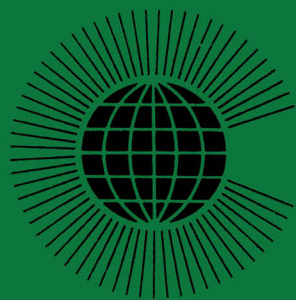


Training for Agricultural Development

Directory of Resources
in the Commonwealth



Commonwealth Secretariat

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**Directory of Resources
in the Commonwealth**

Food Production and Rural Development Division
Commonwealth Secretariat
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This directory is a result of one of the important decisions of the Ministerial Meeting on Food Production and Rural Development held in London in March 1975. In their search for practical methods of accelerating the pace of improving the nutrition, purchasing power and, therefore, the quality of life of the vast number of rural dwellers in the Commonwealth, the Ministers recognized the need for many more trained people in the developing Commonwealth and agreed that reliable and up-to-date information about education and training facilities in the fields of agriculture and rural development in the Commonwealth should be brought together in a single publication to facilitate maximum utilization.

The main purpose of this directory is to meet this expressed need in the hope that it will enhance co-operative action among member countries in making full use of existing facilities and, where possible, improving and expanding them.

Food production and rural development, of course, embraces many disciplines. This composite whole requires expertise in water and soil conservation, irrigation, forestry, fisheries, agronomy, veterinary science, food processing and storage, disease and pest control, sociology, management of co-operatives, wildlife management, and several other disciplines. In defining which of such topics should be included in this publication the main criterion has been whether or not it has a direct bearing on food production and rural development, either in the immediate or longer term. Thus, for example, surveying is included since land conservation and correct land utilization are crucial and land development projects cannot proceed without adequately trained survey technicians.

Material for this directory was sought through official channels and the staff of Ministries concerned with agriculture in many countries took much time and trouble to send in relevant information. In a few cases, however, there was little or no response to our enquiries and information has been taken from existing sources which have not always been accurate or up-to-date. The short introductory statements at the beginning of the description of training programmes were usually provided by the countries concerned but were compiled in other cases from official publications made available by High Commissions in London. Valuable advice and source material was also provided by officials of FAO in Rome, UNESCO in Paris, and a large number of other authorities, foundations and universities. The collection of material and general preparation of the directory has been the responsibility of Norman Tett as Consultant Editor, ably supported by Yvonne Messenger as Sub-Editor who gave valuable help in preparing material for printing.

One reason for the time taken to collect material for this directory is the multiplicity of reference points in many countries. Education and training in agriculture and rural development necessarily stretches across the terms of reference of several government ministries or departments and it is not always practicable to consolidate them under one organization. In view of the single terminal objective of efforts in these fields, however, it is hoped that an additional value of this publication will lie in its illustration of the need for filling gaps and removing overlaps through some suitable co-ordinating arrangement.

In spite of all the time taken and the official and unofficial help received in the preparation of this directory it is far from comprehensive and it will need regular revision and expansion. The directory is therefore issued with a pocket in the back cover where sheets of amendments, addenda and corrections can be collected. It is intended to issue such sheets of new information every few months until a revised second edition can be issued. The publishers hope, therefore, that recipients of the publication who are in a position to do so will forward corrections or additional information to them.

It is now generally recognized that the best way of ensuring a rapid and lasting improvement in agriculture and rural development is through self-help and self-reliance. An essential need in this process is a large pool of suitably trained and active manpower. In publishing this directory, therefore, it is the hope of the Commonwealth Secretariat that the fullest possible use of the available training resources will be made on a national, regional and, where appropriate, inter-regional basis. The Commonwealth Secretariat, and in particular its Division of Food Production and Rural Development and the Commonwealth Fund for Technical Co-operation (CFTC), is available to assist in sustaining, developing and pooling training resources within the Commonwealth.

1. No attempt has been made to give full information such as might be obtained from the prospectus or the handbook of an institution. It is particularly important to bear this in mind regarding entry standards which are summarized very briefly in this directory merely to indicate the approximate level of each course. Any serious applicant for a place on a course would have to obtain more detailed information from the institution concerned or from other reference works in order to find out precisely what qualifications would be required.
2. All available information relevant to the directory has been included but in many cases full data is lacking even for the brief descriptions required; the omission of a certain item therefore merely indicates that information was not available. For example "RA: yes" means that residential accommodation exists, "RA: no" means that the course is non-residential, but the omission of "RA" altogether merely means that the editors have no information as to whether or not there are hostels or student residences. The only exception to this concerns language of instruction. This is only included where it is not English. Hence the omission of an entry at "Lan:" means that English is the language used.
3. The number of participants recorded is not always accurate. It is not given for statistical purposes but merely to give some idea of the size of the programme or institution. As indicated in the text, sometimes it relates to the total capacity of an institution, sometimes to numbers attending each year, sometimes to numbers on each course.
4. Abbreviations are not normally used except for the section of each entry following the description of its administration and finance. To save space in that section, information has been codified concerning the dates of terms, the language of instruction, whether a course is residential, the number of participants and whether trainees or observers from other countries can be accepted. The abbreviations used are set out in a separate key. The only other abbreviations generally used are for university degrees which are always given in the form used by the university concerned.
5. Within each country or province or state, institutions or programmes are listed roughly in the order of the level at which they ordinarily operate; thus lower level courses with minimal entry standards appear first and university degree and postgraduate courses towards the end. Where an institution has a number of courses at different levels these are again listed in a similar order starting with the most elementary and proceeding to the most advanced. Where it has several courses at the same level but on different topics, general agriculture appears first and more specialized courses later. But in the International/Regional chapter it has seemed more convenient to list entries in simple alphabetical order of title and not to group them by level or topic or geographically.
6. Asterisks are used to indicate roughly the level required for entry to a course and are explained in the key.

7. It must be stressed that information given is selected for the particular purpose of this directory; thus the fact that, for example, mention is made of Faculties of Agriculture, Veterinary Medicine and Rural Development for a particular university does not mean that there are not also Faculties of Art, Medicine, Natural Sciences, etc. Only those Faculties and facilities are listed which are significant for agriculture and rural development.
8. There are some deliberate inconsistencies in the kind of information given about universities. For example, long established universities with Faculties of Natural Sciences will almost certainly have courses in botany and zoology, and these will ordinarily have no special significance. In a comparatively new university or one which is at a great distance from other tertiary institution it may, however, be important to indicate that a department of botany or zoology exists.

KEY TO SYMBOLS AND ABBREVIATIONS

Abbreviations are not generally used in the main body of the text except for co-ops. as a convenient form for co-operative societies.

Administration and finance are described only briefly. These sections are not meant to give detailed information of how an institution is managed and financed but merely to indicate whether it is run by the central or a state or local government or by a non-governmental body; and whether its funds are mainly from official or private sources.

Codified information follows the sections on administration and finance in each entry and the following abbreviations are used.

- Lan: Indicates the language of instruction. Where English is the sole language of instruction this item is omitted.
- Cal: Indicates dates of courses, sometimes for the whole year - e.g. Sep/Dec, Jan/Apr, May/Jun means three terms beginning in September, January and May; sometimes only the starting date for a course is given, e.g. from Feb. means that the course starts in February.
- TP: Indicates the total number of participants either in the institution as a whole or attending a particular course. No attempt has been made to be strictly accurate in this information which is given merely as an indication of the size of the project.
- c. Means approximately.
- RA: Indicates whether or not residential accommodation is available.
- NN: Indicates whether non-nationals can be accepted as trainees or as observers.
- Cw. Means Commonwealth.

Asterisks are used to indicate the approximate grade of a course or programme according to the entry standard required. These gradings are only approximate and there may be a wide variation from country to country, e.g. if there is compulsory primary education to the age of 16, (**) will indicate a higher level than in a country where most pupils leave school at 14 years of age.

- * No academic education or not having completed primary schooling.
- ** Full primary education or some schooling plus work experience.
- ** Some secondary education or full primary plus work experience.
- **
** Full secondary education up to 'O' level or approximate equivalent in vocational training.
- ***
** 'A' level or university entry or very considerable work experience.
- ***
*** University degree or senior managerial experience.

In the information about entry standard requirements, generally accepted abbreviations are used such as GCE for General Certificate of Education, OSC for Overseas School Certificate, 'O' and 'A' level for Ordinary and Advanced Level, etc.

The information given at entry standard is not intended to be complete or to indicate that a trainee with the qualifications listed can be accepted. For the actual placement of a trainee full information must be sought by direct correspondence with the institution concerned.

Entries are given a country and number code e.g. CAN 6/2, means the second course listed in the sixth entry under Canada. These codes are used in the index instead of page numbers. The sequence of countries in the directory is shown on the contents page and they are grouped geographically. The codes used to identify countries are as follows:

Antigua	ANT	Malta	MLT
Australia	AUS	Mauritius	MRS
Bahamas	BAH	New Hebrides	NH
Bangladesh	BAN	Nigeria	NIG
Barbados	BAR	New Zealand	NZ
Botswana	BOT	Papua New Guinea	PNG
Canada	CAN	Singapore	SNG
Cyprus	CYP	Sierra Leone	SL
Dominica	DOM	Solomon Islands	SOL
Fiji	FIJ	Sri Lanka	SRI
Gambia	GAM	St. Kitts/Nevis/Anguilla	STK
Ghana	GHA	St. Lucia	STL
Grenada	GRE	St. Vincent	STV
Guyana	GUY	Swaziland	SWA
Hong Kong	HK	Tanzania	TAN
India	IND	Tonga	TON
International/Regional	INT	Trinidad and Tobago	TT
Jamaica	JAM	Uganda	UGA
Kenya	KEN	United Kingdom	UK
Lesotho	LES	Western Samoa	WS
Malawi	MAW	Zambia	ZAM
Malaysia	MAY		

ANTIGUA

Antigua has an equable sub-tropical climate with a variable and often inadequate rainfall. The economy is primarily agricultural. Sugar, once the most important crop, has now been abandoned but cotton production is expanding. Other important crops are vegetables, especially onions, and pineapples. A wide variety of vegetables including sweet potatoes, yams, eddoes, pumpkins and squash, tomatoes, cabbages and okra fetch good prices in the local market, with demand from hotels being an important cost factor.

The most ambitious new project is for maize cultivation on 10,000 acres largely financed from USA. In 1975 a New Farms Development Project was started by the Government to assist agriculture. Fishing is traditional and has been encouraged through Government loans, mechanization and improved repair and maintenance facilities.

ANT 1

Golden Grove Technical College,
P.O. Box 193, St. John's.

Administration: Department of Education. Started in 1972.

Finance: Government, assisted by British overseas aid.

TP: (in college as a whole) 128 full-time, 112 part-time or evening.

1 (**) AGRICULTURAL MECHANICS

Two-year craft level course in agricultural mechanics. Also a one-year full-time course.

Entry standard: Primary school leaving certificate, age 15+.

BAHAMAS

The current agricultural and rural development policies of the Bahamas are to achieve greater self-sufficiency in food supplies and to increase the number of farmers and others involved in activities related to agriculture. The urgency of the situation is indicated by the fact that over 80% of the food consumed in the Bahamas is imported and only about 7% of the work force is directly engaged in agriculture.

In order to achieve these objectives Government has recently introduced credit schemes for land development and farming equipment and extended those dealing with agricultural supplies. It has also made more Crown land available for farming purposes. In addition to facilitating production, Government is implementing plans to establish collecting and packing houses for produce, in five of the important farming areas, with a view to raising the efficiency of the marketing system.

It is fully appreciated that the success of the agricultural and rural development plans will depend upon competent and motivated manpower. Hence agricultural science has been introduced into the school system and at the College of the Bahamas, and farming training schemes have also been organized. The educational drive is supported by the Extension Service. At present, the Service is very small - consisting of seven professional officers and eight leaders of the farming community. The officers have been allocated different crops or problems and are responsible for the necessary applied research, demonstrations and extension. One of their main duties is that of collaborating with teachers so that a new generation of farmers can be produced.

As regards Fisheries, there are no educational schemes in operation at present.

<u>BAH 1</u>	<u>Bahamas Agricultural Research, Training and Development,</u> North Andros.
Administration:	BARTAD for the Ministry of Agriculture and Fisheries. This is a major development programme to help the Bahamas to become self-supporting in food, and involves the 2,300 square mile island of Andros. Eighty acre pilot farms are settled by Bahamians from many islands after training. The programme planning started in 1973 and training in 1975.
Finance:	Government of Bahamas and USAID. Cal: 2 courses per year. TP: 20. RA: board out. NN: by arrangement with Min. of Agric. & Fish. 1 (*) AGRICULTURE Three-month course of lower level vocational training in the general principles of crop and livestock production.
Purpose:	To prepare new recruits for careers as farmers.
Entry standard:	Success in special aptitude and attitude tests.
<u>BAH 2</u>	<u>College of the Bahamas,</u> Nassau.
Administration:	Ministry of Education.
Finance:	Government of Bahamas.

Cal: from Sep. TP: 55. RA: some. NN: yes, if through Bahamas Govt.

1 (**) AGRICULTURE

Two-year course covering the following subjects: introduction to agriculture, soil and animal science, plant physiology and propagation, plant protection, genetics and bio-chemistry.

Purpose: To prepare students to Associate Degree and Junior Secondary Teacher level.

Entry standard: Bahamas Junior Certificate in biology or general science.

2 (***) AGRICULTURE

Four-week course in the practical and theoretical aspects of livestock, crop and ornamental production. The course is part of the Joint Ministries of Education and Agriculture & Fisheries Teachers' Programme, and takes place in the summer.

Purpose: To extend the knowledge of qualified teachers who are interested in teaching agricultural science.

Entry standard: Qualified teachers with an interest in teaching agricultural science especially in Family Island schools.

BAH 3

Central Agricultural Station,
Gladstone Road, Nassau.

Administration: Ministry of Agriculture and Fisheries.

Finance: Government of Bahamas.

TP: 4 p.a. RA: yes. NN: no.

1 (**) AGRICULTURE

One-year intensive course of practical training in the general principles of crop and livestock production: in-service attachment.

Purpose: To assist professionals prior to further degree and diploma courses abroad.

Entry standard: GCE 'O' level.

BARBADOS

Barbados has traditionally had a monoculture economy based on sugarcane, but since 1964 has been attempting to diversify its agricultural production. The aims of current agricultural policy are towards self-sufficiency in food production, with an improvement in the availability of agricultural information and emphasis on agricultural studies in education.

The United Nations Development Programme Plan 1973-77 is currently functioning under the aegis of the Ministry of Agriculture, Science and Technology. Efforts are being made to ensure that relevant information and techniques are available to farmers in order to increase food production. The benefits of research and extension services are relayed in areas of marketing, statistics and livestock feeding. The main emphasis is on the practical application of such knowledge in order to correlate development needs with large-scale technology.

Plans are underway to introduce agricultural studies into the curricula of various schools, and also to establish a Farm School at Codrington and a training centre of the Rural Development Project at Spring Hall. Meanwhile, lower level training in agriculture is provided at the Samuel Jackman Prescod Polytechnic. The Sugar Producers Association and the Ministry of Agriculture run a Farm Mechanization Programme, mainly for members of 4H Clubs, to help them understand the workings of motor tractors and the techniques of motorized cultivation. The Ministry of Agriculture also provides preliminary training, consisting of a year's orientation and experience inside its various departments, for students entering the East Caribbean Institute of Agriculture and Forestry. Higher level training in agriculture is provided by the UWI Faculty of Agriculture at its St. Augustine (Trinidad) Campus.

BAR 1 Samuel Jackman Prescod Polytechnic.

Administration: Ministry of Education.

1 (**) AGRICULTURE

Two-year course in agricultural crafts, covering soil science, animal husbandry, farm management, with regular visits to farms. Emphasis is on demonstrations and practical work.

Entry standard: Primary and secondary school leavers, age 16-21.

BAR 2 Barbados Community College.

Administration: Ministry of Education.

1 (**) LAND SURVEYING

Course for land surveying, at professional level: two years plus one year as 'intern' on practical training.

2 (**) AGRICULTURE

Two-year course in agriculture is proposed.

BAR 3 University of the West Indies,

Cave Hill Campus, P.O. Box 64, Bridgetown.

Administration: Part of the University of the West Indies.

Cal: Sep/Dec, Jan/Mar, Apr/Jun. TP: 700 total at Cave Hill.
RA: yes. NN: yes.

1 (***) NATURAL SCIENCES

There is a Faculty of Natural Sciences at Cave Hill, though no department of soil science, nor any general or special courses directly related to agriculture. However, students who wish to enter the Faculty of Agriculture at the St. Augustine Campus in Trinidad, but lack appropriate qualifications in chemistry, biology or physics can enter degree programmes in these subjects at Cave Hill and transfer later to St. Augustine.

Entry standard: Usual university entrance, i.e. GCE in five subjects, two of which are at 'A' level, or four subjects with three at 'A' level.

Note: The Caribbean Meteorological Institute, Husbands, St. James, which is affiliated to the University of the West Indies, has a course in agro-meteorology.

CANADA

Although Canada is largely an urban and industrial country, agriculture remains an extremely important part of the economy and accounts for approximately 30 per cent of activity in the primary industry sector of the economy. Owing to the extensive mechanization of work on farms, the number of farm workers has been declining, while the total production of food has increased steadily. It is estimated that one farmer currently produces sufficient food to feed fifty people as a result of his farming efforts, or nearly ten times as many as a farmer of the early 1900s could support.

Because of the growing complexity of their operations, farmers require specialized training. In the last decade there has been a rapid development of vocational and technical education in Canada. An increasing number of composite and regional secondary schools provide courses in agriculture and other technical subjects, as well as regular academic courses.

Community colleges have developed to meet the need for various types of programmes and an increase in students seeking post-secondary education in other than the university sector. Most provinces provide agricultural training either in colleges of agricultural technology, or in general technical institutes. Universities across Canada provide first degree and postgraduate courses in agriculture.

In general universities produce professionals, while community colleges produce technical manpower and para-professionals. Many opportunities are provided for further academic and vocational experience beyond regular and full-time classes in secondary schools, community colleges or universities.

ALBERTA

CAN 1

Lethbridge Community College,
Lethbridge, Alberta.

Administration: Provincial Government.

Finance: Provincial Government.

RA: no.

1 (**) AGRICULTURAL MECHANICS

First year of two-year diploma course in agricultural mechanics - the second year is taken at Olds College (CAN 2).

Entry standard: Grade 10.

2 (**) MEAT TECHNOLOGY

One-year certificate course for meat technician.

Entry standard: Grade 9.

3 (**) AGRICULTURE

Two-year diploma course in vocational agriculture.

Entry standard: Grade 11.

4 (**) ENVIRONMENTAL SCIENCE

Two-year diploma course in environmental science, covering conservation enforcement, renewable resource management (with general or fish and wildlife options), land use planning.

Entry standard: High school diploma (= 11/12 years schooling).

- CAN 2 Olds College,
Olds, Alberta.
- Administration: Department of Advanced Education and Manpower.
- Finance: Provincial Government.
- RA: yes.
- 1 (**)
Two-year diploma courses in agricultural mechanics, in agricultural business technology, and in agricultural production technology.
- Entry standard: Grade 12, or adult status.
- 2 (**)
Two-year diploma course in environmental technology. The plant science programme has options in agronomy and agricultural chemicals; the soils programme has options in land classification, land resources, soils and fertilizers, soil and water irrigation.
- Entry standard: Grade 12, or adult status.
- 3 (**)
Two-year diploma in horticulture and floriculture.
- Entry standard: Grade 12, or adult status.
- CAN 3 Fairview College,
Fairview, Alberta.
- Administration: Department of Advanced Education and Manpower.
- Finance: Provincial Government.
- RA: yes.
- 1 (**)
Two-year diploma courses in agricultural technologies, covering agricultural mechanics, crop production, farm management, livestock production; and in animal health care technology.
- Entry standard: Grade 12, or adult status.
- CAN 4 Lakeland College,
Vermilion, Alberta.
- Administration: Department of Advanced Education and Manpower. Formerly Vermilion College.
- Finance: Provincial Government.
- 1 (**)
Two-year diplomas in animal science - with options in health and care, nutrition and feeds, production, reproduction; in field crop production; in pest management; in renewable resources technology - with an option in wildlife and fisheries; in soils and fertilizers technology; in agricultural equipment business; in agricultural mechanics.
- Entry standard: Grade 12, or adult status.

Canada

CAN 5

Forestry School,
P.O. Box 880, Hinton, Alberta.

Administration: Department of Energy and Natural Resources.

Finance: Provincial Government.

RA: yes.

1 (**) FORESTRY/WILDLIFE

Second year of two-year diploma course in forestry. (Year 1 is given at the Northern Alberta Institute of Technology in Edmonton.) There are options in forestry or in wildlife, fisheries and recreation.

CAN 6

University of Alberta,
Edmonton 7, Alberta T6G 2J9.

Administration: Largely autonomous. Started in 1908. There are several field stations including the university farm of 700 acres, a plant science station of 150 acres, 5,500 acres of ranch land, a fishery research laboratory on a lake and an experimental ecology station.

Finance: Mainly Provincial Government.

Cal: Sep/Dec, Jan/Apr, May/Jun, Jul/Aug. TP: c. 18,500 full-time. RA: yes. NN: yes.

1 (**) SUNDRY

First degree courses in Faculty of Agriculture and Forestry: four years for B.Sc. (Agric.), with options in rural economy, agricultural engineering, agronomy, animal or poultry science, entomology, food science, grazing management, plant science, soil science: four years for B.Sc. (Forestry), with options in general forestry, forest management, forest recreation, and forest hydrology. Also four years for B.Sc. (H.Ec.) (food s and nutrition) in the School of Household Economics.

Entry standard: Grade 12, senior matriculation.

2 (***) SUNDRY

Higher degrees are offered in most departments except forestry: for M.Ag., one term residence minimum (non-thesis); for M.Sc., one year residence minimum (thesis); for Ph.D., two years residence minimum (after M.Sc.). The interdepartment programme leading to the M.A. degree in community development requires two years residence, field work experience and thesis.

Entry standard: Appropriate first degree.

CAN 7

University of Calgary,
2920 24 Avenue NW, Calgary, T2N 1N4.

Administration: Formed in 1945 as the Calgary Branch of the University of Alberta and established as a full university in 1966. Largely autonomous. The environmental sciences centre is situated in an extensive forestry reserve. There is a Faculty of Environmental Design.

Finance: Mainly Provincial Government.

Cal: Sep/Dec, Jan/Apr, May/Jun, Jul/Aug. TP: c. 10,000 incl. 70 in Fac. Env. Des. RA: yes. NN: yes.

1 (***) ENVIRONMENTAL SCIENCE

The University's Faculty of Environmental Design has a 2-3 year programme, with an option in environmental science, leading to M.E.Des. The Kananaskis Environmental Research Center, west of Calgary, provides for scientific study of major aspects of the national environment.

BRITISH COLUMBIA

- CAN 8 Malaspina College,
375 Kennedy Street, Nanaimo, British Columbia V9R 5K8.
- Administration: Provincial Government.
RA: yes.
- Entry standard: 1 (**) FORESTRY
Two-week pre-apprenticeship training for setting chokers (logging);
also two months for log loading and shovel operator.
- Entry standard: Open, but some previous related experience necessary for log
loading course.
- 2 (**) AGRICULTURE
One-year course in agriculture.
- 3 (**) FORESTRY
Two years for Diploma in Forest Resource Technology with options
in forestry, fish, wildlife and recreation, or forest products (wood
or pulp and paper). The second year is taken at the BCIT
(see CAN 17).
- 4 (**) SURVEYING
Two-year diploma course in surveying, with second year options in
surveys or photogrammetry. The second year is taken at the BCIT
(see CAN 17).
- Entry standard: High school graduation (= Grade 12), with certain subject require-
ments according to course taken.
- CAN 9 British Columbia Vocational School,
P.O. Box 120, Dawson Creek, British Columbia V1G 4G2.
- Administration: Provincial Government.
RA: yes.
- 1 (**) AGRICULTURE
Short course in agriculture.
- CAN 10 Cariboo College,
P.O. Box 860, Kamloops, British Columbia V2C 5N3.
- Administration: Provincial Government.
- Entry standard: 1 (**) BEEF PRODUCTION
One-year course in beef production.
- Entry standard: Grade 10 minimum, and Grade 12 preferred.
- CAN 11 British Columbia Vocational School,
3650 Willingdon Avenue, Burnaby, British Columbia V5G 3H1.
- Administration: Provincial Government.
RA: yes.
- Entry standard: 1 (**) HORTICULTURE
Six-month pre-apprentice course in practical horticulture.
- Entry standard: Grade 10.

Canada

- CAN 12 British Columbia Vocational School,
P.O. Box 726, Terrace, British Columbia V8G 4C2.
- Administration: Provincial Government.
RA: yes.
- 1 (**) MARINE ENGINE REPAIR
Ten-month course in marine engine repair and maintenance.
- Entry standard: Grade 10 minimum, and Grade 12 preferred.
-
- CAN 13 Vancouver Community College,
675 West Hastings Street, Vancouver, British Columbia V6B 1N2.
- Administration: Provincial Government.
- 1 (**) MARINE ENGINEERING/NAUTICAL TRAINING
One-month to six-month courses in marine engineering; also variable length courses in nautical training upgrading.
-
- CAN 14 Camosun College,
1950 Landsdowne Road, Victoria, British Columbia V8P 1B2.
- Administration: Provincial Government.
- 1 (**) NAUTICAL TRAINING
Variable length courses in nautical training upgrading.
- 2 (**) FOOD TECHNOLOGY
Two-year diploma course in food technology with options in food processing or production. The second year is taken at the BCIT (see CAN 17).
- 3 (**) FORESTRY
Two years for Diploma in Forest Resource Technology with options in forestry, fish, wildlife and recreation, or forest products (wood or pulp and paper). The second year is taken at the BCIT (see CAN 17).
- 4 (**) SURVEYING
Two-year diploma course in surveying, with second year options in surveys or photogrammetry. The second year is taken at the BCIT (see CAN 17).
- Entry standard: High school graduation (= Grade 12), with certain subject requirements according to course taken.
-
- CAN 15 College of New Caledonia,
2001 Central Street, Prince George, British Columbia V2N 1P8.
- Administration: Provincial Government. This is a Regional College and also a Community College.
Cal: Sep/Dec, Jan/May. RA: yes.
- 1 (**) FORESTRY
Six-week pre-employment course in logging.
- Entry standard: Strong physique, age 17+.

2 (**) FORESTRY

Two-year diploma course in forest resource technology.

Entry standard: Secondary school graduation including maths, biology, draughting to Grade 11; mature students without these qualifications may be admitted.

3 (**) FORESTRY

Three-year course for extension certificate of forestry, for in-service upgrading.

Entry standard: Secondary education to Grade 11 plus two years' experience in forestry industry or forestry service.

CAN 16

Selkirk College,

P.O. Box 1200, Castlegar, British Columbia V1N 3J1.

Administration: This is a Community College provided by the Provincial Government. Among the facilities is a Forestry Reserve. There is another campus at Nelson where the Vocational Division is based.

Cal: Sep/Dec, Jan/Apr. RA: yes.

1 (**) FORESTRY

Two-year diploma course in forestry. Year 1 provides background knowledge and specific forestry topics useful for practical employment in forestry during the summer recess, such employment being compulsory. Year 2 covers specific forest topics in greater detail. A further term after the second year is required for practical work at the Forestry Field School.

Entry standard: High school graduation with maths at Grade 12 level and good biology, physics and chemistry.

2 (**) AGRICULTURAL SCIENCE/FORESTRY

One-year pre-professional courses in agricultural sciences or in forestry for those proceeding to degree courses but lacking the prerequisite qualification. The Faculty of Forestry at the University of British Columbia accepts students who have completed two years at Selkirk College for the second year of the forestry degree course at the University.

3 (**) FORESTRY

A number of courses each lasting usually only one semester but at first and second year university level, with credits transferable to any university in British Columbia. Courses include introductory forestry, forestry surveying, forest products and utilization, silviculture, forest management and policy, forest harvesting, forest pestology.

CAN 17

British Columbia Institute of Technology,

3700 Willingdon Avenue, Burnaby, British Columbia V5G 3H2.

Administration: Opened 1964. Sponsored jointly by the Provincial Government and by the Government of Canada.

Finance: Provincial and Federal Governments.

Cal: Sep/Dec, Jan/May. RA: no, but advice given. NN: yes.

1 (**) FOOD TECHNOLOGY

Two-year diploma course in biological sciences technology, with options in food processing or production.

2 (**) FORESTRY

Two-year diploma course in forest resource technology, with options in forestry, fish, wildlife and recreation or forest products (wood or pulp and paper).

3 (**) SURVEYING

Two-year diploma course in surveying technology with second year options in survey or photogrammetry.

Entry standard: High school graduation (= Grade 12) with maths and a science. Non-nationals are required to take the test of English as a foreign language set by Princeton, New Jersey, USA.

CAN 18

University of British Columbia,

2075 Westbrook Place, Vancouver, British Columbia V6T 1W5.

Administration: Largely autonomous. Founded in 1908. The University has Faculties of Agriculture and Forestry, Institutes of Oceanography and Animal Resource Ecology, and there is a University Research Forest of 24 square miles.

Finance: Mainly Provincial Government.

Cal: Sep/Jun, Jan/Apr; short summer term is Jul/Aug. TP: over 18,000 incl. c. 300 in Fac. Agric. and 350 in Fac. For. RA: yes. NN: yes.

1 (**) SUNDRY

First degree courses: four years for B.Sc.Hons., B.Sc.(Agr.) Gen. and Hons., B.H.E.; five years for B.S.F. (= Forestry). Subjects include agricultural biology, agronomy, dairy science, poultry science, soil science, forest biology, silviculture, wood science, animal science.

Entry standard: High school graduation, with certain subject requirements according to course taken.

2 (***) SUNDRY

Higher degree courses: one or two years for M.Sc., M.A.Sc., M.Eng. Specializations include agriculture, plant genetics, poultry genetics, wildlife management, forest engineering, forest fire science, community development, animal resource ecology, fisheries.

Entry standard: Appropriate first degree.

CAN 19

Simon Fraser University,

8888 Barnett Hwy., North Burnaby, British Columbia V5A 1S6.

Administration: Started in 1965. Largely autonomous.

Finance: Mainly Provincial Government.

Cal: Jan/Apr, May/Aug, Sep/Dec. Students may enrol at start of each semester and may elect for two or three semesters in any year. TP: c. 5,000. RA: yes. NN: yes.

1 (**) MARINE SCIENCE

Marine science is offered as a minor specialization in the normal four-year first degree biology programme. The marine science courses take place at the Bamfield Marine Station in the summer session.

Entry standard: High school graduation, with certain subject requirements.

2 (***) PESTOLOGY

Master degree course offered with specializations in pestology or pest management.

Entry standard: Appropriate first degree.

CAN 20

University of Victoria (B.C.),

P.O. Box 1700, Victoria, British Columbia V8W 2Y2.

Administration: Established in 1903 as Victoria College and became a university in 1963. This is one of five universities participating in the W.C.U. Marine Biological Society with research facilities on Vancouver Island. Although there is no Faculty of Agriculture or Forestry, the University is associated with forestry research.

Finance: Mainly Provincial Government.

Cal: Sep/Dec, Jan/Apr. TP: 4,600. RA: yes. NN: yes.

1 (**) SUNDRY

First degree courses: four years for B.A. and B.Sc. Subjects include marine biology, marine science, ecology, nutritional biochemistry and environmental studies.

Entry standard: High school graduation, with certain subject requirements.

2 (***) MARINE SCIENCE

Master degree course offered with specialization in marine science.

Entry standard: Appropriate first degree.

MANITOBA

CAN 21

University of Manitoba,

Winnipeg, Manitoba R3T 2N2.

Administration: Founded in 1877. Largely autonomous. The University has Faculties of Agriculture and Home Economics, an Aquatic Biology Research Unit, a Centre for Settlement Studies and a Natural Resources Institute.

Finance: Mainly Government grants.

Cal: Sep/Apr; short vacation term is Jul/Aug. TP: over 13,000 incl. c. 600 in Fac. Agric. RA: yes. NN: yes.

1 (**) SUNDRY

First degree courses: four years for B.Sc., B.Sc.Hons., B.H.Ec., and B.S.A. Subjects offered include agriculture, farm management, food science, nutrition, animal science, plant science, soil science, agricultural engineering.

Entry standard: Full secondary schooling to Grade 12, or equivalent.

2 (***) SUNDRY

One or two years for M.Sc. in a number of subjects, including most first degree subjects listed.

Entry standard: Appropriate first degree.

CAN 22

University of Winnipeg,

515 Portage Avenue, Winnipeg, Manitoba R3B 2E9.

Administration: Established in 1967 from United College which had been formed in 1938 by the amalgamation of Manitoba College (1871) and Wesley College (1877). Administered largely by United Church of Canada through a board of regents.

Canada

Finance: Mainly Provincial Government.

Cal: Sep/Dec, Jan/Apr; two summer sessions from May/Jul and Jul/mid Aug. TP: c. 2,500 full-time, c. 2,500 part-time.
RA: yes, but limited. NN: yes.

1 (**) DEVELOPMENT STUDIES

The three-year degree courses for B.A.Gen. include development studies and environmental studies, planning and conservation.

NEW BRUNSWICK

CAN 23

New Brunswick School of Fishing,
BP 178 Caraquet, New Brunswick EOB 1KO.

Administration: Provincial Department of Fisheries,

Finance: Government of Canada.

Lan: French & Eng. TP: 8-15 per course. RA: yes. NN: no.

1 (**) SUNDRY

Specialization courses up to twenty-two weeks in duration, in subjects such as: fishing gear and boat rigging; nautical science; marine engineering; course for chief engineer. Some of the courses are in a series of units which may be taken at different times.

Entry standard: Age 17+, usually with some relevant experience.

2 (**) SUNDRY

Refresher courses of two weeks to two months in duration, in marine motor mechanics, welding, electricity, hydraulics, electronics.

Entry standard: Age 17+, with some experience. Candidates for courses in welding, electricity and hydraulics should be holders of Engineering Certificate in Fishing, or in training for it.

3 (**) FISHERIES

Twenty-week course of introduction to fisheries, followed by twelve weeks practical training aboard fishing vessels. Course includes training in nautical science, marine engineering, fishing gear, water safety, marine sciences and electricity.

Entry standard: Age 17, with Grade 9 or equivalent.

CAN 24

Maritime Forest Ranger School,
P.O. Box 518, Fredericton, New Brunswick.

Administration: Established in 1946 as a co-operative effort of the Provincial Governments of New Brunswick and Nova Scotia and the wood-using industries of the two provinces. Operated in affiliation with the University of New Brunswick and under the direction of an Executive Committee. The University Forest of 3,600 acres is adjacent to the school, with a tract of a further 3,500 acres for field instruction.

Finance: Government. The school was established with generous contributions from pulp, paper and lumber companies.

Cal: Jan/May, Sep/Dec. TP: c. 95. RA: yes. NN: yes, in principle.

1 (**) FORESTRY

Eight-month course (in two terms) with employment in forestry during summer recess. The course includes general forestry, communication, surveying, accident control, dendrology, fire control, forest improvements, milling and lumber grading, photogrammetry, silviculture, foremanship, etc.

Entry standard: High school graduation and, preferably, completion of pre-university programme; age 20, with a minimum of one year of employment in forestry or woods work. Prior consideration to applicants sponsored or recommended by forest industries or government forest agencies.

CAN 25 University of New Brunswick,
Fredericton, New Brunswick.

Administration: Founded as a provincial academy of arts and sciences in 1785 and incorporated as the College of New Brunswick in 1800, renamed Kings College in 1828 and University of New Brunswick in 1859. Largely autonomous. There is a Faculty of Forestry with over 3,500 acres of forest land. The Huntsman Marine Laboratory is used by several universities and Government departments.

Finance: Mainly Government grants.

Cal: Sep/Dec, Jan/May; short vacation term in Jul/Aug. TP: over 5,000 full-time incl. c. 450 in Fac. For. RA: yes. NN: yes.

1 (**) FORESTRY/MARINE SCIENCES

First degree courses in forestry and forestry engineering: five years for B.Sc.F. and B.Sc.F.E. Also first degree courses in marine sciences and marine biology.

2 (***) FORESTRY/MARINE SCIENCES

Higher degree courses, including one year for M.Sc.F. Higher degree specializations include forest hydrology, forest ecology, forest fire science, forest soils, silviculture, wood science; and marine sciences and biology.

NEWFOUNDLAND

CAN 26 College of Fisheries, Navigation, Marine Engineering and Electronics,
P.O. Box 4920, Parade Street, St. John's, Newfoundland A1C 5R3.

Administration: Department of Education through a Board of Governors.

Finance: Provincial Government.

Cal: Sep/Aug. TP: 2,600. RA: for 80. NN: yes.

1 (**) FISHERIES

Short courses lasting one to twelve weeks in many subjects to meet the special needs of fishermen and fish plant workers.

Entry standard: Variable according to course, but mainly experience.

2 (**) MARINE MECHANICS

One-year vocational programmes in several subjects, including marine diesel mechanics and marine cooking and stewarding.

Entry standard: Varies from Grade 8 to Grade 12.

3 (**) FISHERIES/FOOD TECHNOLOGY

Three-year technology programmes in several subjects including food processing technology (marine products) and nautical science (fishing).

Entry standard: High school graduation.

Canada

- CAN 27 Newfoundland College of Trades and Technology,
P.O. Box 1693, Prince Philip Drive, St. John's,
Newfoundland A1C 5P7.
- Administration: Ministry of Education through a Board of Governors.
- Finance: Provincial Government.
- Cal: from Sep. TP: 1,850. RA: no. NN: yes.
- 1 (**) MEAT CUTTING
Twenty-four weeks for Certificate of Vocational Education in meat
cutting.
- Entry standard: Grade 8 to Grade 11.
- 2 (**) FORESTRY/SURVEYING
Two-year diploma courses in forestry technology or in surveying
technology.
- 3 (**) FOOD TECHNOLOGY
Two and a half years for Diploma in Food Management Technology.
- Entry standard: Grade 11 public examination with good pass marks in English, maths,
science and two other subjects.
-
- CAN 28 Memorial University of Newfoundland,
St. John's, Newfoundland A1C 5S7.
- Administration: Founded in 1925. Largely autonomous.
- Finance: Now mainly Provincial Government but originally funded by Carnegie
Corporation grants.
- Cal: Sep/Dec, Jan/Apr, May/Jul. TP: c. 6,500 full-time.
RA: yes. NN: yes.
- 1 (**) MARINE SCIENCES
First degree course in marine sciences or marine biology.
- 2 (**) MARINE SCIENCES
Higher degree course with specializations in marine sciences or
marine biology.
-
- NOVA SCOTIA
-
- CAN 29 Fisheries Training Centre,
P.O. Box 700, Pictou, Nova Scotia.
- Administration: Provincial Department of Fisheries.
- Lan: some French, mainly Eng. TP: c. 60 per session. NN: no.
- 1 (**) FISHERIES
Six to twelve week courses in navigation, engineering (advanced),
engineering (gas) and Able Fisherman. Also, mobile courses given
"outport" in navigation, diesel engines, gas engines and fishing
techniques, lasting about four weeks.
- Entry standard: Variable.

CAN 30

Nova Scotia Agricultural College,
Truro, Nova Scotia.

Administration: Provincial Government. Opened in 1905 when it took over the School of Horticulture in Wolfville and the School of Agriculture in Truro. It has close associations with the Ontario Agricultural College, now part of the University of Guelph, and Macdonald College of McGill University. The College is on 550 acres and has well-equipped buildings including a modern farm complex. Its laboratories provide facilities for the technical staff of the Nova Scotia Department of Agriculture and Marketing.

Finance: Mainly Provincial Government.

Cal: Sep/Dec, Jan/Apr.

1 (**) SUNDRY

Vocational courses of varying lengths, both pre-employment and up-grading, for farm and farm related careers. Vocational certificates are awarded to those who complete them satisfactorily. Subjects include artificial insemination, operation and repair of farm machinery, land use planning, poultry meat production, swine herd management, weed control, basic sheep production, beef production, power saw operation and safety, woodlot harvesting.

Entry standard: Variable.

2 (**) AGRICULTURAL SCIENCES

Two-year technical diploma courses in agricultural business, animal science, plant science or agricultural engineering for those wishing to farm or be employed in farm-related industry or professional agriculture. All students are advised to take a career introduction programme of practical work between their first and second years.

Entry standard: Grade 11, in English, maths, a science and two additional subjects. Mature students with lower academic standard may be accepted.

3 (**) AGRICULTURAL TECHNOLOGY

One-year courses for Diploma of Technology for those who have already obtained the technician diploma. Subjects include advanced business management, plant nutrition, advanced field crops, advanced animal nutrition, but other subjects can be selected from degree courses. Diplomas of Technology can also be awarded in biology and chemistry laboratory technology and in farming technology, the programme for which includes seven months practical on-the-farm training.

4 (**) AGRICULTURAL SCIENCE

First two years of a four-year course leading to a degree in agricultural science. Most participants proceed to Macdonald College of McGill University, to the University of Guelph or the University of Maine for the final two years. Students on this course may also prepare for admission to Ontario Veterinary College of the University of Guelph where they will specialize, in the final two years, in subjects such as economics, agricultural science, environmental science and food science (see CAN 51).

5 (**) AGRICULTURAL ENGINEERING

First three years of a five-year course leading to a degree in agricultural engineering. Most participants proceed to the Nova Scotia Technical College (CAN 31) for the final two years.

Canada

Entry standard: Grade 12, with good marks in English, maths, chemistry, another science and an additional subject. Applicants with Newfoundland Grade 11 must take a pre-college year in the subjects listed above.

Note: Students with good credits on courses 4 and 5 qualify for a diploma conferring the status of Associate of the Nova Scotia Agricultural College.

CAN 31 Nova Scotia Technical College,
P.O. Box 1000, Halifax, Nova Scotia.

Administration: The College is becoming a part of Dalhousie University.

1 (***) AGRICULTURAL ENGINEERING

Two years for B.Eng. in agricultural engineering after completion of the three-year diploma courses at Nova Scotia Agricultural College (CAN 30).

ONTARIO

Only brief details are given of Ontario's Colleges of Applied Arts and Technology, except for the first, CAN 32, which is typical. The CAATs are almost all non-residential and their entry standards are similar - Ontario Year 4, grade 12 - though certain courses have specific subject and level requirement. Fuller details of CAAT courses can be obtained from the address below.

CAN 32 to CAN 45 College Affairs Branch,
Ministry of Colleges and Universities, Mowat Block, Queens Park,
Ontario M7A 1C1.

CAN 32 Algonquin College of Applied Arts and Technology,
1385 Woodroffe Avenue, Ottawa, Ontario K2G 1V8.

Administration: Ministry of Colleges and Universities, Ontario.

Finance: Provincial Government.

Lan: Eng., or Eng./French as indicated. Cal: Sep/May in 2 semesters. TP: c. 6,500 full-time. RA: no. NN: yes.

1 (**) HORTICULTURE

Two years for Diploma in Horticulture and Landscaping (also offered in French).

2 (**) FORESTRY

One year for Certificate for Forest Woodworker.

Entry standard: Ontario Year 4, grade 12.

3 (**) FORESTRY

Two years for Diploma for Forestry Technician (also offered in French).

4 (**) SURVEYING

Two years for Diploma for Survey Technician (also offered in French).

5 (**) SURVEYING

Three years for Diploma in Survey Technology.

Note: Courses 2 or 3 take place at the Upper Ottawa Valley Campus in Pembroke.

- CAN 33 Confederation College of Applied Arts and Technology,
P.O. Box 398, Postal Station F, Thunder Bay, Ontario P7C 4W1.
1 (**) SURVEYING
- CAN 34 Fanshawe College of Applied Arts and Technology,
P.O. Box 4005, Terminal C, London, Ontario N5W 5H1.
1 (**) FARM BUSINESS
2 (**) SURVEYING
- CAN 35 Georgian College of Applied Arts and Technology,
401 Duckworth Street, Barrie, Ontario L4M 3X9.
1 (**) RESOURCES TECHNOLOGY
2 (**) SURVEYING
3 (**) SUNDRY
Short programmes.
- CAN 36 Humber College of Applied Arts and Technology,
P.O. Box 1900, Rexdale, Ontario M9W 5L7.
1 (**) HORTICULTURE
2 (**) SURVEYING
- CAN 37 Loyalist College of Applied Arts and Technology,
P.O. Box 4200, Belleville, Ontario K8N 5B9.
1 (**) SURVEYING
2 (**) WATER RESOURCES
- CAN 38 Niagara College of Applied Arts and Technology,
Woodlawn Road, Welland, Ontario L3B 5S2.
1 (**) HORTICULTURE
2 (**) SURVEYING
- CAN 39 Northern College of Applied Arts and Technology,
P.O. Box 970, Kirkland Lake, Ontario P2N 3L2.
1 (**) SURVEYING
2 (**) FORESTRY
- CAN 40 St. Clair College of Applied Arts and Technology,
2000 Talbot Road West, Windsor, Ontario N9A 6S4.
1 (**) ANIMAL HEALTH

Canada

- CAN 41 St. Lawrence College of Applied Arts and Technology,
Portsmouth Avenue, Kingston, Ontario K7L 5A6.
1 (**) ANIMAL CARE
2 (**) WATER RESOURCES
- CAN 42 Sault College of Applied Arts and Technology,
P.O. Box 60, Sault Ste. Marie, Ontario P6A 5L3.
1 (**) FORESTRY
2 (**) FISH AND WILDLIFE
- CAN 43 Seneca College of Applied Arts and Technology,
1750 Finch Avenue East, Willowdale, Ontario M2N 5T7.
1 (**) RESOURCES TECHNOLOGY
- CAN 44 Sheridan College of Applied Arts and Technology,
Trafalgar Road, Oakville, Ontario L6H 2L1.
1 (**) ANIMAL CARE
- CAN 45 Sir Sandford Fleming College of Applied Arts and Technology,
Brealey Drive, Peterborough, Ontario K9J 7B1.
1 (**) FARM MANAGEMENT
2 (**) FORESTRY
3 (**) FISH AND WILDLIFE
- CAN 46 Centralia College of Agricultural Technology,
Huron Park P.O., Ontario NOM 1Y0.
Administration: Ministry of Colleges and Universities, Ontario.
Finance: Provincial Government.
Cal: Sep/May. TP: 277. RA: yes. NN: yes.
1 (**) FARM MANAGEMENT
Two-year course in agricultural business management. A full-year farm analysis project gives extensive training in real farm situations.
Purpose: To assist rural youth to become successful farm operators.
2 (**) ANIMAL HEALTH
Two-year course in animal health technology.
Purpose: To train technicians in performance of tests to assist veterinarians in accurate diagnosis and efficient treatment of animal health.
Entry standard: Ontario Secondary School Graduation Diploma, or equivalent.
- CAN 47 Kemptville College of Agricultural Technology,
Kemptville, Ontario KOG 1J0.
Administration: Ministry of Colleges and Universities, Ontario.
Finance: Provincial Government.
Cal: 2 semesters beg. Sep & Jan. TP: 250. RA: yes. NN: yes.

1 (**) AGRICULTURE

Four semesters for Diploma in Agriculture. It is not necessary to proceed directly from one semester to the next. Experimental plots, orchards, gardens and dairy and beef herds provide facilities for study, research and demonstration.

Entry standard: Ontario Secondary School Graduation Diploma, or equivalent.

CAN 48

New Liskeard College of Agricultural Technology,
New Liskeard, Ontario TOJ 1TO.

Administration: Ministry of Colleges and Universities, Ontario.

Finance: Provincial Government.

Cal: Sep/Apr. in 2 semesters. TP: 65. RA: no. NN: yes.

1 (**) AGRICULTURAL TECHNOLOGY

Two-year diploma course in agricultural technology. A year-round farming programme is maintained on the college's 480-acre farm site, to provide instructional material and to carry out applied research projects.

Entry standard: Ontario Year 4, grade 12, or equivalent, with emphasis on maths, chemistry and other science courses.

CAN 49

Ridgetown College of Agricultural Technology,
Ridgetown, Ontario NOP 2CO.

Administration: Ministry of Colleges and Universities, Ontario.

Finance: Provincial Government.

Cal: 3 semesters beg. Sep/Dec/Feb. TP: 220. RA: yes.
NN: yes.

1 (**) AGRICULTURAL PRODUCTION AND MANAGEMENT

Two-year course designed to provide training for careers in the business of farming and for positions in the expanding agricultural industry.

Entry standard: Ontario Year 4, grade 12, or equivalent.

2 (**) AGRICULTURAL LABORATORY TECHNOLOGY

Two-year programme designed to train students in laboratory principles and techniques and their application in the agriculture and food industry.

Entry standard: Ontario Year 4, grade 12, or equivalent.

3 (**) AGRICULTURAL SECRETARY

Two-year programme to provide training in stenographic and clerical services as they apply to farm business.

Entry standard: Ontario Year 4, grade 12, or equivalent.

CAN 50

The Niagara Parks Commission School of Horticulture,
Niagara Falls, Ontario L2E 6V5.

Administration: Niagara Parks Commission.

Finance: Provincial Government.

Cal: from Apr. TP: 36. RA: yes. NN: no.

Canada

1 (**) HORTICULTURE

Three years for Diploma in Horticulture, covering horticultural mechanization, botany, greenhouse and nursery production, weed control, plant diseases and greenhouse management.

Entry standard: Ontario Year 4, grade 12, or equivalent, with certain credits.

CAN 51

University of Guelph,

Guelph, Ontario N1G 2W1.

Administration: Established in 1964 and absorbing the Ontario Veterinary College (founded in 1962), the Ontario Agricultural College (1874) and Macdonald Institute (1903). Largely autonomous. There is a School of Agricultural Economics and Extension Education, a Food Industry Research Institute, a Marine Laboratory and a Centre for Resources Development. The University Farm and experimental plots total nearly 2,000 acres.

Finance: Approximately half from Ontario Government and nearly a quarter from fees for contracted research.

Cal: Sep/Dec, Jan/Apr, May/Jul. TP: c. 9,000 full-time.

RA: yes. NN: yes.

1 (**) AGRICULTURE/HORTICULTURE

Two years for Associate Diploma in Agriculture. A diploma in horticulture can be taken in three years by correspondence.

Entry standard: Ontario Year 4, grade 12, or equivalent, with at least three months' experience in agriculture or landscaping.

2 (***) SUNDRY

First degree courses: four years for B.Sc.(Agr.), B.Sc.Hons., B.Sc.(Eng.), and D.V.M. B.Sc.Hons. specializations include earth science, fish and wild life biology, food science, marine biology.

Entry standard: Ontario Year 5, grade 13, with some special credit requirements. Candidates for the D.V.M. course must have completed three or more semesters of degree programme in science or agriculture for admission into the pre-veterinary semester; or four or more semesters for admission into the first semester.

3 (***) SUNDRY

Higher degree courses include one year for M.Sc. in agricultural economics, agrometeorology, apiculture, hydrology, veterinary microbiology, resources development. The Postgraduate Diploma in Veterinary Medicine requires one year after D.V.M.

CAN 52

Lakehead University,

Thunder Bay, Ontario P7B 5E1.

Administration: Founded in 1965. Largely autonomous.

Finance: Mainly Government grants.

Cal: Sep/May in 2 semesters. TP: 2,500. RA: yes. NN: yes.

1 (**) FORESTRY

Two years for Diploma in Forest Technology, with third year option for Post-diploma Certificate in Environmental Forest Technology or in Timber Harvesting Technology.

Entry standard: Ontario Year 4, grade 12, with overall average 60 per cent.

2 (***) FORESTRY

Four years for B.Sc.F.

Entry standard: Ontario Year 5, grade 13, including maths, chemistry and biology.

- CAN 53 University of Toronto,
315 Bloor Street West, Toronto, Ontario M5S 1A3.
- Administration: Founded in 1927 as Kings College. Largely autonomous. There is a Faculty of Forestry and an Institute of Environmental Studies. The University Forest covers 20,000 acres.
- Finance: Mainly Government grants.
Cal: Sep/Dec, Jan/May with short summer term Jul/Aug.
TP: c. 29,000. RA: yes. NN: yes.
- 1 (***) FORESTRY
Four years for B.Sc.F. In the third year a student may elect the branch of wood science. Candidates must also present relations and functions, calculus and chemistry.
- Entry standard: Ontario Year 5, grade 13, or equivalent.
- 2 (***) SUNDRY
Higher degree courses include two years for M.Sc.F., specializing in a variety of forestry topics, wood science, wildlife management, or natural resources. There is a one-year diploma course in veterinary public health (D.V.P.H.) for qualified vets.
- Entry standard: Appropriate first degree.
- CAN 54 Trent University,
Peterborough, Ontario K9J 7B8.
- Administration: Founded in 1963. Largely autonomous. Teaching is in small tutorial groups and requires much academic work outside term.
- Finance: Mainly Provincial Government.
Cal: Sep/Dec, Jan/Mar, Mar/May. TP: c. 2,000. RA: yes.
NN: yes.
- 1 (***) ENVIRONMENTAL STUDIES
Special programmes for students who have completed their first year of degree study at Trent are:-environmental resources studies, development studies. There is also a special programme concerned with the problems of newly-developing countries.
- CAN 55 University of Waterloo,
University Avenue, Waterloo, Ontario N2L 3G1.
- Administration: Founded in 1959. Largely autonomous. There is a Faculty of Environmental Studies.
- Finance: Mainly Government grants.
Cal: Sep/Dec, Jan/Apr, May/Aug. TP: c. 14,500. RA: yes.
NN: yes.
- 1 (***) ENVIRONMENTAL STUDIES
Three years for B.E.S. and four years for B.E.S. (Hons), including earth science and regional planning, in the Faculty of Environmental Studies.
- Entry standard: Ontario Year 5, grade 13, with maths.

Canada

- CAN 56 University of Western Ontario,
London, Ontario N6A 5B8.
- Administration: Founded in 1878 as a Church of England University becoming non-denominational in 1908. Largely autonomous.
- Finance: Mainly Provincial Government.
Cal: Sep/May. TP: c. 16,000. RA: some. NN: yes.
- 1 (***) PLANT SCIENCES
Four years for B.Sc. honours in plant sciences.
- Entry standard: Ontario Year 5, grade 13, with credits in maths.
- 2 (***) SUNDRY
Higher degree courses include one year for M.Sc. in plant sciences; environmental engineering is also a specialization offered.
- Entry standard: Appropriate first degree.
-
- CAN 57 University of Windsor,
Windsor, Ontario N9B 3A9.
- Administration: Founded in 1857 as Assumption College. Became a full university in 1953. Largely autonomous.
- Finance: Mainly by Federal and Provincial Government grants.
Cal: Sep/Dec, Jan/Apr, with short summer sessions May/Jun and Jul/Aug. TP: 6,000 full-time, 8,000 part-time. RA: yes.
NN: yes.
- 1 (***) SUNDRY
First degree courses: specializations offered in B.Sc. are marine science, nutrition and earth science.
- Entry standard: Ontario Year 5, grade 13.
-
- CAN 58 York University,
4700 Keele Street, Downsview, Ontario M3J 2R3.
- Administration: Founded in 1959. Largely autonomous.
- Finance: Mainly by Provincial and Federal Government grants.
Cal: Sep/Dec, Jan/May. TP: 11,000 full-time, 10,000 part-time.
RA: yes. NN: yes.
- 1 (***) ENVIRONMENTAL STUDIES
Specialized honours programmes in earth and environmental science in the B.Sc. course in the Faculty of Science.
- Entry standard: Ontario Year 5, grade 13, with chemistry, physics and maths.
-
- PRINCE EDWARD ISLAND
-
- CAN 59 Prince Edward Island Marine and Fisheries Training Centre,
Summerside, Prince Edward Island.
- Administration: Holland College, Charlottetown, PEI.
- Finance: Provincial Government.
TP: c. 150. RA: no. NN: yes.

1 (**) FISHERIES

A number of courses varying in length from 2-3 days to up to forty-eight weeks, but mostly one or two months. Subjects covered include:- boat refitting and repair, fishing master/mate, general seamanship, inshore net and gear, marine engineering, net maintenance and repair, oyster culture, pair seine course, tuna boat operation - theoretical/practical.

Purpose: To improve skills in the fishing industry.

Entry standard: Variable, but in general experience relevant to the particular course.

QUEBEC

CAN 60 to CAN 64 The following institutions in the Province of Québec offer courses (**) in AGRICULTURAL TECHNOLOGY, in French.

CAN 60 Institut de Technologie Agricole,
C.P. 70, Saint Hyacinthe, Québec.

CAN 61 Institut de Technologie Agricole,
La Pocatière, Québec.

CAN 62 Collège d'Alma,
675 ouest, Boulevard Auger, Alma, Québec G8B 2B7.

CAN 63 Collège de Joliette,
20 sud, Rue St-Charles, C.P. 130, Joliette, Québec J6E 3Z3.

CAN 64 Collège de Sainte-Foy,
2410, Ch. Sainte-Foy, Québec G1V 1T3.

CAN 65 to CAN 70 The following institutions offer courses (**) in FORESTRY, in French.

CAN 65 Collège de Chicoutimi,
534 est, Rue Jacques Cartier, C.P. 1148, Chicoutimi, Québec.

CAN 66 Collège de la Gaspésie,
Rue Jacques Cartier, C.P. 590, Gaspé (Gaspé-Sud), Québec.

CAN 67 Collège de Rimouski,
60 ouest, Rue de l'Evêché, Rimouski, Québec.

CAN 68 Collège de Rouyn-Noranda,
425 Rue Gagné, C.P. 1500, Rouyn, Québec.

CAN 69 Collège d'Enseignement Général et Professionnel,
Hauterive, Québec.

- CAN 70 L'Ecole Forestière,
Duchesnay, Québec.
- CAN 71 Ecole de Pêches,
Grande-Rivière, Gaspé, Québec GOC 1VO.
- Administration: Ministry of Education, through the Gaspé Collège d'Enseignement
General et Professionnel.
- Finance: Provincial Government.
Lan: French. Cal: Sep/Jun. TP: 80. RA: yes. NN: yes.
- 1 (**) FISHERIES
Two-year course for professional fishermen; three years for
fishing boat mechanic.
- Entry standard: Grade 9 (= three years secondary education).
- 2 (**) FISHERIES
Three-year course for fishing technician.
- Entry standard: Grade 11 (= five years secondary education), including sciences.
- CAN 72 McGill University,
P.O. Box 6070, Station A, Montreal, P.Q. H3L 3G1.
- Administration: Founded in 1821. Autonomous. The Faculty of Agriculture and
the School of Food Science are at Macdonald College (P.Q.
H9X 3M1). There is a university farm of nearly 900 acres and 700
acres of woodland. There is a link with Bellairs Institute in
Barbados for marine biology.
- Finance: Approximately half from Provincial Government grants.
Cal: Sep/Dec, Jan/Apr. with summer sessions May/Aug.
TP: c. 16,000 incl. 450 in Fac. Agric. RA: yes. NN: yes.
- 1 (**) SUNDRY
First degree courses: three years for B.Sc.(Agr.), B.Sc.(F.Sc.),
B.Sc.(Agr.Eng.). Subjects include agricultural biology, agronomy,
horticulture, plant pathology, soil science, wildlife resources,
marine sciences, animal science, animal behaviour, and also
renewable resource development.
- 2 (**) SUNDRY
One year for M.Sc. covering a range of agriculture, horticulture
and forestry subjects.
- 3 (**) SUNDRY
There is a postgraduate diploma course requiring one year's study
in engineering for arid land development. Among the topics that
can be studied are agricultural business and commerce, marine
science, woodlot management.
- CAN 73 Université Laval,
Cit -Universitaire, Qu bec G1K 7P4.
- Administration: Founded in 1852, based on a seminary existing from 1663. Largely
autonomous. The University has Faculties of Agriculture and of
Forestry and Geodetics, and a nutrition centre.
- Finance: Mainly Provincial Governmental grants.
Lan: French. Cal: Sep/Jun, Jan/May with summer sessions
May/Sep. TP: 11,000 incl. over 300 in Fac. Agric. RA: yes.
NN: yes.

1 (**) SUNDRY

First degree courses: three years for B.Sc.A. (Home Economics); four years for B.Sc.A. in subjects such as agricultural engineering, food, surveying, forestry.

2 (***) SUNDRY

One and a half years is required for M.Sc. in subjects such as forestry, rural economics, silviculture, wood science, animal science, plant or soil science.

CAN 74

Université de Montréal,

P.O. Box 6128, Montréal 101, Québec.

Administration: Founded in 1919 from a branch of Laval University which was established in 1878. It is a private institution. Autonomous. There are Faculties of Veterinary Medicine and of Environment Design.

Finance: Mainly Provincial Government grants.

Lan: French. Cal: Sep/Dec, Jan/Apr. TP: over 15,000.
RA: yes. NN: yes.

1 (**) VETERINARY SCIENCE

First degree course in Faculty of Veterinary Medicine: four years for D.M.V.

2 (***) VETERINARY SCIENCE

One year further for M.Sc.V. Also one-year postgraduate certificate course in applied veterinary science.

CAN 75

Concordia University,

1455 de Maisonneuve Boulevard West, Montréal, Québec H3G 1M8.

Administration: Established in 1974 by the merger of Sir George Williams University and Loyola College. Autonomous.

Finance: Mainly Government grants.

Cal: Sep/Dec, Jan/May. TP: 16,000. RA: no.

1 (**) ECOLOGY

First degree course in ecology.

2 (**) CO-OPERATION

One-year course (in English, Sep/May) in the theory and practice of co-operation for 50 participants from Canada and from developing countries.

CAN 76

Université de Sherbrooke,

2500 Boulevard Université, Sherbrooke, P.Q. J1K 2R1.

Administration: A Catholic university, founded in 1954. The University has an Urban and Regional Development Centre and a Centre for Studies in Co-operative Economics, where the programmes are given in association with the Canadian International Development Agency and are intended for trainees from French-speaking African countries.

Finance: Mainly Government grants.

Lan: French. Cal: Sep/Dec, Jan/Apr, May/Aug. TP: over 5,000 full-time, nearly 5,000 part-time. RA: yes. NN: yes.

1 (**) CO-OPERATIVE STUDIES

Twelve-month diploma course in co-operative economics. Also a three-month study cycle leading to a certificate. (The short course takes place Jun/Aug.)

SASKATCHEWAN

CAN 77

Wascana Institute of Applied Arts and Sciences,
4635 Wascana Parkway, P.O. Box 556, Regina,
Saskatchewan S4S 5X1.

Administration: Department of Continuing Education, Government of Saskatchewan. The Institute is mainly programmed in the health science field but it offers courses more directly related to agriculture and rural life through its Extension Department at various community locations.

1 (**) RURAL SKILLS

Courses ranging in length from four months to one or two years, and at various levels, in farm management, farm business management, irrigation, livestock management, farm machinery and carpentry, farm home improvement.

Entry standard: Varies with courses from nominal elementary to two or three years secondary education.

CAN 78

Kelsey Institute of Applied Arts and Sciences,
(Saskatchewan Institute of Applied Arts and Sciences),
33rd Street and Idylwyld Drive, Box 1520, Saskatoon,
Saskatchewan.

Administration: Department of Continuing Education, Government of Saskatchewan.

Finance: Provincial Government.

RA: no. NN: yes.

1 (**) RURAL SKILLS

A variety of short courses lasting one to six weeks on aspects of rural life and agriculture.

Entry standard: Variable, from elementary to secondary graduation.

2 (**) FARM MACHINERY/TRADES

Trade and occupational courses lasting up to one year in farm machinery and in farm welding and carpentry.

Entry standard: Two or three years of secondary education.

3 (**) AGRICULTURAL TECHNOLOGIES

Two-year technology courses in water science, animal health, soils or plant physiology and pathology.

Entry standard: Secondary school graduation.

CAN 79

Saskatchewan Technical Institute,
P.O. Box 1420, Saskatchewan Street and 6th Avenue, N.W.
Moose Jaw, Saskatchewan S6H 4R4.

Administration: Department of Continuing Education, Government of Saskatchewan. The technology courses of the Institute are primarily in industrial business and engineering fields. Agricultural and rural life courses are largely concentrated in a satellite school at Weyburn and in extension courses offered in many other local communities.

Finance: Provincial Government.

1 (**) AGRICULTURAL TECHNOLOGIES/TRADES
Courses include credit and non-credit courses in applied technologies and in trades.

Entry standard: Secondary school graduation for technology courses.

CAN 80 University of Saskatchewan,
Saskatoon, Saskatchewan S7N 0W0.

Administration: Founded in 1907. Largely autonomous. The University has Faculties of Agriculture, Home Economics, Engineering and Veterinary Medicine, and an Institute of Pedology. There is a 3,000 acre University Farm. This University is the base for the Matador Project, an International Biological Programme, studying the interaction of soil/plants/animals/atmosphere.

Finance: Mainly Provincial Governments grants.

Cal: Sep/Dec, Jan/Apr (Fac. Vet Med. has 4 x 8 week terms during Sep/May). TP: over 9,000 full-time incl. 300 in Fac. Agric. and 250 in Fac. Vet. Med. RA: yes. NN: yes.

1 (**) AGRICULTURE
Two-year diploma course in agriculture, with practical work, for young farmers.

2 (***) SUNDRY
First degree courses: four years for B.S.A. (= agriculture) and B.E. (= engineering). Some of the specializations offered are agricultural business, agricultural engineering, crop or dairy science, horticulture, poultry or soil science, veterinary medicine.

3 (****) SUNDRY
Higher degree specializations include plant ecology, animal science, veterinary immunology or pathology, as well as most of the first degree specializations.

CAN 81 University of Regina,
Regina, Saskatchewan S4S 0A2.

Administration: Founded in 1974 having previously been a second campus of the University of Saskatchewan. Largely autonomous.

Finance: Mainly Provincial Government grants.

Cal: Sep/Dec, Jan/Apr. TP: 3,500. RA: yes. NN: yes.

1 (**) SUNDRY
Courses carrying credit towards degrees or diplomas which are offered by the Department of Extension in various locations are:- rural sociology, history of rural development.

DOMINICA

The island of Dominica is volcanic in origin and evidence of continued volcanic activity is given by the thermal springs and a geyser. The soil is rich though porous, but it is easily eroded and landslides are frequent after heavy rain.

Agriculture provides most of the employment opportunities, the Department of Agriculture being responsible for the organization and development of the island's agricultural resources. Bananas are the principal cash crop and mainstay of the economy. Citrus production is also significant, particularly limes and grapefruit which are grown mainly for export. Coconuts and cocoa are other important export crops. The livestock industry (cattle and poultry) is expanding as a result of official encouragement and production from in-shore fishing is also increasing. Dominica has over seventy square miles of forested land with scope for development.

Courses in agriculture at ordinary level are offered at two secondary schools on the island - Dominica Grammar School and St. Mary's Academy. The Land Management Authority provides courses of instruction for the tenants of its settlements, the Authority staff providing training, with help from staff of the Division of Agriculture. The Division of Lands and Surveys provides in-service training in land surveying and survey draughting, with Survey Division staff acting as tutors to four or five trainees annually.

DOM 1 Clifton Dupigny Technical College,
P.O. Box 165, Roseau.

Administration: Ministry of Education, with one full-time member of staff plus assistance from technical officers of the Ministry of Agriculture. Started in 1972.

Finance: Government, assisted by British overseas aid.
TP: 92 full-time. RA: yes.

1 (**) AGRICULTURE/CROP HUSBANDRY

Two-year course in agriculture for young people already farming or intending to farm and with facilities for doing so. Also one-year course in crop husbandry.

2 (**) CROP AND LIVESTOCK PRODUCTION

Theoretical and practical courses in economic farming in local conditions with equal emphasis on crop and livestock production.

Entry standard: Primary school leaving certificate, age 15+.

GRENADA

Grenada, like the other Windward Islands, enjoys an equable sub-tropical climate with rainfall which is variable but usually adequate. Agriculture is the major economic activity and is more diversified than in other islands; the country's farmers have shown considerable flexibility in changing to and from various crops - a flexibility made necessary by Grenada's vulnerability to hurricanes, from which certain crops recover very slowly. The main export crops are cocoa, nutmeg-mace (Grenada supplying about a third of the world output) and bananas, while cultivation of sugar cane, coconuts, citrus (especially limes) and cotton are also important. Subsistence food crops are widely grown in great variety.

Government efforts are mainly on improvement of existing cultivation through fertilizers and pest control schemes, and on expansion and improvement of the livestock industry, which, except for poultry products, does not meet local demand. It is hoped that both dairy farming and beef raising may be developed if adequate foodstuffs can be made available. There is still a high level of unemployment which can probably only be diminished by more efficient and more intensive production of export crops though attempts are also made to settle some of the unemployed as smallholders.

An important Government reforestation programme started in 1957 to repair hurricane damage. The Government sawmill has a timber preserving and treatment plant for practical and experimental use.

Both in-shore and off-shore fishing are significant, the Government providing supporting cold storage plants and harbour facilities.

The Caribbean Rural Development and Advisory Training Service (CARDATS - see INT 9) operates from Grenada.

GRE 1Grenada Farm Training Centre,

c/o Ministry of Agriculture, St. Georges.

Administration: Ministry of Agriculture. The training centre was established in 1969, and has a four acre farm. There is crop research and demonstration on an adjoining Agricultural Station.

1 (**) AGRICULTURE

One-year residential training programme for youth intending to farm. Also short courses for farmers.

Entry standard: Primary schooling.

2 (**) AGRICULTURAL EXTENSION/MANAGEMENT

Short in-service courses for extension workers and short courses for estate managers.

GRE 2Grenada Technical and Vocational Institute,

St. Georges.

Administration: Ministry of Education. The Institute opened in 1972, funded largely by British Aid.

TP: capacity 350.

1 (**) AGRICULTURAL MECHANICS/REFRIGERATION

Various craftsmen courses lasting two or more years, and technicians courses lasting three years. Subjects include refrigeration technology and agricultural mechanics.

GUYANA

Amongst Caribbean countries, Guyana is exceptional in having vast tracts of land which are either un-utilized or seriously under-utilized. Development of this idle land capacity requires heavy investment if it is to realize its full productive potential, which is clearly of national and international significance at a time of world food shortages. The development programme for 1976, therefore, places great emphasis on agriculture, land development, forest exploitation and the provision of infra-structural facilities.

It is taking time to move away from the historic agricultural pattern - large scale production of sugar, with rice as the only other large crop and most other food stuffs imported - to a new pattern of self-sufficiency, but the fall in world sugar prices has speeded the trend, and rice production has increased to record levels. Attempts to become more self-sufficient in food have been made largely through co-operatives but also by opening new lands for development, by guaranteeing markets and good prices for crops, by providing better credit facilities for farmers and by instructing them in modern techniques. The Guyana Agricultural Co-operative Development Bank has intensified its role in developing the agricultural sector by lending increased sums over the whole range of agricultural activity - rice farming, peasant cane farming, pig rearing, beef and dairy cattle, and poultry farming. It has also lent to the timber and fishing industries.

The Government gives high priority to training in the relevant skills to exploit more fully the forest, mineral and water resources of the country. Technical education and vocational training is provided by the Government at two technical institutes, a school for home economics, an industrial training centre, and a school of agriculture; the increase in expenditure on agriculture and education planned for 1976 includes extensions to the school of agriculture.

GUY 1

The Guyana Co-operative Union Farm Settlement Scheme,
c/o T.U.C. Transport House, 46 Urquhart Street, Georgetown.

Administration: Started in 1966 by the Guyana Co-operative Union.

Finance: Mainly from T.U.C. with help from Oxfam.

TP: 50 at each of 2 settlements. NN: no.

1 (*) AGRICULTURE/RURAL DEVELOPMENT

Six to eight weeks pre-settlement training, mainly to provide motivation, given by extension officers. The training in agriculture is mostly in-service on settlements.

Purpose: To settle the interior of the country by co-operative units.

Entry standard: Minimal education but pioneering spirit and readiness for hard physical work.

GUY 2

Guyana National Service,

Office of the Prime Minister, Georgetown.

Administration: Started in 1974 by the National Service Secretariat and dependent on the Prime Minister's Office. Absorbed the Guyana Youth Corps at Tutumari in 1975.

Finance: Government of Guyana.

TP: 3,000 p.a. RA: partial. NN: no.

1 (**) RURAL DEVELOPMENT

Training for youth in various skills including agriculture, organization of co-operatives and pioneering, lasting about one year, at three centres, one being at Tutumari which will become a Technical Skills Training School to produce City and Guilds level technicians for National Service.

Purpose: To harness energies of youth for national service projects.
 Entry standard: Variable. School pupils up to the age of 18 and out of school youth up to the age of 25.

GUY 3 Burnham Agricultural Institute,
 North West District.

Administration: Affiliated to the Guyana School of Agriculture; started in 1973. The Institute provides access to twenty-five acres of partly cleared land in the Matthews Ridge-Arakaka-Port Kaituma Sub-region.
 Finance: Government of Guyana.
 TP: 28 (m. and f.). RA: yes. NN: no.

1 (**) RURAL DEVELOPMENT/AGRICULTURE

One-year course of training to provide basic skills in animal science, agricultural mechanization and management, and in principles of co-ops. The course is designed to be an integral part of a total programme of education for the students and provides opportunities to develop leadership, to make intelligent choice of agricultural operations, to improve quality of homes and to participate in civic activities as well as obtaining practical training.

Purpose: To encourage land settlement and improve standards of farming.
 Entry standard: 16+. No formal educational qualification but the course is intended for those preparing to work in agricultural industries or to settle on land in the neighbourhood or who expect to own or manage a farm or agri-business.

GUY 4 New Amsterdam Government Technical Institute,
 New Amsterdam, Berbice.

Administration: Ministry of Education and Social Development.
 Finance: Government of Guyana.
 TP: 650 in Inst. as a whole, c. 40 on agric. mech.

1 (**) AGRICULTURAL MECHANICS/ENGINEERING

Two-year course in agricultural engineering in tropical countries for City and Guilds Examinations 811. There is also a course in agricultural mechanics at trade level, taken in block release or evening classes, and a land surveying course at technician level.

GUY 5 Government Technical Institute,
 Woolford Avenue, Non Pareil Park, Georgetown.

Administration: Ministry of Education and Social Development.
 Finance: Government of Guyana.
 TP: c. 800 in mech. eng. as a whole, c. 20 in land surv. RA: no.

1 (**) AGRICULTURAL MECHANICS

Two years full-time or three years evening courses for Craft Certificate of Agricultural Mechanics. (In 1974 25 candidates sat City and Guilds Examination 811.) Also three months block release course in agricultural mechanics, and block release for Refrigeration Engineer Certificate.

2 (**) LAND SURVEYING

Two years part-time for Certificate of Land Surveyor Technician and three years evening course for Craft Certificate of Land Surveying Technician.

GUY 6

Kuru-Kuru Co-operative College,

Foefdyke, Linden Highway.

Administration: Started in 1975 and administered by a Board of Governors for the Ministry of Co-operatives and National Mobilization. The College works in co-operation with the Guyana School of Agriculture, Ministries of National Development, Agriculture, Education and Social Development, and the University of Guyana.

Finance: Government of Guyana.

1 (**) CO-OPERATIVE STUDIES

Various certificate and diploma courses in co-operative management techniques, with emphasis on the application of knowledge and skills in actual situations, and essentially practical training.

GUY 7

Guyana School of Agriculture,

Mon Repos, East Coast Demerara.

Administration: Started in 1963 by the Ministry of National Development and Agriculture and now a Public Corporation.

Finance: Government of Guyana with assistance early on from Oxfam.

Cal: Sep/Dec, Jan/Mar, Apr/Jun. TP: 152. RA: yes.

1 (*) AGRICULTURE

Short courses in specialized subjects for acquisition of skills and proficiency in farming.

Entry standard: Farming experience.

2 (**) AGRICULTURE

Two-year certificate course, mainly practical, covering subjects such as animal and crop husbandry, soils, entomology, plant pathology, veterinary science, farm machinery, farm management, marketing, co-operatives and food science.

Entry standard: Full primary education.

3 (**) AGRICULTURE

Two-year diploma course in agriculture with instruction in a wide range of subjects, to train field assistants.

Entry standard: Four subjects in GCE 'O' level, including English and one science.

4 (***) AGRICULTURAL EDUCATION

Two-year diploma course for teachers who wish to specialize in vocational agriculture.

Entry standard: Experienced trained teachers.

Note: The school co-operates with other organizations concerned with promoting agricultural development, by making facilities available to them - for example, the Regional Education Programme for Animal Health Assistants (REPAHA) - see INT 36.

JAMAICA

Jamaica is primarily an agricultural country and its agricultural development policy must be directed towards obtaining optimum utilization of total resources - land, people and capital. Government policy, based on a Green Paper of 1973, is to accelerate and extend the settlement of suitable agricultural land, and to provide an appropriate basis for land settlement including a Land Reform Programme and rationalization of irrigation. Some of the immediate objectives are to increase production of food and raw materials to meet the requirement of both home and export markets and the agro-industries, to structure production so as to reduce reliance on imports, and to improve rural income and amenities as a basis for raising the standard of living of rural people.

The agricultural economy of the country has long been based on the main export crop of sugar cane, but a number of other crops make a significant contribution, particularly bananas, pimento, citrus, cocoa and coffee. The Ministry of Agriculture is concerned to rationalize the sugar and banana industries, expand coffee and tobacco production and encourage the commercial production of more fruit, such as mangoes and avocados. There are also programmes to co-ordinate milk and meat processing throughout the country and to expand fishing.

Various levels of formal agricultural education exist in Jamaica. Junior secondary, technical and private schools provide some agricultural training and there is a vocational school which teaches various aspects of crop and livestock production. The Jamaica School of Agriculture - the only post-secondary institution in the English-speaking Caribbean region equipped to provide technical training in agriculture and household science for men and women - produces graduates for appointments in the Government's agricultural services and in the private sector. Graduate and postgraduate level courses are available at the University of the West Indies on its St. Augustine (Trinidad) Campus. The Training Division of the Ministry of Agriculture conducts in-service training sessions for various levels of extension staff to acquaint them with recent innovations in their particular fields.

Farmers' Training Centres across the island demonstrate new developments in crop and livestock husbandry skills, both in theory and practice. Extension service officers assist farmers' families in topics such as nutrition and homemaking. Training is also provided by organizations such as 4 H Clubs, while various rural development programmes encourage local participation and self-help in rural areas.

There are several Government schemes aimed at improving agricultural production. Project Food Farms is responsible for the development of Government owned lands and now produces import substitute crops on about 12,000 acres. Project Land Lease, which began in 1973, makes good but unused land available to small farmers who agree to cultivate on Government advice and with supporting credit schemes. Project Self-Help, formerly the Self-Supporting Farmers Development Programme, provides agricultural credits now concentrated on food crops, tree crops and livestock.

The Government is making major efforts to deal with the problem of unemployed or under-employed youth through the National Youth Service and the Youth Development Agency which, through Youth Community Training Centres, provides some general education

followed by intensive training for employment in industry and agriculture. Some of the work of the YCTCs and the Pioneer Corps is linked to Project Land Lease (JAM 3 is an example of this). The Youth Service Scheme will ultimately require all young people leaving school to undertake two years' community service for the State, aimed mainly at improving living conditions in rural areas. The Government is aiming to get young people back to the land - not only to raise output but also to rejuvenate the farming community.

JAM 1

Knox Development Foundation (Knox Community College),
P.O. Box 45, Spaldings.

Administration: Founded by the Presbyterian Church of Jamaica and grant-aided by the Government, Knox College started in 1947 as a group of schools for children aged 4-18 on 90 acres of land in the central highlands. The project was based on an innovative system of education integrating pupils with the community and working towards self-sufficiency in food production. Recently the idea of using the school community to help in the development of the community as a whole has led to the establishment of a Community College providing further education for adults, job training and community development projects. Planned expansion includes further rural industrial development - for example, potato processing to supply hotels throughout the island.

Finance: Mainly funds raised by the Presbyterian Church from commercial concerns and from international trusts and foundations.

NN: welcome as observers.

1 (**) AGRICULTURE

All high school pupils help with food production on the college farm and learn about pig keeping, poultry husbandry, vegetable growing and dairying.

2 (**) COMMUNITY DEVELOPMENT

Training at the Community College is varied. Some is industrial, such as metal fabrication, but most is related to agriculture, including the development of low cost housing that can be self-built by country dwellers.

JAM 2

4 H Clubs,
6 Richmond Avenue, Kingston 10.

Administration: Started in 1941 and administered by a Council under the Ministry of Agriculture and Land, with initial help from Freedom from Hunger and the British Y.F.C.

Finance: Partly self-supporting but assisted by Government of Jamaica funds, trusts and foundations.

TP: c. 30,000.

1 (**) AGRICULTURE

These are clubs for young farmers and farm workers aged 9 to 25, partly for recreational purpose but with a strong element of agricultural training. In addition, there are 30-40 week residential courses in small scale farming, tractor operation, etc; also production projects - for example, dairy farming, goat and rabbit farming, craft work.

JAM 3 Nyerere Community Farm,
Cacoon, Hanover.

Administration: Government of Jamaica. This is an experimental youth scheme launched through two of the Government's current development programmes: the Pioneer Corps and Project Land Lease. The Pioneer Corps has over 10,000 members throughout the country, many of them young people who have not been successful in the conventional school system. They work on community projects like building basic school and day care centres, running co-operatives among under-privileged youth, and so on.

Finance: Government of Jamaica.

1 (**) AGRICULTURE

Training for farmers who wish to participate in the Government's Project Land Lease scheme. Land is offered on 49-year leases but farmers must keep it well-cultivated and select crops according to Government advice. One third of the plot must be cultivated in the first year, and the whole plot within four years, otherwise the land is forfeited.

2 (**) AGRICULTURE

Intensive training in farming and co-operative techniques for Pioneer Corps members, covering fruit, vegetable and other food crop production and cattle rearing. While training members earn money by constructing the buildings they will occupy and building up the infrastructure on which they will depend. Later they take over plots of land.

Purpose: To bring young people to a good piece of agricultural land and to match them up with experienced, older farmers. The aim is to inject young people into the agricultural scene.

JAM 4 Rhymesbury Settlement Scheme,

Ministry of Agriculture, 110 Old Hope Road, Kingston 6.

Administration: Ministry of Agriculture.

1 (**) DAIRY TRAINING/AGRICULTURE

One-year residential training programme for young farmers on this settlement, or for settlement elsewhere, in farming and dairying.

JAM 5 Ministry of Agriculture Veterinary Division,
Kingston 6.

Administration: Veterinary Division of the Ministry of Agriculture.

Finance: Government of Jamaica.

RA: by arrangement. NN: yes (but see Note below).

1 (**) ANIMAL HEALTH

Six-month course for training Animal Health Assistants, covering administration and government procedure, anatomy and physiology, animal health, animal diseases and their control, record keeping, laboratory work and care of equipment.

Purpose: To train assistants for the veterinary service.

Entry standard: Secondary education, in-service.

Note: It is expected that these courses will be phased out as soon as the Regional Centre in Guyana starts turning out fully qualified Animal Health Assistants.

Jamaica

JAM 6 Ministry of Agriculture Training Division, Kingston 6.

Administration: Ministry of Agriculture. Courses are run at five centres (Canaan, Kenilworth, Eltham, Smithfield and the Farmers Training Centre at Twickenham Park).

Finance: Government of Jamaica.

RA: yes. NN: yes (arrangements at Government level).

1 (**) SUNDRY

About forty in-service courses for a total of over 700 participants lasting from one day to two weeks, ranging from courses for tractor operators to courses for Divisional Area Officers, and covering subjects from administration at a high level, rural co-operative development, agricultural credit, soil conservation, farm management techniques, pest control, to the use and management of chain saws.

2 (**) SUNDRY

Training sessions for staff of the Jamaican Agricultural Society, some lasting two weeks, residential, and covering topics such as rural development, extension education, co-ops., as well as farming techniques.

3 (**) AGRICULTURE

Three-month course for Agricultural Headmen to train twenty-eight recruits in basic agriculture before employment by the Land Authorities.

4 (**) RURAL DEVELOPMENT

On-the-job training for National Youth Service workers who are placed in various departments of the Ministry of Agriculture before posting to Land Authorities in the various Parishes (over 300 NYS workers) or retained in posts in the Ministry of Agriculture (about 60).

Purpose: In-service training for staff.

Entry standard: Variable, depending on the course taken.

JAM 7 Jamaica School of Agriculture, Twickenham Park, Spanish Town P.O., St. Catherine.

Administration: Ministry of Education through a Board of Governors. Established in 1910 at Hope as Government Farm School, it was renamed in 1939 and relocated at Twickenham Park in 1957. There are seven departments: Agricultural Economics, Agricultural Education, Agricultural Engineering, Agronomy, Animal Husbandry, Home Economics, Natural Sciences. Facilities include a commercial dairy farm, pig and poultry units, an agricultural engineering workshop and a plant propagation unit.

Finance: Government of Jamaica.

Cal: Jan/Apr, May/Jul, Sep/Nov. TP: c. 650. RA: yes, for 330 m. & 120 f. NN: yes.

1 (**) HORTICULTURE

The Evening Division (started September 1975) offers courses in plant propagation, vegetable production, backyard gardening, container gardening, use of manures and fertilizers. Courses are normally two hours per week for ten weeks.

Purpose: To encourage small holders and food production at home.

Entry standard: Some experience of vegetable gardening.

2 (***) AGRICULTURE/HOME ECONOMICS

Two-year diploma courses in agriculture, in household science, and in agricultural science for teachers.

3 (***) SUNDRY

Three years for Associate Degree in Sci.(Agric.) and in Sci. (Consumer Educ.). Graduates receive from these programmes advanced credit standing for admission to higher degrees at universities.

Purpose: To meet the growing demand for trained personnel for the agriculture and household science services of Jamaica and the Caribbean region.

Entry standard: GCE or Jamaica School Certificate with passes in English, maths and science, or equivalent. Age 16+. Unless specially exempted, entrants take a 20-week pre-semester course starting in August.

4 (***) AGRICULTURAL EDUCATION

A teacher training course to prepare teachers of agricultural science for all-age and secondary schools is planned. This would be three years (8 semesters) for Diploma and four years (11 semesters) for Associate Degree in Science (A.Sc.).

JAM 8

College of Arts, Science and Technology,
237 Old Hope Road, Kingston 6.

Administration: Established in 1958 as the Jamaican Institute of Technology on the former site of the Jamaican School of Agriculture. The college is situated in 45 acres.

TP: 3,500 total in coll. RA: some. NN: yes.

1 (***) SURVEYING

Two years for Land Surveying Technician Certificate, the first year full-time, the second year part-time or day-release.

Entry standard: Two GCE 'O' level passes, one in either maths or English.

2 (***) SURVEYING

Three years full-time for Diploma in Land Surveying.

Purpose: To up-grade employees and to meet the needs of industry and commerce for trained recruits.

Entry standard: Five GCE 'O' levels, including maths and English.

JAM 9

University of the West Indies,
(Mona Campus), Mona, Kingston 7.

Administration: University. This is one of three constituent campuses, the others being in Trinidad (which has the Faculty of Agriculture) and Barbados. The Faculty of Natural Sciences at Mona has departments of botany and zoology.

Finance: Governments of fourteen territories in the West Indies.

Cal: Sep/Dec, Jan/Mar, Apr/Jun. TP: 1,000+ in Fac. of Nat.Sci. at Mona. RA: yes. NN: yes.

1 (***) BOTANY/ZOOLOGY

Three or four years for B.Sc. specializing in botany or zoology.

Entry standard: Five passes in GCE including two at 'A' level in relevant subjects, or four passes with three at 'A' level. Age 17+.

2 (***) SUNDRY

One-year postgraduate diploma courses in community nutrition and food technology. Also, two years for M.Sc.

ST KITTS - NEVIS - ANGUILLA

Unlike the other Leeward Islands, St. Kitts has not abandoned the production of sugar. In addition to sugar cane a wide variety of food crops is grown and attempts are being made to produce surpluses for export - as with peanuts, for instance. Cotton and copra production are also significant. The drive for more food production includes expansion of in-shore fishing with Government help.

Anguilla grows much smaller quantities of food crops but has considerable numbers of sheep and goats. Fishing, especially for lobsters, is important. Anguilla has no institutions or programmes for training in farming or fisheries.

St. Kitts Technical College gives full-time courses in ten main categories, one of which is agricultural engineering. Most courses are for City and Guilds examinations.

The number of 'agro-teachers' is being increased. Several trainees for posts in agricultural services are at the Jamaica School of Agriculture and at the UWI St. Augustine Campus in Trinidad. The island has an active 4 H Movement.

STK 1

St. Kitts Technical College,
P.O. Box 333, St. Kitts.

Administration: Department of Education. Started in 1971.

Finance: Government with assistance by British overseas aid.

TP: 93 full-time and 98 part-time or evening.

1 (**) AGRICULTURAL MECHANICS

One-year craft level course in agricultural machinery repair.

Entry standard: Full primary schooling, age 15+.

ST LUCIA

Agriculture is St. Lucia's main industry, providing employment for the majority of its inhabitants and accounting for nearly 80 per cent of the State's export earnings. It is largely a monocrop economy based on bananas but copra production has increased in recent years and is now also an important item. Efforts are being made to diversify to other crops for local consumption and to produce "exotica" (avocado pears, mangoes, aubergines, etc.) for the export market.

It was announced in December 1975 that "agriculture will be the cornerstone of the Government's development strategy" during the next five years, and accordingly a comprehensive development programme is being prepared. This is likely to include modernization of the Land Tenure system and the creation of an agricultural corporation to bring into production large tracts of cultivatable land now lying idle. Part of the up-dating process will be an improvement of the terms on which loans are made available from the Agricultural Bank.

In support of this, the Government is enlarging its agricultural extension services, especially in the banana field, and in a further effort to extend the banana industry a comprehensive development programme over the next five years is being drawn up by the British Development Division on the advice of consultants. This will form part of the rural development programme.

Hitherto, farming has not been taught in primary or secondary schools but Government has announced the intention to restructure school curricula to make them more meaningful and applicable to the requirements of the State. Some specialist courses in agriculture are, however, available through the Morne Technical College.

STL 1

Union Agricultural Station,

Nr. Castries.

Administration: Ministry of Agriculture and Ministry of Education.

Finance: Ministry of Agriculture.

TP: 27. RA: no. NN: not yet.

1 (**) AGRICULTURE

Two-year course in general agriculture.

Entry standard: Primary school leaving certificate.

STL 2

Morne Fortune Technical College,

Castries.

Administration: Ministry of Education. The college opened in 1970.

Finance: Government of St. Lucia, assisted by British overseas aid.

Cal: Sep/Jun. TP: 150 full-time, 15 part-time or evening.

RA: no. NN: yes.

1 (**) AGRICULTURE

Two years agricultural cadetship, planned in co-operation with the Ministry of Agriculture and Lands. Theoretical and practical training is given in crop and animal husbandry, agricultural engineering, farm management, crop protection, agricultural chemistry, rural sociology and extension. A Certificate at credit or pass levels may be awarded.

Purpose: To train candidates for employment in Government or in private sector of agriculture and allied industries, or for self-employment on own farm.

Entry standard: Candidates are selected by the Ministry of Agriculture and Lands from primary, junior secondary and secondary schools mainly for aptitude for agriculture.

2 (**) AGRICULTURAL MECHANICS

Two years full-time College Certificate course in construction mechanics and repair of agricultural tractors.

Purpose: Training in construction and maintenance of agricultural equipment.

Entry standard: Full local schooling plus College entrance test.

ST VINCENT

Although banana production continues to be the mainstay of St. Vincent's economy, the agricultural diversification programme introduced about ten years ago has led to an increase in production of arrowroot, cotton, coconuts and vegetables. One limitation to increased production of arrowroot is the lack of adequate factory capacity to process the product, though this is being remedied.

After the collapse of the sugar cane industry - the island's only sugar factory became unprofitable and was closed in 1962 - many young able-bodied men had to obtain seasonal agricultural work in the USA and in other West Indian Islands. The official encouragement of diversified agriculture is largely intended to increase employment opportunities within the island group, which is now self-sufficient in livestock and meat products.

- STV 1 Handicrafts Development Programme,
c/o Community Development Division, Kingstown.
- Administration: Ministry of Education, Community Development and Youth Affairs
with assistance from UNDP/ILO.
- Finance: Government of St. Vincent.
TP: 350. NN: no.
- 1 (*) RURAL CRAFTS
Training in rural handicrafts, at fourteen rural centres.
- Purpose: To encourage self-employment in rural areas.
- Entry standard: None.
- STV 2 St. Vincent Technical College,
P.O. Box 613, Kingstown.
- Administration: Ministry of Education. Started in 1971.
- Finance: Government, assisted by British overseas aid.
TP: (in college as a whole) 96 full-time, 143 part-time or evening.
- 1 (**) AGRICULTURAL MECHANICS
Two-year course in agricultural mechanics (8 full-time students
in 1973).
- Entry standard: Primary school leaving certificate. Age 15+.

TRINIDAD AND TOBAGO

In 1974 the Government of Trinidad and Tobago established two funds - a Food Development Fund to finance projects for increasing food production and bringing new land into use, and a Fisheries Development Fund, mainly to provide facilities for processing shrimp and to reduce dependence on foreign trawlers. Although self-sufficiency in food production is not a main target, because trade within the Caribbean area through CARICOM enables Trinidad and Tobago to import part of its requirements, attempts to increase domestic food production are part of the overall effort towards greater food production in the Caribbean area as a whole.

Horticultural production, particularly of tree crops on family farms, is being given greater encouragement through improved marketing facilities and better agricultural credit. Attempts are being made to produce animal feed from local products such as petroleum and molasses to make the production of meat and particularly of poultry more economical. The Government is continuing to support co-operatives as this form of enterprise is considered to have great potential especially for agricultural marketing.

However, subsidies for development to bring un-utilized land into production have not produced the expected results partly through lack of training, and major developments which imply mechanization also require skilled labour. To meet the manpower requirements, extension services have been extended so that farmers can receive more assistance with new methods of cultivation and new varieties, while a new national fund concerned with training at the professional, technical and sub-professional levels will provide better training facilities through the John S. Donaldson Technical Institute, the Eastern Caribbean Institute of Agriculture and Forestry, Trade Centres and Youth Camps, Regional Training Institutes including one in Fisheries, and the Management Development Centre. Assistance has been received from the Inter-American Bank for the construction of Vocational and Farm Schools and for expanding the principal technical schools. The whole system of vocational and technical training is being restructured to fit modern economic and social requirements, and special attention is being given to enabling secondary school leavers to take advantage of training facilities while attached to firms and institutions for on-the-job instruction.

TT 1

Community Centres: Pioneer Youth Corps,

Ministry of Planning and Development, Division of Community Development, Trinidad House, Port of Spain.

Administration: National Committee for Adult Education in Community Centres in consultation with the Ministries of Education and Culture, of Labour, of Agriculture, Lands and Fisheries, and of Health and Housing.

Finance: Government of Trinidad and Tobago.

NN: no.

1 (*) COMMUNITY DEVELOPMENT

Training through participation in national development schemes, including maintenance of National Parks, forestry work, crop harvesting. In rural areas the Youth Corps has set up co-operative vegetable growing units. There is also basic training in crafts and trades at the Community Centres.

Purpose: To integrate youth with community development.

Entry standard: None. Age range 15-21.

- TT 2 National Youth Service and Youth Camps,
Office of the Prime Minister, Division of Community Development and Youth Affairs, Whitehall, Maraval Road, Port of Spain.
- Administration: Set up in 1964 and administered by the Division of Community Development and Youth Affairs of the Office of the Prime Minister.
- Finance: Government of Trinidad and Tobago.
TP: 325 p.a. RA: yes (4 camps for boys, one for girls). NN: no.
- 1 (*) COMMUNITY DEVELOPMENT/AGRICULTURE
Two years training in residential camps mainly in agricultural processes, farm records and book-keeping, and maintenance skills as needed for the camps.
- Purpose: To train youth and to encourage settlement on Crown Lands.
- Entry standard: None. Unemployed youth in age range 13-24.
-
- TT 3 Kendal Farm School,
c/o Roxborough Post Office, Tobago.
- Administration: The Principal and the Farm School Committee. This is the first of three Farm Schools planned by the Government - the other two will be established at Valencia and at Palo Seco in Trinidad. At Kendal the school is housed temporarily pending construction of new premises so, although the programme calls for modern facilities, up-to-date equipment and will train fifty students, the present make-shift arrangement allows for only twenty-four students and facilities that are not completely modern. Classes started in 1971.
- Finance: Government of Trinidad and Tobago.
TP: 24 per course (increasing to 50). RA: yes. NN: yes (application through the Ministry of Agriculture).
- 1 (**) AGRICULTURE/ANIMAL HEALTH
Eighteen-month full-time course in agriculture and its various aspects.
- Purpose: To produce skilled practising farmers, agricultural extension aides, veterinary aides, artificial inseminators and middle level technicians.
- 2 (**) AGRICULTURE/HOME ECONOMICS
Short courses, seminars and workshops organized for practising farmers through the extension service. Also special courses for women in various aspects of home economics.
- 3 (**) AGRICULTURAL EXTENSION
Facilities are available for short-term in-service training courses for extension staff.
-
- TT 4 John S. Donaldson Technical Institute,
Wrightson Road, Port of Spain.
- Administration: Set up in 1963 by the Ministry of Education and Culture.
- Finance: Government of Trinidad and Tobago.
Cal: Sep/Dec, Jan/Apr, Apr/Jul. TP: 600 full-time & 1,200 part-time in Inst. as a whole. RA: no.
- 1 (**) HOME ECONOMICS
Two-year course for Home Economics Technician (Food and Nutrition).
- Entry standard: GCE 'O' level in English and cookery. Age 18+.

2 (***) LAND SURVEYING

Four- and-a-half-year course in land surveying, including two years study of science and maths to GCE 'A' level and two and a half years specialist studies and field work.

Entry standard: GCE 'O' level in four subjects including English, maths and a science. Age 16+.

TT 5

Eastern Caribbean Institute of Agriculture and Forestry,
Centeno, Via Arima.

Administration: Ministry of Agriculture, Lands and Fisheries. Established 1954 as the E.C. Farm Institute and remained a regional institute for ten years, with finance from several Caribbean governments. From 1964 until 1967 it was a national institute. It was named the E.C.I.A.F. in 1969.

Finance: Government of Trinidad and Tobago with some UNDP aid.
Cal: Oct/Dec, Jan/Mar, Apr/Jul. TP: c. 60 p.a. RA: yes.
NN: yes (mainly from the Caribbean area).

1 (***) AGRICULTURE/FORESTRY

Two years for Diploma in Agriculture including natural sciences plus five major areas of study - animal production, crop production, farm management, agricultural extension methods, agriculture engineering, and with practical work on 100-acre farm; also two years for Diploma in Forestry, including silviculture, forest management and forest utilization, and with emphasis on practical training.

Purpose: Mainly to train staff for the agriculture and forestry services.

Entry standard: GCE 'O' level in five subjects including English, maths and a science.

TT 6

University of the West Indies,
(St. Augustine Campus), St. Augustine.

Administration: This is one of three constituent campuses, the others being in Jamaica and Barbados. The University as a whole is independent. In 1960 the Imperial College of Tropical Agriculture in Trinidad was incorporated into the (then) U.W.I. as the Faculty of Agriculture. The College of Arts and Sciences and Departments of English and Medicine, etc. were added later.

Finance: Governments of fourteen territories in the West Indies.
Cal: Oct/Dec, Jan/Mar, Apr/Jun. TP: c. 250 in the Fac. Agric.
RA: yes. NN: yes.

1 (***) AGRICULTURE

In-service short courses for agricultural officers in the region, through the Department of Agricultural Extension.

2 (***) SUNDRY

Three years for B.Sc.(Agric.) with optional emphasis on plant science, livestock science, soil science, agricultural economics or agricultural technology; three years for B.Sc. in botany or zoology; there are plans for a joint programme with the Faculty of Engineering for B.Sc. in agricultural engineering. A programme in food technology is available in the Department of Chemical Engineering, and training in the development of agricultural machinery is available in the Department of Mechanical Engineering.

Entry standard: Five subjects in GCE including two at 'A' level, or four subjects with three at 'A' level in relevant subjects.

3 (***) SUNDRY

Two years for M.Sc.(Agric.) with a choice of options, one year for postgraduate Diploma in Food Technology, or Community Nutrition.

Entry standard: Good first degree.

THE GAMBIA

The national economy of The Gambia is, and will be for the foreseeable future, based on agricultural production, in particular the growing of groundnuts. Some diversification is being achieved by Government supported schemes of cotton growing and rice production by irrigation from the higher reaches of the River Gambia. There is now a fairly rapid change of techniques from total hand labour to the use of animal power for ploughing, sowing, weeding and lifting of crops.

In its first five-year Development Plan the Government lays stress on rural development, both agricultural and social. Over 80% of the population of half a million live in rural areas and the Development Plan aims at "providing a sustained improvement in their standard of living", and will give "preference to the poorest members of the community".

Government is discussing plans to re-orientate formal schooling, both primary and secondary, towards agriculture. Already the only sixth form high school has introduced agricultural science to 'A' level as well as 'O' level in the W.A.E.C. examinations.

The Department of Agriculture deploys a force of over one hundred trained extension workers (A.A.s) with twice that number of single crop Demonstrators working under them. Demonstrators are recruited to help farmers in the production of cotton or irrigated rice, or to support a 'package deal' of improved groundnut cultivation or dry-season growing of onions. Staff training is therefore a combination of pre-service training of agricultural assistants, refresher training, and single-crop training of demonstrators.

Farmer training, apart from an annual class of twenty-five young men at each of the twenty-four Mixed Farming Centres who are schooled in the use of oxen and ox-implements, is not residential or highly formalized. Young Farmers' Clubs help to inculcate skills and new techniques. Church-run projects, such as the Missionary Vocational Programme and Samita Community Projects also provide some training facilities.

The Departments of Animal Health and Production and Co-operation also deploy village level staff, and there are twenty-eight Community Development Field Workers (Ministry of Economic Planning and Industrial Development).

GAM 1Mixed Farming Centres,

c/o Department of Agriculture, Yundum, Western Division.

Administration:

Ministry of Agriculture and Natural Resources.

Finance:

Government of The Gambia.

Lan: indigenous. Cal: Apr & May. TP: 600 p.a. in 24 centres, 25 per course. RA: yes. NN: no.

1 (*) AGRICULTURE - GENERAL

Two-month courses, mainly practical, in ox-ploughing, use of fertilizers, animal husbandry, soil conservation, and cultivation of groundnuts, citrus, oil palm and rice.

Purpose:

To improve basic farming skills.

Entry standard:

None, except farming experience.

The Gambia

- GAM 2 Agricultural and Training Centre, Lamin,
P.O. Box 744, Banjul.
- Administration: Established in 1970 by a Catholic Mission.
- Finance: Catholic funds with some Government help.
- Cal: from Sep. TP: 15 p.a. (in one-year agric.) RA: no.
NN: no.
- 1 (**) AGRICULTURE
Training courses for intending farmers in modern and improved methods.
- Entry standard: Primary schooling. Most trainees are sons of farmers who will return to the family farm.
- 2 (**) AGRICULTURE/TRADES
One-year course in agriculture, including some carpentry and engineering. Other three-year courses for careers in construction, carpentry and metalwork.
- Purpose: Mainly training for self-employment; some trainees will go into Government service or join group schemes.
- Entry standard: Junior secondary school leavers.
- GAM 3 Brikama Post-Secondary College,
Near Banjul.
- Administration: A Board including representatives of departments concerned.
- Finance: Government of The Gambia.
- Cal: Sep/Jul. TP: 25 p.a. RA: yes. NN: no.
- 1 (**) AGRICULTURE
Two-year course of formal training leading to Certificate in Agriculture, following one year's field experience on attachment with agricultural extension staff. Women students take domestic science as an alternative to part of the programme.
- Purpose: To train new staff for the Department of Agriculture's extension service.
- Entry standard: At least four years' secondary schooling, and on selection by the Department of Agriculture.
- Note: Pending completion of buildings for the new college (Gambia College) at Brikama, the Certificate in Agriculture course starting October 1975 has begun at Yundum.

GHANA

The theme of Self-Reliance, which has been the cornerstone of Government policy for some years, means that rural development and self-sufficiency in food production are important goals, agriculture thus playing a central role after many years of near neglect. Indeed, agriculture is seen as having the highest potential for growth of all the sectors of the economy. There are a number of inhibiting factors to increasing the areas under cultivation - such as the high costs of land clearance and of provision of roads and storage facilities - and expansion of agriculture must depend on a rapid dissemination, through the national extension service programme, of information about techniques.

One of the main instruments for the policy of increasing agricultural production is the campaign "Operation Feed Yourself", which uses the mass media of communication to awaken the whole population to the need to increase agricultural output and to methods of doing so. It is not, however, concerned solely with increased production of food for internal consumption, but of food and other agricultural products for local industry or for export. Every effort is being made to link agriculture and industry so that industry can draw raw materials from the agricultural sector while supplying it with fertilizers, equipment and other inputs in a concerted effort of import substitution.

It is realized that rural development requires regional planning to ensure proper co-ordination between national goals and local aspirations. The technique for this will be to create development centres or towns throughout the country to service agricultural activities in the rural areas and to become focal points for local industrial development, thus raising rural incomes. Great importance is given to the role of the Co-operative Movements in channelling local energies and skills for development purposes.

A big expansion programme in the field of technical and vocational education will result in larger numbers of trained people needed for accelerated agricultural production. It is also planned to provide training for middle and higher level manpower in a number of subjects, including farm management and farm machinery mechanics, fisheries technology, food processing technology and food service management, in institutions which will provide an alternative to formal university training for those who have good secondary education.

The extension services related to fisheries are being strengthened and more attention is being paid to the inland cultivation of fish, pelagic fishing and the preservation and marketing of both.

Apart from official schemes, there is significant low-level training in rural skills and simple farming techniques by a number of rural centres run by various Church missions, especially in the Northern Region and often assisted by agencies such as Oxfam and Christian Aid. Some of these provide residential courses for a few school leavers but most give only short courses for farmers.

Ghana's development strategy is essentially employment-oriented and this means encouraging labour-intensive and capital-saving patterns of investment and giving high priority to projects likely to make minimal demands on scarce resources of equipment but able to use spare labour. Such projects include food and agricultural production, small scale irrigation projects and water control and drainage, land reclamation and conservation, and afforestation, and can use otherwise unemployed youth with the minimum of specialized training.

Ghana

- GHA 1 "Leadership by Doing" Programme,
National Youth Council, Accra.
- Administration: National Youth Council. These projects of the NYC are part of an initial phase in an attack on rural depopulation.
- 1 (*) AGRICULTURE
There are Rural Youth Village Training Stations in the Eastern and Volta Regions, providing practical training in crop farming, animal husbandry, etc. Also one-year training course at Oyarifa in Legon, in a "farmhouse" established by the NYC and the Afienya Youth Leadership Training Institute.
- 2 (*) FISHERIES
Projects include a Youth Fishing, Production and Marketing Co-operative at Kpone (Greater Accra Region).
- GHA 2 Bunso Training School,
Cocoa Production Division, Bunso, (Eastern Region).
- Administration: Chief Cocoa Officer (Head of the Cocoa Production Division).
- Finance: Ghana Marketing Board.
- Lan: local dialect for farmers, Eng. for staff. Cal: Oct/Sep.
TP: c. 8,000 farmers p.a. & 525 staff. RA: yes. NN: yes (by special arrangement).
- 1 (*) COCOA PRODUCTION
Two-week residential courses in improved cocoa agronomic practices. Courses are run in sixteen Farmers' Training Hostels throughout the country (thirty-six farmers per hostel, per course).
- Purpose: Training of cocoa farmers.
- 2 (**) COCOA PRODUCTION
Courses of two to six months' duration, for junior and senior staff, in cocoa production, covering disease and pest control, propagation methods, maintenance of farms, processing of beans for market, spraying techniques, improved agronomic practices.
- Purpose: To train personnel for the Ghana Cocoa Marketing Board.
- 3 (**) COCOA PRODUCTION
Refresher courses at various levels, two weeks to two months in duration, covering aspects of cocoa production such as grading, general agronomy, spraying.
- Entry standard: Minimum Middle School Leaving Certificate, at least one year's service in Cocoa Production Division, over 18 years, with good physique; success at entry examination and interview.
- GHA 3 Continuation Schools,
c/o Ministry of Education, Accra.
- Administration: Ministry of Education.
- Finance: National Bank of Ghana.
- 1 (**) AGRICULTURE
Part-time apprenticeship courses, during the last two years of primary education (that is, around ninth and tenth year of schooling) in farming, fishing, etc.

- GHA 4 Young Farmers' Training and Settlement Scheme,
c/o Ministry of Agriculture, P.O. Box M37, Accra.
- Administration: Ministry of Agriculture. The Scheme has been in existence for more than ten years.
- Finance: Government of Ghana.
RA: partial.
- 1 (**) AGRICULTURE
Three-year training for settlement, including one year at a farm institute and two years working on 40-acre plots in small groups under the direction of extension staff of the Ministry. Training is mainly for the production of staple crops. Settlers are supported by loans of seed, fertilizer, etc.
- Purpose: Land settlement.
- Entry standard: Mainly primary school leavers.
-
- GHA 5 Farm Mechanization Training Centre,
Navrongo (Upper Region).
- Administration: Ministry of Agriculture. (There are similar Centres at other locations.)
- Finance: Government of Ghana.
TP: c. 100 per centre.
- 1 (**) AGRICULTURE/AGRICULTURAL MECHANICS
One-year course in general agriculture plus four months on agricultural mechanics, farm management, tractor operation and maintenance. The Centres also run short 1-3 day courses for local farmers.
- Purpose: To assist farm mechanization.
- Entry standard: Primary school leavers.
-
- GHA 6 Ghana Nautical College,
P.O. Box 1115, Accra.
- Administration: Ministry of Transport and Communications.
- Finance: Government of Ghana.
Cal: Sep/Jul. TP: c. 300. RA: for 150. NN: yes (from Eng. spk. African countries).
- 1 (**) NAVIGATION
Six-month course for navigation cadets, for College Certificate.
- 2 (**) NAVIGATION
Fourteen or so navigation courses lasting from one week to one year, concerned with inland waters as well as sea. They include one year for Second Hand (Fishing) Certificate of Competency; one term for Skipper (Fishing) Certificate of Competency; one term for College Certificate of Master (Inland Water). Also courses covering radio telephony and radar.
- 3 (**) MARINE ENGINEERING
Nine courses in the Engineering Department, including three months for Dockyard technicians; two years for pre-sea DTI Second

Engineer Part 'A' Certificate; four terms for Second Engineer (Fishing) Certificate of Competency; one year for College Certificates of Second Class and First Class Refrigeration Engineer.

Purpose: To train officer grade personnel for all aspects of the maritime industry - merchant navy, fishing industry and inland waters.

Entry standard: With all courses, educational and experience requirements vary according to level.

GHA 7 Ho Technical Institute,
Ho.

Administration: Ministry of Education.

Finance: Government of Ghana.

1 (**) AGRICULTURAL MECHANICS

The Institute is approved by the City and Guilds of London Institute as a centre for their courses and examinations in Agricultural Engineering in Tropical Countries, but now prepares students for its own examinations.

GHA 8 Tamale Technical Institute,
Tamale.
Details exactly as GHA 7 above.

GHA 9 Farm Institutes,
c/o Chief Training Officer, Ministry of Agriculture,
P.O. Box M37, Accra.

Administration: Ministry of Agriculture.

Finance: Government of Ghana.

Cal: Feb/Dec. TP: 500 p.a. (100 at each Inst.) RA: yes.

1 (**) AGRICULTURE

One-year courses in subjects such as crop and animal husbandry, farm management, farm mechanics, farm mechanization, soil science; at five Institutes.

Entry standard: Middle School Leaving Certificate (= 10 years schooling).

GHA 10 Nyankpala Agricultural College,
Tamale.

Administration: Ministry of Agriculture.

Finance: Government of Ghana.

Cal: Feb/Dec. in 3 terms. TP: c. 30 per course. RA: yes, for 130. NN: yes.

1 (*) AGRICULTURE

Short courses of two weeks to three months duration for working farmers, in vegetable and poultry production.

Entry standard: Practical experience only.

2 (**) AGRICULTURE

Three-year course in general agriculture.

Purpose: Mainly to train agricultural assistants for government service.

Entry standard: School Certificate.

- GHA 11 Kwadaso Agricultural College,
Academy Post Office, Kwadaso, (Kumasi).
- Administration: Ministry of Agriculture.
- Finance: Government of Ghana.
- Cal: Feb/Dec. in 3 terms. TP: 150 p.a. RA: 280 m. 40f. NN: yes.
- 1 (***) AGRICULTURE
Three-year course in general agriculture. Training is largely practical with experience in raising cattle, pigs, sheep or poultry and in cultivating maize, cocoa, oil palm, citrus, groundnuts and vegetables. One year is spent at a Division of the Ministry of Agriculture or a research institute or an approved farm. Subjects covered include crop and animal husbandry, crop protection, soil science, agricultural economics, farm mechanics, meteorology and surveying.
- Purpose: Mainly to train assistants for the Ministry of Agriculture.
- Entry standard: West African School Certificate or GCE 'O' level with passes in English, maths and a science; or Intermediate City and Guilds Certificate with Agricultural Engineering bias. Age: 18-25.
- 2 (**) HOME ECONOMICS
Course in home economics related to agriculture.
- GHA 12 Ohawu Agricultural College,
P.O. Box 28, Ohawu, Abor, (Volta Region).
- Administration: Ministry of Agriculture.
- Finance: Government of Ghana.
- Cal: Feb/Dec. in 3 terms. TP: 110 p.a. RA: yes. NN: yes.
- 1 (**) AGRICULTURAL MECHANICS
Three-year course in agricultural mechanics including two years on attachment to Division of the Ministry of Agriculture. Subjects covered include farm machinery and tractor operation, farm shop mechanics, surveying, crop and animal husbandry, soil science, agricultural economics, and there is practical work on the 100 acre farm.
- Purpose: To assist the mechanization of agriculture.
- Entry standard: Intermediate City and Guilds Certificate for agricultural mechanics.
- GHA 13 to 18 This is the address for correspondence about other Agricultural Colleges of the Ministry of Agriculture:
c/o Training Section, Ministry of Agriculture, P.O. Box M37, Accra.
- GHA 13 Accra Agricultural College.
- GHA 14 Bolgatanga Agricultural College.
- GHA 15 Cape Coast Agricultural College.
- GHA 16 Koforidua Agricultural College.

Ghana

- GHA 17 Sekondi Agricultural College.
- GHA 18 Sunyani Agricultural College.
- GHA 19 Agricultural Irrigation Training School,
c/o Ministry of Agriculture, P.O. Box M37, Accra.
- Administration: Ministry of Agriculture. The School is a new project and will be run in co-operation with the University of Ghana, Legon.
- Finance: Government of Ghana.
- 1 (**) IRRIGATION
Courses in agricultural irrigation.
- GHA 20 Ghana Women's and Young Adults' Rural Training Course,
YWCA, P.O. Box 1504, Accra.
- Administration: YWCA. The programme has been running for six years.
- Finance: YWCA with assistance from UNESCO with payment of expenses of students from other countries.
- Lan: Eng. and local. Cal: Jul/Aug. TP: 20-24. RA: yes.
NN: yes (from African countries).
- 1 (**) RURAL EDUCATION
Four- to six-week vacation course with two weeks' residential instruction and remaining period spent living in villages, working with women and girls on all aspects of rural life improvement - for example, food production, food utilization, nutrition, child care.
- Purpose: To enable educated women to help improve rural living standards.
- Entry standard: Secondary schooling and teacher training background.
- GHA 21 School of Forestry,
P.O. Box 214, Sunyani.
- Administration: Started in 1943 by the Forestry Department of the Ministry of Lands and Mineral Resources.
- Finance: Government of Ghana.
- Cal: Jul/Jun in 3 terms. TP: 180. RA: yes. NN: yes.
- 1 (**) FORESTRY
Three-year course in forestry with practicals taking up a total of one year. Also other short courses of six months' duration for up-grading.
- Purpose: To train Technical Officers (Forestry) for government service and for in-service up-grading.
- Entry standard: West Africa School Certificate or GCE 'O' level with passes in English, maths and one science subject.
- GHA 22 Veterinary Training School,
Pong Tamale, P.O. Box 300, Tamale, Northern Region.
- Administration: Started in 1960 by the Ministry of Agriculture.
- Finance: Government of Ghana.
- Cal: Jan/Mar, Apr/Jul, Sep/Dec. TP: 100. RA: yes - 75 m. & 25 f.

1 (**) VETERINARY SCIENCE

Three years pre-service training for animal health assistants covering animal husbandry, biology and veterinary medicine, with practical work on the school's 1,000 acre farm (1,000 head of cattle as well as some sheep and pigs), and including one year with field units of the Ministry of Agriculture.

Purpose: Mainly to train assistants for Ministry of Agriculture Veterinary Service.

Entry standard: School Certificate.

GHA 23

University of Ghana,
P.O. Box 25, Legon.

Administration: Autonomous. There are Faculties of Agriculture and Science and Departments of Agricultural Economics and Farm Management, Crop Science, Animal Science, Nutrition and Food Science, Botany, Zoology, Extension; there is also an Institute of Public Administration (administration of which is assisted by USAID and Guelph University, Canada) and an Institute of Statistical, Social and Economic Research. The University has a 60 acre Botanical Garden and three Agricultural Research Stations: Kpong (900 acres concerned mainly with irrigation); Nungua (mainly animal breeding); and Kade (2,700 acres concerned mainly with forestry zone crops such as cocoa).

Finance: Government of Ghana.

Cal: Oct/Dec, Jan/Mar, Apr/Jun. TP: 400+ in Facs. of Agric & Sci. and postgrad. RA: yes. NN: yes.

1 (**) SUNDRY

Two years for Diploma in General Agriculture, in Agricultural Engineering or in Animal Science.

Entry standard: Minimum five GCE 'O' levels.

2 (**) AGRICULTURAL ADMINISTRATION

One-year diploma course in agricultural administration, in the Ghana Institute of Public Administration.

Entry standard: Technical Officer level, plus experience in assisting in management of projects.

3 (***) SUNDRY

First degree course: four years for B.Sc.Agric. and for B.Sc.Hons., specializing in botany, food science, nutrition, zoology, oceanography and fisheries. There is a new degree course in home science.

Entry standard: Passes in five subjects in GCE, with at least three at 'A' level (specified subjects for most courses).

4 (***) FORESTRY

One-year diploma course in forestry protection, for graduates.

5 (***) SUNDRY

Higher degree courses: two years for M.Sc. in agricultural economics, agricultural extension, animal science, crop science, soil science, biochemistry, botany, food science, nutrition, zoology; also two-year course leading to M.Sc. in agricultural administration, in the Ghana Institute of Public Administration and in association with Guelph University, Canada.

Entry standard: Appropriate first degree, preferably Hons. Candidates for course in agricultural administration should have experience in senior Project Management.

<u>GHA 24</u>	<u>University of Science and Technology, Kumasi.</u>
Administration:	Formerly the Kumasi College of Technology which opened in 1952. The University has Faculties of Agriculture and Science with Departments of Agricultural Economics and Farm Management, Agricultural Engineering and Mechanization, Animal Production, Crop Production, Horticulture, Land Economy and Estate Management. There is also a Land Administration and Research Centre, a Technology Consultancy Centre (est. 1972) and a Post-Graduate School of Wood Science and Technology (est. 1974). The University has a link in land economics with the University of Cambridge, U.K.
Finance:	Government of Ghana. The Technology Consultancy Centre is supported by grants from international trusts, and by local commercial institutions. Cal: Oct/Dec, Jan/Mar, Apr/Jun. TP: 220 in Fac. of Agric. RA: yes. NN: yes.
	1 (**) HORTICULTURE Two years for Diploma in Tropical Horticulture.
Entry standard:	West African School Certificate and two years' practical experience at a horticultural institution.
	2 (**) FORESTRY Two-year diploma course in forestry (started 1975 in collaboration with the Forestry Department and Forest Product Research Institute).
Entry standard:	School of Forestry Certificate and at least two years' post-certificate experience.
	3 (**) ESTATE MANAGEMENT/SURVEYING Two years for Certificate in Estate Management or in Land Surveying.
Entry standard:	For estate management, candidates should have technical training and be already employed in this field; for land surveying, West African School Certificate.
	4 (**) RURAL DEVELOPMENT Training, mostly by demonstration and experience and largely through extension services, is provided by the Technology Consultancy Centre of the University, with the aim of stimulating development through appropriate technology and by the introduction of new products and improved techniques using locally produced raw material.
	5 (***) SUNDRY First degree courses: four years for B.Sc.(Agric.), B.Sc.(Agric. Eng.), B.Sc. specializing in botany, zoology, or land economy.
Entry standard:	Five passes in GCE 'O' level including English, and with two 'A' level sciences.
	6 (***) SUNDRY Higher degree courses: two years for M.Sc. A two-year course in wood science, wood technology and management, leading to an M.Sc. is given in the new Post-Graduate School of Wood Science and Technology. Practical courses are taken during long vacation with reputable wood-processing firms.
Entry standard:	Appropriate first degree.
	7 (***) LAND SURVEYING One year for postgraduate Diploma in Land Surveying.
Entry standard:	Appropriate first degree (eg. land economics).

- GHA 25 University of Cape Coast,
Cape Coast.
- Administration: Founded in 1962 as a university college and became a full University in 1972. It is primarily for the preparation of teachers for secondary schools, teacher training colleges, polytechnics and technical institutions. It has Departments of Botany and Zoology in its Faculty of Science, and a Centre for Development Studies.
- Finance: Government of Ghana.
Cal: Oct/Dec, Jan/Mar, Apr/Jun. TP: 1,100+. RA: yes.
NN: yes.
- 1 (***) AGRICULTURAL EDUCATION
Courses are planned for the training of teachers of agricultural science in secondary schools.
- GHA 26 National Service Scheme,
c/o Principal Secretary, Ministry of Education, P.O. Box M45, Accra.
- Administration: Started in 1973 and administered by the National Service Secretariat for the Ministry of Education.
- Finance: Government of Ghana.
1 (***) RURAL DEVELOPMENT
New university graduates and diploma holders must give one year service mainly in rural areas, on assignments linked with their own specializations: fields include agriculture, rural development and co-ops.

NIGERIA

In Nigeria, as in so many countries, a major problem is how to decrease the disparity in living standards between urban and rural areas. The seventy per cent of population who live in rural areas - many of them peasant farmers operating a large number of small-holdings with a national average of less than 1.2 hectares - have benefited little from the country's recent fast economic growth. The level of food production is barely keeping pace with population growth, mainly due to low yields, decreasing soil fertility with the limited use of fertilizer, unimproved crop varieties and breeds of livestock, lack of credit, continued use of very simple manually operated tools and inadequate extension services. The tragedy of this situation manifests itself in shortage of food and in the poor nutritional status of a large proportion of the population.

Yet agriculture and its related activities will continue to be the mainstay of the economy in the foreseeable future because that sector will continue to furnish most employment opportunities and will have to provide most of the country's raw materials both for local industry and for export. Nigeria's future development will to a large extent continue to be dependent on increased production and improvement of its main crops - cocoa, rubber, oil palm, cotton and groundnuts - even though their foreign exchange earning role will decrease with their increased use in satisfying domestic demand.

Rural development policy therefore places continuing emphasis on ensuring adequate food supplies to keep pace with increasing population, on expanding production of export crops, on significantly increasing the production of agricultural raw materials to support domestic manufacturing industries, on creating rural employment opportunities and minimizing the tendency for inadequate and inefficient use of human resources in rural areas, and on evolving appropriate institutional and administrative apparatus to facilitate a smooth integrated development of the agricultural potential of the country as a whole.

At present less than half the potential agricultural land is utilized and that which is under cultivation produces less than it should for lack of skilled labour and of the right equipment and techniques. The country's livestock, the bulk of which is on the savanna lands, could be considerably increased with proper management and improvement. Forest products too are under-utilized. But the required transformation of peasant production to modernized methods calls for new training and expertise, and here lie the main constraints. The agricultural extension services have been hampered by lack of sound composite training and by the limited number of extension workers, and consequently the results of agricultural research have not made much impact on farming practices; farmers have generally persisted in traditional methods of production. The rate of implementation of development projects is also adversely affected by shortages of technicians such as irrigation engineers, hydrologists and farm management specialists, and these same manpower shortages hinder project conception and formulation, as well as the management of essential supporting services such as credit.

The provision of adequate numbers of appropriately trained, skilled personnel to implement projects and policies is an essential part of all rural development programmes. Nigerian universities offer a wide range of courses related to agriculture and rural development

aimed at producing high level staff for Government service and industry, and they are supported by the Schools of Agriculture and the Colleges of Technology, with a variety of lower level courses. In Nigeria, as in other countries, much low-level education and training for agriculture takes places through non-governmental agencies. A number of church missions - Catholic, Anglican, Lutheran, Methodist - organize extension programmes, farm associations and rural development projects in several States, often with on-the-farm training or demonstration short courses. These are too numerous for all but a few examples to be listed separately but provide a useful supplement to the official extension services with which they usually co-ordinate their activities.

NIG 1 to NIG 9

Rural Training Centres.

These are administered by various Church organizations and are mostly schools where husband and wife can receive training in agriculture and grow their own food on small farms provided. The nine locations are:

NIG 1

Kulp Bible School,
Near Mubi, Gongola State.

1 (*) RURAL SKILLS
Three-year regular course, plus two-year advanced course, in English.

NIG 2

Mbamba Christian Rural Centre,
Near Yola, Gongola State.

1 (*) RURAL SKILLS
Three-year course comprising two years at centre and one on a farm.

NIG 3

Bast Muri Christian Rural Institute,
Near Zing, Gongola State.

1 (*) RURAL SKILLS
Two-year course.

NIG 4

Muri Christian Training School,
Near Bambur, Gongola State.

1 (*) RURAL SKILLS/OX TRAINING
Three-year course, plus one-year advanced course, in English.
Also training in the use of oxen.

NIG 5

Benue Bible Institute,
Harga, Gongola State.

1 (*) RURAL SKILLS
Four-year course.

NIG 6

Rural Bible School,
Egede, Benue State.

1 (*) RURAL SKILLS
Two-year course.

Nigeria

- NIG 7 Adunu Training Centre,
Adunu, Niger State.
- 1 (*) RURAL SKILLS
One-year course, self-supporting.
- NIG 8 Boys School,
Roni, Kano State.
- 1 (*) AGRICULTURE
Practical agricultural training. This is a primary boarding school for 250 pupils which is self-supporting on a 225-acre mechanized farm.
- NIG 9 Christian Training Centre,
Zambo, Benue State.
- 1 (**) RURAL SKILLS
Three-year course for class 7 leavers.
- NIG 10 Abeokuta Christian Council,
Rural Development Committee, Onikolobo, P.O. Box 184, Abeokuta, Ogun State.
- Administration: The Committee has been active in rural development from 1967 through this centre. Day to day management is by a local committee through the Rural Development Adviser who is a qualified agriculturalist with a Diploma in Agriculture and training in extension work.
- Finance: Sponsored by the Christian Council of Nigeria and financed from Church funds, both local and overseas grants, the project is supported by the Government Agricultural Department through the loan of staff to assist in training courses.
- Lan: Yoruba & Eng. TP: c. 150 p.a. RA: yes. NN: yes.
- 1 (*) RURAL SKILLS/ANIMAL HUSBANDRY
Various courses from short four-day refresher courses to four months training in animal husbandry.
- Purpose: To provide training for young farmers and to organize group farms, thus providing employment opportunities for school leavers and reducing the urban drift.
- Entry standard: Variable.
- NIG 11 Christian Rural Development,
Mararraba, Plateau State.
- Administration: Church-run through 70 village extension agents.
- 1 (*) CO-OPERATION/RURAL DEVELOPMENT
There is a loan programme to assist about twenty co-operatives with over 400 farmer members. There is also a citrus and poultry distribution scheme.

- NIG 12 Uba District Intensified Community Development Programme,
Uba, Gongola State.
- Administration: Church of the Brethren Mission. There are programmes in selected schools linked to this project launched in 1965.
- 1 (*) AGRICULTURE
 Practical and theoretical instruction on the four main crops of the region, for pupils in their final year of primary school. Pupils' own plots are matched to plots on parents' farms, for comparison of results.
- NIG 13 Faith and Farm (S.U.M.)
Vom Christian Hospital, P.O. Vom, via Jos, Plateau State.
- Administration: Started in 1958 and run by the Church of Christ in Nigeria with the Sudan United Mission. There is a revolving loan fund scheme set up to assist farmers trained in using oxen, and help in settlement is given to trainees who would not otherwise have access to good farm land.
- Finance: Church funds and donations from overseas.
 Lan: Hausa & Eng. (at sel. courses for Prim. 7 sch. leavers).
 TP: 20-30 p.a. RA: partial. NN: not as trainees.
- 1 (*) AGRICULTURE
 Nine-month apprenticeship scheme, through Master Farmers, spent on a farm.
- Entry standard: Anyone who is willing to try new ideas.
- 2 (**) AGRICULTURE
 Three-year training course, with two years at the Christian Training Centre, Zamko, and one year working on home farm land.
- Entry standard: Boys who have finished Primary 6 or 7.
- Purpose: The Faith and Farm programmes are aimed at training young people in better methods of farming, thus enabling them to produce more food and cash crops for their own betterment.
- NIG 14 Farm Institutes, Kano,
c/o Permanent Secretary, Ministry of Agriculture, Kano,
Kano State.
- Administration: Started in 1964 by the State Ministry of Agriculture. There are similar schemes in other States in the north.
 TP: over 150 p.a.
- 1 (**) RURAL SKILLS/CO-OPERATIVES
 Practical one-year courses (at eight institutes) in crop and livestock husbandry, poultry keeping, horticulture, co-operative management, surveying, soil conservation, farm crafts and farm management. Instruction is combined with the farming of the students' own plots under supervision. After training, students are encouraged to form co-operative groups and are given loans for settlement.
- Purpose: To encourage settlement.
- Entry standard: Full primary schooling.

Nigeria

- NIG 15 Farm Settlement Scheme,
c/o Permanent Secretary, Ministry of Agriculture, Ibadan,
Oyo State.
- Administration: Started in 1960 and run by the Department of Agriculture.
- Finance: State Government, assisted by F.A.O.
- RA: yes. TP: c. 100 p.a. on 2 yr. course (over 1,200 settlers on
25 settlements, each about 1,500 acres).
- 1 (**) AGRICULTURE/CO-OPERATION
Two years at a fully residential farm institute, followed by communal
work on settlements under supervision, then 3-4 years independent
work on own land with advice before incorporation into autonomous
co-operatives.
- Purpose: To encourage co-operative settlement.
- Entry standard: Mainly school leavers.
-
- NIG 16 Government Technical College,
P.M.B. 1070, Maiduguri, Borno State.
- Administration: State Ministry of Education. Founded in 1973.
- TP: 216 (at the College).
- 1 (**) AGRICULTURAL ENGINEERING
Two years covering all three stages of agricultural engineering in
tropical countries for City & Guilds Examinations 811. Stage I
is a basic introduction to farm machinery operation (for Agricultural
Machinery Operators Certificate), Stage II is an introduction to
farm machinery operation and workshop processes (for Agricultural
Mechanics Certificate), and Stage III is an advanced study of
agricultural machinery and implements, and workshop processes
(for Agricultural Engineering Technicians Certificate).
- Entry standard: Full primary education for Stage I. Completion of Stage I or at
least two years secondary education for Stage II. Completion of
Stage II or full secondary education, with good school certificate
including maths and a science, for Stage III.
-
- NIG 17 Government Trade Centre,
Oyo, Oyo State.
- Administration: State Ministry of Education.
- TP: 450 (total at Centre).
- 1 (**) AGRICULTURAL ENGINEERING
Course in agricultural engineering for City & Guilds 811
(see NIG 16/1 for course details).
-
- NIG 18 Government Technical Training School,
Makurdi, Benue State.
- Administration: Started in 1973 by the State Ministry of Education.
- Finance: State Government.
- Cal: Sep/Jun. TP: c. 400 (total at School).

1 (**) AGRICULTURAL MECHANICS

Course in agricultural mechanics at two levels. Level I covers principles of crop husbandry and land use, agricultural machinery, related studies, including English, maths, physics and technical drawing. Level II covers principles of crop husbandry and land use, construction of agricultural machinery and maintenance, workshop processes and related studies. Students take the City & Guilds Examination 811 at the end of each stage. This course is directly related to the practical aspects of maintaining farm machinery and visits to farms, agricultural stations, vehicle and machinery maintenance and repair shops are included.

Purpose: To train skilled mechanics to maintain and service farm machines.

Entry standard: Secondary three.

NIG 19

Federal Marine Fisheries School,
Victoria Island, Lagos, Lagos State.

Administration: Nigerian Institute of Oceanography and Marine Research.

Finance: Government of Nigeria.

TP: 80. RA: yes.

1 (**) FISHERIES

Three-month course for Fishery Artisans (= fishermen), beginning January.

Entry standard: Primary School Leaving Certificate plus one year's experience.

2 (**) FISHERIES

Four months for coxswain's certificate (fishing), beginning April.

Entry standard: Primary School Leaving Certificate plus two years' sea service.

3 (**) FISHERIES

Six months for Certificate of Mate (fishing/off shore), beginning February.

Entry standard: Three or four years of secondary schooling plus two years' sea service as coxswain.

4 (**) FISHERIES

Two-year course for fishery assistants, beginning September.

Entry standard: GCE 'O' level in at least five subjects, including biology or general science.

5 (**) FISHERIES

Six-week fishery orientation course for fisheries research officers, beginning August.

Entry standard: Serving officers in Government Fisheries Service.

NIG 20

Auchi Polytechnic,
P.M.B. 1196, Benin City, Bendel State.

Administration: State Ministry of Education. Founded in 1966 and renamed 1974.

Finance: State Government.

TP: 1,000+ (total in Polytechnic).

1 (**) LAND SURVEYING/ESTATE MANAGEMENT

Courses in land surveying and estate management.

Nigeria

- NIG 21 Co-operative Training School,
Benin City, Bendel State.
- Administration: Founded in 1965 as a Government Institution under the Co-operative Societies Division of the Ministry of Trade and Industry.
- 1 (***) CO-OPERATIVE STUDIES
Basic training courses lasting 6-8 weeks and refresher courses of 4-6 days for co-operative society secretaries and committee members.
- NIG 22 Institute of Administration, (Co-operative Courses Section),
Ahmadu Bello University, Zaria, Kaduna State.
- Administration: The Co-operative Training Centre was founded in 1955 as a branch of the Institute of Administration but has now been absorbed into it. Training courses in the early days were organized by the Ministry of Social Welfare and Co-ops.
- 1 (***) CO-OPERATIVE STUDIES
Pre-1970, there was a six-month basic training course in co-operation mainly for officials of the central and local authorities. Refresher courses were also organized and the centre was associated with a diploma course in co-operative management organized through the University. It co-operated with the School of Agriculture in the basic training course and organized lectures in co-operation with the School of Agricultural Studies. The Institute of Administration continues to organize a number of in-service training courses, both residential and extra-mural, in management of co-operatives.
- NIG 23 Co-operative College,
P.M.B. 1014, Enugu, Anambra State.
- Administration: Founded in 1961, sponsored by the Co-operative Division of the State Ministry of Commerce and staffed by officials of that division.
- 1 (***) CO-OPERATIVE STUDIES
Pre-1970 there was a nine-month course for a Certificate of Co-operative Studies, for examiners and inspectors of Co-operative Societies. There were also short refresher courses lasting two or three weeks, seminars for senior staff and 4-6 week management training courses.
- NIG 24 Co-operative College,
Private Mail Bag 5033, Ibadan, Oyo State.
- Administration: The oldest Co-operative Training Institute in Africa south of the Sahara, this was founded in 1943 as a staff training school, under the supervision of the Co-operative Societies Division of the Ministry of Trade and Industry.
- Cal: Oct/Jun. RA: yes. NN: yes.
- 1 (***) CO-OPERATIVE STUDIES
Nine-month basic course in co-operative studies for co-operative officers, covering duties of co-operative officers, economics of co-operation (including agricultural co-operation), co-operative development, co-operative laws and principles, communications and extension methods, elementary agriculture, and leading to the Certificate in Co-operative Studies.
- Entry standard: West African School Certificate.

2 (**) CO-OPERATIVE STUDIES

Short training courses varying in length from three days to three months, and also refresher courses for graduates from the basic training course who return after a few years field work.

3 (***) CO-OPERATIVE STUDIES

Nine-month course for university graduates leading to the Senior Certificate in Co-operative Studies, and covering a range of subjects including those in 24/1.

NIG 25

Kwara College of Technology,
P.M.B. 1375, Ilorin, Kwara State.

Administration: Started in 1972 by the State Ministry of Education.

Finance: State Government.

1 (**) CO-OPERATIVE STUDIES

Various courses including in-service training for the Co-operative Inspectors Basic Certificate.

Purpose: To train inspectors for co-operatives.

Entry standard: In-service.

NIG 26

Institute of Management and Technology,
P.M.B. 1079, Enugu, Anambra State.

Administration: Started in 1973 by the State Ministry of Education.

Finance: State Government.

TP: 1,000 (total in Institute, incl. 150 part-time).

1 (**) CO-OPERATIVE STUDIES

Courses in co-operative studies.

NIG 27

School of Agriculture, National Root Crops Research Institute,
Umudike, Umuahia, Imo State.

Administration: Agricultural Research Council of Nigeria.

Finance: Federal Government.

Lan: Eng. Cal: Sep/Jul. TP: (on cert. & dip. courses) 350.
RA: yes. NN: no.

1 (**) RURAL SKILLS

Farmer training courses, of three to six months in duration, in poultry, piggery, rubber technology, horticulture, tractor driving and machine operation.

Entry standard: Full primary education.

2 (**) AGRICULTURE

Two years for Certificate in Agriculture (Gen).

Entry standard: GCE 'O' level or West African School Certificate, with pass in English and good credits in maths, biology and one other science.

3 (**) AGRICULTURE

Two years for Diploma in Agriculture.

Entry standard: Holders of the Certificate in Agriculture who also have one year's field experience.

Nigeria

4 (***) HOME ECONOMICS

Six-month course in home economics for women, soon to be up-graded to a two-year Diploma.

Entry standard: Women holders of the Certificate in Agriculture who also have at least one year's field experience.

Purpose: The main courses are to train staff for extension services, research institutions and agricultural development projects.

NIG 28

Kaduna Polytechnic College of Science and Technology,

Department of Water Resources, Irrigation and Agricultural Mechanization, P.M.B. 2021, Kaduna, Kaduna State.

Administration: Board of Governors.

Finance: Government of Nigeria.

TP: 300 (total in Polytechnic). RA: some. NN: yes.

1 (**) AGRICULTURAL MECHANICS/IRRIGATION

Courses up to two years in duration for tractor operators, agricultural mechanics and irrigation assistants (for the Certificate in Irrigation Engineering).

Entry standard: Artisan Grade II or III plus 2-4 years secondary education, depending on course taken.

2 (**) IRRIGATION

One year for Higher Certificate in Irrigation Engineering, for holders of the Certificate in Irrigation Engineering.

3 (**) AGRICULTURAL MECHANIZATION/WATER RESOURCES

Two or three years for Diplomas in Agricultural Mechanization, or in Water Resources with special studies in irrigation engineering, hydrology, municipal water problems.

Entry standard: West African School Certificate.

4 (**) WATER RESOURCES

Two years for Higher Diploma in Water Resources, with options in irrigation engineering, hydrology, municipal water problems.

Entry standard: Holders of Diploma in Water Resources or Higher Certificate in Irrigation Engineering.

NIG 29

School of Agriculture,

Kabba, Kaduna State.

Administration: Division of Agriculture and Livestock Services Training of Ahmadu Bello University.

Finance: Private, but with State and Federal Government subsidies.

Cal: Apr/Dec. RA: yes.

1 (**) AGRICULTURE/HORTICULTURE

Two years for Certificates of Agricultural Assistant in horticulture, agricultural engineering, animal science, agricultural science, agronomy or extension education. Also, one further year for Certificate of Agricultural Superintendent.

Purpose: To train staff for Government and local authorities.

Entry standard: West African School Certificate or a certificate from a Farm Training Centre. Candidates for the Superintendent's course must hold a Certificate of Agricultural Assistant.

- NIG 30 School of Agriculture,
Samaru, Zaria, Kaduna State.
- Administration: Started in 1928 by the former Northern Nigerian Government. Now run by the Division of Agricultural and Livestock Services Training, Ahmadu Bello University, Zaria.
- Finance: Federal Government of Nigeria.
Cal: Apr/Dec. TP: c. 650 p.a. RA: yes. NN: yes (from Gambia).
- 1 (**) AGRICULTURE/HOME ECONOMICS
Two-year certificate courses in general agriculture, home economics, agricultural mechanics, horticulture or experimental agriculture.
- Purpose: To offer training in basic agricultural sciences and extension.
- Entry standard: West African School Certificate, or field overseers plus at least one year of field experience, or Grade II Teacher Certificate.
- 2 (***) AGRICULTURAL MECHANICS/HOME ECONOMICS
Two-year diploma courses in home economics or agricultural mechanics.
- Entry standard: A Certificate in the relevant field plus a minimum of one year post qualification work experience.
- NIG 31 Institute of Agricultural Research and Training,
University of Ife, Ife-Ife, Oyo State.
- Administration: This combines former training schools of the State Ministry of Agriculture and Natural Resources. Apart from research, it provides training courses for middle level extension workers. There are two schools of agriculture - at Akure and Moor Plantation, Ibadan - and a school of animal health at Moor Plantation.
- 1 (**) AGRICULTURE
Two-year certificate course in agriculture at the Akure School of Agriculture, including surveying and engineering, crop production, livestock production, natural sciences, social sciences.
- 2 (**) AGRICULTURE
Two-year diploma course in agriculture, similar to 31/1 above but at a more advanced level, and including also home economics, at Moor Plantation, Ibadan.
- 3 (**) ANIMAL HEALTH
Two-year livestock assistant course leading to the Certificate in Animal Health, at Moor Plantation, Ibadan. The course covers a range of subjects including chemistry, animal husbandry, physiology, poultry husbandry, animal breeding, medicine, surgery, obstetrics and parasitology.
- 4 (**) ANIMAL HEALTH
Two-year livestock superintendent course leading to the Diploma in Animal Health, at Moor Plantation, Ibadan. The content of the course is similar to 31/3 above but at a more advanced level, and includes also poultry diseases, biochemistry, meat hygiene, pharmacology.

Nigeria

- NIG 32 College of Technology,
P.M.B. 1110, Calabar, Cross River State.
Administration: Started in 1972 by the Federal Ministry of Education.
Finance: Government of Nigeria.
TP: 600 (total in College, incl. 120 f.)

1 (**) ESTATE MANAGEMENT
Various courses including training in estate management.
- NIG 33 College of Science and Technology,
P.M.B. 5080, Port Harcourt, Rivers State.
Administration: Founded in 1970 by the Federal Ministry of Education.
Finance: Government of Nigeria.
Cal: Sep/May. TP: c. 1,000 in College as a whole.

1 (**) SUNDRY
Two-year GCE 'A' level course in sciences including botany and zoology, intended as a preparation for courses in agriculture. There is also a course in marine engineering.
Entry standard: School Certificate with credits in three science subjects and passes in maths and English.
- NIG 34 School of Agriculture and Animal Husbandry,
Bauchi, Bauchi State.
Administration: State Ministry of Natural Resources.
Finance: State Government.
Cal: Apr/Jun, Jul/Sep, Oct/Dec. TP: c. 30 p.a. (m. only).
RA: yes. NN: no.

1 (**) LIVESTOCK
Two years for Livestock Assistant Certificate, including practical training for three months in Ministry departments and extension services.
Entry standard: West African School Certificate, with preference for candidates who have studied science. Candidates without five years secondary education may be accepted if they have been serving in Government animal husbandry posts and pass a common entrance exam.
- NIG 35 Livestock Services Training Centre,
Ahmadu Bello University, P.M.B. 2134, Zaria, Kaduna State.
Administration: Largely autonomous. Federal Government university.
Finance: Mainly university, but subsidized by both State and Federal Governments.
Cal: Apr/Jun, Jul/Sep, Oct/Dec. TP: 200 p.a. RA: yes.
NN: yes.

1 (**) ANIMAL HEALTH/LIVESTOCK
Two years for Certificate in Animal Health and Husbandry; two years for Diploma in Animal Products.

- Purpose: To train staff for the livestock services.
- Entry standard: For certificate, West African School Certificate with credits in specified subjects. Candidates are sponsored by Authorities. For diploma, holders of the certificate who have had one year's practical experience.
- NIG 36 Veterinary School,
c/o Department of Veterinary Research, Vom, Kaduna State.
- Administration: Started 1940 under the National Veterinary Research Institute.
- Finance: Federal Government.
- Cal: Sep/Dec, Jan/Mar, Apr/Jun. TP: 75 p.a. RA: yes. NN: yes.
- 1 (**) ANIMAL HEALTH AND HUSBANDRY
Two years for Certificate in Animal Health and Husbandry.
- Purpose: To train staff for the veterinary services.
- Entry standard: West African School Certificate or GCE 'O' level including English, chemistry and biology.
- 2 (***) ANIMAL HEALTH AND HUSBANDRY
Two years for Diploma in Animal Health and Husbandry, for holders of the Certificate in Animal Health and Husbandry (Class I and II).
- NIG 37 School of Forestry,
Obubra, Cross River State.
- 1 (**) FORESTRY
Courses in forestry.
- NIG 38 School of Forestry, Jos,
P.M.B. 2019, Jos, Plateau State.
- Administration: Department of Forestry Research of the Federal Government.
- Finance: Federal Government.
- Cal: from Jan. & Jun.
- 1 (**) FORESTRY
Three to six months vocational training for forest guards, game guards, silviculture assistants.
- 2 (**) FORESTRY
Two-year course for forestry assistants, six months of which is spent in the field as preliminary training.
- Purpose: Training for staff.
- Entry standard: West African School Certificate.
- NIG 39 School of Forestry, Ibadan,
P.M.B. 5054, Ibadan, Oyo State.
- Administration: Department of Forest Research of the Federal Government.
- Finance: Federal Government.
- Cal: Jul. to Jan. of following yr. TP: c. 200. RA: yes. NN: yes.

Nigeria

1 (**) FORESTRY

Two years for Certificate of Forestry Assistant (Basic Forestry) including six months preliminary field training.

Purpose: To train staff for the forest service.

Entry standard: West African School Certificate with credits in English and science.

2 (***) FORESTRY

One year for Diploma in Forestry for forest superintendents.

Entry standard: Holders of the Certificate with some years on-the-job experience.

NIG 40

Institute of Administration,

University of Ife, Ife-Ife, Oyo State.

Administration: The Institute was established with grants from the Ford Foundation and the co-operation of a number of Centres of Administrative Studies and Research.

1 (**) ECONOMIC DEVELOPMENT STUDIES

Certificate and diploma courses in economic development studies.

2 (***) ADMINISTRATION

Nine-month postgraduate diploma course in administration; also short courses for officials sponsored by African countries.

NIG 41

Ahmadu Bello University,

Zaria, Kaduna State.

Administration: Formed in 1962 out of several older teaching institutions. Largely autonomous. There are Faculties of Agriculture (with a link (I.U.C.) with Wye College, University of London), Science and Veterinary Medicine. Associated with the University are the Division of Agricultural and Livestock Services Training (NIG 35) incorporating the School of Agriculture at Samaru (NIG 30); the Institute for Agricultural Research and Special Services with a School of Agriculture at Kabba (NIG 29) and a Training Centre at Mando Road; the Institute of Administration (NIG 22); and a Rural Economy Research Unit at Samaru, which provides training in agricultural economics and rural sociology for application to agricultural and rural development. The Agricultural Research Institute has about 3,000 acres at Samaru and four research sub-stations.

Finance: Federal Government and the Governments of the northern states.

Cal: Oct/Dec, Jan/Mar, Apr/Jun. TP: 6,000+ in Univ. incl. 110 in Fac. Agric. & 160 in Fac. Vet. Med. RA: yes. NN: yes.

1 (***) SUNDRY

Three years for B.Sc. in botany or zoology, for B.Sc. (Agric.), B.Sc. (Surveying); five years for D.V.M. (= veterinary medicine).

Entry standard: Five GCE passes including two at 'A' level, or four with three at 'A' level, plus 'O' level English. Age 17+.

2 (***) SUNDRY

One or two years for M.Sc. in botany or zoology, for M.Sc. (Agric.); two years for M.Sc. (Vet.Sci.).

Entry standard: At least Second Class Upper Div. Hons. in relevant first degree.

- NIG 42 University of Benin,
P.M.B. 1154, Benin City, Bendel State.
- Administration: Started in 1970 as the Institute of Technology of Benin City and re-formed as the University of Benin in 1972. Largely autonomous.
- Finance: Federal and State Governments.
Cal: Oct/Dec, Jan/Mar, Apr/Jun. TP: 400+ in Univ. incl. 55 in Fac. Sci.
- 1 (***) BOTANY/ZOOLOGY
Four years for B.Sc. specializing in botany or zoology.
- Entry standard: GCE with two good passes in science subjects at 'A' level.
-
- NIG 43 University of Ibadan,
Ibadan, Oyo State.
- Administration: Largely autonomous. There are Faculties of Agriculture, Forestry, Resources Management, Veterinary Medicine, and Technology (intended to promote the efficient use of natural resources); also the Nigerian Institute of Social and Economic Research. The University has links (I.U.C.) in nutrition with the University of Surrey, in Veterinary Medicine with the University of Liverpool and in forestry with the University of Oxford. The Jos campus at present offers only courses in humanities and social sciences.
- Finance: Mainly Federal Government.
Cal: Oct/Dec, Jan/Mar, Apr/Jun. TP: 4,000 in Univ. incl. 700+ in Fac. Agric. RA: yes. NN: yes.
- 1 (**) FORESTRY/FOOD SCIENCE
One year for Certificate in Forestry and two years for Certificate in Food Science and Applied Nutrition.
- Entry standard: School Certificate or equivalent.
- 2 (***) SUNDRY
Three years for B.Sc.(Agric.), B.Sc.(For.) and for B.Sc.Hons. in botany or zoology; four years for B.Sc.(Agric.Engin.), B.Sc.(For.Engin.) and B.Sc.(Wood Technology); five years for D.V.M.
- Entry standard: GCE in five subjects including two at 'A' level, or four subjects with three at 'A' level. The 'A' levels must be in specified sciences.
- 3 (***) SUNDRY
One year for postgraduate diplomas in agricultural engineering, agricultural extension, animal genetics and improvement, animal nutrition, crop husbandry, forestry, grassland and husbandry, livestock husbandry, plant genetics and crop improvement, poultry husbandry. Two years for M.Sc., M.Vet.Med., M.Sc.(Agric.) or M.Sc.(Vet.) with possible specialization in animal genetics and improvement, animal nutrition, crop-, grassland- or livestock-husbandry, plant genetics and crop improvement, or poultry husbandry; also for M.Sc.(For.). Three to four years Ph.D. studies in agriculture, forestry and veterinary medicine.
- Entry standard: At least Second Class Hons. Upper Div. in relevant first degree.

Nigeria

- NIG 44 University of Ife,
Ife-Ife, Oyo State.
- Administration: Autonomous. Founded in 1961. There are Faculties of Agriculture, Science, Social Sciences; associated with the University are the Institute of Agricultural Research and Training (NIG 31) and the Institute of Administration (NIG 40). The University has links (I.U.C.) in estate management, agricultural extension and rural development, and food science with the University of Reading.
- Finance: Mainly Federal Government.
Cal: Sep/Dec, Jan/Mar, Apr/Jul. TP: 6,000+ in Univ. as a whole incl. 300 in Fac. Agric. RA: yes. NN: yes.
- 1 (***) SUNDRY
Four years for B.Sc.Agric.; B.Sc. in food science and technology, in estate management; B.Sc. special Hons. in botany, zoology, biochemistry, genetics and microbiology; B.Sc.Agric.Eng.; B.Sc. Social Sciences. The former preliminary year is now the first year of degree programmes in all faculties.
- Entry standard: Five passes in GCE including two at 'A' level in specified subjects.
- 2 (****) SUNDRY
Nine months for postgraduate Diploma in Agricultural Economics and Development. Two years for M.Phil. and four years for Ph.D. courses in all departments.
- NIG 45 University of Lagos,
Lagos, Lagos State.
- Administration: Started in 1962, largely autonomous.
- Finance: Mainly Federal Government.
Cal: Oct/Dec, Jan/Mar, Apr/Jun. TP: 3,000+ in Univ. as a whole. RA: yes. NN: yes.
- 1 (***) BOTANY/ZOOLOGY
Three years for B.Sc. in botany or zoology, in the School of Biological Sciences. There are Departments of Biochemistry and Microbiology about to start Hons. degree courses.
- Entry standard: Five GCE passes including two at 'A' level, or four with three at 'A' level, including specified science subjects.
- 2 (***) BOTANY/ZOOLOGY
Two further years for M.Sc.
- Entry standard: Appropriate first degree.
- NIG 46 University of Nigeria,
Nsukka, Anambra State.
- Administration: Started in 1960. Largely autonomous. There are Faculties of Agricultural Sciences, Biological Sciences, Environmental Studies and Social Sciences. There is an Economic Development Institute (on the Enugu campus), a Division of Extra Mural Studies, and a 500 acre experimental farm. There is a third campus at Calabar, Cross River State. The University has links (I.U.C.) in land economy and estate management with the Universities of Cambridge and Strathclyde.
- Finance: Federal Government.
Cal: Sep/Dec, Jan/Mar, Apr/Jun. TP: c. 5,000 in the Univ. incl. 500 in the Fac. Agric. Sciences. RA: yes. NN: yes.

1 (**) ANIMAL HEALTH AND HUSBANDRY

Three years for Diploma in Animal Health and Husbandry. Instruction is both theoretical and practical. During vacations, students are usually posted to field stations for practical work under supervision.

Entry standard: West African School Certificate with credits in relevant science subjects. The course is basically for in-service candidates.

2 (***) SUNDRY

Three years for B.Sc. in botany, zoology, or botany and zoology, estate management; four years for B.Sc. in agricultural economics, animal science, soil science, agricultural engineering, food science and administration, home science and dietetics; six years for degree programme leading to D.V.M.

Entry standard: Five passes in GCE including two at 'A' level, or four including three at 'A' level in relevant sciences. Candidates with five 'O' level passes including English and three science subjects may be admitted to a five year degree programme in agricultural subjects.

3 (***) SUNDRY

Two years for M.Sc. in crop science, soil science, animal science or food science.

Entry standard: Appropriate first degree.

NIG 47

National Youth Service Corps,

c/o Cabinet Office, P.M.B. 12673, Lagos, Lagos State.

Administration: Started in 1973 and run by a Directorate in the Cabinet Office.

Finance: Federal Government.

1 (***) COMMUNITY DEVELOPMENT

Before giving one year of service graduates have short orientation courses, and then assist with communal projects including road surveying, agriculture, water schemes, land surveys, food conservation, etc.

Entry standard: Service is compulsory for all holders of first degrees from Nigerian Universities up to the age of 30.

SIERRA LEONE

Agriculture in Sierra Leone, as in many developing countries, is characterized by a large number of small holders - about 75% of the country's population - who produce only a third of the GDP. The Government has therefore placed top priority on development to achieve increased agricultural production, in order to meet both foreign and domestic markets, to raise the per capita income of the peasant farmer, and to improve the standard of living in rural areas. The Government's educational and agricultural policies converge on this priority area.

Major educational policies within the National Development Plan for the 5-year period 1974/79 are to improve the quality of education in all subsectors, and to make the content of education in all subsectors more relevant to the economic and social needs of the country. Agricultural education is considered as one of the most important educational activities and is therefore one of the highest priority areas.

Agricultural education and training is provided in teachers' colleges, to equip teachers to provide instruction in primary schools. The Bunumbu Project, sponsored by UNDP/Sierra Leone Government, is designed to boost rural development by training teachers to serve also in community education centres in rural areas. The Government plans to provide agricultural education and training up to form five in secondary schools in rural areas, to encourage students to take up careers in agriculture. It is hoped that some of these students will pursue higher studies at university, to be absorbed as technical staff in the Agricultural Extension Service, or teach in secondary schools and teachers' colleges, and that others will enter farming on their own once they can secure land and adequate agricultural credit. There are now over 80 such schools throughout the country.

Government has set up further training institutions where required to train special field extension staff. The country is divided into Agricultural Extension Districts, or circles; the technical staff of a circle typically consists of an agricultural officer or an assistant agricultural officer, plus several graded agricultural instructors. Some large or provincial offices have a mechanical superintendent and an agricultural superintendent. Supervision at provincial level is by senior agricultural and principal agricultural officers. Staff functions include the sale and distribution of improved plant cultivars, local planting materials and agro-chemicals; husbandry advice to farmers; planning and supervising mechanical cultivation of rice; marketing advice. The Extension Service is served by five research stations: the Rice Research Station (Rokupr); the Veterinary Station (Teko); the Animal Husbandry Station (Musaia); the Cocoa Research Station (Kpuwabu); the Cocoa Research Station (Pendembu).

SIL 1

Farmers Training Centre,

Kenema (Town), Eastern Province.

Administration:

Ministry of Agriculture and Natural Resources. (The Kenema Rural Institute is no longer operative. This centre is located on the original campus of that institute.)

Finance:

World Bank, through the International Development Association Programme and the Sierra Leone Government.

Lan: Mende and Krio. Cal: throughout the year. TP: 25-30.
RA: yes. NN: no.

1 (*) AGRICULTURE

Short courses of 10-14 days for farm families in the cultivation of rice, cocoa, coffee and oil palm.

Purpose: To improve farming techniques.
Entry standard: None; mostly illiterate farm families.

SIL 2 Agro-Technical Training Centre,
Manga Burreh (Town), Northern Province.

Administration: Ministry of Agriculture and Natural Resources.

Finance: Government of Sierra Leone.

Cal: every 6 mths. from Sep. TP: 30. RA: yes. NN: no.

1 (*) AGRICULTURE

One-year course in practical agriculture with emphasis on techniques of rice cultivation and the use of rice farm machinery.

Purpose: To improve farming techniques.
Entry standard: Farming experience.

SIL 3 Farmers Training Institute,
Batkanu (Town), Northern Province.

Administration: Ministry of Agriculture and Natural Resources.

Finance: Government of Sierra Leone.

TP: 50. RA: yes. NN: no.

1 (*) AGRICULTURE

Two-year course in general agriculture for potential farmers, consisting of seventeen months at the Institute and six months practical work in the home village.

Purpose: To provide good practical training for intending farmers.
Entry standard: Ranging from no educational qualification up to three years of secondary school work.

SIL 4 Tikonko Agricultural Extension Centre,
P.O. Box 142, Bo.

Administration: Methodist Church.

Finance: Methodist Missionary Society, Oxfam, Canadian University Service Overseas and other small donations (private or churches).

Lan: Mende (also some English or Krio through interpreters).
TP: 60 p.a. RA: with local families. NN: yes.

1 (*) AGRICULTURE

One-week courses in practical farming including swamp (paddy) preparation, use of improved seed varieties, fertilizers, etc. Extension work supports the courses. There is also a credit scheme for successful participants.

Purpose: To improve farming standards and rural skills. Farmers are moving from subsistence to cash crops and need help with sales of rice.
Entry standard: Some primary education preferred.

2 (**) RURAL MECHANICS

Ten-week intensive course in the use, maintenance and repair of power tillers, and also equipment such as pumps, sprayers, winches, threshing and winnowing machines. In addition, small machines and

Sierra Leone

tools are designed and produced for sale, resulting in on-the-job training of local craftsmen.

Purpose: To improve rural mechanical skills.

Entry standard: Full primary education. Entrants are usually elected by co-ops. or by independent farmers, who send their employee/operator to the course.

SIL 5 Bumpe High School,
Bumpe, via Bo.

Administration: Ministry of Education through Board of Governors.

Finance: Government of Sierra Leone.

Cal: Sep/Jul. TP: 280 m. & f. RA: some. NN: yes.

1 (**) AGRICULTURE

Three-year course in mixed farming, covering husbandry and the rearing of pigs and poultry. This is incorporated into the regular secondary education system.

Purpose: To encourage primary school leavers, otherwise unemployed, to take up farming. All students are required to offer agricultural science up to Form 3. Those showing special ability are encouraged to offer it at GCE 'O' level, which will prepare them for further university training, or for self-employment as farmers on return to their village.

Entry standard: Primary school education.

SIL 6 Forest Ranger Training School,
Bambawo, Kenema.

Administration: Forestry Division of Ministry of Agriculture and Natural Resources.

Finance: Government of Sierra Leone.

Cal: Sep/Dec, Jan/Mar, Apr/Jul. TP: 20. RA: yes. NN: no. (Non-nationals will be accepted in the near future and the number of participants may rise to 50, within the Mano-River Union, an agreement on multilateral co-operation between Sierra Leone and Liberia.)

1 (**) FORESTRY

Course of training for forest rangers.

Purpose: To train for forest ranger requirement, i.e. middle level technical staff.

Entry standard: Form 3 (third year secondary).

SIL 7 Field Assistant Training Centre,
Makali.

Administration: Agricultural Div. of Ministry of Agriculture and Natural Resources.

Finance: Government of Sierra Leone.

Cal: 6 mths. starting Jun 1976. TP: 50. RA: yes. NN: not yet.

1 (**) AGRICULTURE

Six-months course in practical agriculture, involving irrigated rice and seed multiplication.

Purpose: To train agricultural field assistants for extension work.

Entry standard: Form 4 (four years secondary) plus success at aptitude test, plus a year's field work under supervision.

- SIL 8 Farmers Training Centre,
Masiaka.
- Administration: Ministry of Social Welfare.
- Finance: Charity - Service Civil International (SCI) Europe.
TP: about 20. RA: yes. NN: no.
- 1 (***) AGRICULTURE
Two-year course in general agriculture aimed at providing practical experience in raising all types of crops.
- Purpose: To help young men achieve independence in farming.
- Entry standard: Four to five years secondary education.
-
- SIL 9 Milton Margai Teachers' College,
Goderich, (Freetown District).
- Administration: Ministry of Education.
- Finance: Government of Sierra Leone. Help has been provided by UNESCO.
Cal: Oct/Nov, Jan/Mar, Apr/Jun. TP: 450. NN: yes.
- 1 (***) RURAL SCIENCE EDUCATION
Three-year course for Higher Teachers Certificate, covering liberal education and science, as well as rural science in which a specialist course is available.
- Purpose: To prepare teachers of lower forms of secondary schools.
- Entry standard: Four GCE 'O' levels in appropriate subjects including English.
-
- SIL 10 Bunumbu Teachers' College,
Bunumbu, (Kailahun District).
- Administration: Ministry of Education, through a Board of Management.
- Finance: Government of Sierra Leone.
Cal: Sep/Dec, Jan/Mar, Apr/Jun. TP: first admission Sep 1976.
RA: yes.
- 1 (***) RURAL EDUCATION
Three-year course for Higher Teachers' Certificate in Home Economics, Agricultural Education, and Arts and Crafts.
- Purpose: To train primary teachers who will also provide leadership in rural development through community education centres. (This is a special Sierra Leone Government/UNDP undertaking, usually referred to as the Bunumbu project. It will utilize 20 pilot schools within a 20-mile radius of Bunumbu Teachers' College as community centres, in addition to their normal role in providing education to the children. The schools will provide new curricula for primary school pupils.)
- Entry standard: Four GCE 'O' levels in appropriate subjects including English.
-
- SIL 11 Njala University College,
Njala.
- Administration: University of Sierra Leone, of which it is a constituent college. Based on an agricultural experimental station dating from 1910 and a teacher training programme from 1919 both of which it has absorbed.
- Finance: Government of Sierra Leone. The College has been helped by the

University of Illinois under USAID and has a link with the National College of Agricultural Engineering (U.K.).

Cal: Oct/Dec, Jan/Mar, Apr/Jul. TP: 285 (on courses listed).
RA: yes. NN: yes.

1 (***) AGRICULTURE

Two-year certificate courses (lower level than degree courses) in agriculture, and in home economics related to agriculture. These take place in the Faculty of Agriculture.

Purpose: To educate potential farmers and junior staff of agricultural services.

Entry standard: Four years secondary education plus practical interest in agriculture.

2 (***) AGRICULTURAL EDUCATION

Three-year course in the Faculty of Education for Higher Teachers Certificate in Agricultural Education.

Purpose: To train teachers of agricultural subjects.

Entry standard: Four GCE 'O' levels including English, maths and a science.

3 (***) SUNDRY

Three-year degree courses for B.Sc. Agric., B.Sc.H.Econs.Gen., B.Sc.H.Econs.Ed. (all in Faculty of Agriculture), and for B.Sc.Agric.Ed. (in Faculty of Education).

Purpose: To produce qualified experts in agriculture, and home economics related to agriculture, for employment in government and private sectors.

Entry standard: Five GCE 'O' levels including English language and two 'A' levels; or H.S.C. with two passes at principal level and three credits at S.C. level including English. In both cases, high standards in science subjects are required.

SIL 12

Fourah Bay College,

P.O. Box 87, Freetown.

Administration: University of Sierra Leone, of which it is a constituent college. Founded in 1827.

Finance: Government of Sierra Leone.

Cal: Oct/Dec, Jan/Mar, Apr/Jun. TP: (in college) 1,000.
RA: yes. NN: yes.

1 (***) BOTANY/ZOOLOGY

Three or four years for B.Sc. in botany or zoology.

Purpose: To produce qualified scientists to work at the university and the Sierra Leone Fisheries.

Entry standard: Usual university entrance.

2 (***) MARINE BIOLOGY/FISHERIES

Three-year diploma course in aquatic biology and fisheries. This is associated with the Institute of Marine Biology and Oceanography.

Purpose: To produce qualified scientists to work at the university and the Sierra Leone Fisheries.

Entry standard: Usual university entrance.

3 (***) MARINE BIOLOGY/FISHERIES

Two years for M.Sc. in aquatic biology and fisheries, associated with the Institute of Marine Biology and Oceanography.

Entry standard: A good first degree in botany or zoology.

BOTSWANA

The broad aims of Botswana's agricultural policy are the development of the livestock industry on the basis of sustained production, the development of basic food crop production to provide improved and more reliable food supplies for most farm families, and the introduction of systems of land use that will allow increased production while conserving natural resources. Perhaps the most significant step taken so far towards the achievement of these goals is the land reform policy introduced in 1975. This was based on in-country research showing that productivity of the grazing can be doubled by changing the management of cattle from the tribal communal system to controlled grazing, including limitation of stock.

The immediate concern of the extension service is to promote knowledge and discussion of this land reform policy. At present there are about 180 agricultural extension agents meeting farmers face to face though their job is hampered by a scattered population and travelling problems. Surveys are now being carried out on cattle numbers, water supplies and grazing conditions which will lead into regional and district plans of implementation. Throughout the process, training is being planned and implemented for all levels of society from planners to farmers, including extension agents, land board members and officials, conservation committee members, ranch managers and so on. Agricultural extension is also evaluating research into possibilities of substantially raising the yields and reducing the failure rate of sorghum, through pilot projects.

Further extension is undertaken by Community Development personnel, who are placed in villages and major centres of population. They are involved in the wider aspects of development but, where their work overlaps with that of the Agricultural Extension Service, it is expected that co-operation will take place. The concept of village team extension is being encouraged.

Training of extension officers basically takes place at three levels. At the certificate level, agricultural demonstrators and animal health assistants are trained in a two-year course at the Botswana Agricultural College. The second and third levels of training - diploma and degree level - take place normally at the UBLS Swaziland. The role of agricultural extension officers is slowly shifting from that of persons who deal on a one-to-one basis with farmers, to those expected to impart information effectively to groups of farmers, but there is relatively little time spent during training on practising methods of teaching and principles of group learning. Similarly, those promoted as a result of their experience, technical knowledge and proven ability in the field to posts of district agricultural officers and district agricultural supervisors, receive little training in administration and organizational or supervisory skills. The Ministry itself recognizes these changing training needs but at present there is no institutional framework for satisfying these skill requirements apart from short courses.

BOT 14 B Clubs,

c/o Ministry of Agriculture, Private Bag 003, Gaborone.

Administration: Started in 1966 with encouragement from the Ministry of Agriculture, and organized by its Department of Extension.

Finance: Mainly self-supporting.

Lan: Setswana. TP: 1,000+ in about 40 clubs. RA: no. NN: no.

1 (*) RURAL SKILLS

Informal part-time project training in livestock management, poultry keeping, vegetable gardening, rabbit keeping, tree planting, soil conservation.

Purpose: To interest young people in agriculture.

Entry standard: Variable. The clubs are for rural youth.

BOT 2

Rural Training Centres,

c/o Ministry of Agriculture, Private Bag 003, Gaborone.

Administration: Government of Botswana. There are three Rural Training Centres (with 80, 72 and 32 beds), and six annexes or short-course centres (each with 10-15 beds).

Finance: Government of Botswana. Original funding by the U.K. Federation of Women's Institutes, expansion by external donors.

Lan: Setswana. TP: 1,000+ p.a. RA: yes. NN: no.

1 (*) RURAL DEVELOPMENT

Various courses for rural development, six days to four months duration, for farmers, housewives, youth, low level Government workers, land boards, co-operative personnel, Government staff training. Village courses also provided.

Purpose: To support rural development including training for trainers.

Entry standard: Participants range from those with no formal education to degree holders.

BOT 3

Botswana Extension College,

Ministry of Education, Private Bag 0043, Gaborone.

Administration: Ministry of Education.

Finance: Ford Foundation (up to 1978) and Ministry of Education. Initial funding in 1973 by Ford Foundation through the International Extension College.

Lan: Setswana & Eng. TP: non-formal 3,000 p.a., formal 200 p.a. RA: no. NN: no.

1 (*) SUNDRY

Various non-formal courses in subjects like child care and nutrition, village development, also courses for youth and in-service Government staff. There is a course for leaders and members of 4 B Clubs in fruit-tree growing and vegetable growing; a handbook is produced and the courses are linked to radio broadcasts. A course for members of village development committees is similarly linked to radio broadcasts.

2 (**) SUNDRY

Formal courses to improve educational standards, in general subjects for Junior Certificate or Cambridge O.S.C. All these are correspondence courses supported by radio programmes and some face to face teaching.

Purpose: To provide education to all Botswana for personal and rural development.

Entry standard: As necessary for each type of course.

BOT 4Department of Extra Mural Service,

University of Botswana, Lesotho and Swaziland, Private Bag 0022, Gaborone.

Administration: University.

Finance: University and various donors.

Lan: Setswana & Eng. RA: no. NN: no.

1 (*) RURAL DEVELOPMENT

The Department is concerned with adult and extension education in social development, adult studies and training through face to face teaching, seminars and radio programmes.

Purpose: To identify the abilities necessary for people to implement rural development and to find effective ways of teaching those abilities.

Note: There are proposals for setting up a diploma course in Extension and Development Education to last a full academic year, and to train staff for extension work from Ministries and from Botswana Extension College. For other relevant UBLS courses, see SWA 10.

BOT 5Botswana Brigades,

Ministry of Education, Private Bag 005, Gaborone.

Administration: The Ministry of Education has overall responsibility but detailed administration is by local Boards of Trustees. There are over 30 Brigades throughout the country working from 12 centres. The essential Brigade concept is to provide vocational training covering its cost by the sale of the produce of trainees. Training is in-service, that is earning with learning for usually 3 years before joining a settlement. Trade and Service Brigades have proved more successful than Farming Brigades which have had difficulties over settlement and over adequate proceeds of sale of produce.

Descriptions of the following three projects are given as typical of Brigades associated with agriculture. All the others, however, are concerned with rural development in the broad sense.

Finance: Government of Botswana and funds of the individual trusts and associations.

Lan: Setswana and Eng. RA: in some centres. NN: observers welcome.

1 (**) AGRICULTURE/RURAL SKILLS

The Serowe Brigades Development Trust, P.O. Box 121, Serowe, runs a Farmers' Brigade at Swaneng where there is also one for tanners and a Consumers Co-operative. Elsewhere there is a mobile Rural Builders Brigade and a unit for Agricultural and Livestock Development and Experimentation.

2 (**) FORESTRY

The Kweneng Rural Development Association, P.O. Box 102, Molepolole, runs a number of Brigades with instructional courses including one in forestry. Others cover building, general engineering and motor mechanics.

3 (**) APPROPRIATE TECHNOLOGY

The Kgatleng Development Board, Box 208, Mochudi, runs the Mochudi Farmers' Brigade which was started in 1969 with the aim of training young men in improved dryland farming and animal husbandry practices. It has now successfully developed a multi-purpose implement capable of performing all the operations necessary for successful cropping as well as carting and carrying,

and this is now in production and being promoted by the Ministry of Agriculture. Training at Mochudi now consists of teaching the proper operation of the implement and how it can be used to carry out improved tillage practices for increased productivity. Several former trainees are employed to assist farmers who purchase the implement, and to instruct members of the Ministry of Agriculture extension staff in its use.

Purpose: The Brigades aim to encourage self-employment, rural employment and settlement.

Entry standard: Minimum of full primary schooling, age 16+.

BOT 6 Tutume Community College,
Post Office Box 2, Tutume, Via Francistown.

Administration: Ministry of Education.

Finance: Government of Botswana. Development finance: McConnel Foundation, USA.

Cal: Jan/Dec. TP: 500, + 120 Brigade trainees. RA: yes.

1 (**) AGRICULTURE/RURAL DEVELOPMENT

This is a secondary school with associated Brigades, where there is a strong bias to development studies and agriculture. Non-formal training is also given at night school and clubs.

Entry standard: Standard 7, primary school examination.

BOT 7 Co-operative Development Centre,
P.O. Box 86, Gaborone.

Administration: Ministry of Agriculture through Educational Branch.

Finance: Government of Botswana with assistance from SIDA, DANIDA, UNDP, etc.

TP: over 300 in 1974.

1 (**) CO-OPERATIVE STUDIES

Week-end and one-week seminars at various locations (Government schools and Training Centres) for members of co-operative societies. More formal and professional courses for staff of co-operative department and of associated Government departments are given at the Denman Rural Training Centre, Sebele.

BOT 8 Botswana Enterprises Development Unit,
Ministry of Commerce and Industry, Private Bag 004, Gaborone.

Administration: Government of Botswana.

Finance: Government of Botswana. Initial funding by Swedish Government and UN.

Lan: Setswana & Eng. TP: 10-33 per course and 10-15 courses p.a.
RA: no. NN: no.

1 (**) RURAL INDUSTRY MANAGEMENT

Courses on marketing, company registration, taxation, labour laws, book-keeping are provided when and where necessary, often in conjunction with other training institutes.

Purpose: To encourage, support and train Batswana to set up and effectively manage their own rural enterprises (other than farming).

- BOT 9** Botswana Agricultural College,
Private Bag 0027, Gaborone.
- Administration:** Founded by Freedom from Hunger Campaign, and since expanded with U.K. official aid.
- Finance:** Government of Botswana, with help for development from overseas aid.
Cal: Feb/May, Jun/Sep, Oct/Dec. TP: 150 m & f. RA: yes.
NN: no.
- 1 (**) AGRICULTURE
Two years for Agriculture Certificate, covering agricultural science, crop and vegetable production, livestock, engineering, land use, national development, extension work.
- 2 (**) ANIMAL HEALTH
Two years for Animal Health Certificate, covering animal diseases, health, husbandry, management, anatomy, physiology.
- 3 (**) COMMUNITY DEVELOPMENT
Two years for Community Development Certificate, covering social work, theory, method and practice, youth work, home economics, human relations, social studies, communication, co-operatives, social services, civics, some agriculture and government.
- Purpose:** To train field workers in agriculture and community services.
- Entry standard:** Junior Certificate (= three years' secondary schooling).
- BOT 10** Botswana Training Centre,
Gaborone.
- Administration:** Government of Botswana.
- Finance:** Government of Botswana with UNDP/ILO assistance.
Cal: Jan/Dec. TP: c. 200 m & f. RA: yes. NN: no (but ILO has run some co-operative training courses at the Centre, attended by non-nationals).
- 1 (**) CO-OPERATIVE STUDIES
Various courses in commercial subjects and co-operative studies, three weeks to twelve months duration.
- Purpose:** To upgrade and improve work of Government staff, especially clerks/secretaries.
- Entry standard:** Junior Certificate, and work experience.
- BOT 11** Botswana Vocational Training Centre,
Ministry of Education, P.O. Box 525, Gaborone.
- Administration:** Government of Botswana. Started 1973.
- Finance:** Government of Botswana, with development aid from CIDA, ILO.
TP: 200 m. only. RA: yes. NN: no.
- 1 (**) RURAL SKILLS
One-year courses for trades, crafts and artisans.
- Entry standard:** Form 3 (= 10 years' schooling).

LESOTHO

Lesotho is an agricultural country, likely to remain dependent on agriculture for a long time to come. There are many development schemes and projects by which agriculture is to be improved, and appropriately trained and educated manpower is essential if these goals are to be reached.

The present emphasis is on adult learning - that is, on reaching the small farmer and encouraging him to improve his traditional skills and adopt more productive techniques. Staff in Government service, trained at the Lesotho Agricultural College, go out and advise farmers and their wives on many aspects of agriculture and home economics. The five Farmer Training Centres run short courses for farmers and their wives, as well as longer courses of training in improved agricultural methods and livestock rearing for young people, who will subsequently return to their own villages to farm. The Adult Learning Centre runs a series of short courses throughout the year, each in a particular subject; between courses, trainees work at home on their own small plots, with visits from a field worker and the course organizer. Here three quarters of the participants are women, since the farm work is done largely by women while the majority of men are absent as migrant labourers in South Africa. The Nutrition Centres, which are in fact used as centres for all the activities of the District Women's Associations, also make their contribution towards raising the standards of rural life.

In Lesotho there are, as yet, few facilities for training staff at the degree and diploma level. Most of the candidates for higher level agricultural posts are sent for training to universities in Africa, Europe, USA and the Commonwealth.

LES 1

Farmer Training Centres,
P.O. Box 773, Maseru.

Administration: Started in 1969 and supervised by the Office of the Prime Minister. In 1971 the service absorbed the courses for young farmers at four farmer training centres.

Finance: Government of Lesotho.
TP: 140 p.a. RA: some.

1 (*) **RURAL SKILLS**
Nine-month course for youths, including instruction and practical work in improved agricultural methods, training for rural vocations, carpentry. There is an 80-acre farm with cattle, pigs, poultry and rabbit keeping projects.

Purpose: To educate rural youth to lessen shortage of skilled labour and produce young, progressive farmers with civic consciousness.

Entry standard: The course is for young people who could not pass minimum entry qualification for the Lesotho Agricultural College.

2 (*) **AGRICULTURE**
Various short courses lasting 2-4 days in agriculture and home economics, for farmers and their wives.

Purpose: To improve farming techniques and raise the standards of rural life.

Entry standard: Variable, but candidates must be farm workers.

- LES 2 Adult Learning Centre,
 "Thupelo-Baholo", Christ the King Mission, Private Bag,
 Qacha's Nek.
- Administration: Misereor of Germany. Started in 1973 after extensive research
 into development training needs of the District.
- Finance: Mainly Church funds but with equipment grants from some voluntary
 bodies and charities. Small fees are charged for the courses.
 Lan: Sesotho (sometimes through inter./trans.). TP: 4-48 per
 course. RA: yes. NN: observers welcome.
- 1 (*) SUNDRY
 About fifteen courses a year, lasting 1-3 days each, on subjects
 such as: how to make and buy fertilizer, how to grow trees,
 maintenance of ox-drawn machinery, breeding cattle for more milk
 and meat, haymaking, vegetable growing, fruit trees, business and
 money saving ideas, bottling and drying fruits, crop and vegetable
 storage, how to be a leader. Courses include field demonstrations
 and practical work; trainees work at home between courses, with
 visits from a field worker.
- Purpose: To improve farming techniques and to support farming activities
 with good quality vegetable seeds, seedling trees and grafted fruit
 trees at cost prices.
- Entry standard: No educational or religious qualification necessary. Some candi-
 dates have completed primary schooling, some have not. Most have
 small plots of about 5 acres, in villages within a radius of 30 miles.
 Three quarters of the candidates are women.
- LES 3 3B Young Farmers Clubs, (Balemi Ba Bacha),
 c/o Ministry of Agriculture, Co-operatives and Marketing,
 P.O. Box 24, Maseru.
- Administration: Started in 1963 and supervised by the Extension Division of
 Ministry of Agriculture, Co-operatives and Marketing.
- Finance: The Government of Lesotho with some assistance from Christian
 Aid, FAO/UNICEF.
 TP: over 2,000 in 70 clubs. RA: no.
- 1 (*) SUNDRY
 Mainly club type activities on lines of US 4 H clubs but with 123
 communal projects as well as home-based schemes. Extension
 workers help with training in poultry rearing, vegetable gardening,
 tree planting, use of fertilizers.
- Purpose: To improve skills of young farmers.
- LES 4 Thaba Khupa Ecumenical Centre, (Farm Institute),
 P.O. Box 929, Maseru 10017.
- Administration: Started in 1972 and administered by the Lesotho Sodepax Commission
- Finance: Mainly Church funds.
 RA: yes.
- 1 (**) AGRICULTURE GENERAL
 Two years on a 180-acre farm, including one year managing own
 small plot. Topics include vegetable growing, poultry production,
 fish pond farming.
- Purpose: To train school leavers before they start farming on their own
 account.
- Entry standard: Primary school leavers. About 17 years old.

Lesotho

- LES 5 Lesotho Agricultural College,
P.O. Box 829, Maseru.
- Administration: Ministry of Agriculture, Co-operatives and Marketing. There is a college farm of nearly 300 acres shared with the research station.
- Finance: Government of Lesotho.
Cal: July/Jun. TP: 65 p.a. RA: yes.
- 1 (**) AGRICULTURE/HOME ECONOMICS
Two years for Certificate in Agriculture; two years for Certificate in Rural Domestic Economics (for women).
- Purpose: To train assistants for Government service.
- Entry standard: Junior Certificate of Education/3 years secondary schooling.
- 2 (**) CARE OF LIVESTOCK
One-year post-certificate course for livestock assistants.
- Purpose: To provide in-service training for livestock assistants.
- Entry standard: In-service livestock assistants, age 18+.
-
- LES 6 Maseru Agricultural Training School,
P.O. Box 24, Maseru.
- Administration: Started in 1955 and administered by the Ministry of Agriculture, Co-operatives and Marketing.
- Finance: Government of Lesotho.
TP: 100 p.a. including 20 women.
- 1 (**) GENERAL AGRICULTURE
Two years, after six months probationary course, in general agriculture.
- Purpose: To train entrants to the agricultural extension service. Some trainees go on to further courses for veterinary posts.
- Entry standard: Junior School Certificate/at least four years secondary schooling.
-
- LES 7 University of Botswana, Lesotho and Swaziland,
P.O. Roma.
- 1 (***) SUNDRY
Central administration is in Lesotho but the Faculty of Agriculture is in Swaziland (see SWA 10). Lesotho Campus has facilities for some relevant science subjects, e.g. biology.
- Note: The Lesotho element of UBLS has now been declared the National University of Lesotho, operating independently.

MALAWI

Malawi, relying heavily, as it does, on the export of agricultural commodities for earning its foreign currency needs, places great emphasis on improved agriculture both in the lives of the vast majority of its people and in the curriculum of its schools. Some progress has been made in raising the status of the farmer vis-a-vis that of the white collar worker and there is no lack of applicants for training places in the specialist agricultural courses at college and university, at certificate, diploma and degree levels. Graduates from these courses are still mostly required to fill advisory or managerial posts in Government service or the estate sector, and there is as yet little return of trained men at these levels to the villages as improved farmers.

Agriculture is taught in both primary and secondary schools in Malawi and all students take the courses up to Junior Certificate level. Courses are of variable quality due to the shortage of qualified teachers, and examinations in agriculture are as yet rarely held in unspecialized primary and secondary schools. There are, however, specialized colleges and institutes for the teaching of agriculture and related subjects (forestry, fishing and veterinary) the courses being at certificate, diploma and degree levels to fit the initial educational level of the candidates.

There is a well established Extension Service to farmers backed by Research and Technical Departments and it is into these that the majority of those passing out from the specialist colleges and institutes still go, though an increasing number are now being absorbed by the private sector in one capacity or another. It is the Government's policy to get the rural communities to adopt improved agricultural techniques and to enter the cash economy through persuasion, example, financial inducement and making available necessary inputs on credit but in kind.

This seasonal credit service is made possible as all smallholder marketing is controlled by one marketing organization in co-operation with which loans are recouped at an agreed rate at each sale of the farmer's crops. The need for an efficient crop marketing and input sales service within easy reach of the farmer is recognised and the service is being steadily improved. There is also an active Extension Aids Branch printing manuals and leaflets and carrying extension advice to the farmers in the villages through radio and through a fleet of mobile audio-visual aid units. There are Rural Training Centres at many locations, often using the premises of the local Agricultural Office, giving one day courses for farmers. Divisional Training Centres offer courses of up to one week and Farm Institutes (see MAW 4/1) provide three week courses. Both the Divisional Centres and the Farm Institutes are also used for short in-service specialist courses.

Government seeks to encourage agricultural production both through the maximisation of the potential of such estates as exist or are from time to time created and through the stimulation of the villagers on customary land as is indicated in the preceding paragraph. Response, as might be expected, has been most rapid from the estate sector and from certain intensive rural development areas favoured with no major climatic limiting factor. The potential for improvement in the smallholder sector is however great and, to obtain a better response, the Government proposes to extend the improved marketing, input and credit facilities from the present limited 'major project' areas to the rest of the country in a series of area development projects under an overall National Rural Development Programme. Farmer participation in the development process is sought through a series of local liaison committees.

It is expected that these improvements backed by an intensified extension effort will stimulate production and make it possible to follow on with improved facilities for water supply, health, communications, education, village trade and industry. It is expected that such development will require an increase in the number of trained agricultural field workers in the villages from the present level of about 1 to 1,000 farm families in the areas outside major projects, to a figure nearer 1 to 500, quite apart from the more practical training needed for those farmers who, it is hoped, will eventually form the nucleus of progressive leaders in the rural society of about one million farm families.

It is in this context that Malawi's agricultural training facilities must be set.

MAW 1

Malawi Young Pioneers,

P.O. Box 5694, Limbe.

Administration: The Office of the President of Malawi.

Finance: The Government of Malawi, with some grants from FAO.

TP: 2,300 p.a. including 150 girls. RA: yes.

1 (*) AGRICULTURE

Ten months training at 23 regional bases in various subjects including agriculture, for youth aged 16-25 from all backgrounds. All undertake practical agricultural work in vegetable farming, poultry and animal husbandry, food and cash crops. The Institute at Nasawa offers further training in several subjects including agricultural mechanics.

Purpose: To encourage young people to go into agriculture and to help them with settlement on the land.

Entry standard: None. Age 16+.

MAW 2

Fish Farming Pilot Extension Scheme,

Domasi.

Administration: Ministry of Agriculture and Natural Resources.

Finance: The project has received support from Oxfam.

1 (*) FISHERIES - INLAND

This is a one-year pilot project (started 1975) to see if control of ponds increases inland fish production. Some of the pond management is integrated with poultry and vegetable production.

Purpose: If successful, farmers and village workers will be trained in new techniques.

MAW 3

Fisheries Training Centre,

Mpwepwe, Private Bag Magochi.

Administration: Ministry of Agriculture and Natural Resources.

Finance: The Government of Malawi, British Aid and DANIDA.

Lan: English and Chichewa.

1 (*) FISHERIES

Three-week to three-month courses for fishermen and fishing boat builders.

Purpose: To train fishermen and those in ancillary crafts.

Entry standard: Fishing experience and boat building experience for ad hoc boat building courses.

2 (**) FISHERIES

Two-year course for extension assistants in fisheries.

Purpose: To train junior staff for extension work.

Entry standard: Junior School Certificate, 16+, fishing experience.

3 (**) FISHING BOAT BUILDING

Three-year course for fishing boat builders.

Purpose: To train boat builders.

Entry standard: Junior School Certificate, practical woodwork experience, with National Trade Test Certificate Grade III in carpentry and joinery; 16+.

4 (**) FISHING BOAT MECHANICS

Six- to twelve-month courses for fishing boat mechanics.

Purpose: To train repair mechanics for the fishing industry.

Entry standard: Standard 8, preferably with J.C.E., 16+ and with one year's experience of mechanics.

MAW 4Thuchila Farm Institute,

Nr. Mikolongwe, Limbe.

Administration: Department of Extension and Training of the Ministry of Agriculture and Natural Resources.

Finance: The Government of Malawi and Oxfam.

Cal: throughout year. RA: yes. NN: possibly.

1 (*) AGRICULTURE

Farmer training courses of up to three weeks in length, on many aspects of farming.

Purpose: To improve farming techniques.

Entry standard: Farming experience.

Note: Other Farm Institutes run similar courses.

2 (**) FARM HOME ECONOMICS

One-year course (beginning January) for farm home instructresses, covering home economics, food production and teaching practice.

Purpose: To train women teachers of agriculture and home economics.

Entry standard: Full Junior Certificate with passes in English, maths and a science preferred. Under special circumstances, less than full J.C. accepted provided there are passes in English and a science at that level.

Note: It is planned to transfer this course to the new Natural Resource College when that is constructed, hopefully in 1978.MAW 5Colby College of Agriculture,

c/o Ministry of Agriculture and Natural Resources, Lilongwe.

Administration: Ministry of Agriculture and Natural Resources. The College has six departments: land husbandry; crop husbandry; animal husbandry; extension; farms; applied educational subjects.

Finance: Government of Malawi.

Cal: Sep/Dec, Jan/Mar, Apr/Jul. TP: 150 p.a. RA: yes. NN: yes.

1 (**) AGRICULTURE

Two-year certificate course in science and practice of agriculture. Women students take farm/home science instead of machinery and surveying.

Malawi

Purpose: To produce junior staff for the Ministry of Agriculture with good practical and up-to-date theoretical knowledge and ability to communicate.

Entry standard: Full Junior Certificate with passes in English, maths and a science. Previous field experience preferred. Preference to Young Pioneers (see MAW 1).

MAW 6 Lilongwe Land Development Training Centre,
Lilongwe Land Development Programme, Lilongwe.

Administration: Ministry of Agriculture and Natural Resources.

Finance: Government of Malawi.

1 (**) SUNDRY

Courses usually of one month for training project staff including extension field workers in topics such as general agriculture, nutrition, committee work. These are purely in-service courses and are not suitable for non-nationals. Pre-service training of project staff is at Colby College of Agriculture or at Thuchila Farm Institute (for Farm Home Instructresses).

MAW 7 Malawi College of Forestry,
Chongoni, Private Bag 6, Dedza.

Administration: Ministry of Agriculture and Natural Resources.

Finance: The Government of Malawi, and Overseas Funds for Training of International Students.

Cal: Aug (Yr 1) to Oct (Yr 3). TP: 36 p.a. RA: yes. NN: yes.

1 (**) FORESTRY

Two-year residential course leading to Forest Ranger Certificate.

Purpose: To train men in forestry primarily for employment in Malawi.

Entry standard: Four years secondary schooling plus good English, entrance examination competitive, previous practical experience preferred.

2 (**) FORESTRY

Eighteen months residential course (beginning March) leading to Forestry Diploma.

Purpose: To up-grade forest rangers to fit them for appointment as foresters.

Entry standard: A Forest Ranger Certificate and a minimum of three years satisfactory service. Selection by competitive interview.

MAW 8 Mikolongwe Veterinary Training School,
Box 5193, Limbe.

Administration: Ministry of Agriculture and Natural Resources. Started in 1953 and re-organized in 1961.

Cal: Sep/Dec, Jan/Jul. TP: 50 p.a. RA: yes. NN: possibly.

1 (**) VETERINARY ASSISTANT

Two years pre-entry before appointment as veterinary assistant. The school has access to large-scale livestock projects in the vicinity.

Purpose: To train assistants for the Malawian Veterinary Service. Professional veterinarians qualify outside Malawi, usually in Kenya.

Entry standard: Full Junior Certificate, including passes in maths and a science. Good knowledge of English. Previous experience as veterinary scout preferred. Entry competitive.

2 (**) SUNDRY

Short refresher courses of 2-6 weeks, sponsored by the FAO, in subjects such as artificial insemination, dairy work, etc.

Purpose: To provide in-service training and training for up-grading.
Entry standard: Relevant experience.

MAW 9 Bunda College of Agriculture,
P.O. Box 219, Lilongwe.

Administration: University of Malawi, of which it is the Faculty of Agriculture. It has a link with the Univ. Coll. of Wales (Aberystwyth) in Agriculture.

Finance: The Government of Malawi. (USAID and British Overseas Aid helped with the construction costs.)

Cal: Oct/Dec, Jan/Mar, Apr/Jul. TP: 20 p.a. (Degree)
40 p.a. (Diploma). RA: yes. NN: yes.

1 (***) AGRICULTURE

Four-year general B.Sc. Ag. course organized through four departments: Agricultural engineering, crop production, livestock production and rural development (including farm management, extension work and home economics). The first year work in introductory science is taken at Chancellor College, Zomba.

Purpose: To produce expert agronomists with an emphasis on practical skills.
Entry standard: Malawi Certificate of Education with at least five credits including English, maths and some sciences.

2 (**) AGRICULTURE

Three-year course for Diploma in Agriculture.

Entry standard: Malawi Certificate of Education with credits or good passes in English, maths and sciences.

MAW 10 Soche Hill Teachers Training College,
Chancellor College, P.O. Box 280, Zomba.

Administration: Chancellor College which is a constituent college of the University of Malawi now incorporates the Soche Hill Teachers Training College and the former Institute of Public Administration.

1 (***) AGRICULTURAL EDUCATION

Two-year course for the University Certificate of Education. This is a 'sandwich' course with lectures in two successive long vacations (Jul/Oct) and can be attended by teachers of agricultural subjects who seek in-service training in education.

MAW 11 Land Husbandry Training Centre,
Ministry of Agriculture and Natural Resources, P.O. Box 30134,
Lilongwe 3.

Administration: Ministry of Agriculture and Natural Resources.

Finance: UK/Malawi loan.

Cal: variable. NN: yes.

1 (***) LAND HUSBANDRY

In-service courses in land husbandry mainly for recent graduates.

Purpose: To give advanced training to newly recruited staff.

Entry standard: University degrees or diplomas in agriculture. A certificate in agriculture may be accepted for lower level training.

SWAZILAND

Although small and mountainous, Swaziland has three well-defined areas; the highveld in the west is mostly over 1,200 metres and best used for afforestation, the middleveld at an average altitude of 700 metres is suitable for mixed farming because of its good soil and plentiful rain, and the lowveld is mainly cattle-raising country except in the east where fertile soils enable irrigation crops to be produced. Four major rivers provide good potential for agricultural growth through irrigation. Agriculture plays the key role in the economy, providing three-quarters of the people with their livelihood.

However, living standards among the Swazi majority depending on subsistence farming have not grown as fast as for the minority employed in modern economic developments. Most Swazi families cultivate small plots of land, their main crops being maize and groundnuts.

The Government aims to improve living standards through Rural Development Programmes to ensure that land is more efficiently used, and it has designated seven special rural development areas. On this land, not held in traditional smallholdings, new and better methods of producing maize, cotton, tobacco and vegetables are being introduced together with improved methods of cattle management for beef production. Commercial agriculture chiefly concentrates on sugar, pineapple, citrus fruits and forestry which together provide over half the total exports.

From the training aspect the current policy is to provide training facilities simultaneously with the development projects which are being carried out. Such facilities include agricultural education at the primary school level, degree courses in agriculture and economics at the University, and in-service training. Degree studies in engineering, land management, etc. have to be undertaken outside Swaziland. The Department of Establishment and Training sponsors both students and civil servants for training in Swaziland and abroad. Good use is also made of offers by national and international aid agencies.

The Ministry of Agriculture has two main departments, Agriculture and Veterinary, providing services and carrying out extension activities to train farmers and staff at all levels in a wide range of subjects concerning crop and animal production.

SWA 1

Nhlangano Farmers Training Centre,
Post Box 14, Nhlangano.

Administration: Government of Swaziland. Founded in 1970 by the Ministry of Agriculture. The Centre provides services to other Ministries (Co-operatives and Commerce, Health, Education and Local Administration) for farmers and staff.

Finance: Government of Swaziland.

Lan: Eng. and Siswati. RA: for 28. NN: yes (civil servants and farmers).

1 (*) AGRICULTURE

Short courses of 2-14 days. There are plans for long-term courses in the future. In 1974 the NFTC conducted 55 courses with 1,654 participants.

Purpose: Theoretical and practical training.

Entry standard: No specific qualifications.

- SWA 2 Lutheran Farmer Training Centre,
Post Box Pigg's Peak.
- Administration: Started in 1968, administered jointly by the Ministry of Agriculture and the Lutheran Church.
- Finance: Government of Swaziland and the Lutheran Church.
Lan: Eng. and Siswati. TP: over 1,000 p.a. RA: for 40.
NN: yes.
- 1 (*) AGRICULTURE
Short courses from two days to six months in duration, in various agricultural subjects and skills.
- Purpose: Training for farmers and for agricultural service junior staff.
- Entry standard: No specific qualifications.
-
- SWA 3 Chinese Agricultural Mission,
P.O. Box 693, Manzini.
- Administration: Government of Swaziland with support from the Chinese Government. The scheme started in 1969. There are three sub-stations.
- Finance: Government of Swaziland and the Chinese Government.
Lan: mainly Siswati, some Eng. TP: c. 300 p.a. RA: no.
NN: not as trainees, but observers welcome.
- 1 (*) AGRICULTURE
Three months practical training in farming, mainly in crops such as rice, vegetables, fruit.
- Purpose: Training for farmers in crop cultivation, especially rice.
- Entry standard: Farming experience.
-
- SWA 4 Gcina Training Centre,
(National Youth Service) P.O. Box 432, Mbabane.
- Administration: Government of Swaziland through the Ministry of Local Administration. The scheme was started in 1969 with Israeli advice.
- Finance: Government of Swaziland.
Lan: Siswati. TP: 150 p.a. male only. RA: yes. NN: not as trainees, but observers welcome.
- 1 (*) AGRICULTURE
Eleven months training mainly in agriculture (crop, dairy and poultry farming) with some technical and general education, and recreational activities.
- Purpose: Training for agriculture. Most participants return to their own farms but some work on development projects.
- Entry standard: School leavers in age range 17-25. Wide educational range from illiterates to Cambridge Overseas School Certificate. All trainees volunteer and Chiefs select those to attend.
-
- SWA 5 Schools Agricultural Project,
c/o Ministry of Education, P.O. Box 39, Mbabane.
- Administration: The Ministry of Education through the Senior Inspector (Agric.) and a Board, with help from University of Botswana, Lesotho and Swaziland.
- Finance: Government of Swaziland with an initial U.S. grant.

1 (**) AGRICULTURE

This is a pilot project for the teaching of agriculture at top primary and lower secondary levels. Examinations are at the end of primary and the end of three years secondary training. The project depends on having teachers trained to teach agricultural subjects and is intended to give school pupils a positive approach to rural development.

SWA 6

Swaziland Agricultural College and University Centre,
P.O. Luyengo.

Administration: Started in 1966 by the Ministry of Agriculture.

Finance: Government of Swaziland.

TP: 150 p.a. (on dip. and cert. courses). RA: yes. NN: yes, on cert. courses.

1 (**) AGRICULTURE, FORESTRY

Two-year certificate courses in agriculture or forestry. Three-year diploma courses in agricultural subjects (crop and animal husbandry, land use and irrigation, agricultural engineering, etc.). There are also short courses of adult farm training in subjects such as the economics of mechanized farming, pest and disease control in vegetables, improved maize cultivation, etc.

Purpose: To improve skills for agriculture.

Entry standard: Certificate and diploma courses are for primary school leavers after six months probationary training.

SWA 7

Co-operative Development Centre,
P.O. Box 261, Mbabane.

Administration: Government of Swaziland with assistance from ILO and the Swedish International Development Authority. The ILO Project Manager is in charge assisted by UN experts and local counterparts. Started in 1975, the Centre will become fully operational mid-1976.

Finance: Recurrent finance from the Government of Swaziland. Co-operatives pay fees for participants.

Lan: mainly Eng. some Siswati. TP: 200/300 p.a. RA: some. NN: yes.

1 (**) CO-OPERATION

Short courses from one week to three months in duration, at various levels for government supervisory personnel, managerial and accountancy staff of co-ops. and elected co-op. leaders.

Purpose: To improve the working of co-ops.

Entry standard: No formal educational qualification for elected leader's course. Other entry standards variable, depending on level of course.

SWA 8

Veterinary and Stock-Farmers' Training Centre,
Mpisi, P.O. Box 163, Manzini.

Administration: Ministry of Agriculture through Veterinary Training Officer. Started in 1951.

Finance: Government of Swaziland.

TP: 20 p.a. + 250 p.a. on short courses. RA: some. NN: yes; also observers on short visits welcome.

1 (**) VETERINARY

One-year course for veterinary assistants (Technical Assistant Grade Field Staff). Also short courses for stock owners in animal husbandry and management.

Purpose: Training of veterinary staff and stock farmers.

Entry standard: Junior School Certificate (= 3 years secondary) for one year pre-service course.

SWA 9

Mananga Agricultural Management Centre,
P.O. Box 96, Tshaneni.

Administration: Commonwealth Development Corporation. Courses are linked to the 100,000 acre development managed by the C.D.C. The Centre has its own 1,600 acre farm including 500 of sugar cane and 200 of wheat. The Swaziland Irrigation Scheme estates nearby and the Vuvulane Irrigated Farms, a settlement with 200 farmers on smallholdings, can be used for field studies. Formal lecturing is minimal; training is through exercises, discussions and field studies.

Finance: Commonwealth Development Corporation.

Cal: from April. RA: yes. NN: yes; C.F.T.C. grants are available for a number of countries.

1 (**) SUNDRY

Various courses covering subjects such as economic surveys and analysis, marketing, field management.

Entry standard: In-service courses for officials with three years experience in agriculture.

2 (**) AGRICULTURAL MANAGEMENT

Twelve-week course in planning and control in agricultural management. (There are three such courses p.a. and places are booked many months ahead).

Purpose: To train staff for development projects.

Entry standard: Five years experience in practical farm management plus two years study at an agricultural college or university. Good English and some arithmetic essential. In special cases, long experience is accepted instead of agricultural college training.

SWA 10

University of Botswana, Lesotho and Swaziland,
(Swaziland Campus), Post Box Kwaluseni.

Administration: Largely autonomous. The Faculty of Agriculture (P.O. Luyengo) has departments of crop production, animal production, land use mechanization, agricultural economy and home economics.

Finance: Governments of the three countries.

Cal: Aug/Dec, Jan/May. TP: 75 in Fac. Agric. (700 in whole of univ.) RA: yes. NN: yes.

1 (**) CO-OPERATION

The university division of extra-mural services provides short courses for co-operative workers (accountancy for book-keepers, training in rural credit, etc.).

2 (**) SUNDRY

Two-year diploma courses in agriculture (started 1967), in animal

Swaziland

health and management (started 1974), in home economics (started 1974) and in agricultural education (started 1975).

Entry standard: School Certificate with good standards in English and maths.

3 (***) AGRICULTURE

Four-year degree course in agriculture (started 1974).

Entry standard: Cambridge O.S.C. in the first or second divisions with high standard in English, maths and a science subject.

ZAMBIA

Zambia's Second National Development Plan (SNDP), now in its final months, has laid major emphasis on rural development, aiming at self-sufficiency in foodstuffs, import substitution and progressive reduction in the economy's reliance upon mining. It has given high priority to employment generation, and development of technical skills and regional decentralization, as well as to self-reliance - this being one of the important principles of the national philosophy of Humanism.

The Third National Development Plan (TNDP), which starts on 1st January 1977, will pursue these same objectives, emphasizing also the need to promote exports, to improve rural standards of living by providing in the rural areas new employment and income opportunities, and to develop irrigation resources in order to procure all-the-year-round production of crops. With fluctuating copper prices and steadily increasing prices of food and other agricultural commodities, economic stability will be possible only by a full exploitation of the agricultural potential of Zambia.

The TNDP aims at something beyond self-sufficiency in respect of commodities like maize, sugar, groundnuts, hides and skins, and tobacco. Where there is a shortage of inputs like fertilizers, every effort will be made to exploit alternative local sources. Every possible encouragement will be given to the commercial sector of agriculture, to implement the policy of import substitution and export promotion and achieve the objective of diversifying the economy. Village co-operatives will be revitalized and strengthened, to become centres for the supply of inputs and credit as well as providing marketing facilities. Efforts will be made to bring the traditional farmers into the monetized sector as soon as possible, by both intensive and extensive methods of cultivation.

An overall growth of the rural sector will be called for, in order to make rural areas more attractive. This will include the improvement of rural health, water supplies, education facilities, communication and transportation, and the establishment of agro-industries to provide additional employment opportunities. Much greater emphasis will be laid on conservation and development of the country's water resources. There will also be emphasis on the increased participation and involvement of the people and institutions in rural areas in the decision making process.

Education for rural development has been given more importance in public and private institutions. Agricultural science is taught in theory and practice in primary and secondary schools while, since 1975, all government schools and colleges, including the university, have been committed to establishing production units, to provide practical opportunities for acquiring agricultural knowledge and skills and to promote self-reliance and self-sufficiency in local foodstuffs. Primary and secondary school teachers of agricultural science have continued to take diploma courses in agricultural science education at the Natural Resources Development College, and the School of Agriculture at the University of Zambia produces qualified staff for the Department of Agriculture and for work in the agro-industries.

The Ministry of Rural Development, through the Young Farmers Club Movement, provides encouragement and training in agriculture for youth in primary and secondary schools while the Zambia National Service, through its Rural Reconstruction Programme, aims at converting a possible social menace (unemployed youths) to a national resource (total involvement of youths in national development) by providing training in aspects of farming.

Zambia

- ZAM 1 Zambian Association of Young Farmers' Clubs,
c/o Ministry of Agriculture, P.O. Box RW 291, Lusaka.
- Administration: Ministry of Rural Development in close co-operation with the
National Council of Zambia Association of Young Farmers' Clubs.
Started in 1964.
- Finance: Government of Zambia through Ministry of Rural Development/
Department of Agriculture and the National Young Farmers' Clubs
Council.
- Lan: Eng. (for seminars and conferences) & local (in villages).
 TP: over 10,000 members. RA: no.
- 1 (*) AGRICULTURE
Instruction in agricultural subjects is given at club meetings, and
home projects are encouraged. Club members use facilities at
Farmer Training Centres and Farm Institutes where necessary.
- Purpose: To train members and leaders in rural development skills and
leadership.
- Entry standard: None.
-
- ZAM 2 Zambia National Service,
P.O. Box 2251, Lusaka.
- Administration: Started in 1964 as the Zambia Youth Service, it is administered by
the Ministry of Defence.
- Finance: Government of Zambia.
- TP: 1,400+ p.a. RA: partial. NN: not as trainees, but
observers welcome.
- 1 (*) RURAL SKILLS
Ten-week training course in six camps - four for men and two for
women - followed by about two years' participation in development
projects such as road building, forestry, agricultural settlement
for those who wish to settle eventually in co-op. units. Initial
farm training is obligatory for all and includes techniques for cash
and food crops, poultry rearing, animal husbandry, maintenance of
machinery, soil conservation, crop marketing, co-operative
organization. Selected trainees also have trade training and all
have some military training.
- Purpose: Training for self-employment.
- Entry standard: Variable. The scheme is open to all unemployed, unmarried young
people in the age range 16-25.
-
- ZAM 3 Luanshya Youth Development Scheme,
P.O. Box 200, Luanshya.
- Administration: Started in 1967 by the Roan Mpatamutu, Mine Townships Management
Board and Luanshya Municipal Council.
- 1 (*) AGRICULTURE
Training for unemployed youth in mining townships for other work,
including agriculture.
-
- ZAM 4 Family Farms Limited,
P.O. Box 42, Magoye.
- Administration: Initiated by Lee Holland, sponsored by the United Church of
Canada, in co-operation with the Agricultural Development Officer
of Barclays Bank in 1970 as a self-financing organization for

settlement on lands in the southern province purchased from the Government. The scheme was possible because the Bank provided seasonal credit to each smallholder. By the end of the second season, seventy-four farmers had been settled and in 1972 the scheme became a non-profit-making company with the Permanent Secretary of the Ministry of Rural Development as Chairman. Other settlements followed and the original one at Mbaya Musuma was divided into two for administrative convenience. Recently an intermediate technology unit has been set up near Chisekesi for which Christian Aid provides financial assistance.

1 (*) AGRICULTURE

There are no formal courses though training and guidance are given. The system is for an initiator to move into the area identified for settlement with an agricultural assistant, who later becomes the Settlement Adviser. About two years is spent investigating possibilities, studying local conditions, etc. Settlers are chosen by a selection committee and the initiator divides up the settlement land into farms to suit individual requirements and capabilities. With settlement, including laying out of roads, completed the initiator leaves and the Settlement Adviser remains to guide the agricultural practices of the farmers. The central organization provides back-up services including negotiations for credit.

2 (*) RURAL SKILLS

Craftsmen are taught how to make and repair simple tools and equipment at the intermediate technology unit. The intention is that when trained these men will set up repair shops on the different settlements.

Note: The farms have an Intermediate Technology and Mechanization Programme (ITMA) and plans for 1975-78 include continued investigation and introduction of appropriate technology related to agricultural development as well as provision of training of craftsmen, workshop operators, farmers and their sons and employees, fishermen, and for up-grading semi-skilled rural craftsmen.

ZAM 5

Farmer Training Centres,

c/o Director, Department of Agriculture, P.O. Box RW 291, Lusaka.

Administration: Ministry of Rural Development through Department of Agriculture Training Section. There are thirty-eight centres throughout the country, comprising Farm Institutes (8), Farmer Training Centres (27), an Animal Husbandry Centre, a Farm Mechanization Centre and a Horticultural Centre.

Finance: Government of Zambia.

Lan: Eng. (for staff) & local (for farmers). TP: 20-60 per course. RA: yes, capacity 1,229 m. & f. NN: no.

1 (*) RURAL SKILLS

Various short courses of one to two weeks duration in agricultural subjects.

Purpose: To improve knowledge and skills in general and specialized agricultural subjects.

Entry standard: None.

2 (**) RURAL EDUCATION

Various short courses of one to fifteen weeks duration for junior staff.

Purpose: In-service training.

Entry standard: Variable.

- ZAM 6 Fisheries Training Centre, Sinazongwe,
Post Box 9, Sinazeze.
- Administration: Department of Fisheries.
- Finance: Government of Zambia through Ministry of Lands and Natural Resources.
- Lan: Eng. & local. Cal: variable. TP: 210. RA: partial.
 NN: no.
- 1 (*) FISHING
 Basic training course of 4-6 weeks for fishermen. Also six-month advanced training course. Also six-week course in boat handling, outboard motors, marine engines and fish processing.
- Purpose: To improve fishing skills.
- Entry standard: Fishing experience.
- 2 (**) FISHERIES/FISHERIES EDUCATION
 Six-month basic training course for fisheries assistants. Also various six-week refresher courses, three-month course for extension workers, and twelve-month course in marine mechanics - all in-service for assistants in the Department of Fisheries.
- Entry standard: Fisheries experience.
-
- ZAM 7 Fisheries Training Centre, Nchelenge,
P.O. Box 5, Nchelenge.
- Administration: Department of Fisheries.
- Finance: Government of Zambia through Ministry of Lands and Natural Resources.
- TP: 12. NN: no.
- 1 (*) FISHING
 Short basic training courses for fishermen.
- Entry standard: Experience only.
-
- ZAM 8 Fisheries Training Centre, Mwekera,
Post Box Mwekera, Near Kitwe.
- Administration: Department of Fisheries.
- Finance: Government of Zambia through Ministry of Lands and Natural Resources.
- Lan: Eng. & vern. TP: 108 p.a. NN: no.
- 1 (*) FISHERIES
 Six-week course for fish farmers.
- Purpose: To improve fish farming techniques.
- Entry standard: Previous experience, or interest.
-
- ZAM 9 Fisheries Training Centre, Mpulungu,
P.O. Box 112, Mpulungu.
- Administration: Department of Fisheries.
- Finance: Government of Zambia through Ministry of Lands and Natural Resources.
- TP: 20 p.a. NN: no.

1 (*) FISHING

Twelve-month course for fishermen.

Entry standard: Practicial experience only.

ZAM 10

Zambezi Training Farm,
P.O. Chirundu.

Administration: Started in 1970 by the Diocese of Monze in co-operation with the Ministry of Rural Development. The Diocese has other agricultural development projects with some extension work but no structured training.

Finance: Capital costs are shared equally by the Government of Zambia and the Archdiocese of Milan, Italy. The Italian Aid Organization, A.S.I.P., provides qualified irrigation experts or other staff. Except for minor expenditure from Church funds, all running costs are borne by the Government.

Lan: Eng. with interpretation into Nyanja, Shona or Tonga.
TP: 25. RA: yes, for 10 married, 15 single. NN: no, but observers welcomed.

1 (**) IRRIGATION AGRICULTURE

One-year certificate course in irrigated cultivation of bananas, paw-paws, pineapples, tomatoes, and vegetables. Practical training for farmers on small plots (about one hectare) provided for them on successful completion of the course, with follow-up technical assistance and provision of cheap seeds, fertilizer, insecticides, etc., as well as common marketing.

Entry standard: Primary School Leaving Certificate.

ZAM 11

President Citizenship College,
P.O. Box 415, Kabwe.

Administration: College Council of Trustees.

Finance: Government of Zambia and private organizations.

Lan: Eng. & local. Cal: Jan/Dec. TP: 64. RA: yes. NN: yes (by special arrangement).

1 (**) CO-OPERATIVE EDUCATION

Various courses from one to twenty-two weeks for staff of co-operatives in political and social education; economics and development; co-operative education; industrial relations. The College also runs seminars, workshops and conferences.

Purpose: Staff development.

Entry standard: Variable.

ZAM 12

Zambia Co-operative Centre,
P.O. Box 629, Luanshya.

Administration: Ministry of Rural Development.

Finance: Government of Zambia.

TP: 50. RA: yes. NN: no.

1 (**) CO-OPERATIVE EDUCATION

Short courses for co-op. leaders and departmental staff in principles of the co-op. movement and in government procedures.

Zambia

- ZAM 13 Kalulushi Farm College,
c/o Mindolo Ecumenical Foundation, P.O. Box 5, Kalulushi.
- Administration: Director, through Board of Governors, and the Ministry of Rural Development.
- Finance: Government of Zambia, and private finance.
- Lan: Eng. & local. Cal: Aug/Sep. TP: 49 p.a. RA: yes
 (29 single, 20 married). NN: no.
- 1 (**) AGRICULTURE
 Two years basic training in farming after five months probation.
 First year work is in groups and covers vegetables, pigs, poultry and theory. Second year work is on individual plots, living on own produce. Successful trainees stay for a third year before joining Ipafu Settlement.
- Purpose: To train farmers for settlement and work on own farms.
- Entry standard: At least two years' secondary schooling but agricultural experience will be considered.
-
- ZAM 14 Chipembi Farm College,
P.O. Box 38, Chisamba.
- Administration: Started in 1964 and administered by the United Church of Zambia with co-operation of Government Departments.
- Finance: Church and Government funds.
- Cal: Aug/Sep. TP: 40 p.a. RA: yes. NN: no.
- 1 (**) AGRICULTURE
 Three-year course in mechanized mixed farming with practical training on plots, mainly in the cultivation of maize, cotton, vegetables, and in animal husbandry, poultry, farm management, tractor use, dairy work.
- Purpose: To train farmers to work on the Kalola Settlement Scheme, a Government-supported farming project, or on other settlements, or to work on own farms.
- Entry standard: Full Form III certificate, age range 18-35. Men and women with primary education but who are potential commercial farmers may be considered.
-
- ZAM 15 Nkumbi International College,
P.O. Box 6XK, Kabwe.
- Administration: Department of Technical Education and Vocational Training, Lusaka. The College was set up as a secondary school for refugees.
- Finance: Aid from international agencies and Government of Zambia.
- Cal: Jan/Dec. TP: 500 m. & f. RA: yes. NN: yes.
- 1 (**) AGRICULTURAL MECHANICS
 Mainly general education but combining two-year course for Tradesman in Agricultural Mechanics (certificate is awarded only after completion of a year's practical work). Also two years for Tradesman in Automotive Mechanics.
- Entry standard: Two or three years' secondary education.

- ZAM 16 Zambia College of Agriculture,
P.O. Box 53, Monze.
- Administration: Ministry of Rural Development.
- Finance: Government of Zambia.
- Cal: Oct/Jun. TP: 250, incl. 30 women. RA: yes. NN: yes (by special arrangement).
- 1 (**) AGRICULTURE
Two years for Certificate in Agriculture.
- Purpose: Mainly in-service training for field staff of the Ministry and recently for the Rural Reconstruction Programme.
- Entry standard: At least three years' secondary education, including English, maths and a science, plus one year of practical experience.
- 2 (**) VETERINARY SCIENCE
One-year foundation course for veterinary assistants.
- Purpose: Mainly pre-service training for field staff.
-
- ZAM 17 Mpika College of Agriculture,
P.O. Box 143, Mpika.
- Administration: Training Section of the Ministry of Rural Development.
- Finance: Government of Zambia.
- Cal: Sep/Aug. TP: 36 (to be expanded). RA: yes. NN: no.
- 1 (**) AGRICULTURE/LIVESTOCK
Two-year certificate courses for agricultural assistants and for stock assistants.
- Purpose: Mainly training for field staff. Some trainees go into agro-industries.
- Entry standard: Three years' secondary education including passes in English, maths and science, and one year's practical experience.
-
- ZAM 18 Mazabuka Veterinary Training School,
P.O. Box 237, Mazabuka.
- Administration: Ministry of Rural Development.
- Finance: Government of Zambia.
- Cal: Sep/Dec, Jan/Mar, Jun/Aug. TP: c. 20 p.a. men only.
RA: yes. NN: no.
- 1 (**) VETERINARY SCIENCE
One-year foundation course for veterinary assistants. This is largely practical under the supervision of a qualified Veterinary Officer, and is followed by a two-year course in theory and practice of agriculture at the Zambia College of Agriculture (ZAM 16).
- Purpose: To train staff for veterinary service. The best graduates from this course may be sent on to the Livestock Science and Animal Production course at the Natural Resources Development College (ZAM 19) as in-service students (after attaining two GCE 'O' levels plus at least two years' field experience).
- Entry standard: Full Form III Secondary School Certificate, including English, maths and science. Age range 18-25.

Zambia

- ZAM 19 Natural Resources Development College,
P.O. Box Ch. 99, Chelston, Lusaka.
- Administration: Training Section of the Ministry of Rural Development.
- Finance: Government of Zambia.
- Cal: Sep/Dec, Jan/Apr, May/Aug. TP: c. 500. RA: yes.
NN: yes.
- 1 (**) SUNDRY
Various three-year diploma level courses. Year 1 covers basic and applied sciences, economics, accounts, agricultural engineering. Specialization in years 2 and 3 in a variety of subjects including: livestock science and animal production, agriculture, agricultural engineering, water development, agricultural business management, agricultural science education and nutrition (for women only). The courses are both theoretical and practical.
- Purpose: Training for technical staff for various Government departments.
- Entry standard: School Certificate with three 'O' level passes including maths and one science. Entry is competitive.
-
- ZAM 20 Zambia Forest College,
P.M.B. Mwekera, Kitwe.
- Administration: Ministry of Lands and Natural Resources.
- Finance: Government of Zambia.
- Cal: Jan/Dec. TP: 44 men only. RA: yes. NN: yes (by special arrangement).
- 1 (**) FORESTRY
Two years for Certificate for Forest Ranger.
- Purpose: Pre-service training for Forestry Department.
- Entry standard: Form II Secondary Certificate.
- 2 (**) FORESTRY
Two years for Diploma in Forestry.
- Purpose: Pre-service training for Forestry Department.
- Entry standard: GCE 'O' level in five subjects.
- 3 (**) FORESTRY
Various refresher and re-training courses of six weeks to six months duration for Forestry Department employees.
-
- ZAM 21 Institute of Technology,
P.O. Box 658, Kitwe.
- Administration: Department of Technical Education and Vocational Training.
- Finance: Government of Zambia.
- TP: 825 (all courses). RA: yes. NN: yes (by special arrangement).
- 1 (**) SURVEYING
Two-year certificate and three-year diploma courses in surveying.
- Entry standard: GCE 'O' level in five subjects.

<u>ZAM 22</u>	<u>University of Zambia,</u> P.O. Box 2379, Lusaka.
Administration:	Founded in 1965, largely autonomous. There is a Rural Development Studies Bureau and there are Departments of Rural Economy and Extension Education, and Agricultural Engineering, within the School of Agricultural Science. The University has been host for a Commonwealth Seminar on Agricultural Development.
Finance:	Government of Zambia. Cal: Oct/Dec, Jan/Mar, Mar/Jul. TP: 2,600 total incl. 90 in Sch. of Agric. Scis. RA: yes. NN: yes. 1 (**) AGRICULTURE Four years (including 1½ years studying natural sciences) for B.Sc.Agric. in animal science, crop science, rural economy and extension education, soil science, farm mechanization and land planning, and for B.Sc. in biology.
Purpose:	Mainly to produce agricultural generalists to become agricultural officers in the Department of Agriculture and to work in agro-industries.
Entry standard:	Five GCE 'O' levels including maths, a science and English, or equivalent credits in School Certificate.

KENYA

Agriculture is likely to be the main source of employment in Kenya for many years. Land reform and revision of tenure has been a basic factor in agricultural development over the last ten-year period: many large holdings previously farmed by expatriates have been reorganized through Shirika (Co-operation) Schemes, whereby each participant receives a plot of about one hectare for his own use, and draws a wage for working on the main farm under the direction of a manager. By 1974 43,000 hectares were under Shirika settlement. It is expected that some 350,000 new agricultural small-holdings will be created by 1978, the state-owned farms providing essential supporting services - in seed production and improved strains of livestock, for instance. Organizations such as the Agricultural Development Corporation and the Kenya Tea Development Authority have been important in developing improved varieties and techniques. The National Christian Council of Kenya is involved in several development schemes - such as the Growth Centres in Northern Kenya, to encourage settlement by pastoral tribes.

Agricultural development goals are clearly outlined in Kenya's Third Plan (1974-78): achievement of a significant growth of marketed production through intensified land use; improvement of the distribution of rural income by increasing the proportion of farmers producing cash crops; development of less favoured areas; increase in agricultural exports. Success in the development effort depends to a great extent on manpower with the right skills, so very high priority is given to training and extension programmes aimed at helping the farmer community to take up better agricultural methods.

To facilitate this, a new Extension and Training Division has been created within the Ministry of Agriculture and a new Faculty of Agriculture has been established at the University of Nairobi, while its Faculty of Veterinary Science has been expanded. The Extension Services employ more than 6,000 people and absorb the largest part of the Ministry of Agriculture's budget. The Training Division covers six programmes: i) intermediate agricultural education, to provide sub-professional staff for the agricultural and veterinary services; ii) large-scale farmer training, at the Farmer Training Centres at Eldoret and Thompson's Falls (Nychururu); iii) small-scale farmer training at 34 Farmer Training Centres; iv) range training, in particular to develop the semi-desert quarter of Kenya which receives too little rain to be fully productive; v) in-service training programmes for junior agricultural assistants and specialized extension for farmers' wives and rural youth; and vi) training and demonstration farming at the two residential district development centres.

The Third Plan includes increased facilities for training in forestry, including new plantation programmes and more saw mills. It covers restocking of inland lakes and rivers as well as extension programmes for full- and part-time fishermen and for fishermen/farmers, bearing in mind the particular need to introduce training without upsetting work routines.

Emphasis now is on district development through local committees. The "Harambee" (let us pull together) spirit is particularly evident in self-help activities in rural areas. Co-operative societies play a highly significant role in development. By 1974 there were over 1,000 co-operatives with a total membership of nearly 500,000. Programmes for the development of co-operatives are based on the Kenya Co-operative College at Langat, which operates correspondence courses as well as regular staff training, and which also runs training programmes through the Farmer Training Centres.

Kenya

Until recently the main cash crops such as coffee and tea were limited to large-scale farms but now they are successfully produced on smallholdings, which also contribute significantly to dairy production. Agricultural production has already risen through the encouragement of other labour-intensive crops, such as pyrethrum and maize, and horticulture.

Since Kenya's independence, there has been a big expansion in educational institutions, while curricula have been made more relevant to the country's needs by increasing the emphasis on technical, practical and scientific studies. The Third Plan provides for a number of projects to facilitate agricultural teaching at the secondary level. Schools in areas of large-scale agriculture provide for the teaching of mechanized farming, while in areas of small-scale agriculture the emphasis is on techniques for small-holders. A new secondary school at Kitale will specialize in agricultural mechanics.

The National Youth Service, run by the Ministry of Labour, and the Youth Development Programme of the Ministry of Co-operatives and Social Services - through its Village Polytechnics - are enlarging agricultural training programmes and providing a much higher standard of rural education. These are supported by organizations like the Association of Youth Clubs and the 4 K Clubs, who aim to encourage youth to remain in rural areas by improving their skills and thus enhancing their employment opportunities.

KEN 1

Association of Youth Clubs,

Department of Community Development and Social Services,
P.O. Box 30276, Nairobi.

Administration: Started in 1957 and administered locally under general control of the relevant government department.

Finance: Self-supporting.

TP: 13,000 members in 170 centres (not only rural). RA: no.

1 (*) AGRICULTURE

The rural youth clubs have various training programmes in agriculture and animal husbandry.

Purpose: To improve employment opportunities.

Entry standard: None. Many participants are unemployed; age range 14/25.

KEN 2

4 K Clubs,

Officer i/c 4 K Programme, Ministry of Agriculture,
P.O. Box 30028, Nairobi.

Administration: Ministry of Agriculture.

Finance: Mostly self-supporting.

TP: c. 25,000 members in 850 branches. NN: no.

1 (*) RURAL SKILLS

Agriculture extension workers assist in local community youth clubs by giving informal training in a variety of rural skills, including vegetable growing, poultry and rabbit keeping, etc.

Purpose: To encourage youth to remain in rural areas, and improve their skills.

Entry standard: None.

- KEN 3 Youth Development Programme (Village Polytechnics),
 c/o Principal Youth Officer, Department of Social Services,
 P.O. Box 30276, Nairobi.
- Administration: Started in 1970 by the Ministry of Co-operatives and Social Services with local committees and U.N./I.L.O. assistance. There are now 120 or so Village Polytechnics and a Village Polytechnic Research and Training Centre at Karen, established with a grant from UNICEF.
- Lan: local. NN: not as trainees, but observers welcome.
- 1 (*) RURAL SKILLS
 The programme provides flexible courses for job training, including village technology and aspects of agriculture, on a variety of projects, on lines developed from 1966 by the National Christian Council of Kenya. The Soy Village Polytechnic, for instance, provides apprenticeship training by local craftsmen, and there are Senior Youth Centres at Kipterer and Kaitheri with good programmes for craft training.
- Purpose: Development of rural skills.
- Entry standard: None, though most participants have some primary education.
- KEN 4 Farmer Training Centres,
 c/o Extension and Training Division of the Ministry of Agriculture, Nairobi.
- Administration: Ministry of Agriculture. Rural training centres were first established in the period 1964/74 linked to the Land Reform Policy, by which large areas previously farmed by expatriates were transferred to Kenyan/African farmers usually on comparatively small holdings. There are now 34 Farmer Training Centres.
- 1 (*) AGRICULTURE
 Short training courses of about one week's duration for small scale farmers.
- Purpose: To introduce farmers to modern farming techniques.
- KEN 5 Samburu Rural Development Centre,
 Maralal, Nakuru.
- Administration: Anglican Diocese of Nakuru. This started with a demonstration ranch in 1972 to indicate to the nomadic people of the region that controlled use of pastures and improved breeding produced superior herds.
- Finance: Church funds, with help from Oxfam and other international agencies.
 NN: not as trainees, but observers welcome.
- 1 (*) ANIMAL HUSBANDRY
 Originally local people were encouraged to visit the Centre (to purchase stock or supplies, etc.) and to accept follow-up visits by staff (to demonstrate animal care, for instance). Some short courses in rudimentary knowledge of animal health, forestry and ranching have since been given at the local secondary school. From 1975 the post of the Assistant Director has carried responsibility for extension work with the object of encouraging nomadic tribesmen to become progressive ranchers, and this aspect is expected to expand.

Kenya

KEN 6

Kenya National Youth Service,
P.O. Box 20397, Nairobi.

Administration: Started in 1964 by the Ministry of Labour.

Finance: Government of Kenya.

TP: 2,000 p.a. RA: yes. NN: no.

1 (*) RURAL SKILLS

Two months basic training mainly in agriculture for young men and women aged 16-30 before employment for two years (extensible to three or four) on development projects on farms and ranches belonging to the Service. The employment includes continued training and education.

Purpose: To provide rural employment.

Entry standard: Most participants have primary education.

Note: Kenya's Third Plan provides for the expansion of the National Youth Service to 5,600, and the Ministry of Labour is undertaking a major irrigation and settlement project to provide employment opportunities in small scale agriculture for school leavers.

KEN 7

Maasai Rural Training Centre,
P.O. Isinya, Kajiado.

Administration: Diocese of Nairobi of the Church of the Province of Kenya, with the full co-operation of the Kenya Government mainly through the Training Division of the Ministry of Agriculture and the District Commissioner. The whole project includes a training section, extension work, a ranch and a tannery, the Isinya Village Polytechnic and three other extension centres, and it employs over 250 people including 30 Kenya Government staff such as teachers, veterinary and range management staff.

Finance: Church funds, missionary societies, charities and trusts including Oxfam, Christian Aid, etc.

TP: c. 140. RA: no. NN: not as trainees, but observers welcome.

1 (**) RANGE MANAGEMENT

In 1974 the centre ran a one-year course from June to April in principles and practice of range management, including animal health, animal production, farm records, agriculture, hides and skins improvement.

Purpose: To provide young men with modern ranching techniques. Most proceed to jobs as ranch foremen or assist their fathers on family ranches.

Entry standard: Full primary education.

2 (*) ANIMAL HUSBANDRY

Various short courses of 6-14 days covering good ranching methods: for example, land use and animal husbandry, crop husbandry and simple economics. About six courses a year.

Entry standard: None, though most participants have some education and all have experience of range work.

3 (*) HORTICULTURE

Attached to the Centre is a two-acre plot to grow food for the courses and also to demonstrate to the Maasai, who are herdsmen, the need for cultivation.

4 (*) SUNDRY

The Village Polytechnic programmes include masonry, carpentry, metal work and motor vehicle maintenance. Extension work from the Centre includes demonstrations of the use of vaccines, care of livestock, supervision of dips, etc.

KEN 8

Limuru Boys' Centre,

P.O. Box 2, Limuru.

Administration: Started in 1968 and administered by the Ministry of Education.

Finance: Government of Kenya with assistance from International Aid organizations.

TP: 12 p.a. RA: yes. NN: not as trainees, but observers welcome.

1 (**) AGRICULTURE

Two-year residential course in agriculture and modern farming methods, animal husbandry, farm mechanics, with practical training on the Centre's farm.

Purpose: Training for school leavers.

Entry standard: Primary school education.

KEN 9

YWCA Vocational Training School,

Limuru.

Administration: YWCA. A programme of this kind has been running for over ten years though not always at Limuru.

Finance: Fees paid by students are minimal so the courses are heavily subsidised from YWCA funds.

TP: 36 girls. RA: yes. NN: not as trainees, but observers welcome.

1 (**) RURAL SKILLS

Two-year course of training including a high proportion of practical work in fruit and vegetable production, rearing of small livestock, nutrition and general home economics, for an examination set by the UK National Council of Domestic Studies.

Purpose: To improve rural living standards.

Entry standard: Full primary education (= 6-9 years schooling).

KEN 10

Nakuru Secondary Technical School,

P.O. Box 661, Nakuru.

Administration: Ministry of Education.

Finance: Government of Kenya.

Cal: Jan/Dec. TP: 540 m., 160 f. (total in school).

1 (**) SURVEYING

Course in surveying, taken as an option in the general secondary education course.

Entry standard: Full primary education.

Kenya

- KEN 11 Young Farmers Clubs of Kenya - Young Farmer Training Scheme,
c/o Agricultural Society of Kenya, P.O. Box 478, Nakuru.
- Administration: Council of the Society.
- 1 (*) AGRICULTURE
Two-year course in agriculture with one year's practical work on two different farms. Also one-year course in farm management. Various school holiday courses for secondary school pupils.
- Purpose: To encourage young men to enter farming. The one- and two-year courses are associated with the National Agricultural Training Institute.
- Entry standard: Mainly post-secondary - age range 16-25.
-
- KEN 12 Thika Secondary Vocational School,
P.O. Box 91, Thika.
- Administration: Ministry of Education, which organizes five other secondary vocational training schools giving four-year pre-technical courses.
- Finance: Government of Kenya.
Cal: Jan/Nov.
- 1 (*) AGRICULTURAL MECHANICS
Four-year course for the East African Certificate of Education in agricultural mechanics.
- Purpose: To provide basic training for mechanics for agriculture.
- Entry standard: Junior School Certificate.
-
- KEN 13 Narosurra Farm Mechanization Training Scheme,
Narosurra.
- Administration: Ministry of Agriculture.
- 1 (*) FARM MECHANIZATION
Three-month course in farm mechanization.
-
- KEN 14 Fisheries Training School,
P.O. Box 90423, Mombasa.
- Administration: Fisheries Department of Ministry of Tourism and Wild Life.
- Finance: Government of Kenya.
TP: 15. NN: no.
- 1 (*) FISHERIES
Six-month course for fishery assistants and three-month course for fishery scouts.
- Purpose: To train assistant staff for the Fisheries Department.
-
- KEN 15 Co-operative College of Kenya, Langata,
Ushirika Road, P.O. Box 24814, Karen, Nairobi.
- Administration: Ministry of Co-operatives and Social Services. Started in 1967 and expanded in 1971.
- Finance: Government of Kenya.
TP: 25-30 per course. RA: yes, for 168. NN: yes, if sponsored by international bodies.

1 (**) CO-OPERATIVE MANAGEMENT

Three-month basic course in administration, book-keeping, management, for middle management staff of co-ops.

Entry standard: Pass in correspondence course in co-ops. For employees of the Co-operative Movement.

2 (**) CO-OPERATIVE MANAGEMENT

Further three months in administration, book-keeping, management, being a continuation of the basic course, taken after six months' further job experience.

3 (**) CO-OPERATIVE ADMINISTRATION

Nine months for Certificate in Co-operative Administration, being an advanced course for job management staff of the Co-operative Movement and for extension staff of the Co-op. Department.

Entry standard: School Certificate 'O' level.

4 (**) CO-OPERATIVE MANAGEMENT

Two years for Diploma in Co-operative Management, being an advanced course for extension staff of the Co-op. Department.

Entry standard: School Certificate 'A' levels (two passes or one principal pass).

KEN 16

Bukura Institute of Agriculture,

Bukura, Western Province.

Administration: Ministry of Agriculture.

Finance: Government of Kenya.

Cal: May/Mar. TP: 250. RA: yes. NN: no.

1 (**) AGRICULTURE

Two-year certificate course in general agriculture.

Purpose: To train assistants for agricultural service.

Entry standard: East African Certificate of Education.

2 (**) OX-TRAINING

The Institute has an ox-training course as part of the investigations into appropriate technology in Kenya, which is run jointly by the National Christian Council of Kenya, the Institute of Development Studies and the Faculty of Agriculture of the University of Nairobi.

KEN 17

Embu Institute of Agriculture,

P.O. Box 6, Embu.

Administration: Ministry of Agriculture.

Finance: Government of Kenya.

Cal: May/Apr. TP: 250. RA: yes.

1 (**) AGRICULTURE

Two-year certificate courses in general agriculture for men, and in agriculture with home economics for women. The general agriculture course covers animal production, crop production, farm management, farm mechanization, soil conservation and survey.

Purpose: To train staff in agricultural services, and to improve standards of agriculture.

Entry standard: East African Certificate of Education with good standards in science subjects.

Kenya

- KEN 18 Egerton Agricultural College,
Private Bag, P.O. Njoro.
- Administration: Ministry of Agriculture.
- Finance: Government of Kenya.
- Cal: May/Apr. TP: 620. RA: yes. NN: yes (limited).
- 1 (**) SUNDRY
Three-year diploma courses in agricultural engineering;
agricultural education; agricultural and home economics; general
agriculture; dairy technology; horticulture; animal husbandry;
range management; and farm management.
- Purpose: To provide technical training in agricultural subjects.
- Entry standard: Full secondary education.
-
- KEN 19 Animal Health and Industry Training Institute (A.H.I.T.I.).
P.O. Box 29040, Kabete.
- Administration: Ministry of Agriculture with F.A.O. and U.N.D.P. participation.
- Finance: Government of Kenya.
- Cal: May/Mar. TP: 250 full-time, 120 part-time. RA: yes.
NN: no (though trainees from Lesotho have been accepted).
- 1 (**) SUNDRY
Two-year certificate course in animal health and range management.
Also six-month courses in hides and leather technology, and short
courses in artificial insemination. Other in-service courses, for
example in sheep management, as needed by Ministry of Agriculture.
- Purpose: To train veterinary assistants and technicians for industries based
on animal products.
- Entry standard: East African Certificate of Education with good passes in some
sciences and maths.
-
- KEN 20 Dairy Training School,
Naivasha.
- Administration: Ministry of Agriculture.
- Finance: Government of Kenya.
- RA: yes.
- 1 (**) DAIRY MANAGEMENT
Six-month residential course in dairy management.
- Purpose: To train sub-professional staff for technical officer grades in
agricultural and veterinary services.
- Entry standard: East African Certificate of Education with good standards in science
subjects.
-
- KEN 21 Meat Inspectors Training School,
Athi River.
- Administration: Ministry of Agriculture.
- Finance: Government of Kenya.
- RA: yes.

1 (**) MEAT INSPECTION

Five-month residential course in meat inspection.

Purpose: To train staff for sub-professional grades in Ministry of Agriculture service.

Entry standard: East African Certificate of Education with good standards in science subjects.

KEN 22 Kenyatta University College,
P.O. Box 43844, Nairobi.

1 (**) RURAL EDUCATION

The Department of Home Economics of the University College has teacher training courses in food and nutrition and in rural development for secondary school teachers, since 1972.

KEN 23 Forestry Training School,
P.O. Box 8, Londiani.

Administration: Established in 1957 by the Ministry of Agriculture and Natural Resources.

Finance: Government of Kenya.
TP: 30 p.a. RA: yes.

1 (**) FORESTRY

Two-year certificate course in forestry management, forestry protection, measurement, silviculture, surveying and elementary engineering. Also a one-year diploma course at a more advanced level.

Purpose: To produce technical and administrative field staff for the Forestry Department at the sub-professional level.

Entry standard: For certificate course, school leavers with 'O' levels or junior employees in Forestry Department; for diploma course, forest rangers with field service experience.

KEN 24 Kenya Polytechnic,
P.O. Box 30214, Nairobi.

Administration: Ministry of Education.

Finance: Government of Kenya.
Cal: May/Aug, Sep/Dec, Jan/Apr. TP: 400 full-time, 2,500 part-time (in Polytechnic). RA: yes.

1 (**) SURVEYING

One-year diploma and certificate courses in land surveying.

2 (**) MARINE ENGINEERING

Seven-term certificate course in marine engineering.

Entry standard: Credits in School Certificate or passes in GCE 'O' level or equivalent in relevant subjects.

KEN 25 University of Nairobi,
P.O. Box 30197, Nairobi.

Administration: As the University College of Nairobi, it was part of the University of East Africa, but it became an autonomous university in 1970. There are faculties of Agriculture, Engineering, Science, and Vet. Science, and also a University Institute of Development Studies.

Kenya

Finance: Government of Kenya.

Cal: Sep/Dec, Jan/Mar, Apr/May. TP: 4,000 in univ. incl. 120 in Fac. of Agric. and 180 in Fac. of Vet. Sci. RA: yes. NN: yes.

1 (***) SUNDRY

First degree courses: three years for B.Sc.Hons. in botany and zoology, for B.A. in land economics, for B.Sc.Eng. in land surveying, for B.Sc. in food and nutrition and for B.Sc.Agric.; four years for B.V.M. in veterinary medicine.

Purpose: To provide the country with graduate experts.

Entry standard: East African Advanced Certificate of Education with the equivalent of five GCE passes including at least two at 'A' level (more are required for certain courses and they need to be in relevant subjects).

2 (***) SUNDRY

A number of higher degree courses, including a three-year postgraduate course for M.Sc. in wild life ecology.

Entry standard: Appropriate first degree.

3 (***) RURAL DEVELOPMENT

The Institute of Development Studies assists with the Tetu District Special Rural Development Programmes, which includes training for extension officers, linking their work to 4 K projects, to interest youth in the production of high protein foods. The Institute also has training for social scientists in subjects related to rural development and agriculture. (See also KEN 16/2).

MAURITIUS

The economy of Mauritius is characterized by a heavy dependence on the production of sugar from cane, which accounts for about 90% of the cultivated land area and of its export earnings. This monoculture dependence is accompanied by a reliance upon imports for the supply of most of its staple foods. Conscious of this unhealthy economic situation, the Government embarked some years ago on a policy of diversification, both industrial and agricultural. Industries, mainly of the processing nature, and tourism have grown significantly in recent years.

In the agricultural sector, policy strategy aims at an intensive use of the land area for food production. This increase in food production derives mainly from the intensive use of sugarcane interlines and of fallows between cane rotations, so does not affect adversely the area under cane. Very recently, the "grow-more-food" policy has been worked up into a planned production programme with the co-operation of primary producers.

The Extension Division, an arm of the Ministry of Agriculture, is responsible for the promotion of progressive changes for adoption by farmers. For this purpose, it maintains personnel specializing in the crop or livestock fields. It is involved in individual field visits, group work and in making use of the mass media of TV, radio and the printed word.

A notable development in the context of rural development has been the Rural Development Programme of the Ministry of Planning and Economic Development, which has the objective of bettering the quality of life in the villages. The Government is concurrently promoting the creation of industries in the rural sector.

Formal training in agriculture is given by the University of Mauritius, which absorbed the long-established College of Agriculture in 1968. The University courses are development-oriented, the main purpose being to promote research and training in agriculture, sugar technology, public administration, etc. Hence the University organises many short in-service courses to meet immediate needs of Government and other employers. As yet, little or no agricultural education exists in the lower stages but, in the effort to fight disaffection from agriculture, initiation to agriculture in primary schools supplemented by training in secondary schools is under study by the Government.

MRS 1

Young Farmers Clubs (N.F.U.F.C.),

Ministry of Education and Cultural Affairs, Port Louis.

Administration:

The Ministry of Education provides the central administration. The first clubs started in 1962 and 60 were formed in the next ten years.

Finance:

Government of Mauritius and grants from Oxfam.

Lan: various indigenous. TP: about 1,000. RA: no.

1 (*) AGRICULTURE

Apart from the training given in regular club activities, the N.F.U.F.C. runs general agricultural training courses usually lasting twelve weeks.

2 (*) FISH FARMING

The N.F.U.F.C. set up the first successful fish farm and runs

two-month training courses for young farmers.

Entry standard: None except interest in agriculture and access to land.

Purpose: To encourage farmers' children to start their own projects as well as helping on family farms, and to assist them to acquire skills and knowledge.

MRS 2 University of Mauritius,
Rduit.

Administration: Largely autonomous. Established 1965. There are three Schools, of Agriculture, Administration, and Industrial Technology. The School of Agriculture has a link with the University of Reading (U.K.)

Finance: Government of Mauritius.

Lan: English and French. Cal: Sep/Dec, Jan/Apr, Apr/Jul.
TP: (in univ.) 875. RA: no. NN: yes.

1 (**) SUNDRY

Various part-time certificate courses: twenty-eight weeks for sugar analysis; one year for land surveying and co-operative studies; two years for sugar cane production and sugar manufacture; three years for sugar manufacture.

Entry standard: Various according to the course but generally some experience in the industry is required.

2 (**) SUGAR TECHNOLOGY

A five-month course (sponsored by UNIDO) in sugar cane technology, covering agricultural engineering, cane production, process control, etc.

Entry standard: Practical experience in the industry.

3 (**) AGRICULTURE/SUGAR TECHNOLOGY

Three-year full-time diploma course in agriculture and sugar technology.

Entry standard: Five GCE 'O' levels, or equivalent, including English language.

4 (**) SUNDRY

Part-time diploma courses: two years for Diploma in Co-operative Studies; three years for Diploma in Land Surveying.

Entry standard: Five GCE 'O' levels, or equivalent, including English language.

5 (***) AGRICULTURE/SUGAR TECHNOLOGY

First degree courses, 3-4 years full-time, for B.Sc.(Hons)(Agric.) and for B.Sc.(Hons)(Sugar Tech.), including practical training, usually on the university farm and on sugar factories.

Entry standard: Two GCE 'O' levels and two GCE 'A' levels. 'O' level in English language is compulsory.

6 (***) AGRICULTURE

Higher degrees - M.Phil/Ph.D (by thesis) - in certain areas of agriculture.

Entry standard: Appropriate first degree or equivalent status.

TANZANIA

Agriculture is the backbone of the Tanzanian economy, accounting for about 40% of monetary and subsistence GDP and for almost 80% of exports. Principal crops are coffee, cotton and sisal, with cashew nuts, tea and tobacco also being important.

Much of the agriculture is on smallholdings, the majority of the population being outside the wage employment sector, relying on peasant agriculture for their living. The rural development policy is therefore aimed at expanding agricultural output by improving the skills of village farmers. Alongside it, the educational policy of "education for self-reliance", adopted in 1967, aims at preparing youth for worthwhile employment in a largely rural society. An organized adult education campaign, working through district adult education officers, follows the same principle of integrating learning with working. An increase in the volume of production per acre is already being achieved through this emphasis on better training and education.

Important changes in rural organization have included the establishment of a few large, publicly owned, usually mechanized, farms, and the creation of Ujamaa villages, where individual smallholders are brought together for co-operation. Such villages are intended to become economic, social and political entities running their own schools and working together for improvements in their own living conditions.

There are seventeen farmer training courses to improve the skills of farmers in Ujamaa villages, as well as projects like the Lushoto Integrated Development Project, run by the Community Development Trust Fund of Tanzania and a German foundation, which includes agricultural extension service and in 1973 trained over 2,500 farmers in 70 Ujamaa and co-operative groups. There are many vocational schemes, such as the National Industrial Apprentice Training Scheme which provides craft training in rural areas through mobile units, and the National Service Cottage Industry Training Programme, which trains youths from Ujamaa villages, concurrently with production activities, in subjects such as masonry, carpentry, welding and agro-mechanics. The Folk Development Centres (formerly Rural Training Centres - 34 in 1973 with a residential capacity of 1,500 and providing courses for over 10,000 trainees) are intended to act as a base for training in all rural skills. There is an emphasis on non-mechanical improvements, since many of the smaller co-operative villages have inadequate facilities for tractor maintenance, and several ox-training centres have been established.

The two main objectives of the education for rural development policy are to make schools an integral part of the community, and to prepare pupils for a life of service to the community, bearing in mind that their standard of living will depend mainly on the level of productivity they attain in rural activity. This has meant retraining and reorientation of teachers, and has led to the attempt to make all schools economic as well as social and educational communities. Most schools now have farms or workshops attached to them, some farms being run on a co-operative basis. Thus agriculture is now part of primary and secondary teacher training, and two colleges of national education have specialist agricultural courses, training teachers for secondary schools that have a particular agricultural bias.

National Service, which is compulsory for all young people who receive senior secondary or post-secondary education, is also significant for agriculture since it runs farms, builds roads and carries out other productive activities.

Tanzania

Tanzania's aim is to achieve self-sufficiency by 1980 in high and middle level manpower. The Ministry of Agriculture has expanded training facilities for field assistants. At the diploma level, five training institutes provide three-year full-time courses as well as in-service training. The forestry school provides in-service training, certificate and diploma courses, and two institutes provide training for fisheries field officers. Degree courses are provided at the University of Dar es Salaam.

TAN 1

Buhemba Rural Aid Centre,
P.O. Box 160, Musoma.

Administration: Started in 1965 by the Anglican Diocese of Victoria Nyanza and staffed largely by the NZ Christian Mission Society, as well as by Tanzanian nationals. The centre also provides an advisory extension service, loan of equipment, store for the provision of scarce supplies, welding workshop for machinery repair, etc. There is an experimental farm of 900 acres for cattle breeding, testing of improved crop seeds.

Finance: Tanzanian Government and Aid Agencies such as Christian Aid.
Lan: Swahili. TP: 3,385 over first 10 years. RA: yes. NN: no.

1 (*) AGRICULTURE - GENERAL
Short courses of 1-3 weeks in basic agriculture, mainly for farmers in Ujamaa villages. Also short courses in nutrition, hygiene, etc. for village women.

Entry standard: Selection by Government officers through local village committees.

2 (**) AGRICULTURE - GENERAL
There was a successful experimental course in 1974 for young farmers giving 6½ months mainly practical training on 4-acre plots, with extended follow-up. It is hoped that such courses can become regular.

TAN 2

Kibaha Education Centre,
Kibaha.

Administration: Jointly by Ministries of Education, of Agriculture & Co-operatives, and by Regional Administration and Rural Development. The Centre has a secondary school, a Health Centre with courses in Nutrition and an Agricultural Training Centre.

Finance: Government of Tanzania.
Cal: Jan/Dec. Lan: Swahili. RA: yes.

1 (*) AGRICULTURE
Agricultural training at various levels is provided for farmers.
TP: 500 p.a.

2 (**) SUNDRY
Unemployed youth are trained at the School of Rural Technical Skills and Crafts, also a section of the main Centre.

TAN 3

Kilacha Production and Training Centre,
Homi, Nr. Moshi.

Administration: Diocese of Moshi on land granted by the Government and with assistance from Oxfam, YMCA, CAA etc.
RA: some.

1 (*) RURAL DEVELOPMENT
There is a production centre run as a commercial enterprise growing

various crops for sale; the proceeds will finance a training/community development section. Apart from providing income from sales, the production centre is intended to develop new crop varieties and small industries making incubators, poultry feeders, etc.

A Dutch organization is providing an educator to survey the kind of training courses needed. Some are likely to be six months or less in duration, and to concentrate on one or two topics. Many participants will attend daily.

Purpose: To increase agricultural production.

Entry standard: Experience only.

TAN 4 Agricultural College,
Mahiwa, Masasi.

Administration: Started in 1964 by the Diocese of Masasi.

Finance: Church funds and TANU.

TP: 60 p.a.

1 (**) AGRICULTURE - GENERAL

The college is now used by TANU for party training. Some training in agriculture is provided, this being an essential part of the ideology.

TAN 5 Ministry of Commerce and Industries,
Azimio Cottage Industries Training Centre, P.O. Box 481, Tabora.

Administration: Ministry of Commerce and Industries.

Lan: Swahili.

1 (**) SUNDRY

One-year courses, arranged for UNIDO, in subjects such as mechanics, carpentry, blacksmithy, handloom and weaving for women.

Entry standard: Class seven and above.

TAN 6 YMCA Farm School for Youth,
Marangu, Moshi.

Administration: Started in 1966 by Christian Aid, Oxfam and West German foundations and now administered by Ministry of Agriculture and Co-operatives.

Finance: YMCA.

Lan: Swahili. TP: 200. RA: yes. NN: possibly, if through M.F.A.

1 (**) AGRICULTURE - GENERAL

Two-year practical courses for unemployed youth. The first year includes plant studies, animal husbandry, crop cultivation, farm mechanics, farm management and bookkeeping.

Purpose: Training for self-employment.

Entry standard: Primary schooling; trainees must have been unemployed for a year.

TAN 7 Co-operative College,
Box 3091, Moshi.

Administration: Rural Development Division of the Prime Minister's Office.

Finance: Government of Tanzania.

1 (**) CO-OPERATIVE MANAGEMENT

One-year in-service for mature entrants for Diploma in Co-operative Management and Accountancy. Two years for direct entrants without previous experience, the first year being spent on general subjects.

2 (**) RURAL DEVELOPMENT

Six-month in-service course for staff of the Rural Development Division to train them as inspectors and supervisors of co-operative societies and Ujamaa villages.

3 (**) CO-OPERATIVE MANAGEMENT

Six-month in-service management and administration course for staff of regional co-operative unions.

4 (**) ORGANIZATION OF CO-OPERATIVES

Short courses of three months or so at different levels for staff of co-operative societies and Ujamaa village organisers.

TAN 8

Lushoto Institute of Rural Orientation.

Administration:

Rural Development Division of the Prime Minister's Office.

Finance:

Government of Tanzania.

1 (**) RURAL DEVELOPMENT

Courses for regional officers in rural development, and for rural training staff.

TAN 9

Murutunguru Rural Development Training Centre,
Ukerewe Island, Lake Victoria.

Administration:

Rural Development Division of the Prime Minister's Office.

Finance:

Government of Tanzania.

1 (**) RURAL DEVELOPMENT

As TAN 8/1 above.

TAN 10

Butimba College of National Education,
Mwanza.

Administration:

Ministry of Education.

Finance:

Government of Tanzania.

1 (**) AGRICULTURE

Specialist agricultural course for teachers in training, who will be employed in secondary schools with particular agricultural bias.

TAN 11

Kleruu College of Education,
Iringa.

Administration:

Ministry of Education.

Finance:

Government of Tanzania.

1 (**) AGRICULTURE

As TAN 10/1 above.

- TAN 12 to 22 This is the address for general correspondence about the following Ministry of Agriculture Training Institutes:-
c/o Training Division, Pamba House, P.O. Box 2066, Dar es Salaam.
- TAN 12 Ilonga Institute,
P.O. Box Private Bag, Kilosa.
- Finance: Government of Tanzania.
TP: 80. NN: yes.
- 1 (**) AGRICULTURE
Two-year certificate course in agriculture, with emphasis on human nutrition.
- Entry standard: Form IV, 'O' level.
- TAN 13 Ukiriguru Institute,
P.O. Box 1434, Mwanza.
- Finance: Government of Tanzania.
TP: 125 p.a. NN: yes.
- 1 (**) AGRICULTURE
Two-year certificate course in agriculture.
- Entry standard: Form IV, 'O' level.
- TAN 14 Mtwara Institute,
P.O. Box 121, Mtwara.
- Finance: Government of Tanzania.
TP: 80 p.a. NN: yes.
- 1 (**) AGRICULTURE
Two-year certificate course in agriculture, with emphasis on the cultivation of cashew nuts.
- Entry standard: Form IV, 'O' level.
- TAN 15 Tumbi Institute,
P.O. Box 306, Tabora.
- Finance: Government of Tanzania.
TP: 40 p.a. NN: yes.
- 1 (**) AGRICULTURE
Two-year certificate course in agriculture, with emphasis on the cultivation of tobacco.
- Entry standard: Form IV, 'O' level.
- TAN 16 Nyegezi Institute,
P.O. Box 1400, Mwanza.
- Finance: Government of Tanzania.
TP: 150 p.a. NN: yes.
- 1 (**) AGRICULTURE
Two-year certificate course in agriculture, covering land planning and agromechanization.
- Entry standard: Form IV, 'O' level.

Tanzania

- TAN 17 Uyole Institute,
P.O. Box 400, Mbeya.
Finance: Government of Tanzania.
TP: 250 p.a. NN: yes.
- 1 (**) AGRICULTURE
Two-year certificate courses for agriculture (crops), for livestock production, and for agricultural home economics.
- Entry standard: Form IV, 'O' level.
- 2 (**) AGRICULTURAL EDUCATION
Third-year for diploma in agricultural education.
- Entry standard: In-service, for certificate holders after field experience.
- TAN 18 Tengeru Institute,
P.O. Box 3101, Arusha.
Finance: Government of Tanzania.
TP: 40 p.a. NN: yes.
- 1 (**) DAIRY HUSBANDRY
Two-year certificate course in dairy husbandry.
- Entry standard: Form IV, 'O' level.
- TAN 19 Mlingano Institute,
P.O. Box Private Bag, Ngomeni, Tanga.
Finance: Government of Tanzania.
TP: 50 p.a. NN: yes.
- 1 (**) FARM MANAGEMENT
Third-year diploma course in farm management and agromechanization.
- Entry standard: In-service, for holders of Certificate of Agriculture with two years experience.
- TAN 20 Lyamungu Institute,
P.O. Box 3004, Moshi.
Finance: Government of Tanzania.
TP: 20 p.a NN: yes.
- 1 (**) HORTICULTURE
Third-year diploma course in horticulture.
- Entry standard: In-service, for holders of Certificate of Agriculture with two years experience.
- TAN 21 Mpwapwa Institute,
P.O. Box Private Bag, Mpwapwa.
Finance: Government of Tanzania.
TP: 80 p.a. NN: yes.
- 1 (**) VETERINARY SCIENCE
Two-year certificate course in veterinary studies.
- Entry standard: Form IV, 'O' level.

2 (**) ANIMAL PRODUCTION

Third-year diploma course in animal production for certificate holders.

TAN 22

Mkata Institute,
P.O. Box 603, Morogoro.

Finance:

Government of Tanzania.

Cal: Jan/Jun, Jul/Dec. RA: yes. TP: 110. NN: yes.

1 (**) VETERINARY SCIENCE

Two-year certificate course in veterinary science, covering animal husbandry, farm building, pasture, livestock diseases, surgery and obstetrics, meat inspection etc. Practical work on neighbouring farms and close co-operation with extension service. On completion of course students must work for one year at a Ujamaa village.

Entry standard:

Form IV, 'O' level.

2 (**) RANGE MANAGEMENT

Third-year diploma course in range management.

Entry standard:

In-service. Two years experience after certificate.

TAN 23

Forestry Training Institute,
Olmotonyi, P.O. Box 943, Arusha.

Administration:

Ministry of Natural Resources. Established 1936.

Finance:

Government of Tanzania.

TP: 150 p.a. RA: yes. NN: yes if through M.F.A.

1 (**) FORESTRY, BEE-KEEPING

Two-year certificate courses in forestry and bee-keeping.

Entry standard:

School Certificate or GCE passes at 'O' level in some science subjects.

2 (**) FORESTRY, BEE-KEEPING

Thirteen-month diploma up-graded courses in forestry and bee-keeping.

Entry standard:

Forestry Certificate and in-service experience.

3 (**) FORESTRY

Six-month refresher courses for assistant foresters.

Entry standard:

In-service experience.

4 (**) FORESTRY

Various courses lasting six months to two years for chain-saw operators, woodwork and joinery, etc.

Purpose:

All courses are mainly pre-entry and in-service training for posts in Government or para-statal forestry services.

TAN 24

Mbegani Fisheries Development Centre,
P.O. Box 83, Bagamoyo.

Administration:

Department of Fisheries, Ministry of Natural Resources and Tourism.

Finance:

Government of Tanzania, with Norad Aid.

Cal: Jul/Jun. TP: 25 p.a. RA: yes. NN: yes, if through the M.F.A.

1 (**) FISHERIES

Two-year certificate course for fisheries assistant field officers in biology, nautical science, engineering, food technology and management. This course is probably being phased out in favour of 2 below.

Purpose: To train staff for Tanzanian Fisheries Co-operation (TAFICO).

Entry standard: Four years secondary education with at least one science subject. 17+.

2 (**) FISHERIES

Various artisan level courses are planned in subjects like boat building, marine mechanics/electricity, gear technology, refrigeration mechanics, food technology (fish products).

TAN 25 Kivukoni College,
Dar es Salaam.

Administration: TANU. This is the main College of the National Party.

1 (**) RURAL DEVELOPMENT

Courses of instruction for senior officials and for co-operative staff in the zonal colleges.

TAN 26 Lushoto Integrated Development Project,
P.O. Box 60, Soni.

Administration: Community Development Trust Fund, with a German foundation, and the co-operation of four Ministries. Founded 1969.

TP: 20 p.a. RA: yes. NN: yes.

1 (**) RURAL DEVELOPMENT

In addition to its activities mentioned in the Introduction, LIDEP provides facilities for secondary school and university students to study practical problems of rural development. Six-month courses for Ujamaa villagers and longer courses for motor mechanics. At the LIDEP rural training centre at Mabughai, trainees assist with dairy, poultry and vegetable production.

TAN 27 Ministry of Agriculture Veterinary Training Institute,
P.O. Box 603, Morogoro.

Administration: Ministry of Agriculture.

Finance: Government of Tanzania.

Cal: Jan/Jun, Jul/Dec. TP: 80 p.a. RA: yes. NN: yes, if through M.F.A.

1 (**) VETERINARY SCIENCE

Two-year certificate course in veterinary science including in first year basic animal husbandry and principles of agriculture, and in second year, more specialised training with practical work on neighbouring farms and with extension field officers. On completion of course, trainees must work for one year in an Ujamaa village.

Purpose: Mainly to train staff for government service at Assistant Field Officer level.

TAN 28 African College of Wildlife Management,
Mweka, P.O. Box 3031, Moshi.

Administration: Ministry of Natural Resources and Tourism. Supported by OAU. Started in 1964.

- Finance: Government of Tanzania.
- Purpose: To train staff for nature reserves and national parks.
Cal: Jul/Jun. TP: c.100. RA: yes. NN: yes (from Eng. speaking African countries).
- 1 (**) WILDLIFE MANAGEMENT
One-year certificate course for game assistants.
- Entry standard: Cambridge Overseas School Certificate or equivalent, with credits in English and pass in biology.
- 2 (**) WILDLIFE MANAGEMENT
Two-year diploma course for game wardens.
- Entry standard: Cambridge Overseas School Certificate or equivalent, with passes in chemistry and mathematics, and credit in biology.
- 2 (***) WILDLIFE MANAGEMENT
One-year postgraduate diploma course in wildlife management.
- Entry standard: B.Sc. in Natural Sciences.
- TAN 29 University of Dar es Salaam,
P.O. Box 35091, Dar es Salaam.
- Administration: Autonomous. Started in 1961 as a constituent college of the University of East Africa and became a University in 1970. The Faculty of Agriculture started in 1969 as an Agricultural College at Morogoro. There is a Bureau of Resource Assessment and Land Use Planning, and an Institute of Development Studies providing courses in all Faculties. The Faculty of Agriculture and Forestry has departments of crop science and production, animal science and production, agricultural chemistry and soil science, agricultural engineering and land planning, and rural economy and agricultural extension.
- Finance: Government of Tanzania.
Cal: Jul/May in Agric. Jul/Mar in Sci. TP: 700 (in Facs. of Agric. and Sci.). RA: yes. NN: yes.
- 1 (**) AGRICULTURE
Three years for Diploma in Agriculture.
- Entry standard: School Certificate.
- 2 (***) AGRICULTURE
First degree courses in Faculty of Agriculture and Forestry: three years for B.Sc. (Agric.) and B.Sc. (For.). In Faculty of Science: three years for B.Sc. (Hydrology).
- Entry standard: East African General Certificate of Education. For agriculture, passes in approved subjects at ordinary level are required with two principal passes at advanced level.
- 3 (***) AGRICULTURE
Higher courses of one to three years for M.Sc. (Agric.), M.Sc. (Agric. Eng.) and M.Sc. (Forestry).
- Entry standard: Postgraduate.
- 4 (***) DEVELOPMENT POLICY
The Economic Research Bureau co-operates with international agencies to provide postgraduate training for qualified economists in various fields of development.

Tanzania

- TAN 30 Institute of Development Management,
P.O. Box 604, Mzumbe, Morogoro.
- Finance: Government of Tanzania.
TP: 430 including 70 on diploma course.
- 1 (***) COMMUNITY DEVELOPMENT
Three-year diploma course in community development.
- Entry standard: University entrance.
-
- TAN 31 Kunduchi Fisheries Institute,
P.O. Box 23126, Oysterbay, Dar es Salaam.
- Administration: Ministry of Natural Resources and Tourism. Started in 1967.
- Finance: Government of Tanzania.
Cal: Jul/Jun. TP: 20 p.a. RA: yes. NN: yes, through M.F.A.
- 1 (***) FISHERIES
Two-year diploma course for fisheries field officers, covering marine biology, nautical science, engineering, food technology, economics and management. Also specialized courses in fisheries technology.
- Entry standard: Six year secondary education, completion of certificate course (see TAN 24/1) and some years' field experience.

UGANDA

Agriculture will continue to be the backbone of the economy of Uganda for a very long time to come. The need to meet the food requirements of the country and to earn the much needed foreign exchange is ever present, and the government is aware of its obligations.

Training is an essential factor in government efforts everywhere. The requirements in terms of quality and quantity of trained manpower are always increasing. In view of this, efforts have been made to increase the capacity of training institutions and step up the intake. The establishment of a new College of Agricultural Mechanization, will greatly contribute towards meeting the requirements for skilled manpower on the farm and in the agro-industries.

Besides the formal training provided to produce staff to man government services, farmer training is also carried out at District Farm Institutes. These are residential institutes where courses lasting up to a week are organized for farmers. There are fifteen such institutes and the smallest have a capacity of thirty-two. Three new institutes are under construction. The District Farm Institutes are also used for refresher training courses for field staff.

Agriculture is now a major subject in the curriculum of the schools. It is being offered as a subject in GCE 'O' level and it is expected to be taken at 'A' level in 1976 or 1977. Many schools with land and other facilities are establishing farms for teaching purposes and, in the case of boarding schools, also to meet part of their food requirements.

UGA 1Karamoja Agricultural Project,

Private Bag, Kotido, Via Moroto.

Administration: Church of Uganda and the Bible Churchman's Missionary Society.

Finance: The Church and Christian Aid.

Lan: Karamajong & Eng. NN: not as trainees, but observers welcome. (Short introductions to dry land farming techniques could be arranged for visiting "experts".)

1 (*) AGRICULTURE

There are no formal courses as yet (though perhaps one will be needed in the use of new ox-equipment), teaching is by demonstration and example on the farmers' own land. The base for this project is Kaicheri, a fairly isolated village of one of the Karamajong tribes. Field trials have been carried out since 1971 to eliminate unsuitable crops and, as a result, eight varieties have been identified - some traditional, some new - which appear suitable for local conditions. All have been tested under unsophisticated farming methods. Extension work is planned for 1976 in cultivation and care of those eight crops, while research still continues into agronomy, small scale tree planting, and the development of simple equipment.

Purpose: To improve agricultural practices and to help farmers adopt new methods in what is essentially dry land farming.

Uganda

- UGA 2 Christian Rural Service,
P.O. Box 7046, Kampala.
- Administration: Christian Rural Service.
TP: 20,000 Youth Club members, and 112 Young Farmers' Clubs with 4,200 members.
- 1 (*) RURAL DEVELOPMENT
There are six schemes organized by the Service to promote rural development. These are: Youth clubs; Young Farmers' Clubs, concerned mainly with co-operatives and vegetable growing for local markets; Rural Service teams, organizing self-help groups in villages (for example, to provide water courses); literacy classes; Village Industry Groups for local crafts and vegetable growing; family planning.
- UGA 3 Young Farmers of Uganda,
Department of Extension, P.O. Box 102, Entebbe.
- Administration: Ministry of Agriculture and Animal Resources, with aid from FAO/UNICEF. Started in 1964, the scheme provides out of school training programmes guided by the Agricultural Extension Service.
TP: over 100,000.
- 1 (*) AGRICULTURE
Meetings usually take the form of field study of local crops, etc. Home projects such as pig and poultry rearing, vegetable growing, are also encouraged. Some of the young farmers are also members of a co-operative.
- UGA 4 National Union of Youth Organization,
Ministry of Culture and Community Development, P.O. Box 7136, Kampala.
- Administration: Started in 1964 by the Ministry of Culture and Community Development.
TP: over 60,000 in 550 branches.
- 1 (**) RURAL SKILLS
This scheme is to encourage young people aged 12-30 to join income-generating activities such as group farming, fresh water fishing, brick making. The associated vocational training courses include agricultural techniques and there is a one-year course at a farm centre for those going to agricultural settlements.
- UGA 5 Sese Farm School,
P.O. Kalangala.
- Administration: Ministry of Education.
Finance: Government of Uganda.
Cal: Feb/Dec. TP: 6 p.a. (m. only). RA: yes.
- 1 (**) AGRICULTURE
Three-year course for Certificate in General Agriculture.
- Purpose: To train potential farmers.
- Entry standard: Primary School Leaving Examination with high marks.

- UGA 6 Ngogwe Baskerville Senior Secondary School,
P.O. Box 81, Lugazi.
- Administration: Church of Uganda.
- Finance: Mainly mission funds.
- 1 (**) AGRICULTURE
Extension work is informal with individual farmers calling at the school for advice on animal and crop husbandry. Occasionally district agricultural officers bring groups of farmers to see improved methods of keeping animals and growing crops. An additional teacher is to be employed so that extension work may be developed.
- 2 (**) AGRICULTURE
Agriculture is taught as a regular part of the school curriculum, using the 30-acre school farm, started in 1968, for poultry, dairy, pig and vegetable production. The farm is intended both as a teaching unit and a source of food for the school.
- UGA 7 School Leaver Settlement Scheme, Nyakashaka,
c/o Church of Uganda, Burere, Buhweju (Ankole).
- Administration: Jointly by the Church of Uganda and Provincial Government.
- Finance: Mainly Church funds, with some Government assistance.
TP: 60 p.a. (There are over 30 settlements.)
- 1 (**) AGRICULTURE
Three-year apprenticeship type course in agriculture after six months experience as a farm worker. The emphasis is on local crops such as tea, potatoes, strawberries.
- Purpose: Completion of training gives title to land in a settlement and membership of the Co-op.
- Entry standard: Lower secondary education. The scheme is intended for young people almost immediately after leaving school.
- UGA 8 Busitema Agricultural College of Mechanization,
P.O. Box 236, Tororo.
- Administration: Ministry of Agriculture and Animal Resources.
- Finance: Government of Uganda.
Cal: Jun/Mar. TP: 170 p.a. (m. only). RA: yes.
- 1 (**) RURAL SKILLS
One year courses for: agricultural tractor operators; blacksmith and welding.
- Entry standard: At least Standard II level.
- 2 (**) AGRICULTURAL MECHANIZATION
Two-year diploma course in agricultural mechanization for those with Certificate in General Agriculture.
- Entry standard: Certificate in General Agriculture.
- 3 (**) AGRICULTURAL MECHANICS
Three-year diploma course in agricultural mechanics.
- Entry standard: GCE 'O' level credits in maths and three sciences.
Note: Recently there has been a number of candidates with 'A' levels who could not be absorbed into the University. Most

Uganda

institutions admit these candidates without giving them special concessions. In view of this, some institutions are thinking of raising their entry requirements to 'A' level.

Purpose: The purpose of all courses is to train staff for agricultural services, self-employed people, and those employed by private organizations and individuals.

UGA 9 Arapai Agricultural College,
P.O. Box 203, Soroti, Teso.

Administration: Ministry of Agriculture and Animal Resources.

Finance: Government of Uganda.

Cal: Jun/Mar. Int. 105 p.a. (m. only). RA: yes.

1 (**) AGRICULTURE

Two years for Certificate in General Agriculture, with two further years for Diploma in Agriculture. Diploma studies include farm management, land planning, agricultural mechanization, horticulture, field experimentation, home economics and extension supervision.

Purpose: Mainly to train staff for agricultural services.

Entry standard: GCE 'O' level in maths and three sciences, or equivalent credits in Cambridge School Certificate. Diploma students must have Certificate of Agriculture.

UGA 10 Bukalasa Agricultural College,
P.O. Box 97, Bombe.

Administration: Ministry of Agriculture and Animal Resources.

Finance: Government of Uganda.

Cal: Jun/Mar. TP: 150. RA: yes.

1 (**) AGRICULTURE

Two years for Certificate of Agriculture, with two further years for Diploma in Agriculture.

Purpose: Mainly to train officers for agricultural services, etc.

Entry standard: GCE 'O' level in maths and three sciences, or equivalent credits in Cambridge School Certificate.

2 (**) CO-OPERATION

One-year certificate course in co-operation.

Entry standard: GCE 'O' level credits in English, mathematics and history.

3 (**) HOME ECONOMICS

A diploma course in home economics, for women, is expected to start in the near future.

UGA 11 Kigumba Co-operative College,
P.O. Masindi.

Administration: Ministry of Co-operatives and Marketing.

Finance: Government of Uganda.

Cal: Jun/Mar. TP: 50 p.a. RA: yes.

1 (**) CO-OPERATION

Two-year course for Uganda Diploma in Co-operation.

Entry standard: Certificate in Co-operation (see UGA 10/2).

Purpose: Mainly to produce staff for government service.

UGA 12Fisheries Training Institute,

P.O. Box 124, Entebbe.

Administration: Fisheries Department of Ministry of Agriculture and Animal Resources.

Finance: Government of Uganda.

Cal: May/Apr. TP: 44 p.a. RA: yes.

1 (**) FISHERIES

Two-year courses for fisheries assistants and for boat builders. One further year for Diplomas in Fisheries Technology or in Fisheries Management.

Purpose: To improve fisheries.

Entry standard: School Certificate (11-12 years' schooling). Age 19+.

UGA 13Forestry College,

Private Bag, Nyabyeya, Masindi.

Administration: Ministry of Agriculture and Animal Resources.

Finance: Government of Uganda.

TP: 30 p.a. RA: yes.

1 (**) FORESTRY

Two-year course for Certificate in General Forestry. Also eighteen-month promotion course for selected Forest Rangers, for Diploma.

Purpose: Training of staff for the Forest Service.

Entry standard: GCE 'O' level in English, maths and one science subject, or equivalent.

UGA 14Veterinary Training Institute,

P.O. Box 112, Entebbe.

Administration: Ministry of Agriculture and Animal Resources.

Finance: Government of Uganda.

Cal: Jun/Mar. TP: 140. RA: hostels for 120 m. & 20 f.

1 (**) ANIMAL CARE

Two years for Certificate of Veterinary Assistant, with one further year for Diploma in Animal Husbandry, in Dairy Husbandry, or in Ranch Management.

Purpose: Mainly to produce staff for government service.

Entry standard: School Certificate with credits in sciences and good passes in maths and English.

Uganda

2 (**) HIDES AND SKINS

Two years for Certificate of Hides and Skins Improvement, with one further year for Diploma in Leather Technology.

Purpose: Mainly to produce staff for government service.

Entry standard: School Certificate with credits in sciences and good passes in maths and English. Candidates for Diploma must hold the Hides and Skins Improvement Certificate.

UGA 15

Makerere University,

P.O. Box 7062, Kampala.

Administration: Largely autonomous. The University has a centre for continuing education comprising extra-mural studies, correspondence courses and mass media, and adult studies, and provides courses at major centres throughout the country. There are links (I.U.C.) in agriculture with Wye College of the University of London and in agricultural engineering with the National College of Engineering in Britain.

Finance: Government of Uganda.

Cal: Jul/Sep, Oct/Dec, Jan/Mar. (Vet. Med. has 4 terms between Jul & Mar). TP: 300+ in Fac. of Agric. & For. RA: yes. NN: yes.

1 (***) SUNDRY

Three years for B.Sc. in botany or zoology, for B.A. in rural economy, for B.Sc. (Agric.) and for B.Sc. (Forestry). Four years for B.Sc. (Vet.)

Entry standard: School Certificate or GCE with five 'O' level credits and Higher School Certificate, or 'A' level GCE in two subjects and pass in general paper of Higher School Certificate.

2 (***) AGRICULTURAL ECONOMICS

Training in economics for agricultural production experts is given in the Institute of Statistics and Applied Economics.

3 (***) SUNDRY

Eighteen months for M.A., M.Sc., M.Sc. (Agric.) and M.Sc. (Forestry).

Entry standard: Appropriate first degree with Second Class Hons. or better.

BANGLADESH

In Bangladesh, it is appreciated that the success of rural development plans will depend on the development of a large number of trained personnel, under the different agencies, to implement the programmes in a co-ordinated and cohesive manner, and on the development of local leaders through institutionalized methods, to act as change-agents for introducing innovations and technology for development purposes.

At the 'thana' level (thana = a rural district unit), key personnel such as the Project Officer, District Project Officer and Accountant are given theoretical and practical training at different training institutions and in the field. Other orientation courses are arranged where necessary by the Institute of Rural Development Programmes and other organizations, to help implement the programmes successfully and to ensure the necessary co-ordination at thana level. Orientation courses are provided at various levels by the Academy of Rural Development, the Rural Development Training Institute, and the Bangladesh Co-operative College.

Agricultural training for farmers, as part of the rural development programme, is done informally by the agricultural extension staff through recognized methods of extension education. Village/union level extension workers are normally trained at eight (likely to be increased to ten) institutions where a Diploma in Agriculture is awarded after a two-year course. In-service training of union/thana extension workers is also imparted in one of these institutions. Higher level training is given by the Agricultural College, the Agricultural University and the other universities, which together supply most of the specialist manpower required by extension, education and research organizations throughout the country.

Agricultural education has already been introduced at primary and secondary school level and a course for Inter.Sc.(Agri.) is available at some government and private colleges.

BAN 1Sulla Village Rehabilitation Project,

(Bangladesh Rehabilitation Assistance Committee - BRAC),
Sylhet District.

Administration:

Five villages have been set up as "laboratories" - both for experimental and demonstration purposes - with educational activities co-ordinated through a training centre at Dhol Village. Each laboratory village has a one acre farm as a demonstration centre.

1 (*) RURAL SKILLS

This is a rehabilitation project, which includes assistance with rice growing by provision of seed, fertilizer, power tillers and pumps, and the organization of co-operative river fisheries. There is a functional educational scheme aimed at promoting change in attitude for improved farming technology.

2 (**) RURAL SKILLS

In-service training for village cultivators is provided at the demonstration centres/farms. Training is also given to BRAC workers and to organizers and members of co-operative societies within the project.

- BAN 2 Ratanpur Agricultural Implement Repair and Training Centre,
Village Ratanpur, P.O. Sri Ratanpur, District Kushtia.
- 1 (*) AGRICULTURAL MECHANICS
Short practical courses of a week or so on simple repairs and maintenance of agricultural machinery. This is the start of a five-year pilot project based on Ratanpur Village, the centre of a densely populated area of 60 square miles which uses much power equipment. The centre has some land under cultivation for practical demonstrations of the correct use of equipment. A disused building will become a hostel.
- 2 (*) AGRICULTURAL MECHANICS
Apprenticeship training for up to ten boys at a time, selected from those attending short courses. Average apprenticeships will last two years and apprentices will receive weekly wages, and a tool kit on completion of training. The emphasis will be on engine repair and maintenance, including the making and repairing of parts so that apprentices will emerge as competent agricultural mechanics. Woodwork will also be included in the training.
- BAN 3 Bangladesh Co-operative College,
Kotbari, Comilla.
- Administration: Government of Bangladesh.
Finance: Government of Bangladesh.
Lan: Eng. & Bengali. Cal: courses start Jan & Jul. RA: yes.
NN: yes (approval by Bangladesh Govt. necessary).
- 1 (**) CO-OPERATIVE STUDIES
Four- to six-month in-service training courses for officers of the Co-operative Department, at various levels.
- BAN 4 Bangladesh Forest School,
Sylhet.
- 1 (**) FORESTRY
Training courses for foresters and forest guards.
- BAN 5 Bangladesh Forest College for Rangers,
P.O. Box 597, Chittagong.
- 1 (**) FORESTRY
Training courses for forest rangers.
- BAN 6 Academy for Rural Development,
Kotbari, Comilla.
- Administration: Ministry of Social Welfare. Started in 1969.
Finance: Government of Bangladesh.
Lan: Eng. & Bengali. TP: (in 1973/4) over 3,000 on c. 170 courses.
RA: yes. NN: yes.

1 (**) RURAL DEVELOPMENT

Pilot experiments have been run since 1961 in rural co-operatives, rural work programmes, village irrigation schemes and village centres for training and development, and these have become models for the whole country and are now components in the National Rural Development Programme.

Purpose: To assist rural development.

Entry standard: Variable, but usually some secondary education and training in social or extension work.

2 (**) RURAL DEVELOPMENT

Short training courses for foreigners in rural development, covering principles of development planning; sociological and economic factors; agricultural extension; irrigation and mechanization; rural economics and business management including processing and storage units; rural administration; educational programmes for rural women; co-operative office supervision; research and evaluation.

BAN 7

Fisheries Training Institute,

Fisheries Campus, P.O. Baburhat, District Comilla.

Finance: Government of Bangladesh.

Lan: Eng. & Bengali. TP: 15 per course. RA: yes.

1 (**) FISHERIES

Eighteen-month course to train Fishery Officers in extension work.

BAN 8

Bangladesh Veterinary Institute,

Mymensingh.

Administration: Directorate of Livestock Services.

Finance: Government of Bangladesh.

Cal: Oct/Jul. TP: 50 p.a., men. RA: yes. NN: not as trainees, but observers welcome.

1 (**) ANIMAL HEALTH

One-year training course for animal health assistants, theoretical and practical.

Purpose: To train assistants for the Veterinary Services. If appointed, they are employed as Field Assistants (Livestock) at a sub-technical level.

Entry standard: Secondary School Certificate, age 15+.

BAN 9

Bogra Government Technical Institute,

Bogra.

Administration: Directorate of Technical Education.

Finance: Government of Bangladesh.

Cal: Jul/Jun. RA: yes. TP: c. 600.

1 (**) SUGAR TECHNOLOGY

Three-year diploma course in sugar technology.

2 (**) ENGINE MAINTENANCE

Three-year diploma courses in auto-engineering, and in diesel engine engineering.

Purpose: To train technicians.

Entry standard: School Certificate to matriculation level, with good passes in maths, English and some science subjects.

BAN 10 Pabna Technical Institute,
Pabna.

Administration: Department of Technical Education.

Finance: Government of Bangladesh.

Cal: from Jul. TP: c. 600. RA: for 110.

1 (**) SURVEYING

One year for Certificate in Surveying.

2 (**) ENGINEERING

Three-year diploma courses in civil engineering and in power technology.

Entry standard: School Certificate to matriculation level, including English.

BAN 11 Marine Diesel Training Centre,
Sonakanda, Narayanganj.

Lan: Eng. & Bengali. Cal: from Jul. RA: yes.

1 (**) DIESEL ENGINE MAINTENANCE

One-year certificate courses for diesel artificer and for supervisor/instructor. Four months for diesel operator; also one-month refresher courses.

Purpose: To train diesel mechanics for river transport and fishing boats.

Entry standard: First class diesel engine driver's certificate, or Diploma in Mechanical or Power Engineering from a technical school. Age range 20-35.

BAN 12 Bangladesh Agricultural University,
P.O. Agricultural University, Mymensingh.

Administration: Autonomous.

Finance: Government of Bangladesh through Ministry of Education.

Cal: Jul/Jun. TP: c. 2,500 in Univ. RA: yes. NN: yes.

1 (***) SUNDRY

First degree courses: four years for B.Sc. (Ag.) Hons., D.V.M., B.Sc. (A.H.) Hons., B.Sc. (Fisheries) Hons., B.Sc. (Ag.Stat.) Hons., B.Sc. (Ag.Engg.) Hons. and B.Sc. (Ag.Econ.) Hons.

Entry standard: Higher Secondary Certificate (Sc./Agric.) or equivalent, including biology for fisheries and veterinary studies, and maths for economics and engineering.

2 (***) VETERINARY SCIENCE/ANIMAL HUSBANDRY

Two years for B.Sc. (Vet.Sc. and A.H.).

Entry standard: Diploma in Veterinary Science and Animal Husbandry from a regional institution.

3 (***) SUNDRY

Higher degree courses: one year for M.Sc. (Ag.Econ.), M.Sc. (Ag.), M.Sc. (A.H.), M.Sc. (Vet.Sc.), M.Sc. (Ag.Engg.) and M.Sc. (Fisheries); two years for M.Sc. (Ext.Ed.).

Entry standard: B.Sc. Hons. in a relevant subject in at least Second Division. Alternatively, pass in preliminary M.Sc. examination.

BAN 13

University of Dacca,
Ramna, Dacca.

Administration: Ministry of Education.

Finance: Government of Bangladesh.

Lan: Eng. & Bengali (largely Eng. in main Univ. but Bengali in 80 affil. colls.). Cal: Jul/Jun in 3 semesters. TP: 11,000 in Sci. Fac. as a whole and 1,200 in Biol. Sci. Fac.). RA: yes. NN: yes.

1 (***) SOIL SCIENCE/ZOOLOGY

Two years for B.Sc. pass and three years for B.Sc. Hons. in soil science and zoology.

Entry standard: Higher School Certificate in relevant subjects and Second Division for admission to Hons. course.

2 (***) SOIL SCIENCE/ZOOLOGY

Higher degree M.Sc. courses in soil science and zoology.

Entry standard: Appropriate first degree.

BAN 14

University of Rajshahi,
P.O. Rajshahi University, Rajshahi.

Administration: Ministry of Education.

Finance: Government of Bangladesh.

Lan: Eng., Bengali and Urdu (largely Eng. in main Univ. but other languages in the 111 affil. colls.). Cal: Aug/Sep, Nov/Dec, Feb/May. TP: over 11,000 (in Fac. of Sci.). RA: yes. NN: yes.

1 (***) BOTANY/ZOOLOGY

Two years for B.Sc. pass and three years for B.Sc. Hons. in botany or zoology.

Entry standard: Intermediate examinations in relevant subjects.

2 (***) BOTANY/ZOOLOGY

One further year for M.Sc. in botany or zoology.

Entry standard: Appropriate first degree.

BAN 15

Bangladesh Rice Research Institute,
Joydebpur, Dacca.

Administration: Ministry of Agriculture.

Finance: Government of Bangladesh.

TP: 20-30 per course. RA: yes. NN: yes.

1 (***) RICE PRODUCTION

Four-month course in rice production, covering theoretical instruction as well as skills in testing seed germination, techniques of land preparation, identifying diseases and pests, etc. Also short three-week course covering similar topics.

Purpose: To train specialists in rice production, both for extension and research work.

Entry standard: Minimum B.Sc. in agriculture.

HONG KONG

Only some 44 square miles can be classified as arable land out of which some 30,000 acres are farmed. Rice cultivation with two crops per year, which was the traditional farming pattern, and covered 23,352 acres in 1955, continues to give way to intensive vegetable production where communications and water supplies permit. This system of almost continuous cropping, giving six or more vegetable crops per year, now covers 11,230 acres while 960 acres are under flowers. Production of pigs and poultry have developed greatly over the last 25 years and are of considerable economic importance, but have created waste disposal problems.

The Agriculture and Fisheries Department policy is to seek the social and economic advancement of all those associated with the farming and fishing industries by means of greater productivity obtained through increased technical and economic efficiency, improved stability of production, and maintenance of orderly and efficient marketing. At the same time, it is departmental policy to protect the consumer from unnecessarily high food prices by ensuring that local produce of acceptable standards is marketed efficiently.

Farmer training is arranged through the Extension Services of the Agriculture and Fisheries Department largely by individual approach and farm visits. The services include:- a) the teaching of improved methods and practices in the cultivation of crops; b) the control of crop pests and diseases, livestock and poultry husbandry; c) prophylactic and curative treatment of livestock disease; d) enquiries concerning the disposal of pig and poultry manure; e) advising on the mechanization of farm tasks; f) distributing improved planting materials and breeding stock of good quality; g) irrigation problems; and h) the provision of credit facilities.

Farmers' education through the group approach is also practised and includes courses of instruction, demonstrations, discussion group meetings, talks with co-operative societies and organized farm visits. 1190 farmers attended discussion groups in 1974 and about 300 children of farmers received vocational training. Farm topics are taught in primary schools in the New Territories.

HK 1

Kadoorie Agricultural Aid Association,
Pak Ngau Shek, Tai Po, New Territories.

Administration: Kadoorie Agricultural Aid Association and, for Gurkha training, jointly by KAAA and Headquarters, Brigade of Gurkhas.

Finance: Kadoorie Agricultural Aid Association.

Lan: English and Nepalese (for Gurkhas), Chinese (for local farmers). RA: yes. NN: observers welcome.

1 (*) AGRICULTURE

Course of basic training in horticulture, and livestock and poultry rearing.

Purpose: To teach Gurkha soldiers agricultural 'know-how' and to broaden local farmers' knowledge for agricultural diversification.

Entry standard: An interest in farming.

Hong Kong

HK 2 Agriculture and Fisheries Department,
393 Canton Road, Kowloon.

Administration: Agriculture and Fisheries Department.

Finance: Government of Hong Kong.

1 (**) SUNDRY

In-service training courses for staff, especially assistant technical officers for specific posts. Training attachments are available and are much used by other countries in the region in subjects such as wholesale marketing.

Entry standard: Secondary schooling, and by selection.

HK 3 University of Hong Kong,
Pokfulam Road.

Administration: Largely autonomous.

Finance: Government of Hong Kong.

Cal: Oct/Dec, Jan/Mar, Apr/Jun. TP: (in Fac. of Sci.) 500+.
RA: yes. NN: yes.

1 (***) SUNDRY

Three-year first degree courses for B.Sc. pass and honours in botany and zoology. There is a B.Sc. special honours course of a further year in each subject.

Entry standard: Hong Kong Certificate of Education advanced level passes in three subjects, or two at 'A' level and two at equivalent of 'O' level, plus proficiency in English examination. Age 17+.

INDIA

India is one of the largest countries in the world. Within her boundaries, encompassing one-sixth of mankind, are people of widely differing ways of life, and from an enormous range of geographical conditions and climate, including the cold, wild Himalayas in the far north and the tropical paddy fields, coconut plantations and mangrove swamps of the southern coastal plains, the deserts of Rajasthan in the west and the fertile alluvial plains of the Ganges and Brahmaputra in the east, as well as the great Deccan plateau where the soil has been cultivated for thousands of years and is now badly eroded and lacking in the essential mineral salts.

There are obvious problems arising from size and these are underlined by the fact that an Indian National Development Plan consists not of one document but twenty. In addition to the overall national plan there are separate plans for the states and territories, state plans accounting for about one-half of the total outlay of the government under a five-year plan. Expenditure under state control includes such vital sectors as agriculture, small industries, co-operatives and irrigation. At village level, importance is attached to village agricultural development plans, meant to be drawn up and implemented within the framework of block agricultural plans. The intention is to mobilize effectively the resources of local communities and to involve all cultivators in the development effort.

India is still predominantly agricultural. Eighty-five per cent of Indian people live in villages, and about seven out of ten gain their living directly from the land, most of them either as labourers or as subsistence farmers. Thus, agriculture has been given high priority in development plans formulated since 1951. With its allied industries it accounts for nearly half the national income and supplies the raw materials for the textile and leather industries which make up a large proportion of the country's traditional exports. India is the world's largest producer of tea and groundnuts and a major producer of oilseeds, sugar cane, cotton, jute, cashew nuts, tobacco and rubber. New, high-yielding varieties of seed have been introduced with great success in many parts of India, where grain crops take up a large proportion of the cultivable land. The production of wheat in particular has been greatly increased. But the new seeds are dependent on better supplies of water and heavy use of fertilizer, so it is the richer farmers who have been able to take advantage of the new technology and have benefited most from the "green revolution".

Removal of poverty and the attainment of economic self-reliance are the declared major objectives of the Fifth Five Year Plan (1975-79). The strategy for their realization includes emphasis on productive employment opportunities, on agriculture and basic industries, on nutrition, and on homesteads for landless labourers. The government places a high priority on schemes of irrigation, flood control, and land reclamation, in order to bring more land under cultivation and to make crops less susceptible to variations in the weather which is the greatest single obstacle to agricultural prosperity: the Indian cultivator's harvest depends so much on the timing of the monsoon and is at the mercy of drought, floods and other natural disasters. But there are also human problems such as the need for better liaison between the centre and the states, and within the states at different levels of administration.

To achieve the objectives of the Fifth Plan, close and constant links between centre and state are particularly needed in the fields of animal husbandry, fisheries and forestry. The various units dealing with cattle production, animal health and dairying are being brought together under one head to assist the massive milk programme made

possible by the controlled cross breeding of cattle. In fisheries, detailed production programmes in both fresh and brackish water depend on a strengthened Inland Fisheries Unit. A Central Forestry Planning Unit and an Industrial Planning Unit are being created under the Inspector General of Forests. Private and co-operative investment will substantially strengthen the economic base of the cultivator, particularly in the development of minor irrigation and marketing.

But in many cases extension organizations in the states are not strong enough for intensive development work, and agricultural universities and the Indian Council of Agricultural Research are expected to release staff expert in the rarer disciplines to strengthen extension work at state and district levels. The target is one graduate extension officer for each ten thousand of the rural population. In addition the Plan places special importance on the employment of specialists by input suppliers like fertilizer and pesticide firms and by credit agencies like banks, as a necessary service to promote the facilities they offer. Encouragement will also be given to self-help through specialist advisory services of co-operatives and through private consultancies set up in rural areas by groups of specialists. Even so, a large amount of in-service training of extension field workers is required at all levels to keep them up to date, so that new technology can be rapidly transferred to its point of application - the poorest cultivator. Agricultural universities are helping with the higher levels of such in-service training, which is vital to the success of the Fifth Plan.

For the most part, education and training in India are matters for state governments with only a few high prestige institutions directly dependent on the authorities at the centre. At the tertiary level there are at least fifty departments in main universities and a further eighty constituent or affiliated colleges offering courses in agricultural or veterinary sciences.

At lower levels the number of institutions and programmes is proportionately greater. It is not possible therefore to describe Indian patterns of training for agricultural and rural development in as comprehensive a way as for smaller countries. The entries which follow are a random choice of typical lower level projects and a more reasoned selection of only those higher level training courses likely to be used by nationals of other countries.

IND 1

Agrindus Institute,
Mirzapur, Uttar Pradesh.

Administration: This is a permanent centre for demonstration, training and extension in agriculture, rural industries, education and health set up by two Indian Trusts with help from War on Want and later from Oxfam after the famines of 1965 and 1967. By 1973 the project covered more than 100 villages and employed 50 full-time workers and 150 part-time village level workers.

TP: 1,000+ farmers p.a. RA: no. NN: observers welcome.

1 (*) AGRICULTURE

No courses in the normal sense, but training camps and seminars are organized for farmers, and a few boys are trained each year on the Institute's Demonstration Farm in crop and animal husbandry, by working on the farm for a period of a few months. Demonstrations are given on the farmers' own land in the cultivation of basic crops.

Entry standard: Experience only.

- IND 2 West Utkal Agricultural Centre,
P.O. Diptipur, Sambalpur District, Orissa.
- Administration: Baptist Missionary Society through the Church of North India. Founded in 1960. The centre concentrates on crop improvement and provision of irrigation water in a poor and backward area which suffers from droughts so that education is usually combined with relief work in the ten villages associated with the centre.
- Finance: Church funds and Oxfam.
Lan: Eng. & local lan.
- 1 (*) AGRICULTURE
No formal courses but occasional classes for illiterate and newly literate village farmers. Most of the work is by advice to individual farmers and by demonstration plots of new crops in local villages.
- IND 3 Khareberia Project,
c/o YWCA, Calcutta.
- Administration: YWCA, Calcutta.
- 1 (*) HORTICULTURE/FISHERIES
Training for women in vegetable production and fish farming.
- IND 4 Xavier Research Farm,
c/o St. Xavier's High School, Gamdi, Anand (Kaira District).
- Administration: Roman Catholic Church.
- Finance: Church funds with some assistance from charities and foundations such as Oxfam and Misereor.
Lan: Eng., Gujarati & Hindi. TP: 50+. RA: yes. NN: on courses 2 & 3 only (in Gujarati).
- 1 (*) AGRICULTURE
Ten-day courses in general farming given jointly with staff of the Behavioural Science Centre of St. Xavier's College, Ahmedabad.
- Entry standard: No educational requirements but limited to farmers actually tilling the land and managing their own farms. All participants in each group come from the same village and are of similar caste.
- 2 (**) AGRICULTURE
One-year course (in Gujarati) for school pupils in general agriculture with the minimum of theoretical instruction and as much practical work as possible on the farm. The course covers soil science, plant nutrients, crop protection, crop rotation, dry farming, organization management, storage, care of implements and animal husbandry.
- Purpose: The programme has existed for four years and is intended for children of farmers owning their own land.
- Entry standard: Full primary education.
- 3 (**) AGRICULTURE
Three-day extension type courses (in Gujarati) given to the same participants for three consecutive years; covering in the first year soil fertility, plant needs, fertilizers; in the second year pests and diseases and crop rotation; in the third year dry farming, organization, management and storage.
- Purpose: The courses have been given for five years and are intended to improve skills of ordinary cultivators.

IND 5

Agricultural Institute,

Kosbad Hill P.O., Thana District, Maharashtra State.

Administration:

The Institute was started in 1949 by the Gokhale Education Society in order to improve agricultural education in rural areas and in particular in the tribal areas of that region. A secondary purpose was to study the agricultural problems of smallholders and solve them through research. As a result an extension service had to be developed for the results of such research to be applied by cultivators. The extension service started as a pilot project in ten villages with a programme of high yielding varieties of rice and other crops mainly through on-the-spot demonstration. In the same villages youth clubs for learning-by-doing were opened. There is now a Training-cum-Demonstration Farm at the Post Basic Ashram School, Kosbad Hill and that School is being up-graded to give higher secondary education to tribal children including subjects like agriculture, horticulture, animal husbandry, dairy science and agricultural engineering.

The work of the research scientists at the Institute is sponsored by the Indian Council of Agricultural Research and the Institute is recognised as a postgraduate centre by two universities.

NN: not as trainees, but observers welcome.

1 (**) AGRICULTURE/RURAL SKILLS

The Institute works through a number of units of which one gives agricultural training in the Tribal Youth Training Centre; another provides an Agricultural School for the sons of farmers; the Gramsevak Training Centre gives agricultural and extension training to village level workers; another unit provides farmers with training in the adoption of new techniques; another gives applied nutrition training.

IND 6

Amarpurkashi Agro-Industrial Polytechnic,

Amarpurkashi, Moradabad District, Uttar Pradesh.

Administration:

Society for Agro-Industrial Education in India.

Finance:

Private.

TP: 20-30 p.a. RA: yes. NN: no.

1 (**) AGRICULTURE

One year in theory and practice of improved farming techniques including cash crops, seed farming, crop rotation, implements, marketing and consumer co-ops., ancillary industries.

Purpose:

Training for employment in agriculture for unemployed youth.

Entry standard:

None, except literacy. The course is intended for unemployed 16 year olds.

IND 7

Coimbatore Water and Agricultural Development Project,

Coimbatore District, Tamil Nadu.

Administration:

In 1966 a number of voluntary agencies set up "Action for Food Production" (AFPRO) to provide technical advice on the development of agricultural projects in South India with particular reference to the development of water resources. Villagers were encouraged to co-operate in a scheme for drilling wells and providing pumps by collected funds and becoming responsible for the maintenance of the pumps. Something like 200 wells have been drilled in recent years.

1 (**) IRRIGATION

Training programme for pump mechanics starting in 1976 in co-operation with the State Government.

- IND 8 National Cadet Corps,
Ministry of Defence, New Delhi 1.
- Administration: Formed in 1948 and run jointly by Ministry of Defence and Ministry of Education and Social Welfare.
TP: c. 2,000,000 are involved.
- 1 (**) AGRICULTURE/CO-OPERATIVE STUDIES
Compulsory training in the junior division for ages 13 to 18 and in senior division up to age 26 including military training but also with long-period work campaigns for projects including agriculture, irrigation, and rural co-ops.
- IND 9 Social Work and Research Centre,
Tilonia, Ajmer, Rajasthan.
- Administration: The centre started in 1972 to involve unemployed graduates in providing integrated services for rural communities. The centre is concerned mainly with water development, medical work and broad educational services. The Indian Government is co-operating because of the importance of involving young graduates in rural problems and of making available technical services on a no profit/no loss basis to village cultivators.
- 1 (**) AGRICULTURE
Agricultural extension work includes instruction in the use of fertilizers and plant pesticides, the introduction of high yielding seed, the provision of a seed bank and of tractors on hire, etc.
- IND 10 Farmer Training Centres,
c/o Ministry of Agriculture and Irrigation, Government of India, Krishi Bhavan, New Delhi 110001.
- Administration: State Government Agriculture Services. Since 1967 special Farmer Training Centres have been established throughout India, and there are now one hundred, including seven in Andhra Pradesh, three in Assam, six in Bihar, five in Gujarat, five in Haryana, one in Himachal Pradesh, one in Jammu and Kashmir, four in Kerala, five in Madhya Pradesh, ten in Maharashtra, six in Mysore, four in Orissa, seven in Punjab, four in Rajasthan, seven in Tamil Nadu, eleven in Uttar Pradesh, seven in West Bengal, one in Delhi, one in Goa, one in Nagaland, one in Pondicherry, one in Meghalaya, and two in Arunachal Pradesh.
- Finance: Government of India.
Lan: Eng. & regional lan. TP: many thousands; 20-30 per course.
RA: yes. NN: no.
- 1 (**) AGRICULTURE
Specialized short courses of four to fourteen days for farmers and for rural women.
- 2 (**) AGRICULTURAL EXTENSION
Two to three-day courses for conveners of farmers' discussion groups.

India

Purpose: To create a core of progressive farm leaders; to encourage farmers to seek technical advice from extension personnel; to inform them of the availability of various forms of advice, assistance, credit, etc; and to pass on to farmers simplified techniques of applying technical innovations in use of high-yielding crop varieties, multiple cropping programmes, use of better seeds, fertilizers, pesticides, etc. Apart from regular short courses, the centres run twice weekly discussion groups and one day demonstrations for up to fifty participants.

IND 11 Fishermen's Training Centres.

Administration: Department of Fisheries, State Governments. There are over thirty centres in India for training fishermen in the operation of small mechanized boats or in inland fish culture. There are seven such centres in Tamil Nadu, six in Mysore, five in Kerala, four each in Maharashtra and Karnataka and a few more in other states and territories. If needed, detailed information should be sought from the Department of Fisheries of the relevant State Government. A few typical courses are described.

Finance: State Governments.

Lan: regional and local. TP: from 20 to 50 per course.
RA: yes. NN: no.

1 (**) FISHERIES

Thirty-six week courses for deep sea fishermen at five centres in Kerala, six-month courses for sea fishermen at four centres in Maharashtra, ten-month courses for sea fishermen at four centres in Mysore, short courses for sea fishermen at six centres in Tamil Nadu. Instruction includes basic navigation, fishing gear construction and maintenance, etc.

2 (**) INLAND FISHERIES

Three-month courses for inland fishermen at two centres in Mysore, and a course for inland fishermen at Mettur Dam in Tamil Nadu.

Entry standard: Fishing experience and schooling to at least Vth standard.

Note: Some courses are attended by fisheries officers in training.

IND 12 Fisheries Training Institute - Andhra Pradesh,

Kakinada - 2, District East Godavari, Andhra Pradesh.

Administration: Department of Fisheries, Andhra Pradesh.

Finance: Government of Andhra Pradesh.

Lan: Telugu. TP: c. 20 per course. RA: yes. NN: no.

1 (**) FISHERIES

Course for fishermen co-operatives.

IND 13 Etawah Pilot Project,

Rural Youth Clubs, Ministry of Community Development, Government of Uttar Pradesh, Sachivalay, Lucknow.

Administration: Started in 1954 by the Department of Community Development, U.P. with help from Village Councils.

Finance: Government of U.P.

TP: several thousands organized in hundreds of clubs. RA: no.
NN: no.

1 (**) HORTICULTURE/POULTRY HUSBANDRY
Part-time instruction in vegetable growing, poultry farming, etc.
by trained youth leaders.

Purpose: To interest rural youth in agriculture.

Entry standard: Mainly secondary school pupils.

IND 14 Animal Husbandry School,
Jaipur, Rajasthan.

Administration: State of Rajasthan.

Finance: Government of Rajasthan.

TP: c. 50.

1 (**) ANIMAL HEALTH AND HUSBANDRY
One year for stockman/veterinary compounder. Also a six-month
condensed course and a three-month refresher course.

Purpose: To train stockmen and veterinary helpers mainly for Government
service.

Entry standard: Higher School Leaving Certificate = four years secondary education.

Purpose: To train stockmen and veterinary helpers mainly for government
service.

IND 15 College of Veterinary Medicine,
Haryana Agricultural University, Hissar, Haryana.

Administration: University.

Finance: Government of Haryana.

TP: c. 90.

1 (**) ANIMAL HEALTH AND HUSBANDRY
One-year course for Certificate of Stockman/Veterinary Compounder.

Purpose: To train low level staff for veterinary service.

Entry standard: High School Leaving Certificate = four years secondary education.

IND 16 College of Veterinary Medicine,
Punjab Agricultural University, Ladhiana, Punjab.

Administration: University.

Finance: Government of Punjab.

TP: c. 70.

1 (**) ANIMAL HEALTH AND HUSBANDRY
One-year course for Certificate of Stockman/Veterinary Compounder.

Purpose: To train low level staff for veterinary services.

Entry standard: High School Leaving Certificate = four years secondary education.

IND 17 School of Veterinary Science and Animal Husbandry,
Silchar, Assam.

Administration: Ministry of Agriculture, Assam.

Finance: Government of Assam State.

TP: 120 p.a.

1 (**) ANIMAL HEALTH AND HUSBANDRY
One year for Certificate of Stockman/Veterinary Compounder.

Purpose: To train low level staff for the veterinary services.

Entry standard: High School Leaving Certificate.

IND 18

Stock Assistant Training School,
Srinagar, Jammu and Kashmir.

Administration: Department of Agriculture, Jammu and Kashmir.
TP: c. 20 p.a.

1 (**) ANIMAL HEALTH AND HUSBANDRY
Six months for Certificate of Stockman Assistant in animal management, breeding and breeding records, feeding and fodder crops, control of diseases, drug dispensary.

Purpose: To train junior staff for veterinary services.

Entry standard: High School Leaving Certificate.

IND 19

Stockman Training Centre,
Department of Animal Husbandry, Seetharampet, Hyderabad,
Andhra Pradesh.

Administration: Department of Animal Husbandry, Andhra Pradesh.

Finance: Government of Andhra Pradesh.
TP: 60 p.a. NN: no.

1 (**) ANIMAL HEALTH AND HUSBANDRY
Eight months for Stockman/Veterinary Compounder.

Purpose: To train junior staff for veterinary work.

Entry standard: High School Leaving Certificate.

IND 20

Veterinary Compounders/Stock Assistants Training School,
Chamba, Himachal Pradesh.

Administration: Department of Agriculture of Himachal Pradesh.

Finance: Government of Himachal Pradesh.
TP: 30 p.a. NN: no.

1 (**) ANIMAL HEALTH AND HUSBANDRY
One-year course for Certificate of Stockman/Veterinary Compounder.

Purpose: To train assistant staff for veterinary services.

Entry standard: High School Leaving Certificate.

IND 21

Veterinary College,
University of Agricultural Sciences, Hebbal, Bangalore 24, Mysore.

Administration: University.

Finance: Government of Mysore.
TP: c. 80 p.a.

1 (**) ANIMAL HEALTH/VETERINARY SCIENCES
One year for Certificate of Veterinary and Livestock Inspector.

Purpose: To train inspectors for the veterinary services.

Entry standard: High School Leaving Certificate.

- IND 22 Veterinary Field Assistants' Institute,
Ghongoor, Cachar, Assam.
- Administration: State Government. Founded 1958.
- 1 (**) ANIMAL HEALTH/VETERINARY SCIENCE
Certificate course for veterinary field assistants (C.V.F.A.)
- IND 23 Veterinary and Animal Husbandry Training Centre,
Mahasamund, Madhya Pradesh.
- Administration: Department of Veterinary Services, Madhya Pradesh State.
- Finance: Government of Madhya Pradesh.
TP: c. 100 p.a.
- 1 (**) ANIMAL HEALTH/VETERINARY SCIENCE
One-year course for Certificate of Veterinary Assistant.
- Purpose: To train assistant staff for veterinary services.
- Entry standard: High School Leaving Certificate.
- IND 24 Training Centre in Sheep and Wool Production,
Poona-16, Maharashtra.
- Administration: State Government. Founded 1962.
- 1 (**) SHEEP/WOOL
Diploma course in sheep and wool production.
- IND 25 Central Polytechnic, Madras,
Adyar, Madras 20.
- Administration: Directorate of Technical Education, Government of Madras.
- Finance: Government of Madras.
Cal: from Jun. RA: yes.
- 1 (**) FISHERIES
Three-year course for diploma in fisheries technology and navigation. Two years for diploma in refrigeration and air conditioning.
- Entry standard: For diploma courses, Secondary School Leaving Certificate. Age under 20.
- IND 26 Fisheries Training Institute,
Nowgong, District Chhatarpur, Madhya Pradesh.
- Administration: Directorate of Fisheries, M.P.
- Finance: Madhya Pradesh Government.
Lan: Hindi. TP: c. 50. RA: yes. NN: no.
- 1 (**) FISHERIES
Ten-month course for Inland Fisheries Officers and for Inland Fisheries Inspection Officers.
- Purpose: Staff training.
- Entry standard: In-service.

India

- IND 27 Staff Training Centre,
Ernakulam, Cochin 11, Kerala.
- Administration: Department of Fisheries of the Government of Kerala.
- Finance: Government of Kerala.
- TP: cap. 10. RA: yes. NN: no.
- 1 (**) FISHERIES
Ten-month course for extension officers in fisheries.
- Purpose: Staff training.
- Entry standard: In-service.
-
- IND 28 Regional Training Centre for Inland Fisheries Operatives,
Raja Niketan, Civil Lines, Agra-2.
- Administration: Chief Inspector of Fisheries Education, Ministry of Food and Agriculture.
- Finance: Government of India.
- Cal: Jun/Feb. TP: c. 80. RA: no.
- 1 (**) FISHERIES
Nine months for Certificate for Inland Fisheries Operatives (= extension workers in inland fisheries).
- Purpose: Pre- and in-service training for fishery extension workers.
- Entry standard: Intermediate level science, or full matriculation. Age, if in-service, under 45; others under 30.
-
- IND 29 Central Institute of Fisheries Operatives,
Dewan's Road, Ernakulam.
- Administration: Department of Agriculture of Central Government.
- Cal: from Jan. RA: yes.
- 1 (**) FISHERIES/MARINE ENGINEERING
Fifteen months for boat-building foreman, engine driver and master fisherman certificates and nine months for gear technicians.
- Purpose: To improve fisheries.
- Entry standard: Matriculation, plus experience, plus physical fitness. Age range 17 to 30.
-
- IND 30 Marine Products Processing Training Centre,
Mangalore, Mysore.
- Administration: State Government. Founded 1963.
- 1 (**) FOOD TECHNOLOGY
Diploma course in processing of marine and agricultural products.
-
- IND 31 Institute of Dairy Technology,
Aarey Colony, Goregaon, Bombay, Maharashtra.
- Administration: State Government.
- 1 (**) DAIRYING
Diploma course in dairying.

- IND 32 Southern Regional Station of the National Dairy Research Institute,
Adegodi P.O., Bangalore 30.
- Administration: Indian Council of Agricultural Research. Founded 1923.
- Finance: Government of India.
- Cal: beg. Jul. RA: yes.
- 1 (***) DAIRYING
 Two years for diplomas in dairy husbandry and dairy technology.
- 2 (***) DAIRY TECHNOLOGY
 Postgraduate courses for research workers. (M.Sc. and Ph.D.
 of various universities). Also short courses in dairy extension,
 milk plant operation, milk production.
- Purpose: To train technical staff for the dairy industry.
- Entry standard: For diploma courses, Higher Secondary Certificate in English
 and three science subjects. Under 23.
-
- IND 33 Soil Conservation Research Demonstration and Training Centre,
25 Lytton Road, Dehra Dun, Uttar Pradesh.
- Administration: Indian Council of Agricultural Research, Khrishi Bhawan, Dr.
 Rajendra Prasad Road, New Delhi.
- Finance: Government of India.
- Cal: beg. Apr. and Sep. RA: yes.
- 1 (**) SOIL SCIENCE/WATER RESOURCES
 Five-and-a-half-month course for Certificate in Soil and Water
 Conservation for serving officers in State Departments of
 Agriculture, Forestry, etc.
- Entry standard: In-service training for staff of State Departments of Agriculture
 and Forestry.
-
- IND 34 to IND 55 Agricultural and Rural Institutions.
- Most of the following institutions run diploma level courses in
 subjects related to agriculture and rural studies. It has not been
 possible to provide fuller details and training officers requiring
 more information are recommended to write direct to the institution
 in question.
-
- IND 34 Agriculture School, Gurukul University,
Kangri, Uttar Pradesh.
- 1 (**) AGRICULTURE/EXTENSION
-
- IND 35 Agricultural School,
Muzaffarnagar, Uttar Pradesh.
- 1 (**) AGRICULTURE/EXTENSION
-
- IND 36 Agriculture School,
Rajput Shiksha Shivar, Dhaulana (Meerut), Uttar Pradesh.
- 1 (**) AGRICULTURE/EXTENSION

- IND 37 Agricultural School-cum-Extension Training Centre,
Rajghat, Varanasi, Uttar Pradesh.
1 (**) AGRICULTURE/EXTENSION
- IND 38 Balwant Vidyapeeth Rural Institute,
Bichpuri, Agra, Uttar Pradesh.
1 (**) RURAL SERVICES
2 (**) CIVIL AND RURAL ENGINEERING
- IND 39 Gandhi Vidyapith,
Vedachhi, (Surat), Gujarat.
1 (**) AGRICULTURAL EDUCATION
- IND 40 The Gandhigram Rural Institute,
Chandhigram P.O. (District Madurai), Tamil Nadu.
1 (**) RURAL SERVICES/AGRICULTURE
2 (**) COMMUNITY DEVELOPMENT
- IND 41 G.K. Institute of Rural Education,
Gargoti (District Kolhapur), Maharashtra.
1 (**) RURAL STUDIES - Course for M.Ed.
2 (**) RURAL STUDIES - Course for Ph.D.
- IND 42 Government Agricultural School,
Bulandshahr, Uttar Pradesh.
1 (**) AGRICULTURE/EXTENSION
- IND 43 Government Agricultural School,
Chirgaon (Jhansi), Uttar Pradesh.
1 (**) AGRICULTURE/EXTENSION
- IND 44 Jamia Rural Institute,
Jamia Nagar, New Delhi.
1 (**) RURAL SERVICES
2 (**) CIVIL AND RURAL ENGINEERING
- IND 45 Kasturba Rural Institute,
Rajpura, Punjab.
1 (**) RURAL SERVICES/AGRICULTURE

- IND 46 Lok Bharati,
Lok Seva Mahavidyalaya, Sanosara, Gujarat.
1 (**) RURAL SERVICES/AGRICULTURE
- IND 47 Rajkiya Krishi Vidyalaya,
Gorakhpur, Uttar Pradesh.
1 (**) AGRICULTURE/EXTENSION
- IND 48 Rural Agricultural School,
Bisawar (Mathura), Uttar Pradesh.
1 (**) AGRICULTURE/EXTENSION
- IND 49 Rural Institute,
Hanumanamatti, Mysore.
1 (**) RURAL SERVICES/AGRICULTURAL SCIENCE
- IND 50 Rural Institute,
Shivajinagar, Amravati, Maharashtra.
1 (**) RURAL SERVICES/AGRICULTURE
2 (**) CIVIL AND RURAL ENGINEERING
- IND 51 Rural Institute,
Wardha, Maharashtra.
1 (**) RURAL SERVICES/VILLAGE INDUSTRY
2 (**) CIVIL AND RURAL ENGINEERING
3 (**) AGRICULTURE
- IND 52 Rural Higher Institute,
Mouni Vidyapeeth, Garott, Maharashtra.
1 (**) RURAL SERVICES
2 (**) CIVIL AND RURAL ENGINEERING
- IND 53 Rural Institute of Higher Studies,
Sundarnagar Birouli, Darbhanga, Bihar.
1 (**) RURAL SERVICES
- IND 54 Saraswati Gram Vidyapith,
Bainoda (Mehsana), Gujarat.
1 (**) AGRICULTURE

IND 55

Shri Ramakrishna Mission,

Vidyalaya Rural Institute, Sri Ramakrishna Vidyalaya,
P.O. Perianaickenpalayam, Coimbatore, Tamil Nadu.

- 1 (**) RURAL SERVICES/AGRICULTURE
- 2 (**) CIVIL AND RURAL ENGINEERING
- 3 (***) RURAL ECONOMICS AND CO-OPERATION

IND 56

Vidya Bhavan Rural Institute,

Udaipar, Rajasthan.

Administration: Private by the Vidya Bhavan Society. Founded 1956. This Rural Institute which works under the Vidya Bhavan Society and in association with the Yuvak Mandals Organization has a well developed extension service programme concentrating mainly on applied nutrition.

- 1 (**) RURAL SKILLS
Instruction in villages covering topics such as diet, vitamins, storage of food grains, preservation of vegetables, development of kitchen gardens, food preservation and processing. The Institute raises vegetable and fruit plants which are provided free to those attending extension courses and sold to other villagers.
- 2 (**) RURAL SCIENCE
Diploma course in rural services and in rural and civil engineering.
- 3 (***) COMMUNITY DEVELOPMENT
Post-diploma course in community development.
- 4 (***) COMMUNITY DEVELOPMENT/RURAL SCIENCE
Postgraduate courses in rural sociology and community development.

IND 57

Allahabad Agricultural Institute,

Allahabad, Uttar Pradesh.

Administration: Founded 1910. Largely autonomous.

Lan: Eng. & Hindi. Cal: from Jul. RA: yes.

- 1 (**) AGRICULTURE
Two years for Certificate in Agriculture (U.P. Board of High School and Intermediate Education).

Entry standard: Higher School Certificate.

- 2 (**) DAIRY HUSBANDRY
Two years for Diploma in Dairy Husbandry, set by Dairy Education Board, Government of India.

Entry standard: Higher Secondary School Certificate, Matriculation or equivalent.

- 3 (***) AGRICULTURAL ENGINEERING
Course for B.Sc. (Agri. Engg.) with 45 participants.

IND 58

Gram Seva Mandir,
Nardipur (NG), Gujarat State.

This is a Social Welfare Institution intended to benefit a rural area through activities amongst villagers. It is particularly concerned with women's education and amongst other activities runs two teacher training colleges for women, a secondary school, two hostels, nursery and primary schools, a medical aid scheme, etc.

1 (**) AGRICULTURAL EDUCATION

The primary teachers training college has agriculture as its main subject and also gives training in social services. There is also special training for adult women with agriculture as the main theme.

IND 59

Gramsevak Training Centres,
c/o Ministry of Agriculture and Irrigation, Government of India,
Krishi Bhavan, New Delhi 110001.

Administration: Established from 1952 onwards. There are now eighty-three of these training centres for village level extension workers throughout India, four in Andhra Pradesh, two in Assam, four in Bihar, nine in Maharashtra, four in Gujarat, two in Jammu and Kashmir, three in Kerala, six in Madhya Pradesh, five each in Tamil Nadu and in Mysore, three in Orissa, twenty in Uttar Pradesh, seven in West Bengal, and one each in Arunachal Pradesh, Goa Daman Diu, Himachal Pradesh, Manipur, Meghalaya, Punjab, Rajasthan, and Tripura.

Finance: State Governments.

Lan: usually regional or local, but Eng. sometimes. Cal: Jan/Jul for pre-service courses, variable for others. TP: 30-40 per course. RA: yes. NN: yes but only at the few centres where Eng. is used.

1 (**) AGRICULTURAL EXTENSION

Short courses for selected youth leaders at start of Kharif and Rabi seasons.

2 (***) AGRICULTURAL EXTENSION

Courses of one and a half or two years pre-service for extension personnel.

3 (***) AGRICULTURAL EXTENSION

One-year courses of higher training in agriculture for in-service extension staff. Also four- to six-week refresher courses and two- to four-week ad hoc specialist courses, in-service for extension staff.

Purpose: Pre-service and in-service training for village level extension workers; higher level training is mainly in the use of high yielding varieties and in multiple cropping programmes, and to keep them up-to-date with techniques of agricultural production and with developments in areas such as provision of credit, dry-zone farming, plant protection, agricultural implements, etc.

Entry standard: For pre-service courses, full matriculation or pre-university examinations.

IND 60

Gramsevika Training Centres,

c/o Ministry of Agriculture and Irrigation, Government of India,
Krishi Bhavan, New Delhi 110001.

Administration: Established from 1958 onwards. There are now twenty-five of these training centres for Indian women extension service staff, including three each in Mysore and West Bengal, two each in Andhra Pradesh, Punjab, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, and Tamil Nadu, and one each in Assam, Himachal Pradesh, and Goa.

Finance: State Governments.

Lan: regional or local. Cal: throughout year. TP: 30-40 per course. RA: yes. NN: no.

1 (**) NUTRITION

Courses to train Anganwadi workers in community nutrition in order to implement the Integrated Child Development Scheme.

2 (***) AGRICULTURAL EXTENSION

Pre-service training courses of one year for women extension workers at the village level.

3 (***) RURAL WELFARE

Eight-week refresher in-service courses for women extension officers. Also 2-4 week in-service training for associate women workers and 2-6 week ad hoc specialized in-service courses in applied nutrition, rural welfare, etc.

Purpose: Pre- and in-service training to improve and up-date the professional competence of women extension workers at the village level in nutrition and rural welfare.

Entry standard: Matriculation and pre-university examinations for the pre-service courses.

IND 61

Extension Education Institute,

Nilokheri (District Karnal), Haryana.

Administration: Established in 1959.

Finance: Government of India (Central Government).

Lan: Eng. & Hindi. TP: 20-25 per course. RA: yes. NN: yes.

1 (***) AGRICULTURAL EXTENSION

In-service courses of one to six weeks in extension teaching methods, and communication media; subject matter includes agriculture, animal husbandry, agricultural engineering and specialized areas such as agricultural credit, audio visual aids, management etc.

Purpose: To increase the professional competence of instructional staff and to keep them abreast with the latest developments in teaching methods and techniques.

Entry standard: Graduation. Trainees are nominated by various State Governments/ Union Territories.

IND 62

Extension Education Institute,

Anand, Gujarat.

Administration: Established in 1963 under the administrative control of Gujarat Agricultural University, Ahmedabad (see IND 97).

Finance: Government of India (Central Government).

Cal: Jul/Aug. (for M.Sc.) TP: 20-25 per course (+ 4 p.a. for M.Sc.) RA: yes. NN: yes.

1 (***) AGRICULTURAL EXTENSION

In-service training courses of one to six weeks in extension teaching methods, techniques and communication media; subject matter includes agriculture, animal husbandry, audio visual aids and specialized areas such as credit, management, SFDA/MFAL project.

2 (***) AGRICULTURAL EXTENSION

Higher training in extension education leading to M.Sc. degree course for the instructional staff of G.T.Cs. and H.S.Ws.

Purpose: To increase the professional competence of the instructional staff and keep them abreast with the latest development in teaching methods and techniques, and to improve their professional academic qualifications.

IND 63

Extension Education Institute,
Rajendranagar (Hyderabad A.P.)

Administration: Established in 1963 under the administrative control of Andhra Pradesh Agricultural University, Hyderabad (see IND 78).

Finance: Government of India (Central Government).

Cal: Jul/Aug (for M.Sc.) TP: 20-25 per course (+ 4 p.a. for M.Sc.) RA: yes. NN: yes.

1 (***) AGRICULTURAL EXTENSION

In-service training courses of one to six weeks in extension teaching methods, techniques and communication media; subject matter includes agriculture, animal husbandry, audio visual aids, and specialized areas such as agricultural credit, SFDA/MFAL etc.

2 (***) AGRICULTURAL EXTENSION

Higher training in extension education leading to M.Sc. degree courses for the instructional staff of G.T.Cs. and H.S.Ws.

Purpose: To increase the professional competence of the instructional staff and keep them abreast with the latest developments in teaching methods and techniques, and to improve their professional and academic qualifications.

IND 64

Extension Department in Home Science Colleges.

Administration: The B.Sc. level Extension Department was established in 1961 and the M.Sc. Department in 1964. The course B.Sc. described takes place at Viharilal College of Home and Social Science, Calcutta (W.B.), at the College of Arts and Home Science, Agra (UP), and Allahabad Agricultural Institute, Allahabad (UP); the M.Sc. course is run at Sri Avinashlingan Home Science College, Coimbatore (Tamil Nadu).

Finance: Government of India (only Extension Department of Colleges).

Cal: beg. Jul. TP: 20 per course for B.Sc., 15 for M.Sc. RA: yes. NN: yes.

1 (***) HOME ECONOMICS/EXTENSION

Three years for B.Sc. in home science with main emphasis on extension.

Entry standard: Pre-university/Intermediate.

2 (***) HOME ECONOMICS/EXTENSION

Two years for higher degree of M.Sc. in home science with main emphasis on extension.

Entry standard: First degree in home science.

Purpose: To equip home science graduates with rural aptitude to serve as Instructresses in Gramsevik Training Centres, or as teachers in multi-purpose schools/rural institutes/community development projects.

IND 65

Tractor Training Centre,

Hissar, Haryana.

Lan: Eng. & Hindi. Cal: beg. Jan & Jul. RA: yes.

1 (***) AGRICULTURAL MECHANIZATION

Five month certificate in tractor training. Also short refresher and special courses.

Purpose: To train experts in tractor operation.

Entry standard: Matriculation or equivalent but preference to holders of degrees or diploma in agriculture, engineering, etc. Age range 18-40. Physical fitness essential.

IND 66

Survey Training Institute,

Centre for Survey Training and Map Production, Survey of India Department, Uppal, Hyderabad 39, Andhra Pradesh.

Administration: Survey of India Department.

Finance: Government of India.

RA: some.

1 (***) SURVEYING

Many courses in all aspects of survey work and from eight weeks up to two years.

Purpose: Mainly staff training.

Entry standard: Matriculation or equivalent plus additional qualifications and experience for advanced courses.

IND 67

Central Forest Rangers College,

Chandrapur, Maharashtra.

Administration: Ministry of Agriculture and Irrigation of the Government of India.

Finance: Government of India.

Cal: from Feb. TP: 80 p.a. NN: foreign government nominees who possess requisite standards and are sponsored under Plan/Schemes of the Government of India are admitted.

1 (***) FORESTRY

Two years for certificate in forestry.

Purpose: For sub-professional training for forestry services and for those sponsored by wood-based industries.

Entry standard: Inter.Sc. or its equivalent plus physical fitness. Age 18 to 24 years.

- IND 68 Eastern Forest Rangers College,
Kurseong, West Bengal.
- Administration: Ministry of Agriculture and Irrigation of the Government of India.
- Finance: Government of India.
- Cal: from May. TP: 80 p.a. RA: yes. NN: foreign government nominees who possess requisite standards and are sponsored under Plan/Schemes of the Government of India are admitted.
- 1 (***) FORESTRY
Two years for Certificate in Forestry.
- Purpose: For sub-professional training for forestry services and for those sponsored by wood-based industries.
- Entry standard: Inter.Sc. or its equivalent plus physical fitness. Age 18 to 24.
- IND 69 Northern Forestry Rangers College,
Dehra Dun, Uttar Pradesh.
- Administration: Ministry of Agriculture and Irrigation of the Government of India.
Founded 1878.
- Finance: Government of India.
- Cal: from Mar. TP: 100. RA: yes. NN: foreign government nominees who possess requisite standards and are sponsored under Plan/Schemes of the Government of India are admitted.
- 1 (***) FORESTRY
Two years for Certificate in Forestry.
- Purpose: For sub-professional training for forestry services and for those sponsored by wood-based industries.
- Entry standard: Inter.Sc. or its equivalent. Age range 18 to 24. High standard of physical fitness.
- IND 70 Southern Forestry Rangers College,
Coimbatore 2, Tamil Nadu.
- Administration: Ministry of Agriculture and Irrigation of the Government of India.
- Finance: Government of India.
- Cal: from Nov. TP: 100. RA: yes. NN: foreign government nominees who possess requisite standards and are sponsored under Plan/Schemes of the Government of India are admitted.
- 1 (***) FORESTRY
Two years for Certificate in Forestry.
- Purpose: For sub-professional training for forestry services and for those sponsored by wood-based industries.
- Entry standard: Inter.Sc. or equivalent. Age range 18 to 24. Physical fitness.
- IND 71 Co-operative Training Centres,
c/o Committee for Co-operative Training, 34 South Patel, Nagar,
New Delhi 110008.
- Administration: State Co-operative Unions and Departments.
- Finance: Mainly State Governments.
- Lan: local languages. RA: yes. NN: no.

1 (**) CO-OPERATIVE STUDIES

Lower level courses for junior staff of co-operatives are organized through 66 Co-operative Training Centres throughout India under the direct control of State organizations but with academic support and guidance from the Committee for Co-operative Training of the National Co-operative Union of India which is in overall charge, with the concurrence of the Government of India, of Co-operative Training Programmes. Basic courses of general training last from twelve weeks to one year. Some centres also provide specialized courses in topics such as co-operative banking, marketing, etc.

Entry standard: Mainly in-service for junior personnel such as supervisors, sub-accountants, clerks, who usually have some secondary education.

IND 72

Co-operative Training Colleges,

c/o Committee for Co-operative Training, 34 South Patel, Nagar, New Delhi 110008.

Administration: Committee for Co-operative Training of the National Co-operative Union of India. There are fifteen Co-operative Training Colleges at: Bangalore, Karnataka; Bhubaneswar, Orissa; Chandigarh; Dehra Dun, U.P.; Gauhati, Assam; Hyderabad, A.P.; Indore, M.P.; Kalyani, West Bengal; Kota, Rajasthan; Lucknow, U.P.; Madras, Tamil Nadu; Nagpur, Maharashtra; Patna, Bihar; Poona, Maharashtra; V.V. Nagar, Gujarat.

Finance: Government of India by grants-in-aid.

Lan: Eng. with local lan. used at some colls. for special regional courses only. Cal: from Jul. for higher dip., variable other courses. TP: over 3,000. RA: yes. NN: yes, at some colls. (see Note).

1 (***) CO-OPERATIVE STUDIES

Various diploma courses in aspects of co-operative work, e.g. thirty-six week higher diploma course in co-operation (condensed at eight colleges to eighteen weeks); sixteen weeks in co-operative banking at Madras and Nagpur); fifteen weeks in land development banking at five colleges; ten weeks in co-operative marketing in four colleges; twelve weeks in co-operative audit at six colleges. A new diploma course in co-operative dairy management is planned for several colleges.

2 (***) CO-OPERATIVE STUDIES

Apart from diploma courses the Colleges arrange functional, short-term and induction courses on many special topics including one week orientation in co-operation for agriculture extension officers, at six colleges; two weeks in credit management for small and marginal farmers development projects, at two colleges; two weeks in co-operation for veterinary assistant surgeons, at Madras; two weeks for accountants, or managers, or supervisors of land development banks, at three colleges; two weeks in fertilizer consumption and distribution, at three colleges; two weeks in grading, storage and warehousing at five colleges; two weeks in procurement and distribution of food grains, at Hyderabad; two weeks in distribution of fertilizers, improved seeds, agricultural implements and pesticides, at six colleges; short-term in co-operative cold storage, at Dehra Dun; two weeks for auditors of co-operative sugar factories, at Hyderabad; two weeks on farm guidance activities of primary agricultural co-operatives, at Gauhati; three weeks on milk/dairy co-operatives at seven colleges; two weeks on fishery co-operatives, at three colleges; one week on milk/dairy co-operatives at V.V. Nagar; three days seminar on farm finance, at Nagpur.

Entry standard: For 1) and 2), mainly in-service for experienced intermediate personnel of co-operatives e.g. managers, secretaries, accountants of Governments, supervisors in State, Regional and Divisional Institutions. University graduates preferably with degrees in economics, commerce or agriculture who are prospective managers in primary societies or likely to hold intermediate posts in State, Regional and Divisional Institutions can also be accepted.

Note: Trainees from Afro-Asian countries are accepted and many attend courses at the Colleges under various Government aid schemes e.g. Colombo Plan, SCAAP, etc. These trainees are placed at those colleges where the language of instruction is solely English and arrangements are best made through the Committee rather than through individual colleges. Apart from trainees sponsored by ILO, FAO, UNDP, etc. private trainees can also be accepted if applying through the Government of India (See also IND 73).

IND 73

Vaikunth Meta National Institute of Co-operative Management,
R.B.I. Building, Ganeshkhind Road, Poona 411016, Maharashtra.

Administration: Committee of Co-operative Training of the National Co-operative Union of India.

Finance: Government of India by grants-in-aid.

Cal: from Jul. for dip. course, other courses variable.
TP: c. 1,000 on 37 courses. RA: yes. NN: yes.

1 (****) CO-OPERATIVE MANAGEMENT

Thirty-eight week postgraduate course in co-operative business management, to develop conceptual and decision making skills of young executives and departmental officers. Practical training is included as well as specialization in different sectors of co-operative management.

2 (****) CO-OPERATIVE MANAGEMENT

Short courses and programmes from a few days to four weeks covering all aspects of co-operative management including courses for university teachers and college lecturers, seminars for the chairmen and chief executives of dairy co-operatives, two weeks in management of fishery co-operatives, etc.

Entry standard: Mainly in-service for senior level personnel in charge of direction and control of State, Divisional and District level institutions, deputy and assistant registrars of co-operative societies, other senior executives of co-operative institutions. Trainees can be accepted from Afro-Asian countries. (See also IND 72 and INT 18).

IND 74

Agra University,
Paliwal Park, Agra, Uttar Pradesh.

Administration: Founded in 1927, autonomous. There are Faculties of Agriculture and Veterinary Science. Affiliated colleges include the Post-graduate College of Animal Sciences I.V.R.I., Izatnagar; and the U.P. College of Veterinary Science and Animal Husbandry, Mathura.

Finance: Mainly examination fees.

Lan: Eng. & Hindi. Cal: Jul/Dec, Jan/Apr. TP: c. 1,000 in Fac. Agric. and 300 in Fac.Sci. RA: yes. NN: yes.

1 (***) SUNDRY

Two years for B.Sc. (Ag.), three years for B.Sc. (Ag.) Hons. and four years for B.V.Sc. and A.H.

2 (***) SUNDRY

Two years full-time for M.Sc.(Ag.); subjects include agricultural extension, agronomy, animal husbandry and dairying, soil conservation. Also two years full-time for M.V.Sc.; subjects include anatomy (including immunology and virology), parasitology, pharmacology (including toxicology), surgery.

Entry standard: Intermediate in science or agriculture.

IND 75

Postgraduate College of Animal Sciences,

Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh.

Administration: Indian Council of Agricultural Research. The Postgraduate College is affiliated to Agra University.

Finance: Government of India.

RA: some. NN: yes (limited places).

1 (***) VETERINARY SCIENCE

Two years for M.V.Sc. of Agra University in bacteriology, pathology, parasitology, virology, physiology, animal-nutrition, -genetics, -breeding, biochemistry. Training is also available at the doctorate level by research and thesis. There are three post-graduate diploma courses: in preventive veterinary medicine, in animal husbandry, and in poultry husbandry.

Entry standard: For the Masters' course, B.V.Sc. and A.H. of Agra University or equivalent.

IND 76

University of Allahabad,

Allahabad, Uttar Pradesh 211002.

Administration: Founded in 1887. The Allahabad Agricultural Institute (IND 57) is an associated college of the University, and the University is also associated with the Shiela Dhar Institute of Soil Science, which conducts special research.

Cal: Jul/Sep, Oct/Dec, Jan/May. TP: c. 11,200. RA: yes. NN: yes.

1 (***) SUNDRY

Three years for B.Sc.(Agr.), B.Sc.(Animal Husbandry and Dairying), four years for B.Sc. (Agric.Engin.).

Entry standard: Intermediate examination in relevant subjects.

2 (***) SUNDRY

Two years for M.Sc. in agricultural biochemistry, agricultural extension, dairy technology, plant pathology.

IND 77

All India Institute of Hygiene and Public Health,

110 Chittaranjan Avenue, Calcutta 12.

Administration: Ministry of Health.

Finance: Government of India.

Cal: from Jul. RA: some.

1 (****) VETERINARY SCIENCE/NUTRITION

Various courses including two years for higher degree of M.V.P.H. (Veterinary Public Health) and ten months for postgraduate diploma in nutrition.

Entry standard: Appropriate first degree.

IND 78

Andhra Pradesh Agricultural University,

Hyderabad 30, A.P.

Administration: Established 1964, this includes the Andhra Veterinary College Tirupati, Chittoor District, A.P., the College of Veterinary Science, Hyderabad, A.P., and the College of Basic Sciences, Rajendranagar, Hyderabad, A.P. at all of which veterinary studies can be taken.

Cal: beg. Jun. in 2 semesters. TP: c. 2,100 in Univ. as a whole.
RA: yes. NN: yes.

1 (****) SUNDRY

Degree courses in agriculture and related sciences. Three years for B.Sc. Home Science, four years for B.Sc.; five years for B.V.Sc.

2 (****) SUNDRY

Two years for M.Sc. with specialization in agriculture, agricultural botany, plant pathology, soil science, horticulture, agricultural economics; and for M.Sc. Home Science specializing in food and nutrition. Two years for M.V.Sc. specializing in pathology, dairy science, animal science, parasitology, animal production and genetics, etc.

IND 79

Annamalai University,

Annamalainagar, Tamil Nadu, South India.

Administration: Founded in 1928, incorporated 1929. There is a Faculty of Agriculture.

Finance: State and Central Governments plus fees.

Cal: Jul/Sep, Oct/Dec, Jan/Apr. TP: c. 320 in Fac. Agric.
RA: yes. NN: yes.

1 (****) AGRICULTURE

Four years full-time for B.Sc. (Ag.).

Entry standard: Higher Secondary examination in relevant subjects.

2 (****) AGRICULTURE/MARINE BIOLOGY

Two years full-time for M.Sc. with specialization in botany, marine biology. Also two years full-time for M.Sc.(Ag.).

IND 80

Assam Agricultural University,

Jorhat 78013.

Administration: The University was founded in 1969 on the pattern of the Land Grant Colleges of USA. It has Faculties of Agriculture, Veterinary Science and Home Science.

Finance: Indian Council of Agricultural Research and State Government.

Cal: Jul/Oct, Nov/Feb, Feb/Jun. TP: 704 in Univ. RA: yes.
NN: yes.

1 (***) AGRICULTURE/ VETERINARY SCIENCE
Five years B.Sc. (Agriculture); four years B.V.Sc. and AH.

2 (***) SUNDRY
Two years for M.Sc. Agriculture in agricultural chemistry and soil science, plant pathology, entomology, genetics and soil science, plant breeding, agricultural economics, horticulture, technical husbandry, and technology. Two years for M.V.Sc. in animal nutrition, food and management, animal gynaecology medicine, veterinary surgery, animal pathology, animal physiology.

IND 81 State Forest Service College,
Burnihat, Assam.

Administration: Ministry of Agriculture and Irrigation of the Government of India.

Finance: Government of India.

Cal: from 1st May. TP: 50 p.a. NN: foreign government nominees who possess requisite standards and are sponsored under Plan/Schemes of the Government of India are admitted.

1 (***) FORESTRY
Two year diploma course in forestry.

Purpose: For State Forest Service and those sponsored by wood-based industries.

Entry standard: B.Sc. plus physical fitness. Age 19 to 24.

IND 82 Banaras Hindu University,
Varnasi, Uttar Pradesh 221005.

Administration: Founded in 1915. There is a Faculty of Agriculture. There are Summer Schools in biology and in plant ecology.

Lan: Eng. & Hindi. Cal: Jul/Oct, Oct/Apr. TP: c. 530 in Fac. Agric. RA: yes. NN: yes.

1 (***) AGRICULTURE
Four years full-time for B.Sc.(Ag.).

Entry standard: Age 17-25. Pre-university or Higher Secondary examinations in relevant subjects.

2 (***) AGRICULTURE
Two years full-time for M.Sc. - subjects include biochemistry, botany, zoology. Also two years full-time for M.Sc. (Ag.) - subjects include agronomy, entomology, mycology, plant physiology.

IND 83 University of Agricultural Sciences Bangalore,
Hebbal, Bangalore, Karnataka 560024.

Administration: Established in 1963, the University has Faculties of Agriculture, and of Animal and Veterinary Sciences. It established the Fisheries College and Marine Products Training Centre, Mangalore - the first of its kind in India - and the Agricultural Engineering Institute at Raichur. Other constituent colleges are the Colleges of Agriculture at Hebbal and Dharwar, and the Veterinary College, Hebbal (see IND 21).

Cal: Sep/Dec, Dec/Apr, Apr/Jul. TP: c. 2,400. RA: yes. NN: yes.

- 1 (***) AGRICULTURAL ENGINEERING
Three-year diploma course in agricultural engineering.
- Entry standard: Matriculation, with science subjects.
- 2 (***) SUNDRY
Four years full-time for B.Sc.(Agr.), B.Sc.(Hort.), and B.F.Sc., five years for B.V.Sc. In final year B.Sc.(Agri.) there are specializations in economics and rural sociology, agricultural extension education, entomology, plant pathology.
- Entry standard: One year or two year pre-university course of a recognized university.
- 3 (***) SUNDRY
One-year diploma course in crop production; two years full-time for M.Sc.(Agri.) and M.V.Sc.
- IND 84 Bidhan Chandra Krishi Vishwa Vidayala,
Kalyani Nadia District, West Bengal.
- Administration: Founded in 1974. There are Faculties of Agriculture and Veterinary Science.
- Finance: Government grants. Indian Council of Agricultural Research.
Cal: Jun/May. TP: c. 130 in Fac.Agric. & 450 in Fac.Vet.Sci.
RA: yes. NN: yes.
- 1 (***) VETERINARY SCIENCE
Five years full-time for B.V.Sc. & AH.
- Entry standard: Higher Secondary or pre-university examinations.
- 2 (***) AGRICULTURE/VETERINARY SCIENCE
Two years for M.Sc. specializing in biochemistry, botany, zoology. Also two years for M.Sc. (Ag), for M.Planning, and for M.V.Sc.
- IND 85 University of Bombay,
University Road, Fort, Bombay 32, Maharashtra State.
- Administration: Founded 1857. There is a Marine Biological Research Station. The Central Fisheries Education Institute is a recognized qualified institution of the university.
Cal: Jun/Apr in 2 terms. TP; 97,000 full-time in the univ. as a whole. RA: yes. NN: yes.
- 1 (***) HOME ECONOMICS/FOOD TECHNOLOGY
Three years full-time for B.Sc. (Tech.) and for B.Sc. (Home Science). Specializations include food technology.
- Entry standard: Usually Secondary School Certificate in seven subjects.
- 2 (***) SUNDRY
Two years full-time for M.A. in Economics (Economics and Agricultural Economics). Two years full-time after B.Sc. (Home Science) for M.Sc. (Home Science). Subjects include food nutrition and dietetics. Two years full-time for M.Sc. (Tech.) in fermentation technology, food technology

India

IND 86

University of Calcutta,

Senate House, College Street, Calcutta, West Bengal 700032.

Administration:

Founded in 1857, autonomous. There are Faculties of Agriculture and Veterinary Science. The Carey Institute of Horticulture at 1 Alipore Road, Calcutta 27 and the Bengal Veterinary College, Belgachia, Calcutta 37 are affiliated colleges.

Cal: Jun/May (vacations Sep/Oct and Apr/May). TP: c. 130 in Fac.Agric. & 450 in Fac.Vet.Sci. RA: yes. NN: yes.

1 (***) SUNDRY

Five years full-time for B.V.Sc. & AH. Three years for B.Com. (Hons) in rural economics and co-operation.

Entry standard:

Higher Secondary or pre-university examinations.

2 (***) SUNDRY

Two years full-time for M.Sc. specializing in biochemistry, botany, zoology. Two years full-time for M.Sc.(Ag.), for M.Planning, and for M.V.Sc.

IND 87

University of Calicut,

Ten Lipalam, Kerala State 673635.

Administration:

Founded in 1968 to take over part of the area previous covered by the University of Kerala, from which it inherited four departments of postgraduate studies and research already established at Calicut. There are Faculties of Fisheries, Forestry and Veterinary Science. The Kerala Veterinary College and Research Institute at Mannuthy, Trichur, is associated with the University.

Finance:

Mainly State Government

TP: 50,000. RA: yes. NN: about 30.

1 (***) SUNDRY

First degree courses for B.Sc. in various subjects, and for B.V.Sc.

2 (***) SUNDRY

Higher degree courses for M.Sc. in various subjects, and for M.V.Sc.

IND 88

Central Food Technological Research Institute,

Mysore, India.

RA: yes. NN: yes.

1 (***) FOOD TECHNOLOGY

UNIDO courses of three months starting June in methods and techniques for food processing and preservation, quality control, packaging and storage, with in-plant training and study visits to fruit, vegetable, rice and other food processing plants.

IND 89

Central Institute of Fisheries Education,

Varsova, P.O. Box 7392, Bombay.

Administration:

Department of Agriculture of the Ministry of Food and Agriculture, Government of India. This is a recognized qualified institution of the University of Bombay.

Finance:

Government of India.

Cal: Jul/Jun. TP: 20 p.a. RA: yes. NN: yes.

1 (***) FISHERIES

Two-year course for fisheries officers in fishery biology, fishery technology and fishery administration and economics, leading to diploma in fisheries science. Also M.Sc. and Ph.D. in biochemistry, biochemistry and biology aspects of fish and fisheries, marine and fisheries biology.

Purpose: To train government staff, both pre- and in-service.
Entry standard: University degree in science with zoology as one subject and good marks in it. Age under 45 if in-service, under 30 others.

IND 90

Central Leather Research Institute,
 Adayar, Madras 600020.

RA: yes. NN: yes.

1 (***) LEATHER TECHNOLOGY

UNIDO courses lasting four months to one year in leather technology for those with qualifications in technology and a knowledge of chemistry.

IND 91

Central Training Institute for Poultry Production and Management,
 Hessarghatta, Bangalore, Kamataka.

Administration: Ministry of Agriculture and Irrigation (Department of Agriculture), Government of India.

Finance: Government of India.

TP: c. 30. RA: yes. NN: yes, except course 1.

1 (***) POULTRY SCIENCE

Three-month course in chick sexing (vent method).

Entry standard: High School Leaving Certificate with good eyesight.

2 (***) POULTRY SCIENCE

Eight to twelve-week courses in poultry genetics and breeding, poultry nutrition, poultry management and poultry marketing and technology.

Entry standard: B.V.Sc. and AH, B.Sc. (Agric.) or B.Sc. (Animal Sc.).

IND 92

Dairy Science College Institute of Agriculture,
 Anand, Gujarat.

Administration: Founded in 1961 and associated with Sardar Patel University, which was established in 1955 to help in the regeneration of villages.

TP: 20.

1 (***) DAIRYING

Courses for Indian Dairy Diploma (in dairy technology) and for B.Sc. (Dairy Tech.).

India

- IND 93 Forest Research Institute,
Dehra Dun, Uttar Pradesh.
- Administration: Government of India.
- 1 (***) FORESTRY
Diploma and Certificate courses in forestry, seasoning and preservation of timber, paper technology.
- 2 (***) FORESTRY
Courses of research training and for Ph.D. of various universities.
-
- IND 94 Gauhati University,
Gauhati, Assam 781014.
- Administration: Founded in 1948. Largely autonomous.
- Finance: Mainly from Assam State Government.
- Cal: Jul/Sep, Oct/Dec, Jan/Apr. TP: 40,000 full-time students, with over 14,000 in Fac.Sci. NN: yes.
- 1 (***) AGRICULTURAL BOTANY
There is a Department of Agricultural Botany which apart from B.Sc. courses in botany or zoology, offers a two-year full-time course in agricultural botany.
-
- IND 95 University of Gorakhpur,
Gorakhpur, Uttar Pradesh.
- Administration: Founded 1956. The University has a Faculty of Agriculture.
- Finance: Mainly fees and provincial government grants.
- Lan: Hindi at undergrad. level, Eng. & Hindi at postgrad. level.
Cal: Jul/Dec, Jan/Apr. TP: 1,000+ in Fac.Agric. RA: yes.
NN: yes.
- 1 (***) AGRICULTURE
Three years for B.Sc. (Ag.).
- Entry standard: Age 17 plus. Intermediate in agriculture or intermediate science (agriculture) or equivalent in GCE.
- 2 (***) AGRICULTURE
Two years full-time for M.Sc. (Ag.).
-
- IND 96 Govind Ballabh Pant University of Agriculture and Technology,
Pantnagar, District Nainital, Uttar Pradesh 263145.
- Administration: Founded in 1960. The University is based on the pattern of the Land Grant Colleges of the USA. Situated at Pantnagar Farm (over 16,000 acres), it has Colleges of Agriculture, Home Science, Veterinary Medicine, and Technology (including Agricultural Engineering). An extension service was set up in 1962 and operates in seventeen districts of the State of Uttar Pradesh. Activities include training of farmers, extension workers, advice on seed production, veterinary, animal breeding, demonstration of farmers' fields, etc.
- Finance: Mainly State Government.
- Lan: Eng. & Hindi. Cal: Jul/Oct, Nov/Feb, Mar/Jun. TP: c. 570 in Coll. of Agric. and 290 in Coll. of Vet.Med. RA: yes. NN: yes.

1 (***) AGRICULTURE/ANIMAL SCIENCE

Three years for B.Sc. Ag. and AH. and four years for B.V.Sc. and AH. Five years for B.Tech. specializing in agriculture.

Entry standard: Higher Secondary or intermediate examinations in relevant subjects.

2 (***) SUNDRY

Two-years full-time M.Sc. course in various subjects including microbiology, plant physiology. Two years full-time for M.Sc. Ag. in agronomy, animal nutrition, entomology, poultry husbandry, soil science. Two years full-time for M.V.Sc. in dairy husbandry, veterinary anatomy, veterinary hygiene and public health, veterinary pathology, veterinary virology, etc. Also two years full-time for M.Tech. in farm machinery and power, hydraulic engineering, irrigation and drainage and soil/water conservation.

IND 97Gujarat Agricultural University,

Near Definate, Shahibagh, Ahmedabad 380004, Gujarat.

Administration: Founded in 1972, the University is based on the pattern of the Land Grant Colleges of the USA with constituent colleges at Anand Jurogarh, Navsari for B.Sc. agriculture, at Anand for veterinary science and animal husbandry, and Sath M.C. College of Dairy Science at Anand for dairy science (some of these colleges were formerly part of Sardar Patel University).

Finance: State Government and Indian Council of Agricultural Research.
Lan: Eng. & Gujarati. Cal: Jun/Nov, Dec/Apr. TP: c. 1,840.
RA: yes. NN: yes.

1 (***) SUNDRY

Four years for B.Sc. Agriculture, B.V.Sc. and AH, and B.Sc. Dairy Technology.

2 (***) SUNDRY

Two years for M.Sc. Agriculture in agronomy, agricultural chemistry and soil science, horticulture, plant breeding and genetics, agricultural entomology, plant pathology, veterinary education, agricultural statistics, plant physiology, agricultural economics, agricultural meteorology. Two years for M.Sc. in anatomy, physiology, animal management and genetics, veterinary-surgery, -pathology, -bacteriology, -pharmacology, gynaecology, animal nutrition. Two years for M.Sc. Dairying in dairy-chemistry, -bacteriology, -technology, -engineering, -economics and nutrition.

IND 98Guru Nanak University,

Armritsar, Punjab.

Administration: Established in 1969. Autonomous. There is a Faculty of Agriculture and Forestry.

Finance: Mainly State Government.

Cal: Jul/Sep, Oct/Dec, Jan/Apr. TP: c. 45,270 in Univ. as a whole. RA: for 282 m. & 48 f.

1 (***) AGRICULTURE

There are pre-university courses provided in colleges affiliated to the university, lasting one year after matriculation. Four-year course after pre-university for B.Sc. Agri.

Entry standard: For degree courses, pre-university or Higher Secondary examinations in relevant subjects.

2 (***) AGRICULTURE

Two years full-time for M.Sc. Agri.

India

- IND 99 Haryana Agricultural University,
Hissar, Haryana.
- Administration: Founded 1970. The University is based on the pattern of the Land Grant Colleges of USA. There is a College of Agriculture, a Faculty of Basic Science and Humanities, a Faculty of Veterinary Science, and a Faculty of Home Science.
- Finance: Indian Council of Agricultural Research and State Government.
Cal: Jul/Nov, Nov/Feb, Feb/Jun. TP: c. 1,520. RA: yes.
NN: yes.
- 1 (***) SUNDRY
Four years for B.Sc., B.Sc. Home Science, B.V.Sc. Five years for B.Sc. Hons (Agric.), B.Sc. Hons. (Animal Science).
- 2 (***) SUNDRY
Two years for M.Sc. in a variety of specializations including horticulture, agronomy, soil science, rural sociology and extension education. Two years for M.V.Sc. in anatomy, pathology, gynaecology, physiology, surgery, etc.
- IND 100 University of Himachal Pradesh,
Summer Hill, Simla, Himachal Pradesh.
- Administration: Established in 1970. When the University was formed it absorbed the agricultural colleges at Solan and Palampur.
Lan: Eng. & Hindi. Cal: Jul/Oct, Nov/May. TP: c. 84 in agric. courses. RA: yes.
- 1 (***) AGRICULTURE
There are pre-university courses lasting one year after matriculation in certain colleges. Four years after pre-university for B.Sc. (Agri.).
- Entry standard: For degree courses, pre-university and Higher Secondary examinations.
- 2 (***) AGRICULTURE/BOTANY/ZOOLOGY
Two years for M.Sc. specializing in botany, zoology; and for M.Sc. (Agri.) specializing in agronomy, plant pathology, soil science, entomology.
- IND 101 Indian Agricultural Research Institute,
New Delhi 110012.
- Administration: Founded in 1905.
Cal: Sep/Dec, Jan/Apr, Jun/Sep. Also a summer term during May/Jun. TP: 565 students in Inst. as a whole. RA: yes.
NN: yes.
- 1 (***) AGRICULTURAL SCIENCES
Two years full-time for M.Sc. after good first class bachelor's degree in agriculture or agricultural engineering. Specialization in agricultural extension, agricultural statistics (in co-operation with the Institute of Agricultural Research Statistics of the Indian Council of Agricultural Research), entomology, mycology and plant pathology, nematology, soil science and agricultural chemistry. Also Ph.D. courses.
- Entry standard: Relevant university degree.

- IND 102 Indian Forest College,
Dehra Dun, Uttar Pradesh.
- Administration: Ministry of Agriculture and Irrigation of the Government of India.
Founded 1939.
- Finance: Government of India.
- Cal: from 1st Mar. TP: 75 p.a. RA: yes. NN: foreign
government nominees who possess requisite standards and
sponsored under Plan/Schemes of the Government of India are
admitted.
- 1 (***) FORESTRY
Two year diploma course in forestry.
- Purpose: For professional training in forestry for I.F.S. (Indian Forestry
Service) Probationers.
- Entry standard: B.Sc. plus physical fitness. Age 19 to 26.
-
- IND 103 Indian Institute of Technology, Kharagpur,
P.O. Kharagpur Technology, Kharagpur, West Bengal 721302.
- Administration: Founded in 1951. The Institute plans to establish a biological
science division in the near future.
- Cal: Jul/Dec, Dec/Apr. TP: 2,050 in Inst. as a whole. RA: yes.
NN: yes.
- 1 (***) AGRICULTURAL ENGINEERING
Five years for B.Tech. Hons. with possible option in agricultural
engineering.
- Entry standard: Pre-university or Higher Secondary examinations in relevant
subjects.
- 2 (***) SUNDRY
Two years full-time for M.Tech., specializing in advanced
hydraulics engineering, farm machinery and power, soil and water
conservation engineering, soil mechanization and foundation
engineering. There is also a Diploma of Indian Institute of
Technology which may be taken after one-year postgraduate course
in either applied botany, dairy engineering, farm management
technology, or soil technology.
-
- IND 104 Indian Veterinary Research Institute,
Mukteshwar, Uttar Pradesh.
- Administration: Government of India. Founded 1893.
- 1 (***) VETERINARY SCIENCE
Associateship I.V.R.I. (= Indian Veterinary Research Institute).
Various courses including certificates in advanced animal husbandry
and manufacture of sera and vaccine. Postgraduate refresher
course in veterinary science. National Diploma in Preventive
Veterinary Medicine, Animal and Poultry Husbandry. Also courses
for M.V.Sc., Ph.D. (Agra University).

India

- IND 105 Inland Fisheries Training Unit of Central Inst. of Fisheries Education,
Barrackpore, Via Calcutta, West Bengal.
- Administration: Ministry of Food and Agriculture.
- Finance: Government of India through Indian Council of Agricultural Research.
Founded 1947.
Cal: Jun/May. TP: c. 44.
- 1 (***) FISHERIES
One-year certificate course for Inland Junior Fisheries Officer, in fish culture, inland capture fisheries, fisheries conservation practices, extension, marketing, co-ops., preservation and transport of fish, fishing methods and technology, water and soil analysis, weed control, fishery engineering, fish pond management.
- 2 (***) FISHERIES
Courses for M.Sc. (Zool.) and various doctorate courses.
- Purpose: To train staff in fisheries.
- Entry standard: In-service participants must have two years experience and be under 40 years old. Other participants must be graduates in science with zoology as one subject and under 30 years old.
- IND 106 University of Jabalpur,
Saraswati Vihar, Jabalpur, Madhya Pradesh 482001.
- Administration: Founded in 1957.
Lan: Eng. & Hindi. Cal: Jul/Sep, Oct/Dec, Jan/May. TP: 15,000 in Univ. as a whole. RA: yes. NN: yes.
- 1 (***) HOME ECONOMICS
Three years full-time for B.Sc. (Home Science).
- Entry standard: Age 16 plus. Higher Secondary or pre-university examinations.
- 2 (***) HOME ECONOMICS
Two years full-time for M.Sc. (Home Science) in food and nutrition.
- IND 107 Jawaharlal Nehru Krishi Vishwa Vidyalaya,
P.B. No. 80, Krishinagar, Jabalpur, Madhya Pradesh 482004.
- Administration: Established in 1963. Some of the aims of the University are to provide education in agriculture and allied sciences; to undertake field extension programmes by integrating teaching, research and extension on the pattern of Land Grant Colleges in the USA. There are Faculties of Agricultural Engineering, Agriculture, and Veterinary Science and Animal Husbandry. Constituent colleges are: College of Agricultural Engineering, Jabalpur; Colleges of Agriculture at Gwalior, Indore, Jabalpur, Raipur, Rewa and Sehore; and the Colleges of Veterinary Science and Animal Husbandry at Jabalpur and Mhow.
Lan: Eng. & Hindi. Cal: Jun/Nov, Dec/May. TP: c. 150 in Fac. Agric. Engin, 1,670 in Fac. Agric, 400 in Fac. Vet. Sci. RA: for 1,275 students at various campuses. NN: yes.
- 1 (***) AGRICULTURE/VETERINARY SCIENCE
Four years for B.Sc.(Ag.). Five years for B.V.Sc. and AH, and for B.Tech. (Agri. Engg.).
- Entry standard: Age 16-22. Higher Secondary examination or equivalent, in science subjects.

2 (***) AGRICULTURE/VETERINARY SCIENCE

Two years for M.Sc. (Ag.) (two semesters extra for B.Sc. candidates), specializing in agricultural chemistry, agronomy, extension, entomology, soil science. Two years for M.V.Sc. and AH. Subjects include anatomy, animal nutrition, microbiology, parasitology, physiology.

IND 108

University of Kanpur,

Kalyanpur, Kanpur, Uttar Pradesh.

Administration:

Established in 1966. There is a Faculty of Agriculture.

Lan: Hindi & Eng. Cal: Jul/Jun. TP: c. 510 students in Fac.Agric. NN: yes.

1 (***) AGRICULTURE/FOOD TECHNOLOGY

Three years full-time for B.Sc. (Ag.) and three years for B.Sc. (Tech.) specializing in chemistry and food.

Entry standard:

Age 17 plus. Intermediate examination in relevant subjects.

2 (***) SUNDRY

Two years full-time for M.Sc. in various subjects including botany, zoology; and for M.Sc. (Ag.) in agronomy, animal husbandry, dairying, horticulture, agricultural extension, genetics and plant breeding, etc.

IND 109

University of Kashmir,

University Campus, Hazratbal, Srinagar, Jammu and Kashmir 190006.

Administration:

Founded in 1969. The University has a Faculty of Agriculture.

Cal: Mar/Jul, Aug/Dec. TP: c. 400 in Fac.Agric. RA: yes. NN: yes.

1 (***) AGRICULTURE

Four years for B.Sc.Agric.

Entry standard:

Age 17 plus. Pre-university or Higher Secondary.

2 (***) SUNDRY

Two years for M.Sc. in a variety of subjects including botany, zoology.

IND 110

University of Kerala,

University Buildings, Trivandrun, Kerala State.

Administration:

Established in 1937 as the University of Travancore, it became the University of Kerala in 1957. There is a Department of Aquatic Biology and Fisheries.

Lan: mainly Eng. (Malayalam permitted in 1st year exams). TP: 100,000 in Univ. as a whole. RA: yes. NN: yes.

1 (***) PLANT BREEDING

Two-year M.Sc. course in genetics and plant breeding.

- IND 111 Kerala Agricultural University,
Marnuthy, P.O. Trichur 680651, Kerala.
- Administration: Founded 1971, the University is based on the pattern of the Land Grant Colleges of the USA. There is a Veterinary College at Marnuthy, a College of Agriculture at Vellyaria and a College of Horticulture at Mannily.
- Finance: State Government and Indian Council of Agricultural Research.
Cal: Oct/Feb, Feb/May, Jun/Sep. RA: yes. NN: yes.
- 1 (***) AGRICULTURE/VETERINARY SCIENCE
Four years for B.Sc. in agriculture, horticulture, husbandry and for B.V.Sc.
- Entry standard: Pre-university examination with physics, chemistry and biology or and equivalent examination.
- 2 (***) AGRICULTURE/VETERINARY SCIENCE
Two years for M.Sc. in agronomy, agricultural botany, agricultural chemistry, agricultural entomology, plant pathology. Two years for M.V.Sc. in parasitology, nutrition, physiology, pathology pharmacology surgery, etc.
- IND 112 Konkan Krishi Vidyapeath,
Dapoli 415712, District Retrigiri, Maharashtra.
- Administration: Founded in 1972, the University is based on the pattern of Land Grant Colleges of the USA. The Bombay Veterinary College is an associate institute.
- Finance: State Government and Indian Council of Agricultural Research.
Lan: Eng. & Marathi. Cal: Jun/Sep, Oct/Jan, Jan/Apr. TP: c.580.
RA: yes. NN: yes.
- 1 (***) AGRICULTURE/VETERINARY SCIENCE
Four years for B.Sc.Agr. and for B.V.Sc. and AH.
- 2 (***) SUNDRY
Two years for M.Sc.Agr. in agronomy, horticulture, animal husbandry, dairy science, and for M.V.Sc. in animal nutrition, anatomy.
- IND 113 Kurukshetra University,
Kurukshetra, District Kurukshetra, Haryana.
- Administration: Established in 1956. The University has Faculties of Dairying, and Animal Husbandry and Agriculture.
Lan: Eng. & Hindi. Cal: Jul/Sep, Oct/Dec, Jan/Apr. TP: c. 400
in Fac.Dairying, Animal Husb. and Agric. RA: yes. NN: yes.
- 1 (***) DAIRYING
Four years for B.Sc. in dairying.
- Entry standard: Age 17 plus. Pre-university or Higher Secondary examinations.
- 2 (***) DAIRYING/BOTANT/ZOOLOGY
Two years full-time for M.Sc. in botany, or zoology, and for M.Sc. in dairying, after relevant B.Sc.

- IND 114 University of Madras,
University Centenary Buildings, Chepauk, Triplicane P.O.,
Madras 600005, Tamil Nadu.
- Administration: Established in 1857. There is a Faculty of Veterinary Science
which includes the Madras Veterinary College at Vepery.
Lan: Eng. & Tamil. Cal: Jun/Sep, Oct/Dec, Jan/Mar. TP: c.880
in Fac.Vet.Sci. RA: yes. NN: yes.
- 1 (***) VETERINARY SCIENCE
Five years for B.V.Sc.
- Entry standard: Age 15½ plus. Pre-university examination in science subjects.
- 2 (***) SUNDRY
Two years full-time for M.V.Sc. One year diploma course after
B.E. or B.Tech. in marine zoology, mycology and plant pathology.
Also one-year diploma course in horticulture.
- IND 115 Mahatma Phule Krishi Vidyapeeth,
Rahuri District, Ahmednagar, Bombay.
- Administration: Established 1968. (Formerly known as Maharashtra Krishi
Vidyapeeth).
Lan: Eng. & Marathi. Cal: Jun/Sep, Nov/Feb, Feb/May.
TP: 1,858. RA: yes. NN: yes.
- 1 (***) AGRICULTURE
Four years for B.Sc. Agriculture; five years for B.Ag.
(Agricultural Engineering).
- Entry standard: Secondary School Certificate or equivalent.
- 2 (***) AGRICULTURE
Two years for M.Sc. Agriculture specializing in dairy science,
agricultural economics and extension, genetics and plant breeding,
etc.
- IND 116 Marathvada Krishi Vidyapeeth,
Parbhani, Maharashtra.
- Administration: Established 1973, and based on the pattern of the Land Grant
Colleges of the USA.
- Finance: State Government and Indian Council of Agricultural Research.
Lan: Eng. & Marathi. Cal: Jul/Oct, Oct/Jan, Feb/May.
TP: 902. RA: yes. NN: yes.
- There are associated colleges of agriculture and veterinary science.
- 1 (***) AGRICULTURE/VETERINARY SCIENCE
Four years for B.Sc.Agr. and for B.V.Sc. and AH.
- Entry standard: Secondary School Certificate or equivalent examination.
- 2 (***) SUNDRY
Two years for M.Sc.Agr. in agronomy, agricultural botany,
agricultural chemistry, agricultural economics, agriculture,
horticulture, plant pathology, entomology, animal husbandry and
dairying.

India

- IND 117 Meerut University,
Meerut, Uttar Pradesh.
- Administration: Founded in 1965. The University has a Faculty of Agriculture.
Lan: Eng. & Hindi. Cal: Jul/Dec, Jan/Jun. TP: c. 440 in Fac.
Agric. RA: yes.
- 1 (***) AGRICULTURE
Three years full-time for B.Sc.(Ag.).
- Entry standard: Age 17 plus. Intermediate examination or equivalent.
- 2 (***) SUNDRY
Two years for M.Sc. (Ag.). Subjects include agricultural
economics, extension, agronomy, animal husbandry and dairying,
plant pathology.
- IND 118 University of Mysore,
Mysore Viswavidyalaya Karya Soudha, Crawford Hall,
P.B. No. 14, Mysore, Karnataka State 570005.
- Administration: Established in 1916.
Lan: Eng. & Kannada. Cal: Jun/Oct, Nov/Mar. TP: 89,200
students in Univ. as a whole. RA: yes. NN: yes.
- 1 (***) SUNDRY
Two years full-time for M.Sc. with possible options in botany, food
technology, zoology, home science.
- Entry standard: An appropriate first degree.
- IND 119 Nagpur University,
Tagore Marg, Nagpur, Maharashtra State 440001.
- Administration: Established in 1923.
Cal: Jun/Oct-Nov, Dec/Mar-Apr. TP: 92,000 in Univ. as a
whole. RA: yes. NN: yes.
- 1 (***) HOME ECONOMICS/FOOD AND NUTRITION
Two years full-time for M.Sc. (Home Sci.) in food and nutrition.
- Entry standard: Appropriate first degree. This course is for women only.
- IND 120 National Dairy Institute,
Karnal, Haryana.
- Administration: Government of India but through the Indian Council of Agricultural
Research. Founded 1957.
- Finance: Government of India.
Cal: Jul/Oct, Nov/Feb, Feb/May. TP: c. 250. RA: yes.
NN: yes.
- 1 (***) DAIRYING
Four years for B.Sc., Dairying in dairy technology.
- Entry Standard: Higher Secondary Certificate or pre-university, with English,
physics, chemistry, maths, or equivalent.
- 2 (***) DAIRYING
Two years for M.Sc. Dairying. Also courses for diploma in dairy
engineering and I.D.D. (Indian Dairy Diploma), and dairy extension
courses.
- Entry standard: Appropriate first degrees.

- IND 121 National Dairy Research Institute,
Karnal, Haryana.
Administration: Indian Council of Agricultural Research. Founded 1955.
1 (****) DAIRYING
Ph.D. in dairy chemistry, dairy husbandry, dairy microbiology and dairy technology of various universities.
- IND 122 Southern Regional Station of the National Dairy Research Institute,
Adugodi P.O., Bangalore, 30.
Administration: Indian Council of Agricultural Research.
Finance: Government of India.
Cal: from Jul. TP: 70. RA: yes. NN: yes.
1 (***) DAIRYING
Two years for Diploma in Dairy Technology.
Entry standard: Higher Secondary Certificate in English and three science subjects.
Under 23.
2 (****) DAIRYING
Postgraduate courses for research workers. Also short courses in dairy extension, milk plant operation, milk production.
- IND 123 National Sugar Institute,
Kanpur, Uttar Pradesh.
Administration: Government of India. Founded 1936.
1 (****) SUGAR TECHNOLOGY
Various courses including Ph.D. in sugar chemistry, sugar engineering and sugar technology of various universities.
- IND 124 Orissa University of Agriculture and Technology,
District Puri Orissa, Bhubaneshwar 751003.
Administration: Established 1962, the University has a Department of Animal Husbandry and Dairying, a Department of Clinical Medicine (Animal), and a College of Veterinary Science and Animal Husbandry.
Cal: Jul/Dec, Jan/May. TP: 1,386 in Univ. as a whole. RA: yes. NN: yes.
1 (***) SUNDRY
Four years for B.Sc. Agriculture, B.Sc. (Agri. Engg. and Tech.), and B.V.Sc.
2 (****) SUNDRY
Two years for M.Sc. Agriculture, with a range of specializations; and for M.V.Sc., in surgery, animal nutrition and foods, etc.
- IND 125 Osmania University,
Hyderabad, Andhra Pradesh, South India 500007.
Administration: Established in 1918.
Cal: Jun/Nov, Jan/Apr. For courses of engin. and tech: Jun/Oct, Dec/Mar. TP: 69,000 in Univ. as a whole. RA: yes. NN: yes.

1 (*** SUNDRY

Two years for M.Sc. specializing in applied nutrition, botany, zoology; for M.E. including hydraulic engineering, soil mechanics and foundation engineering; for M.Tech. in applied soil engineering, hydraulics and water resources.

Entry standard: Relevant first degree.

IND 126

Panjab University,

Chandigarh, Union Territory 160014.

Administration: Founded in 1947. There is a Faculty of Dairying, Animal Husbandry and Agriculture.

Cal: Jul/Oct, Oct/Dec, Jan/Apr. TP: 257 in Fac.Dairying, Animal Husb. & Agric. RA: yes. NN: yes.

1 (*** SUNDRY

Five years for B.Sc. (DT & DH) (= dairy technology and husbandry). Three years for B.Sc. hons.sch. specializing in botany, micro-biology, zoology; also three years for B.Sc. (Home Science).

Entry standard: Age 17 plus. Higher Secondary or pre-university examinations.

2 (*** BOTANY/ZOOLOGY

One year full-time for M.Sc. hons. sch. in botany or zoology.

IND 127

University of Poona,

Ganeshkhind, Poona, Maharashtra State 411007.

Cal: Jun/mid-Oct, Nov/mid-Mar. TP: 94,300 in Univ as a whole. RA: yes.

1 (*** IRRIGATION ENGINEERING

Two years for M.E. in hydraulics and dam construction, soil mechanics.

Entry standard: First degree in engineering.

IND 128

Punjab Agricultural University,

Ludhiana, Punjab 141004.

Administration: Founded in 1962. The University has been modelled on the pattern of the Land Grant Colleges of USA. There are Colleges of Agricultural Engineering, Agriculture and Veterinary Science. The campus stands in 1,500 acres and includes the College of Veterinary Medicine at Ludhiana.

Cal: Aug/Nov, Nov/Feb, Feb/Jun. TP: c. 240 in the Coll. of Agric.Engin, 1,290 in the Coll. of Agric, 190 in the Coll. of Vet. Sci. RA: yes. NN: yes.

1 (*** ANIMAL HUSBANDRY/VETERINARY

One-year non-graduate diploma course for agricultural sub-inspector, stock assistant and veterinary compounder. Also certificate courses in certain agricultural practices.

2 (*** SUNDRY

Three years for B.Sc.Hons. in botany, zoology. Three to four years for B.Sc. (Home Sc.) Hons. in food and nutrition. Four to five years for B.Sc. (Ag.) Hons. in animal sciences, crop sciences,

economics, sociology and extension education, food science and technology and nutrition, plant production, soil sciences; and for B.Sc. (Ag.Engg.). Four years for B.V.Sc. and AH.

3 (***) SUNDRY

M.Sc. courses usually lasting two years are available in a large number of specializations.

IND 129

Punjabrao Krishi Vidyapeeth,

P.O. Krishinagar, Akola, District Akola, Maharashtra.

Administration:

Established in 1969. There are Faculties of Agricultural Engineering, Agriculture and Veterinary Science. The constituent colleges are: College of Agricultural Engineering, Akola; Colleges of Agriculture at Akola and Nagpur; Nagpur Veterinary College, Seminary Hills, Nagpur; and the Postgraduate Institute at Akola.

Cal: Jul/Dec, Dec/May. TP: c. 65 in Fac.Agric.Engin, 2,470 in Fac.Agric, & 340 in Fac.Vet.Sci. RA: yes.

1 (***) SUNDRY

Three years for B.Sc.(Agr.Engg.), four years for B.Sc.(Agr.) and five years for B.V.Sc. and AH.

2 (***) AGRICULTURE

The University runs a Farm Apprenticeship Scheme in which the constituent and affiliated colleges of the University arrange practical training for a number of agricultural graduates by attachment to farms for a period of twelve months.

3 (***) SUNDRY

Two years for M.Sc. (Agr.) in various subjects including agricultural chemistry and soil science, agricultural entomology, agricultural extension, plant pathology and microbiology; also two years for M.V.Sc.

IND 130

University of Rajasthan,

Gandhinagar, Jaipur, Rajasthan 302004.

Administration:

Founded 1947.

Cal: Jul/Oct, Nov/Dec, Jan/May. TP: 233 in Fac.Agric. RA: yes. NN: yes.

1 (***) SUNDRY

Three years for B.Sc. Hons. specializing in botany, zoology. Also three years after pre-professional (agriculture) for B.Sc. (Ag.).

2 (***) SUNDRY

Two years full-time for M.Sc. in a variety of subjects including botany and zoology.

IND 131

Rajendra Agricultural University,

Patna, P.O. Pusa District, Samestipur, Bihar.

Administration:

Founded in 1970, the University is based on the pattern of the Land Grant Colleges of the USA. The Veterinary College, Bihar is a constituent college.

Finance:

State Government and Indian Council of Agricultural Research.

Lan: Eng. & Hindi. Cal: Jun/Sep, Oct/Jan, Feb/May. RA: yes. NN: yes.

1 (***) AGRICULTURE/VETERINARY SCIENCE
Three years for B.Sc. (Agri.) and four years for B.V.Sc. and Animal Husbandry.

Entry standard: Intermediate science or equivalent examination with physics, chemistry and biology or maths for B.Sc. or B.V.Sc.

2 (***) AGRICULTURE/VETERINARY SCIENCE
Two years for M.Sc. (Agr.) in agronomy, soil science and agricultural chemistry, soil and water conservation technology, agricultural economics, extension education, horticulture, etc. and for M.V.Sc. in anatomy, surgery, parasitology, animal nutrition, etc.

IND 132

University of Roorkee,
Roorkee, Uttar Pradesh.

Administration: Largely autonomous. The University is not organized in faculties. There is a Water Resources Development Training Centre offering special courses for non-nationals.

Finance: Mainly State Government.

Cal: Jul/Dec, Jan/May. TP: c. 50 per course. RA: yes.
NN: yes.

1 (***) WATER RESOURCES
Twelve-month training programme and postgraduate diploma in water resources development.

2 (***) WATER RESOURCES
Two year Master of Engineering Degree course in water resources development.

3 (***) WATER RESOURCES
Ph.D. Degree in water resources development.

Purpose: To educate in-service engineers from Asian, African and other countries in planning, design, construction and operation of water resources projects.

Entry standard: Graduate engineers (civil, electrical, or mechanical) with a minimum of three years of professional experience in water resources development.

Note: Fellowships under various schemes are offered by Government of India for which the Consulate for India in the applicant's country may be contacted. UN Fellowships may be available.

IND 133

Saurashtra University,
University Campus, Kalawad Road, Rajkot, Gujarat State.

Lan: Mainly Gujarati, but also some Hindi & Eng. Cal: Jun/Oct, Nov/Apr. TP: c. 180 in Fac.Rur.Studies. RA: yes.

1 (***) RURAL STUDIES
Three years after pre-university for BRS in rural agriculture, rural education, or rural reconstruction.

IND 134South Gujarat University,

Government Medical College Campus, Majura Gate, Post Box No.49, Surat, Gujarat State 395001.

Lan: mainly Gujarati, some Eng. Cal: Engin. course: Jun/Oct, Nov/Mar. TP: c. 24,000 in Univ. as a whole. RA: yes. NN: yes.

1 (***) SUNDRY

Two years for M.E. specializing in environment, or soil mechanization. Also two years for MRS (in English medium only) for post-graduate workers who are committed to rural work in agriculture, administration, and extension.

IND 135Tamil Nadu Agricultural University,

Lawly Road, Coimbatore, Tamil Nadu 641003.

Administration:

Founded in 1971. The University has three constituent institutions: the Agricultural College and Research Institute at Coimbatore, the Agricultural College and Research Institute at Madurai, and the College of Agricultural Engineering and Research at Coimbatore.

TP: 1,535 in Univ. as a whole. RA: yes. NN: yes.

1 (***) AGRICULTURE

Various short and long-term certificate courses for in-service personnel of State Government, progressive farmers, etc. including three-month courses in agriculture and farm management.

2 (***) SUNDRY

Four years for B.Sc. (Ag.), and B.Sc. (Hort.); five years for B.E. (Agri.) and B.V.Sc.

3 (***) SUNDRY

M.Sc. (Ag.) course (at Coimbatore and Madurai) two years full-time or nine trimesters part-time after first or second class bachelor's degree in agriculture. Subjects include entomology, agricultural extension, seed technology, soil science. Also two years for M.V.Sc. full-time.

IND 136University of Udaipur,

Pratapnagar, Udaipur, Rajasthan 313001.

Administration:

Founded in 1962 on the pattern of the Land Grant Colleges of the USA. There are Faculties of Agricultural Engineering, Agriculture, and Veterinary and Animal Science, and the University includes Rajasthan College of Veterinary Science and Animal Husbandry at Bikaner.

Lan: Eng. & Hindi. Cal: Jul/Dec, Jan/Jun. TP: 786 in Fac. Agric, 137 in Fac.Aгри.Engin, and 159 in Fac.Vet. & Animal Sci. RA: yes. NN: yes.

1 (***) SUNDRY

Three years for B.Sc. (Home Science); for B.Sc. (Ag.). Four years for B.V.Sc.AH. Five years for B.E.(Ag.).

Entry standard:

Higher Secondary or intermediate Science in relevant subjects.

2 (***) SUNDRY

Two years full-time for M.Sc. in botany, zoology; for M.Sc.(Ag.) in animal husbandry, entomology, soil science, extension education, soil and water conservation; for M.V.Sc.AH. in animal breeding and genetics, bacteriology, surgery.

IND 137

Visva-Bharati,

P.O. Santiniketan, District Birbhum, West Bengal 731235.

Administration:

Founded in 1951. Constituent institutions are Palli-Samgathana Vibhaga (rural reconstruction) and Palli-Siksha Sadana (college of graduate studies in agriculture) with its agricultural farm.

Cal: Jul/Sep, Oct/Dec, Dec/Apr. TP: 98 in the agric. course.

RA: yes.

1 (***) SUNDRY

Three years for B.Sc. Hons. in botany or zoology; four years for B.Sc. (Ag.) Hons.

2 (***) BOTANY/ZOOLOGY

Two years full-time for M.Sc. in botany, zoology.

MALAYSIA

Agriculture plays a dominant role in the economic and social development of Malaysia, with about half the working population actively employed in agriculture, fisheries or forestry and around three-quarters of the population rural-based. However, nearly half of the rural households are classified as "poor" and one of the main aims of the Ministries concerned with agriculture and rural development is to raise living standards in rural areas, while developing and exploiting the agricultural resources, increasing and improving production, assisting the growth of agro-based industries and increasing employment opportunities.

The three main rural products are rubber, timber and palm oil, together accounting for 49 per cent of exports in 1975. Because of lessening demand for rubber, Malaysia has been making serious attempts to diversify, and in particular to increase production of palm oil and exploit abundant timber resources. Other significant crops are rice, coconuts (copra), pineapples (mainly for canning), tea, nutmeg and pepper. Livestock production is increasing slowly, particularly pigs and poultry, though beef and dairy products have to be imported to supplement local production. Marine fish production is also increasing and there are long-term plans for the development and modernization of the fishing industry.

Because of the importance of skilled manpower, education and training figure prominently in development plans. Lower secondary schools have introduced agricultural science, industrial arts, commercial studies and home economics as elective subjects. Secondary Vocational Schools (19 in 1974) provide trade courses together with commerce, agriculture and home science, and there are various courses available in Secondary Technical Schools (8 in 1974). The National Youth Programme, Youth Service Corps and Youth Settlement Training Schemes contribute significantly to the training of young people for rural life.

Staff for Government departments are trained at four fisheries training centres, at the Institutes of Technology, at the new Veterinary Institute in Kluang, at the Forestry School (which has increased its intake of students), at the new Forestry College, and the three Universities.

Extension and training programmes for farmers and operators, as well as for in-service staff, are provided by the agriculture, fisheries, forestry and veterinary divisions of the Ministry of Agriculture. In this they are assisted by various statutory bodies such as the Fisheries Development Authority (MAJUIKAN), and the National Livestock Development Authority (MAJUTERNAK). Further training is provided through Federal and State Agencies such as the Federal Land Consolidation and Rehabilitation Authority (FELCRA) and the State Economic Development Corporation (SEDC), which provide agricultural extension services aimed at increasing the income of smallholders on development projects, and the Malaysian Agricultural Research and Development Institute (MARDI) whose programmes are aimed mainly at import substitution, quality improvement and solving farmers' problems.

It is the policy of the Government to encourage the development and expansion of the Co-operative Movement as a vehicle for improving the standard of rural life, and in 1973 the Farmers' Organization Authority took over the responsibility of supervising all the agro-based co-operative societies.

Malaysia

- MAY 1 National Development Corps,
c/o Ministry of Culture, Youth and Sports, 165 Jalan Ampang,
Kuala Lumpur.
- Administration: Started in 1969 by the Ministry of Culture, Youth and Sports.
- Finance: Government of Malaysia.
TP: 4,000 p.a. RA: yes.
- 1 (*) RURAL DEVELOPMENT
Three months training in civics and agricultural techniques, before
possible further training in Youth Pioneer Corps.
- Purpose: Training for rural development.
- Entry standard: Variable. Age range 16-25.
-
- MAY 2 National Youth Pioneer Corps,
c/o Ministry of Culture, Youth and Sports, 165 Jalan Ampang,
Kuala Lumpur.
- Administration: Started in 1966 by the Ministry of Culture, Youth and Sports.
- Finance: Government of Malaysia.
TP: c. 50 p.a.
- 1 (*) AGRICULTURE
Two years including two months basic training and four months
on-the-job in agriculture (poultry farming and cultivation of rubber,
oil palm, sugar cane and paddy) and tractor driving.
- Purpose: National development.
- Entry standard: Variable. Age range 16-25.
-
- MAY 3 Rural Youth Extension Programme, Sarawak,
Department of Agriculture, Badruddin Road, Kuching, Sarawak.
- Administration: Started in 1963 as 4 H Extension Programme. Absorbed in 1973 by
Saberkas and now administered by the Department of Agriculture.
- Finance: State Ministry of Agriculture and Community Development.
TP: 12,000 members in 18 districts. RA: partial.
- 1 (*) AGRICULTURE/HOME ECONOMICS
Training for rural youth in agriculture and home economics. Projects
under supervision of staff of Agricultural Advisory Service and of
the Rural Youth Co-ordinators. Some of the training is given to
pupils in rural schools. Potential leaders are trained for the
programmes at Farmers Training Centres and at Agricultural
Stations.
- Purpose: Rural Development.
- Entry standard: None.
-
- MAY 4 4 B Clubs and Land Settlement Scheme,
Setia Usaha Kerja, d/a 165 Jalan Ampang, Kuala Lumpur.
- Administration: Started in 1966.
- Finance: Mainly self-supporting but some Government assistance.

1 (*) AGRICULTURE

U.S. type clubs for farming youth with weekly meetings and home projects. There is also land development on three sites with instruction by agricultural extension officers in cultivation of coconuts, maize, bananas and vegetables.

Purpose: To improve farming skills and encourage land settlement.

Entry standard: Variable.

MAY 5

Youth Brigades,

Federal Land Development Authority, Jalan Gurney, Kuala Lumpur.

Administration: Federal Land Development Authority.

Finance: Government of Malaysia.

RA: yes.

1 (*) LAND DEVELOPMENT

Three months training at National Pioneer Corps Training Centre at Dusun Tua, before work on jungle clearance and land settlement schemes.

Purpose: Land settlement.

Entry standard: Age range 18-21.

MAY 6

Farmers' Training Centres,

State Department of Agriculture, Badrudin Road, Kuching, Sarawak.

Administration: Started in 1964 by the State Department of Agriculture as part of the Farmers' Training Programme.

Finance: Government of Malaysia through State Department of Agriculture.

TP: 630 p.a. at 7 centres, each with 3 courses p.a. for 30 (20 m. & 10 f.) RA: yes.

1 (**) AGRICULTURE

Fourteen weeks training in practical crop and animal husbandry, and farm management.

Purpose: To train school leavers for agriculture.

Entry standard: Mostly primary school leavers.

MAY 7

Inland Fisheries Training Centre,

Bukit Tinggi, Bentong, Pahang.

Administration: Ministry of Agriculture.

Lan: Malay. TP: c. 220 p.a. NN: no.

1 (**) FISHERIES

Three-week course for fish farmers.

Purpose: To improve techniques of fish cultivation.

Entry standard: Previous experience.

MAY 8

Marine Fisheries School,

Glugor, Penang.

Administration: Ministry of Agriculture.

Finance: Government of Malaysia.

Lan: Malay. TP: c. 200 p.a. NN: no.

Malaysia

1 (**) FISHERIES/MARINE ENGINEERING
Five months training for engine operator or for fisherman certificates.

Purpose: To improve fisheries.

Entry standard: Previous experience.

MAY 9 Marine Fisheries School,
Seberang Takir, Kuala Trengganu.

Administration: Ministry of Agriculture.
Lan: Malay. TP: c. 200 p.a. NN: no.

1 (**) FISHERIES/MARINE ENGINEERING
Courses in engine maintenance, navigation, fishing methods.

Purpose: To improve sea fisheries.

Entry standard: Previous experience.

MAY 10 Fishermen's Training Institute,
Batu Maung, Penang.

Administration: Department of Fisheries of the Ministry of Agriculture, assisted by UNDP/FAO.

Finance: Government of Malaysia.
TP: 50-60 p.a. NN: no.

1 (**) FISHERIES/MARINE ENGINEERING
One-year courses for fisherman (Skipper) and engineer.

Purpose: To improve fisheries.

Entry standard: Previous experience.

MAY 11 Belimbing Logging Training Centre,
c/o State Director of Forestry, Forest Department, Kuantan, Pahang.

1 (**) FORESTRY
Courses in logging.

MAY 12 Sawmilling and Technical Training Centre,
c/o Timber Research and Technical Training Centre, Kuching, Sarawak.

1 (**) FORESTRY
Courses in sawmilling.

MAY 13 Trengganu Logging Training Centre,
c/o State Director of Forestry, Forestry Department, Kuala Trengganu.

1 (**) FORESTRY
Courses in logging.

- MAY 14 Forest School,
c/o Forest Research Institute, Kepong, Selangor.
- 1 (**) FORESTRY
Courses in forestry.
- MAY 15 Forest School, Sepilok,
c/o Forest Department, Sandakan, Sabah.
- 1 (**) FORESTRY
Courses in forestry.
- MAY 16 Forestry School for Forest Guards,
c/o Natural Resources Training Centre, Kuching, Sarawak.
- 1 (**) FORESTRY
Training for forest guards.
- MAY 17 Farm Institutes,
State Department of Agriculture, Badrudin Road, Kuching, Sarawak.
- Administration: Started in 1970 by the State Department of Agriculture as part of
the Farmers' Training Programme.
- Finance: Government of Malaysia through the State Ministry of Agriculture
and Community Development.
TP: 300 p.a. in 5 institutes.
- 1 (**) AGRICULTURE
One year training with some theory but mainly practical work on
co-operative model farms, with farm profits shared by students.
Subjects include crop and animal husbandry, carpentry, farm
mechanics, farm management. There is a four-week break in the
middle of the course when students are attached to progressive
farmers or work on farms at home under supervision. The programme
includes a Rural Youth Credit Scheme to provide capital for short-
term enterprises.
- Purpose: To improve farming skills and encourage youth enterprises.
- Entry standard: Some secondary schooling, age 16+.
- MAY 18 Co-operative College of Malaysia,
Jalan Templer, P.O. Box 60, Petaling Jaya.
- Administration: By a Council including representatives of Ministries and Departments
of Co-operative Agencies. The college does not provide courses
specifically for agricultural co-ops., only in general co-op.
techniques.
- Lan: Eng. & Malay.
- 1 (**) CO-OPERATIVE STUDIES
Basic four-week courses in the administration and management of
co-operative societies.

2 (***) CO-OPERATIVE STUDIES

Special courses in general co-op. techniques for secondary school teachers.

3 (***) CO-OPERATIVE STUDIES

Courses of training for officers of the Department of Co-operative Development.

MAY 19

Natural Resources Training Centre,
Semongok, Sarawak.

Administration: This serves as a branch of the University of Agriculture, Malaysia (see MAY 24).

1 (***) AGRICULTURE

One-year pre-Diploma course in agriculture.

2 (***) AGRICULTURAL EDUCATION

Short courses for teachers of animal husbandry and agriculture.

MAY 20

Veterinary Training Centre,
Kluang, Johore.

Administration: Veterinary Division of the Ministry of Agriculture.

Finance: Government of Malaysia.

Cal: Jan/Dec. TP: c. 30. RA: yes. NN: no.

1 (***) ANIMAL HEALTH

Two-year in-service course for animal health assistants, theoretical and practical. Successful completion qualifies for exemption from one year of the course for Diploma in Animal Health and Production at the Mara Institute of Technology (see MAY 21/1, 22/1).

Purpose: Pre-entry staff training.

Entry standard: Malaysia School Certificate (= 6 years primary and 5 years secondary education) followed by selection by the Public Services Commission for jobs as veterinary assistants. No age limit.

MAY 21

Mara Institute of Technology,
Petaling Jaya.

Administration: Ministry of Education. There is another campus in Selangor (see MAY 22).

Finance: Government of Malaysia.

Cal: Jul/Nov. Jan/May. TP: 100+, incl. c. 20 f.

1 (***) ANIMAL HEALTH

Four years for Diploma in Animal Health and Production in the School of Applied Sciences. First year subjects are mainly basic science; second year includes statistics, accountancy, genetics, anatomy, physiology and soils; third year, farm management, nutrition, pharmacology and parasitology; fourth year, animal husbandry, public health and agricultural extension. Practical work is included and there are training periods at animal husbandry centres during vacations.

Purpose: To train staff for the Animal Health Service.

Entry standard: Competitive on results of School Certificate. Age 17+.

- MAY 22** Mara Institute of Technology,
Shah Alam, Selangor.
- Administration:** Ministry of Education. This is the second campus of the Mara Institute of Technology (see MAY 21).
- Finance:** Government of Malaysia.
Cal: Jun/Dec, Jan/Jun. TP: 3,600 in Inst. as a whole.
RA: for 1,000.
- 1 (**) ANIMAL HEALTH/FORESTRY
Four years for Diplomas in Animal Health and Production, in Food Technology, in Forestry.
- 2 (**) SUNDRY
Three years for Diplomas in Planning Industry Management, in Town and Country Planning; two years for Diploma in Valuation. A pre-diploma course is compulsory for these courses.
- Purpose:** To train technical experts.
- Entry standard:** Grade II Overseas School Certificate or Malaysia Certificate of Education with five credits. Additional qualifications may be needed for certain courses.
- MAY 23** National Institute of Technology, (Institut Teknologi Kebangsaan),
Jalan Gurney, Kuala Lumpur, 15-02.
- Administration:** Ministry of Education. Started as a technical school in 1925, this is the oldest technical institution in the country, though the youngest university - established 1972.
- Finance:** Government of Malaysia.
Lan: Eng. & Bahasa Malaysia. Cal: Jun/Oct, Oct/Mar.
TP: c. 1,400 in Inst. as a whole. RA: yes. NN: yes.
- 1 (**) LAND SURVEYING
Three years for Diploma in Land Surveying.
- 2 (**) SURVEYING
Five years for first degrees in surveying and property management.
- Purpose:** To produce technical experts.
- Entry standard:** Local equivalent of GCE 'O' level with five credits and a high standard.
- MAY 24** University of Agriculture, Malaysia,
Post Box 203, Sungai Besi, Selangor.
- Administration:** Established in 1971 by the merger of the College of Agriculture of Malaya and parts of the Faculty of Agriculture of the University of Malaya. Administered by the Ministry of Education. There are Faculties of Agriculture, Forestry, Veterinary Science and Animal Husbandry; also experimental farms of the Malaysian Agricultural Resources Development Institute, as well as a Food Technology Institute and an Institute of Agriculture, both forming the experimental station of the Ministry of Agriculture.
- Finance:** Government of Malaysia.
Lan: Eng. & Malay. Cal: Jul/Dec, Jan/May. TP: 2,000+.
RA: yes.

1 (**) SUNDRY

Three years for undergraduate diplomas in agriculture and in fisheries, and four years for animal science.

2 (***) SUNDRY

First degree courses: four years for B.Agr.Sc., B.S. (For), B.S.Agr.Buss., B.E. (Agr.); five years for DVM. For the B.Agr.Sc. degree specialities are possible such as economics, extension, mechanization, animal science, food science, horticulture.

Entry standard: A pass in the Malaysian Certificate of Education or equivalent, and in the Cambridge Higher School Certificate or equivalent, plus relevant subjects for certain Faculties.

MAY 25

University of Malaya,

Pantai Valley, Kuala Lumpur, 22-11.

Administration: Ministry of Education. There is a link (IUC) in Applied Nutrition with Wye College of the University of London.

Finance: Government of Malaysia.

Lan: Eng. (in Fac. of Agric.) and Malay (other Facs.).

Cal: Jun/Aug, Sep/Nov, Dec/Feb. TP: c. 400 in Fac. of Agric.

RA: yes. NN: yes.

1 (***) SUNDRY

First degree courses: four years for B.Agr.Sc., for B.Ec.Hons. in Rural Development, and B.Sc.Hons. with possible specialization in botany, ecology, genetics or zoology.

Entry standard: Good passes in Cambridge Overseas Higher School Certificate in two principal subjects or one plus two subsidiaries. Good results in relevant subjects are required for all degree courses.

2 (***) AGRICULTURAL SCIENCE

One or two years further for M.Agr.Sc.

Entry standard: Appropriate first degree.

MAY 26

National University of Malaysia,

P.O. Box 1124, Jalan Pantai Baru, Kuala Lumpur 22-12.

Administration: Largely autonomous. Started in 1970 using the former premises of Malayan Teachers College but now located 20 miles south of Kuala Lumpur.

Finance: Government of Malaysia.

Lan: Malay. Cal: May/Aug, Aug/Nov, Nov/Feb. TP: c. 2,000.

RA: yes. NN: yes.

1 (***) AGRICULTURAL ECONOMICS

Although there are no courses at first degree level specifically in agricultural economics, the Department of Agricultural and Resource Economics in the Faculty of Economics and Management can accept research trainees in development economics concerning agriculture, land and water resources, primary commodities, etc.

Entry standard: Postgraduate.

SINGAPORE

The main constraint on agricultural production in Singapore is the limited land available. As a result, agriculture in Singapore is restricted to intensive vegetable growing and the rearing of pigs and poultry.

In order to remain self-sufficient in the production of pig meat, eggs and poultry, emphasis has been placed on the intensification of agricultural production with the creation of large scale agricultural enterprises. To minimise the dependence on external supplies of fresh food, there is a definite policy to encourage modern methods of food production such as hydroponics production of vegetables and the aquaculture of fish. The research activities and the services of the Primary Production Department of the Ministry of National Development have been geared towards this end.

- SNG 1 Agriculture Research Station.
 Administration: Primary Production Department, Ministry of National Development.
 Finance: Government of Singapore.
 Cal: Jul/Sep. TP: 4/6 p.a. RA: no.
- 1 (**) HORTICULTURE
 Eight- to ten-week attachments to study techniques of intensive vegetable production including hydroponics methods as well as conventional ones. The course includes practices in nursery techniques, land preparation, irrigation, and weed and pest control.
- Purpose: To train expert staff and workers in horticulture.
- Entry standard: School Certificate with biology or chemistry, and working experience in vegetable production. Age under 35.
- SNG 2 Pig and Poultry Research and Training Institute.
 Administration: Primary Production Department, Ministry of National Development.
 Finance: Government of Singapore.
 Cal: Oct/Dec. TP: 2 p.a. RA: no.
- 1 (**) ANIMAL HUSBANDRY
 Ten-week attachment with lectures and visits to commercial poultry establishments for training in practical poultry husbandry.
- Purpose: Mainly staff training.
- Entry standard: Full secondary schooling plus two years' working experience in animal husbandry or veterinary work; age 21+.
- SNG 3 Veterinary Diagnostic Laboratory.
 Administration: Primary Production Department, Ministry of National Development.
 Finance: Government of Singapore.
 Cal: May/Jul. TP: 2 p.a. RA: no.
- 1 (**) VETERINARY
 Three-month attachment for training in post-mortem techniques (pigs and poultry), diagnosis of common tropical animal diseases

Singapore

and also various laboratory techniques. Similar attachments could be arranged for specialized training in bacteriology, virology, serology and veterinary histological work.

Purpose: To train Veterinary Laboratory Technical Assistants.
Entry standard: School Certificate or Higher School Certificate, with working laboratory experience.

SNG 4 Marine Aquaculture Unit,
Changi.

Administration: Primary Production Department, Ministry of National Development.

Finance: Government of Singapore.

Cal: Apr/Jun. TP: 2 p.a. RA: no.

1 (****) FISHERIES

Three-month working attachment for training in techniques of production of prawn and fish, including cage net construction and cage net fish rearing.

Purpose: Mainly in-service training.

Entry standard: B.Sc. in fisheries or related subjects or Higher School Certificate plus working experience in fish culture; age under 35.

SRI LANKA

Sri Lanka's post-colonial "Dual" economy - which consisted of large estates producing tea, rubber and coconut for export on the one hand, and a domestic sector of smallholders engaged in the cultivation of food crops on the other - has already been radically changed by the Land Reform Laws of 1972 and 1975. These limited the ownership of agricultural land to between 25-50 acres, and allowed for local and foreign owned company estates to be taken over by the State for management and, where suitable, diversification. Already 5½ million acres have been taken over by the Land Reform Commission for re-distribution and re-deployment in a manner that will increase employment and productivity. The Agricultural Productivity Law of 1972 gave the State the further right of intervening where agricultural land is left in a neglected condition or is being managed below attainable levels of productivity.

The main thrust of the Government has been large scale investments in rural areas, including new settlement schemes and major and minor irrigation schemes to provide essentials for a farming community. Great emphasis is placed on the principle of self-reliance and the utilization of locally available resources. A ban on imports of all foodstuffs which could be grown locally has had the effect of diversifying domestic agriculture, increasing its productivity, generating employment and starting a process of transformation in the rural economy. Income earning capacity in rural areas is now more favourable than in urban areas, while disparities among rural incomes are being narrowed.

Development of agriculture and rural industries will continue to be the main focus of policy for a long time to come, and will be a means of coping with the grave unemployment problem affecting the educated younger generation. The Ministry of Education introduced in 1972 fundamental reforms to the education system aimed at relating vocational and professional training programmes to rural development. A variety of four year pre-vocational courses of study have been developed in agriculture and rural industry. These allow schools a choice in selecting courses which are relevant to the available natural resources in the community. Agriculture and its related special areas have become the most popular pre-vocational electives with boys while home science has become equally popular with girls.

It is now planned to introduce farming and home science (with special emphasis on food processing, nutrition, catering, etc.) in the Higher National Certificate of Education programme. In the years to come the Ministry of Education will constantly evaluate the general education programme with a view to bringing about changes in keeping with the total development of the country.

SRI 1National Youth Service,

33 Elibank Road, Colombo 1.

Administration:

Elected committees. Started in 1970 by the National Youth Service Council.

Finance:

Government of Sri Lanka.

Lan: Sinhala and Tamil. TP: 4,000 p.a. at various centres.

RA: some. NN: no.

1 (*) RURAL DEVELOPMENT

Preliminary training courses usually of six weeks before participation in community development projects including irrigation works, de-silting of village tanks, land reclamation.

Purpose: Integration of young people with community development.

Entry standard: Selection is on an electoral basis by Government agent after an interview. Age 17-25.

2 (*) AGRICULTURE/FISHERIES

Further training course for selected servicemen, lasting two years, with six months civic training and eighteen months vocational training in fisheries or farming.

SRI 2

Farmer Training Scheme,

Department of Agriculture, Peradeniya.

Administration: Department of Agriculture of Ministry of Agriculture and Lands.

Finance: Government of Sri Lanka.

Lan: Sinhala and Tamil. RA: at 6 locations.

1 (*) RURAL SKILLS

Half-day and one-day training at eight district training centres and in villages by the agricultural extension staff. Also short courses for selected farmers up to five days in duration. Other courses of 1-3 months.

Purpose: To improve farming skills and meet special needs of farm women, youth, and officials of Farmers' Organizations.

Entry standard: None, though rural youth and farmers usually have some primary education and previous experience.

SRI 3

Youth Settlement Schemes,

c/o National Youth Service Council, 33 Elibank Road, Colombo 1.

Administration: Started in 1967 jointly by the then Ministry of Agriculture and the Ministry of Land, Irrigation and Power.

Finance: Government of Sri Lanka.

TP: c. 700 p.a. RA: yes. NN: no.

1 (*) AGRICULTURE

Two-year training in the preparation of land and in improved farming methods, using land on which the trainees will be settled.

Purpose: Land settlement.

Entry standard: None. Trainees are unemployed rural youth.

SRI 4

Sarvodaya Shramadana Movement,

Meth Medura, 77 de Soysa Road, Moratuwa.

Administration: Sarvodaya Executive Council. Started in 1958 as the 100 Villages Development Scheme.

Finance: Government of Sri Lanka, with public donations, membership contributions and aid from international non-governmental bodies.

Lan: Eng., Sinhala and Tamil. TP: 700+ trainees in 4 res. insts. RA: yes. NN: yes.

1 (*) RURAL DEVELOPMENT

Courses ranging from seven days to two years in duration, on aspects of rural development including community leadership, agriculture, arts and crafts, appropriate technology, and non-formal education. The scheme now covers 850 village communities.

Purpose: Village development based on self-reliance.

Entry standard: Good physical and mental health.

SRI 5 Farm Mechanization Training Centre,
Anuradhapura.

Administration: Ministry of Agriculture and Lands.

Finance: Ministry of Agriculture with West German assistance.

Lan: Eng., Sinhala and Tamil. RA: yes. NN: yes.

1 (*) FARM MECHANIZATION

Thirty courses in farm mechanization lasting 1-5 weeks, basic and advanced levels.

Purpose: To assist farmers to mechanize.

Entry standard: Variable.

SRI 6 Young Farmers' Clubs,
Department of Agriculture, Peradeniya.

Administration: Started in 1953 and supervised by the Extension Service of the Ministry of Agriculture and Lands.

Finance: Partly self-supporting and partly Government of Sri Lanka.

TP: 49,000 in 2,700 clubs. NN: welcome as observers.

1 (**) AGRICULTURE

Leadership training in agriculture and related topics at courses and work camps, lasting up to three months. Leaders are trained because the club movement is too large for the extension service to provide direct instruction.

Purpose: To improve skills and encourage youth to stay on the land.

Entry standard: Leaders selected on merit from membership of young farmers. Age 14-25.

SRI 7 Fisheries Training Centres,
Department of Fisheries, Colombo.

Administration: Department of Fisheries. There are 4 centres at Bar Road, Batticaloa; Beach Road, Jaffna; St. Sebastian's Lane, Negombo; and Teckawatta, Tangalle. All provide the same courses.

Finance: Government of Sri Lanka.

Lan: Tamil/Sinhala. TP: 50 p.a. (Batticaloa) 40 p.a. (others).

1 (**) FISHERIES

Five-and-a-half-month courses for fishermen. Also short field training courses.

Purpose: To increase production in the fishing industry.

Entry standard: Grade 8.

2 (**) MARINE MECHANICS

One-year repair mechanics course (fishing boats).

Entry standard: GCE with maths and arithmetic, and three years' workshop experience.

- SRI 8 School Agriculture Programme,
c/o Ministry of Education, Malay Street, Colombo 2.
- Administration: Ministry of Education.
- Finance: Government of Sri Lanka.
- Lan: Sinhala and Tamil. TP: 130,000 (in about 3,000 schools).
RA: very little. NN: welcome as observers.
- 1 (**) SUNDRY
Four-year programme at junior secondary level (beginning with Grade VI, mid-January) in a range of pre-vocational electives. The general agriculture programme covers food crops, paddy cultivation, plantation crops, animal husbandry, minor export crops, floriculture, fisheries, nursery management and bee-keeping, and a minimum of two subjects must be studied during the four years.
- Purpose: To help pupils to acquire knowledge and skills in practical agriculture and develop wholesome attitudes to work.
- Entry standard: Grade VI.
- Note: A pilot farm programme was started in 1975 in a limited number of schools to serve as the agriculture resource centre for schools around. School-leavers are engaged to develop these farms, working collectively on the basis of two per acre for a period of two years as farm-hand/trainees entitled to 50% of the net profit.
-
- SRI 9 Sri Lanka Forest College,
Monkey Bridge, China Bay.
- Administration: Forest Department.
- Finance: Government of Sri Lanka.
- Lan: Sinhala, some Eng. TP: 20-25 p.a. RA: yes. NN: no.
- 1 (**) FORESTRY
One-year mainly practical course for sub-technical grade forest officers.
- Purpose: In-service training to Government forest officers of Forest Guard level.
- Entry standard: Junior School Certificate.
-
- SRI 10 Farm Schools,
c/o Ministry of Agriculture and Lands, Peradeniya.
- Administration: Ministry of Agriculture and Lands. There are Farm Schools at eight locations.
- Finance: Government of Sri Lanka.
- Lan: Sinhala and Tamil. Cal: from Apr/May. TP: 450 p.a.
RA: yes. NN: welcome as observers.
- 1 (**) AGRICULTURE
One-year practical course in agriculture for school-leavers.
- Purpose: To train young men and women for agriculture.
- Entry standard: GCE 'O' level in maths, language, and four other subjects; age 17-24.

- SRI 11 Hardy Senior Technical Institute,
Amparai.
- Administration: Ministry of Education.
- Finance: Government of Sri Lanka.
- Lan: Eng., Sinhala. Cal: May/Apr. TP: 30. RA: yes. NN: no.
- 1 (**) AGRICULTURE
Two-year course in agriculture, leading to National Diploma in Tech. (Agric.)
- Purpose: To train assistants for Government service and other employment.
- Entry standard: GCE 'O' level in relevant subjects, age 16+.
-
- SRI 12 Sri Lanka School of Agriculture,
Kundasale.
- Administration: Ministry of Agriculture and Lands.
- Finance: Government of Sri Lanka.
- Lan: Sinhala and Tamil. Cal: from Apr. TP: 125 p.a., m & f.
RA: yes. NN: welcome as observers.
- 1 (**) AGRICULTURE
Two-year diploma course in agriculture at technician level.
- Purpose: To train technicians for agricultural services and for other employment.
- Entry standard: GCE 'O' level in six subjects including maths and two science subjects. Age 17-25.
-
- SRI 13 In-service Training Institute,
Department of Agriculture, Peradeniya.
- Administration: Ministry of Agriculture and Lands. In-service training is at three locations.
- Finance: Government of Sri Lanka.
- Lan: Sinhala, Tamil and Eng. RA: yes. NN: welcome as observers.
- 1 (**) SUNDRY
Short courses of one to eight weeks for staff of the Department of Agriculture, and other departments and organizations involved in agricultural development, in specialized subject matter areas.
- Purpose: Induction training for new staff, and refresher courses for existing staff.
- Entry standard: All levels of extension workers and other departmental personnel.
-
- SRI 14 Agricultural Teacher Training Programme,
c/o Ministry of Education, Malay Street, Colombo 2.
- Administration: Ministry of Education. This course takes place at two centres: Palaly and Kuliypitiya.
- Finance: Government of Sri Lanka.
- Lan: Tamil (Palaly) and Sinhala (Kuliypitiya). Cal: Jan/Dec.
TP: 25 (Palaly) and 100 (Kuliypitiya). RA: yes. NN: no.

1 (**) AGRICULTURAL EDUCATION

Two-year course for teachers in agriculture and in pedagogy.

Purpose: To train teachers of agricultural subjects.

Entry standard: Agricultural assistants with more than one year's teaching experience and a pass in agriculture in GCE 'O' level or Secondary School Certificate.

SRI 15

Institute of Surveying and Mapping,
Diyatalawa.

Administration: Survey Department.

Finance: Government of Sri Lanka.

Lan: Eng. (higher dip. & refr. courses), Sinhala and Tamil (tech. course). RA: yes. NN: yes, for courses conducted in Eng.

1 (**) SURVEYS

One-year diploma course for survey technician (advanced).

Entry standard: GCE 'O' level with good maths and physics, plus one year basic course in surveying and levelling, or equivalent qualifications.

2 (***) SURVEYS

One year for Higher Diploma in Surveying. Also four-month refresher course for experienced surveyors.

Entry standard: Higher Diploma: normally in-service postgraduate level, for supervisory officers of the Survey Department, but qualified outsiders considered. Refresher course: about five years practical experience in land surveying.

SRI 16

University of Sri Lanka,
Senate House, P.O. Box 1406, 18 Ward Place, Colombo 7.

Administration: Autonomous. There are five campuses, four with scientific faculties covering subjects such as botany, biology and zoology. The agriculture and veterinary faculties are at Peradeniya. There is a University Farm of 250 acres at Dodangolla, additional facilities at Meewatura and in the livestock units of the Department of Animal Husbandry.

Finance: Government of Sri Lanka.

Lan: Eng. (but agric. & vet. courses eventually to be made available also in Sinhala and Tamil). Cal: Jan/Mar, May/Jul, Aug/Oct. TP: c. 350 in Fac. of Agric. & 100 in Fac. of Vet. Sci. RA: yes. NN: yes.

1 (***) AGRICULTURE/VETERINARY SCIENCE

First degree courses: four years for B.Sc.Agric. and for B.V.Sc. Students of agriculture spend much of the first year at Maha-Illuppallama farm practice unit in the dry zone, followed by three years at Peradeniya and Dodangolla. They also have a three-month basic evaluation course in plantation management.

Entry standard: GCE 'O' level in six subjects, with three subjects from botany, chemistry, physics and zoology at 'A' level.

2 (***) AGRICULTURE/VETERINARY SCIENCE

Higher degree courses: two years for M.V.Sc.; in the new Postgraduate Institute of Agriculture, one year (taught) for M.Sc.Agric., two years (course work and research) for M.Phil., and three years (course work and research) for Ph.D. There are facilities for Commonwealth Scholars in Crop Science, Animal Husbandry, Agric. Chemistry, Agric. Biology, Agric. Economics and Agric. Engineering.

Entry standard: Appropriate first degree.

SRI 17

School of Co-operation,
Polgolla.

Administration: Government of Sri Lanka. Founded in 1943.

Finance: Government of Sri Lanka and Co-operative Movement Fund.

Lan: Eng., Sinhala and Tamil. RA: for 130. NN: yes, for some years training courses for non-nationals were funded by Colombo plan; at present non-nationals can be accepted with free tuition but paying for board and lodging.

1 (**) CO-OPERATIVE MANAGEMENT

Five-month courses for co-operative staff, ordinary level.

Entry standard: Pass in junior level examination for co-operative staff; for private students, four credits in GCE 'O' level.

2 (**) VEGETABLE PRODUCTION AND MARKETING

Two-week courses for co-op. executives and government employees.

3 (***) FISHERIES CO-OPERATIVES

One-month courses for Fisheries Inspectors or Divisional Fisheries Extension Officers.

4 (***) AGRICULTURAL CO-OPERATIVES

Two-week courses for senior officers of the Department of Co-operative Development, Inspectors Grade I or II.

5 (***) CO-OPERATIVE MANAGEMENT

Five-month courses for first and second examinations for inspectors, the second requiring four years' experience after passing the first.

6 (***) CO-OPERATIVE MANAGEMENT

Nine-month advanced courses for co-op. staff with three years service after passing ordinary level examination.

Entry standard: For private students, a relevant University degree.

7 (***) CO-OPERATIVE MANAGEMENT

One year for Diploma in Co-operation for co-op. staff, government officials and instructors.

Entry standard: In-service: Advanced Level Certificate plus four years experience, or five years service after the second inspectors' examination.
Others: University graduates with two years experience as executives in an associated organization.

AUSTRALIA

The development of Australian rural industries has been determined by a number of interacting factors. The most important of these have been the availability of profitable markets, the opening up of new land (including development of transport facilities) and technical and scientific advances (including plant and animal breeding).

Long term prospects for expansion of rural production will depend in the future, as they have in the past, on profitable markets. The Australian domestic market, with the inherent advantages of relative reliability of supply and stability in prices, will expand. Overseas markets are less predictable with consequent uncertainty for Australian agriculture.

The main administrative responsibilities relating to agriculture are divided between the six States and the Australian Government. Constitutional powers relating to agricultural production rest primarily with the States, which administer such matters as advisory and extension services, internal quarantine, production controls (where applicable), land tenure and settlement policy, and intra-State trade. Agricultural education, training and research are to some extent also State responsibilities.

The main areas of accepted Australian Government responsibility are overseas marketing, promotion and information services for exporters, quarantine services for imports and health and quality standards for exports, the provision of credit and financial incentives which are uniform throughout Australia, and all matters relating to agriculture in the Australian Territories.

Most recent policy measures of the Australian Government have been designed to encourage the sound development of existing and new primary industries, to stimulate productivity, to encourage efficient resource utilization, to assist in the development and maintenance of markets for agricultural products, and to promote stability and confidence in the rural sector.

Agricultural education at tertiary level in Universities and Colleges of Advanced Education is funded by the Australian Government. The overall responsibility for education, including agricultural education, in the Northern Territory and the Australian Capital Territory is vested in the federal Department of Education, and in the various States in their respective departments of education. Some State departments of agriculture also have a vital interest in agricultural education through the administration of agricultural colleges.

The policy of the Australian Government is to encourage the quality, adequacy and availability of agricultural education. There is an awareness among government and rural industry organizations of the importance of continuing evaluation of the needs and opportunities in agricultural education. Courses available to satisfy these needs range from formal degree and certificate courses to short courses for farmers and farm employees. The subject content of such courses is updated in an attempt to keep pace with changing circumstances in the rural sector.

Some Australian Universities offer undergraduate and higher degrees in agriculture and related fields, while the agricultural colleges and other tertiary educational institutions offer diplomas and certificates which are predominantly practically oriented. Agriculture and related topics are taught at varying levels in the secondary schools. In some States the rural youth organizations are active in encouraging young people to be interested in the land.

AUSTRALIAN CAPITAL TERRITORY

AUS 1

Canberra Technical College,
Constitution Avenue, Canberra City, ACT 2601.

Administration: Department of Education (Australia).

Finance: Federal Government.

Cal: Feb/May, May/Aug, Sep/Nov. RA: no. NN: yes.

1 (**) SUNDRY

Short courses in agronomy and veterinary science, also a two-year part-time course in woolclassing.

Entry standard: School Certificate with passes in four subjects, or equivalent.

2 (**) HORTICULTURE

Three years part-time for Certificate in Horticulture.

Entry standard: School Certificate with passes in four subjects, or equivalent.

AUS 2

Australian National University,
P.O. Box 4, Canberra, ACT 2600.

Administration: Largely autonomous.

Finance: Federal Government.

Cal: Mar/May, May/Aug, Sep/Nov. TP: c. 260. RA: yes.
NN: yes.

1 (***) FORESTRY

Four years for B.Sc. (Forestry) pass or honours, in the School of General Studies.

Entry standard: Higher School Certificate with passes in five subjects including English, with three at first or second level.

2 (***) SUNDRY

Courses for higher degrees are available in forestry (in the School of General Studies), and for postgraduate Master of Agricultural Development Economics (one year).

Entry standard: For M.Sc. a first class or upper second class honours degree or equivalent; for Ph.D. an approved degree.

3 (***) SUNDRY

Other Ph.D. courses and post-doctoral work are available at the Centre for Resource and Environmental Studies, Institute of Advanced Studies, Research School of Biological Sciences, Research School of Earth Sciences and Research School of Social Sciences and Pacific Studies. Subjects include: animal behaviour, animal physiology, environmental studies, land use, plant pathology, plant physiology.

Entry standard: Appropriate first degree or equivalent status.

NEW SOUTH WALES

Wheat is the staple agricultural product of New South Wales and is the principal crop on a large proportion of the farms. The pastoral industry is next in importance to cereal production and the early economic progress of New South Wales was closely identified with sheep grazing for which the climate and natural vegetation are eminently suitable. There are now also significant beef cattle, pig

and dairy industries while poultry farming has recently become a distinct and highly specialized industry in the two separate fields of egg and meat production. Over a wide area of the State rainfall is low and irregular and great importance must be paid to water conservation.

Commercial fisheries operate both in-shore and off-shore and there is a minor freshwater fishing industry.

New South Wales possesses large areas of natural forest mainly of eucalypt hardwoods. Because natural softwood stocks are decreasing, most new afforestation is of coniferous softwoods.

Apart from the Agricultural Colleges and other tertiary institutions described in the individual entries, agriculture features in education at the secondary level, New South Wales having four Agricultural High Schools providing courses leading to School Certificate and Higher School Certificate. The four schools together have more than 2,000 pupils. Ordinary public secondary schools also provide courses in agriculture. Parts of the State forests are reserved to enable secondary school pupils to acquire some knowledge of scientific forestry and silviculture.

The Department of Education in co-operation with the Department of Agriculture has developed a system of rural youth clubs with about 6,000 members divided into two sections, junior (age 10-21) and senior (age 16-30). The Agricultural Department has highly developed extension services covering all general and specialist branches of agriculture including horticulture.

AUS 3

Department of Technical Education of the Education Department,
Box 33, G.P.O. Sydney, N.S.W. 2001.

Administration: Department of Education, N.S.W.

Finance: State Government.

The Department of Technical Education, through its School of Rural Studies formed in 1964, is responsible for organizing various agricultural courses provided at the Sydney Technical College and other technical colleges in the State. Some examples are listed.

1 (**) AGRICULTURE/SUNDRY

Three years full-time at the Sydney Technical College for Certificate in Agriculture. Other courses include agriculture, agriculture and veterinary chemicals, dairy technology, farm surveying, farm technology, pest control, poultry farming, wool commerce and classing, valuing. There are also correspondence courses.

2 (**) HORTICULTURE

Three years part-time for Certificate in Horticulture, also some shorter specialist courses, at the Ryde School of Horticulture (an annexe of the Sydney Technical College); and at Orange and Newcastle Technical Colleges. Also a supplementary two-year Nursery Management course.

3 (**) FIELD RESEARCH

Three years part-time at the Armidale Technical College for Certificate in Field Research Technology.

4 (**) SUNDRY

Range of special courses in subjects such as poultry farming, dairy bacteriology, dairy produce and by-products, sheep and wool.

Australia

- AUS 4 Tranby Co-operative College,
Glebe, Sydney, N.S.W.
- 1 (**)
1 (***) CO-OPERATIVE STUDIES
Training course in agricultural co-operative studies.
- AUS 5 C.B. Alexander Agricultural College,
Tocal, Paterson, via Maitland, N.S.W. 2421.
- Administration: Department of Agriculture, N.S.W. Started in 1970.
- Finance: State Government.
- TP: 80. RA: yes. NN: yes.
- 1 (**)
1 (***) ANIMAL HUSBANDRY
One year for Farm Certificate with emphasis on beef and dairy cattle.
- Purpose: Theoretical and practical training for those intending to farm or to work in agro-industries.
- Entry standard: At least four years of secondary schooling.
- 2 (**)
2 (***) SUNDRY
One-year advanced course for those who have completed the certificate, covering economics and management, animal production, beef cattle and horse husbandry, veterinary science, dairy cattle husbandry, agronomy and farm mechanization. There are also short courses, for example: valuation and beef cattle management.
- AUS 6 Yanco Agricultural College,
Yanco, N.S.W. 2703.
- Administration: Department of Agriculture, N.S.W. The college is at a research station with over 800 hectares and was started in 1963.
- Finance: State Government.
- TP: c. 75 p.a. RA: yes. NN: yes.
- 1 (**)
1 (***) AGRICULTURE
One-year Farm Certificate course covering agronomy, animal husbandry, farm engineering, farm management and economics.
- Purpose: Training for those intending to work their own properties or to seek employment as managers, overseers.
- Entry standard: Four years secondary schooling.
- 2 (**)
2 (***) AGRICULTURE/IRRIGATION
One-year advanced courses in irrigation and animal production for candidates who have completed the Farm Certificate course.
- AUS 7 Orange Agricultural College,
Box 8830, P.O. Orange, N.S.W. 2800.
- Administration: Department of Agriculture, N.S.W. This is a College of Advanced Education, started 1973, on a farm of 500 hectares.
- Finance: State Government.
- Cal: from end Jul. TP: 120. RA: yes. NN: yes.

1 (***) FARM MANAGEMENT

Two-year full-time course for Associate Diploma in Applied Sciences (Farm Management), covering soil management, crop and animal husbandry, farm mechanization, financial planning and control, marketing, investment and taxation, rural sociology. This is a non-graduate course.

Purpose: To train those entering rural industries or farm management or commercial concerns linked to the rural economy.

Entry standard: Higher School Certificate or equivalent including economics, preferably with one or two years experience in rural industry; age 18+.

AUS 8 Wagga Agricultural College,
Wagga Wagga, N.S.W. 2650.

Administration: Department of Agriculture, N.S.W. This is a College of Advanced Education, on a farm of 1,300 hectares.

Finance: State Government.
 TP: 170. RA: yes. NN: yes.

1 (***) FARM MANAGEMENT

Three years full-time for Diploma in Applied Science (Agric.), with main subjects in agricultural mechanization, agronomy, conservation, grazing animal husbandry, horticulture, intensive animal production (including poultry technology).

Purpose: To train intending farmers or entrants to agro-industries.

Entry standard: Higher School Certificate or equivalent; age 17+.

Note: Wagga Agricultural College is expected to merge with Riverina College of Advanced Education to form its Agricultural School in 1976.

AUS 9 Hawkesbury Agricultural College,
Richmond, N.S.W. 2753.

Administration: Department of Agriculture, N.S.W. This is a College of Advanced Education, on a farm of over 1,400 hectares.

Finance: State Government.
 TP: 340. RA: yes. NN: yes.

1 (***) AGRICULTURE/DAIRY TECHNOLOGY

Three years for Diploma in General Agriculture with major subjects in agricultural mechanization, agronomy, conservation, grazing animal husbandry, horticulture, intensive animal production (including poultry technology). Three years for Diploma in Food or Dairy or Poultry Technology, with specialization in the second year either in food processing or operation, food technology, food chemistry, applied biology, food micro-biology; or dairy processing, milk production, dairy technology, dairy micro-biology; or poultry management. These courses are considered equivalent to first degree studies at universities.

Entry standard: Higher School Certificate or equivalent, and willingness to undergo practical training during long vacations; age 17+.

Australia

2 (***) AGRICULTURAL EDUCATION

One-year postgraduate diploma course in rural extension with emphasis on a wide range of educational methods.

Entry standard: Diploma of an agricultural college or relevant university degree, and two years experience in extension work.

AUS 10

Macquarie University,
North Ryde, N.S.W. 211.

Administration: Largely autonomous.

Finance: Mainly State Government but about 35% Federal Government.

Cal: Mar/Jun, Jul/Nov. TP: 4,000 in univ. incl. 1,000 in Sch. of Earth Scis. RA: yes. NN: yes.

1 (***) AGRICULTURAL ECOLOGY

There is a large department of Earth Sciences but no B.Sc. degree courses. But three- or four-year B.A. courses have a broad curriculum which can include agricultural ecology.

Entry standard: Usual university entrance.

2 (***) SUNDRY

One-year postgraduate Diploma in Environmental Studies. Also higher degree course in plant physiology.

Entry standard: Appropriate first degree.

AUS 11

University of New England,
Armidale, N.S.W. 2351.

Administration: Largely autonomous.

Finance: State and Federal Governments.

Cal: Feb/May, May/Aug, Sep/Nov. TP: c. 3,000 in univ. incl. 150 in Sch. of Nat. Res. and 350 in Fac. of Rur. Sci.

1 (***) SUNDRY

First degree level courses in agricultural economics, agriculture and rural science, agronomy, farm management, livestock production, marine biology, nutrition, soil science, natural resources and horticulture. Specializations for B.Sc. Ag. include agricultural engineering, horticulture, hydrology, poultry science, soil science. B.Rur.Sc. includes some agricultural engineering and specializations in agricultural biology, agronomy, biochemistry and nutrition, genetics, livestock husbandry, physiology. Three years for B.Sc. pass, four years for B.Sc. Hons., B.Ec.Hons., B.Rur.Sc., B.Sc. Ag., B.Ag.Ec. and B.Nat.Res.

Entry standard: Usual university matriculation.

2 (***) SUNDRY

Higher degree courses in a wide range of subjects including veterinary science, forestry, marine science, horticulture. One to four years for M.Sc., M.Sc. Ag., M.Sc. (For.), M.Nat.Res. Also one year postgraduate courses for Dip.Ag.Ec., Dip.Sc.Ag., and Dip.Rur.Acc.

Entry standard: Appropriate first degree.

- AUS 12 University of New South Wales,
Box 1, P.O. Kensington, N.S.W. 2033.
- Administration: Largely autonomous.
- Finance: State and Federal Governments.
- Cal: Mar/Jun, Jul/Nov. TP: c. 14,000 in univ. incl. c. 3,000
at postgrad. level. RA: yes. NN: yes.
- 1 (***) SUNDRY
First degree courses in food technology, soil science, surveying,
wool and pastoral science; also with educational bias for prospec-
tive teachers of sheep husbandry and wool science. Three years
for B.Sc. pass and four years for Hons.
- Entry standard: Usual university matriculation.
- 2 (****) SUNDRY
Higher degree and diploma courses in environmental studies, wool
and pastoral science, biochemical engineering, food technology,
wool technology.
- Entry standard: Appropriate first degree.
- AUS 13 University of Sydney,
N.S.W. 2006.
- Administration: Largely autonomous. There is a Research Station for cereal
breeding, also a Farm Management Institute and an Animal
Husbandry Farm Centre.
- Cal: Mar/May, Jun/Aug, Sep/Nov. TP: 14,000 in univ. incl. 500
in Fac. of Agric. and 450 in Fac. of Vet. Sci. RA: yes. NN: yes.
- 1 (***) SUNDRY
Various diploma courses, not restricted to graduates, mostly one
year, e.g. Dip.Surv.Sc., Dip.Vet.An. (= anaesthesia),
Dip.Vet.Path., Dip.Vet.Rad.
- 2 (****) SUNDRY
First degree courses include agricultural economics, agriculture
and rural science, agronomy, soil science, surveying, veterinary
science. Four years for B.Sc.Agr., five years for B.Sc.(Vet.)
and for B.V.Sc. In the B.Sc.Agr. course, specialization is
possible in agricultural economics, agricultural education or in
plant or animal aspects of agriculture.
- Entry standard: Usual university matriculation.
- 3 (****) SUNDRY
Higher degree courses include agricultural chemistry, agricultural
micro-biology, agronomy, animal physiology, plant-breeding, plant-
pathology, plant-physiology. Usually one year for M.Sc.Agr. or
M.Agr. and two years for M.V.Sc.
- 4 (****) SUNDRY
Postgraduate non-diploma courses in soil science and veterinary
science. Also postgraduate diploma courses, mostly one year, for
Dip.Agr.Chem., Dip.Agr.Ec., Dip.Agr.Ent., Dip.Agr.Ext.,
Dip.Agr.Micro., Dip.Agr.Sc., Dip.An.Hus., Dip.D.Hus.
(= dairy husbandry), Dip.P.Hus. (= poultry husbandry), Dip.N.D.
(= nutrition and dietetics), etc.

NORTHERN TERRITORY

In the arid and semi-arid rangelands of the Northern Territory, the current aim of policy is to develop systems of production for the established extensive beef cattle industry - systems which are economically viable, which produce the types of beef the different markets desire, and which are stable in terms of conservation of plant and soil resources. In the higher rainfall, monsoonal areas, the aim is to develop systems of crop and beef cattle production, based on native and improved pastures, that provide opportunities for diversification and for more efficient and greater production when economic circumstances permit. The trend in these monsoonal areas is towards relatively more intensive methods of production with limited sub-division of Crown lands and some leasehold properties.

Only general subjects related to agriculture are taught in schools, although agriculture as a subject may soon be taught in several high schools. There is a proposal, now in the final planning stages, to establish a Rural College at the town of Katherine, to provide specific training at different levels for agricultural and other rural industries throughout the Northern Territory. Meanwhile, the Darwin Community College provides a certificate course in environmental biology that attracts technical staff wishing to improve their qualifications. The "jackeroo" system of training workers and future managers is still practised to some extent by the extensive beef cattle industry.

Agricultural extension services are provided by the Animal Industry and Agriculture Branch of the Department of Northern Territory. There is no separate extension section with full-time officers, but most officers of the specialist sections have an extension role and some sections have officers with mainly extension duties in some districts. The Branch conducts some training schools for its own staff and producers, and organizes field days on research stations and commercial properties.

AUS 14

Darwin Community College,
Darwin, Northern Territory.

Administration: Independent, by a college council.

Finance: Commonwealth Government.

Cal: 2 semesters p.a. RA: some. NN: yes.

1 (***) ENVIRONMENTAL BIOLOGY
Part-time course for Certificate in Environmental Biology.

Purpose: Basic training for technicians working in the fields of forestry, fisheries, wildlife, environment, national parks, agriculture, water resources and other biological sciences (to level acceptable by Public Service Board).

Entry standard: Four years of secondary education.

QUEENSLAND

The predominantly summer rainfall climate has largely determined the development of Queensland's agriculture, which differs from that in other States of Australia because of the greater proportion of tropical and sub-tropical crops. Of these sugar cane is by far the most important and 95 per cent of the raw cane sugar produced in Australia comes from Queensland. Other important crops are

maize, sorghum, lucerne, bananas, pineapples, cotton, citrus, vegetables and tobacco. Winter-growing crops include wheat, barley and oats.

Dairying is an important primary industry in coastal and sub-coastal Queensland, while the natural grasslands of inland Queensland support most of the sheep and a large proportion of the beef cattle of the State. Gradually more intensive use of these natural pastures is being introduced but that implies substantial capital investment mainly on better fencing and water facilities.

Queensland has been seriously affected by soil erosion so soil conservation now gets high priority as does irrigation and water conservation.

Commercial fisheries are concerned largely with prawn catching for export. There is also a sizeable pearl-shell and cultured pearl industry.

The emphasis in forestry is to try to provide the timber requirements of the State by establishing plantations of softwoods and by improving the natural growth of hardwoods, cypress, pine, etc. Even so timber still has to be imported.

Apart from educational and training projects listed individually, there is formal education for farming in twenty-five State high schools. In these, over two thousand students take agriculture and animal husbandry to Grade 10. In addition about 250 students at high school centres study agricultural mechanics.

Vocational and recreational training administered by the Rural Youth Section of the Department of Education includes vacation courses at the Queensland Agricultural College each year. These are residential and consist of five days of intensive instruction in rural skills. Agricultural Project Clubs are run by another branch of the Education Department and in 1974 some 434 schools operated 969 clubs with 11,040 members. Eighty-seven schools had industrial forest plots, and in a further twenty-seven schools, interest focused on work associated with the establishment of Environmental Study Areas and the provision of native trees for school plantings and stock for home plantings. Queensland schools have a continuous and positive association with the Department of Forestry, which provides them with data on plot sites, growth of species, seed supply, forest nutrition, forest pathology, and entomology. The wide range of Project Club field activities includes beekeeping, gardening, agriculture, conservation and wildlife projects, and they inculcate methods of applying the science and technology to agricultural activities and rural arts. As one aspect of environmental education, Field Study centres have been established using existing school buildings and facilities. During visits to such centres students participate in multi-disciplinary experiences aimed at developing an awareness and understanding of the environment and a concern for environmental problems. The centres, serving both primary and secondary schools, are located in urban, suburban, rural, and wilderness settings, so that natural, man-modified and man-made environments can be examined.

AUS 15

Technical Education Branch of the Department of Education,
P.O. Box 33, North Quay, Brisbane, Queensland 4000.

Administration:

Department of Education, Queensland.

Finance:

State Government.

The Technical Education Division of the Department of Education provides facilities for education and training for agriculture in

Australia

various technical colleges in the State, and through the Technical Correspondence School. Some examples are listed.

1 (**) SUNDRY

Non-certificate courses in sugar analysis and woolclassing. Also short courses in sheep and wool and for cane testers.

2 (**) SUNDRY

Correspondence courses for Certificate in Agricultural Science (four years), Certificate in Horticulture (two years), Certificate for Rural Technicians (four years).

3 (**) WOOLCLASSING

Two years full-time, or four years part-time, for Certificate in Woolclassing at the Brisbane Technical College.

AUS 16

Rural Training School,
Longreach, Queensland.

Administration: Founded in 1966 by the Ministry of Education and Cultural Activities.

Finance: State Government.

Cal: Mar/Nov. TP: 90 on full courses. RA: yes.

1 (**) SHEEP AND WOOL

Two-year certificate courses in animal production (sheep) and in woolclassing.

2 (**) SUNDRY

Short courses for adults usually 10 p.a. with 30 average attendance, in various subjects.

Purpose: To train present and future sheep pastoralists.

Entry standard: Some secondary education.

AUS 17

Rural Training School,
Emerald.

Administration: Founded in 1972 by the Ministry of Education and Cultural Activities.

Finance: State Government.

Cal: Mar/Nov. TP: 100. RA: yes.

1 (**) BEEF PRODUCTION

Two-year certificate course in animal production (beef) including maintenance of equipment.

Entry standard: Some secondary education.

Purpose: Training for the beef cattle industry.

AUS 18

Queensland Agricultural College,
Lawes, Queensland 4345.

Finance: State Government.

1 (**) AGRICULTURE

Three years for diploma in agriculture or in specialist subjects such as agricultural science, poultry technology, horticulture, food technology.

- Purpose: To train intending farmers and entrants into public service, rural property management, etc.
- Entry standard: Secondary School Leaving Certificate.
- 2 (***) AGRICULTURE
First degree courses are also available in some of the above subjects.
- AUS 19 Darling Downs Institute of Advanced Education,
Box 128, P.O. Toowoomba, Queensland 4350.
- 1 (***) AGRICULTURAL ENGINEERING
Four-year fellowship diploma course in agricultural engineering.
- Entry standard: Senior School Certificate.
- AUS 20 Griffith University,
Nathan, Brisbane, Queensland, 4111.
- Administration: Founded in 1971. The first students (500) were enrolled in March 1975.
- 1 (***) RESOURCES ECOLOGY
There is a course in resources ecology including land use (for B.Sc.) at the School of Australian Environmental Studies.
- AUS 21 James Cook University of North Queensland,
Townsville, Queensland 4811.
- Administration: Established in 1970 out of the University College of Townsville, which admitted its first students in 1961. Largely autonomous. The University has a Tropical Veterinary Science Department with an experimental animal unit.
- Finance: Federal Government.
Cal: Feb/May, May/Aug, Sep/Nov. TP: c. 1,200 in univ., with 400 in the Fac. of Sci. RA: yes. NN: yes.
- 1 (***) SUNDRY
First degree courses include marine biology, soil science, surveying: three years for B.Sc. Ordinary and four years Hons.
- Entry standard: Usual university entrance.
- 2 (***) SUNDRY
Master degree courses, usually one year full-time after first degree, include M.Sc. in tropical marine biology, plant pathology, or plant physiology; M.Ec. in regional planning.
- Entry standard: Appropriate first degree.
- AUS 22 University of Queensland,
St. Lucia, Brisbane, Queensland 4067.
- Administration: Largely autonomous. There are several experimental farms including one for Veterinary Science and also a Marine Biology Research Centre at Heron Island.
- Finance: Federal Government.
Cal: Feb/Jun, Jul/Nov. TP: 9,300 in univ., with 260 in Fac. of Agric. Sci. and 500 in Fac. of Vet. Sci. RA: yes. NN: yes.

1 (***) SUNDRY

First degree courses include agricultural economics, agriculture and rural science, farm management, marine biology, soil science, surveying, veterinary science, plant pathology and plant physiology; three years for B.Econ. and B.Sc.; four years for B.Econ.Hons., B.Agr.Sc., B.Surv., B.RTP (= regional and town planning); five years for B.V.Sc. The B.Sc. can be taken in forestry, with three years at the Australian National University and the final year at Queensland.

Entry standard: Usual university entrance.

2 (***) SUNDRY

Postgraduate diploma courses: one year in tropical agronomy and in agricultural extension. Higher degree courses include agricultural chemistry, agricultural economics, agricultural micro-biology, agriculture and rural science, agronomy, animal physiology, farm management, forestry, plant-breeding, plant pathology and physiology, soil science, veterinary science: one year for M.Sc.For. and M.Agr.Sc.; two years for M.V.Sc.

Entry standard: Appropriate first degree.

SOUTH AUSTRALIA

Most of the land area of South Australia is arid or semi-arid and cannot be used for agricultural production. Even with modern farming methods only 5 million out of the total of 65 million hectares are under crops or improved pasture. Nearly all the soils in the agricultural areas of the State are deficient and require large quantities of phosphate fertilizer.

About 90 per cent of the area under crops produces cereals. Wheat is a major crop and South Australia is the fourth State for wheat production, while nearly one-third of Australia's barley is produced in the State. There is significant production also of oats. There is a large market garden industry mostly by smallholders. Nearly half of Australia's vineyard area is located in South Australia and the bulk of the grapes grown are used for wine making. The order of importance in the value of the different kinds of produce is wheat, barley, vegetables, grapes, citrus and orchard fruits (mainly oranges, peaches, apricots and apples).

The value of pastoral and dairy produce is roughly equal to that of the crops. Wool is the most important pastoral product. There is also a significant dairying industry, but South Australia is a relatively small meat producer. Poultry farming too is a comparatively small and highly specialized and localized industry.

The entire coastline of South Australia is fished commercially, with tuna providing half the total production of sea fish.

The forested or wooded areas are not extensive and are probably of more value for soil conservation and water protection than for timber. Most commercial afforestation is of conifers.

Although the Department of Further Education is responsible for a wide range of post-secondary educational activities in Technical Colleges and other centres, much of this is related to urban and industrial skills and trades. Improved standards of farming are largely inculcated through the extension services rather than through formal training. However, at the secondary level agriculture is an elective subject in a number of County High Schools and Area Schools and can be included in the fourth and fifth years in Secondary School Certificate courses.

- AUS 23 Department of Further Education,
Adelaide House, 55 Waymouth Street, Box 2352 G.P.O. Adelaide,
S.A. 5001.
- Administration: Department of Further Education, South Australia.
- Finance: State Government.
- 1 (**) RURAL STUDIES
The Department organizes studies for a Certificate in Rural Studies,
in a flexible course of 400 study hours in eight semester units, which
can be spread over two years part-time. One semester assumes 2½
hours study per week for twenty weeks. Training includes manage-
ment functions as well as skills.
- Purpose: To train young farmers, and to encourage established farmers to
take up further education.
- Entry standard: No special entry qualification but a knowledge of basic science
helpful.
- AUS 24 Urrbrae Agricultural High School,
Fullarton Road, Netherby, S.A. 5062.
- Administration: Department of Education of South Australia.
- Finance: State Government.
- Cal: Feb/Nov. RA: no.
- 1 (**) AGRICULTURE
Two-year Certificate of Agriculture course covering agriculture
and animal husbandry, rural economics, farm management, farm
mechanics and some general subjects.
- Purpose: To train young people in the rural community for farming or for
employment in horticulture or with commercial farms concerned
with agriculture.
- Entry standard: At least three years secondary education, preferably more. The
course is seen as an intensive top-level high school course in
agriculture rather than a post-secondary course. Enrolment at
Urrbrae in the junior school is open to boys who have completed
primary school. They then follow the normal three-year junior
secondary curriculum before joining the special certificate in
agriculture classes at fourth and fifth year level, for which pupils
from outside the school can also be accepted.
- AUS 25 Technical Branch of the Education Department of South Australia,
Box 2352, G.P.O. Adelaide, S.A. 5001.
- Administration: The Technical Branch of the Education Department of S.A. provides
facilities for education and training for agriculture at the S.A.
Institute of Technology, the Technical Correspondence School, and
in the metropolitan and country Adult Education Centres. Some
examples are listed.
- Finance: State Government.
- 1 (**) WOOLCLASSING
Full-time course at the S.A. Institute of Technology for Certificate
in Woolclassing.
- 2 (**) SUNDRY
Part-time courses in welding and farm mechanics, in winemaking, in
home gardening, in weed control.

Australia

3 (**) SUNDRY

Correspondence courses in woolclassing, fruit and vine culture, milk and cream testing.

AUS 26

South-East College of Further Education,
Box 225, Mount Gambier, S.A. 5290.

Administration: Department of Education of South Australia.

Finance: State Government.

1 (**) RURAL STUDIES

Various courses for Certificate in Rural Studies in subjects such as animal husbandry, woolclassing management.

AUS 27

S.A. College of External Studies,
221 Wakefield Street, Adelaide, S.A. 5000.

Administration: Department of Education of South Australia.

Finance: State Government.

1 (**) RURAL STUDIES

Course for Certificate in Rural Studies. Also short courses in dairy technology, meat inspection, woolclassing, horticulture, fruit and vine culture.

AUS 28

Roseworthy Agricultural College,
Roseworthy, S.A. 5371.

Administration: Autonomous. It is a College of Advanced Education; established in 1883, the oldest agricultural college in Australia. It has 1,200 hectares including 500 under crops, a dairy, vineyards and orchards.

Finance: State Government.

Cal: Feb/Dec. TP: c. 240. RA: yes. NN: yes.

1 (***) SUNDRY

Three-year diploma courses in agriculture or oenology. Two years for diploma in farming and for associate diploma in wine production and marketing. Most courses are not at university level but would be accepted as part of the qualification for B.Sc. at the University of Adelaide.

Purpose: To provide technological training for intending or practising farmers, and for entrants into agro-industries including wine-making and marketing.

Entry standard: Equivalent to university entrance.

2 (***) AGRICULTURAL TECHNOLOGY

One year postgraduate diploma in agricultural technology.

Purpose: Advanced training in agricultural extension and farm management integrated with study of a particular agricultural specialization or rural industry.

Entry standard: Appropriate university degree or three-year diploma course.

- AUS 29 Flinders University of South Australia,
Bedford Park, S.A. 5042.
- Administration: Established 1966 and largely autonomous. The University includes the Flinders Institute of Atmospheric and Marine Sciences.
- Finance: State Government.
Cal: Feb/Apr, May/Aug, Sep/Nov. TP: c. 2,500. RA: yes.
NN: yes.
- 1 (***) SUNDRY
First degree courses in marine biology and in earth sciences:
three years for B.Sc. Ordinary and four years for B.Sc.Hons.
- Entry standard: Usual university entrance.
- 2 (***) SUNDRY
Higher degree courses in animal physiology and plant physiology:
two years for M.Sc.
- Entry standard: Appropriate first degree.
- AUS 30 University of Adelaide,
North Terrace, Adelaide, S.A. 5001.
- Administration: Largely autonomous. The Waite Agricultural Research Institute is part of the University occupying over 300 acres at Urrbrae. It also has the Mortlock Experimental Station.
- Finance: Mainly Federal Government.
Cal: Mar/May, Jun/Aug, Sep/Oct. TP: 6,200 in univ., with 300+ in the Agric. Sci. Fac. RA: yes. NN: yes.
- 1 (***) SUNDRY
Courses at first degree level in agricultural economics, agriculture and rural science, food technology, soil sciences, agronomy, horticulture, plant breeding: three years for B.Ec., four years for B.Ag.Sc. and B.Ec.Hons., five years for B.Ag.Sc.Hons.
- Entry standard: University matriculation.
- 2 (***) SUNDRY
Higher degree courses in agricultural chemistry, agricultural economics, agricultural micro-biology, agriculture and rural science, agronomy, animal physiology, plant breeding, plant pathology, plant physiology, soil sciences: M.Ag.Sc. in one year after B.Ag.Sc.Hons., in two years after other degrees.
- Entry standard: Appropriate first degree.

TASMANIA

Agriculture in Tasmania is heavily biased towards the livestock industries - dairy, sheep and wool, beef production - but a wide range of crops is also produced. There is no official State agricultural policy in the sense that there are no Government directives to determine what the State will produce. Farmers choose for themselves the enterprises they engage in, largely on the basis of personal preference and the needs of the market.

Broadly, the policy of the Department of Agriculture is to help farmers derive the greatest possible satisfaction and profit from their chosen enterprises. Noticeable trends in agriculture in recent years have been a decline in the production of pome fruits and the

introduction of new crops, including oil poppies. Many farmers are now profiting also from the sale of timber to a newly-established wood chip industry.

Agriculture as an educational subject can be introduced to the middle grades of primary education as part of the social studies course. At secondary level, a course of rural science is available to students as a subject for their School Certificate (4 years). Rural science courses are also available to secondary students, both urban and rural, who continue to the Higher School Certificate (6 years). Students undertaking these courses may choose to specialize in agriculture, fisheries or forestry.

The Department of Agriculture provides an educational and advisory (extension) service to both commercial and hobby farmers through its Extension Service, its Animal Health Service and its Horticultural and Animal Production Divisions. The Extension Service offers help, on a whole-of-farm basis, with all aspects of farm management, both practical and financial. Horticultural Extension may or may not be on a whole-of-farm basis depending on whether the property is completely or partly horticultural in enterprise. Animal Health extension is limited and specialized, whilst Animal Production extension is provided by specialist officers as support for advice given by officers of the Extension Service.

All the education and advisory work done by the Department is supported by the Department's research divisions.

AUS 31

Adult Education Board,
Department of Education, Hobart.

Administration: State Government.

1 (*) SUNDRY
The Board organizes eight-week courses on specific topics for practising farmers but leading to no qualification.

Entry standard: Practising farmers.

AUS 32

University of Tasmania,
Box 252-C, G.P.O., Hobart.

Administration: Largely autonomous. Founded in 1890.

Finance: State and Federal Governments.

Cal: Mar/May, Jun/Aug, Sep/Nov. (plus a term of 12 weeks Dec/Feb for supplementary and hon. exams.) TP: (in univ) 3,500.
RA: yes. NN: yes.

1 (***) SUNDRY
First degree courses for B.Sc. and B.Ec. (3 years), B.Sc.Hons. and B.Ec.Hons. (4 years), B.Agr.Sc. (4 years) and B.Agr.Sc.Hons. (4½ years). Courses include agriculture, economics, agronomy, agricultural engineering, marine biology, soil science, animal production, horticulture, agricultural extension, micro-biology, plant pathology and entomology.

Entry standard: Usual university entrance (matriculation) including maths and chemistry.

2 (****) SUNDRY
One year for M.Sc. or M.Agr.Sc. Higher degree courses include agronomy, animal production, horticulture, plant pathology, entomology, micro-biology and soil science.

Entry standard: Appropriate first degree or equivalent status.

VICTORIA

Victoria, which occupies about 3 per cent of the Australian continent, produces about 30 per cent of the nation's agricultural output. Its agriculture is based on a freehold land tenure system and is, by world standards, an efficient low cost system of food and fibre production. While there is some land which could be developed for agriculture at some time in the future, the likely trend in the next twenty years will be to further intensification on already cleared land.

Owing to relatively moderate climatic conditions the beef, sheep and dairy industries are pasture based, the animals being grazed in the open throughout the year. The pig and poultry industries are now predominantly intensively operated. Horticultural industries, including vegetables, pome, stone, citrus and vine fruits are the other main primary industries.

Victoria produces significant quantities of food and fibre for export, the main items being beef and sheep meats, wool, wheat, dairy products, canned fruits such as pears and peaches, dried vine fruits, apples and some citrus.

The Department of Agriculture in Victoria supports primary industries through the development of improved technology, a well trained extension service, and a formal agricultural education system. Extension in this State is concerned with informal education of farmers in the various facets of their vocation and there is a rapidly developing link with the formal education provided by the Department's agricultural colleges.

The formal education and training programmes offered in agriculture include full-time tertiary level courses, middle level courses and apprenticeship training. Apprenticeship training in agriculture was established in 1975 and is conducted by the Technical Schools Division of the Education Department under the authority of the Industrial Training Commission. The Technical Schools Division is also the major authority administering Technical and Further Education in Victoria. A new Agricultural College at Warragal is planned for 1976 as well as the McMillan Rural Studies Centre, both administered by the Department of Agriculture.

As a result of legislation passed in 1973, a Victorian Advisory Council of Agricultural Education will be established to advise the Government on agricultural education requirements arising from changes in agricultural education and technology, from changes in the structure and markets of the agricultural industry and from sociological changes.

The Department of Agriculture is now fully committed to a new view of its role in agricultural education. The concept of life-long education - education beyond the formal institutional years, throughout the individual's lifetime wherever he or she is located - is seen as specially appropriate to farmers and their families to help them make decisions relating to the long-term economic viability of farm units, the profitability of enterprises, the efficient use of energy resources and to help them understand the complexities of marketing their products both in Australia and overseas. In this new view of its role, the Department sees its colleges being developed as regional resource centres with the capacity to extend educational activities, if needs be, into the farmer's home and throughout the State, and as centres for co-operative activity with other components of the educational system - schools, adult education, colleges of advanced education, etc. - and its own extension services.

Australia

- AUS 33 Marcus Oldham Farm Agricultural College,
P.B. Geelong, Victoria 3221.
- Administration: Private.
- Finance: Private.
- Cal: 3 terms p.a. beg. Feb, May, Aug. TP: 120. RA: yes.
NN: yes (but must have at least two years' experience on an
Australian farm, or relevant experience in another country).
- 1 (**) AGRICULTURE
Various short courses for farmers.
- Purpose: To improve techniques.
- Entry standard: Farming experience.
- 2 (**) FARM MANAGEMENT
Two years for Diploma in Farm Management.
- Purpose: To train farm managers.
- Entry standard: Completion of secondary course; one year's practical experience
in farming; age 19+.
-
- AUS 34 TAFE (Technical and Further Education),
c/o Technical Schools Division, Educational Department,
480 Collins Street, Melbourne 3000.
- Administration: Technical Schools Division of the Education Department of Victoria.
TAFE is provided at more than 100 technical institutions throughout
the State and through classes in some 150 high schools.
- Finance: State Government.
- 1 (**) SUNDRY
Full- and part-time courses are available in a wide variety of
subjects including: agriculture, agricultural science, boat-building,
citrus growing, farm maintenance, farm mechanics, farm welding,
food processing, horticulture, meat inspecting, rural studies,
shearing, shearing machines, sheep production and wool handling,
viticulture, woolclassing. They range from part-time and pre-
apprenticeship courses to courses designed to train immediate
support personnel for professional officers and higher level manage-
ment, and include highly specialized or restricted programmes
requested by particular industries or firms.
- Purpose: To provide maximum access to educational opportunities following
secondary education.
- Entry standard: Entry requirements vary according to the level of course taken.
-
- AUS 35 Dookie Agricultural College,
Dookie, Victoria 3646.
- Administration: Division of Agricultural Education of the Department of Agriculture.
- Finance: Federal and State Governments.
- Cal: 2 semesters p.a. beg. Feb. and Jul. TP: 180. RA: yes.
NN: not at present.

1 (**) AGRICULTURE
Three years for Diploma of Agriculture.

Purpose: To develop potential in individual's own area of interest and equip for employment in farming and agricultural technology.

Entry standard: Completion of secondary education, preferably plus farming experience.

2 (**) SUNDRY
Various short courses, mainly practical.

Purpose: To improve skills and develop potential.

AUS 36 Glenormiston Agricultural College,
Glenormiston South, Victoria 3265.

Administration: Division of Agricultural Education of Department of Agriculture.

Finance: State and Federal Governments.

Cal: 2 semesters p.a. beg. Feb. and Jul. TP: 110 (for Dip.) + sev. hundreds. RA: yes. NN: no.

1 (**) FARM MANAGEMENT
Course leading to Diploma in Farm Management.

Entry standard: Satisfactory secondary education plus two years' practical farm experience.

2 (**) SUNDRY
Various short courses, mainly practical; also part-time courses.

AUS 37 Longeronong Agricultural College,
Dooen, Victoria 3401.

Administration: Division of Agricultural Education of the Department of Agriculture.

Finance: State and Federal Governments.

Cal: 2 semesters p.a. beg. Feb. & Jul. TP: c. 100 p.a. RA: yes. NN: yes (Two Commonwealth trainees could be accepted annually. They would require 6 months preliminary training in Melbourne if English is their first language, and otherwise 12 months in Melbourne for adaptation and acquiring language skills. These preliminary courses would come under the Australian Department of Education.)

1 (**) AGRICULTURE
Three years full-time for Diploma of Agriculture, including crop and animal production, business management, farm machinery and irrigation.

Purpose: To train intending farmers and those working in agro-industries.

Entry standard: Completion of secondary education plus farming experience preferable.

2 (**) SUNDRY
A variety of practical short courses.

AUS 38 Gilbert Chandler Institute of Dairy Technology,
State Research Farm, Werribbee, Victoria 3030.

Administration: Department of Agriculture of Victoria.

Finance: State Government.

Cal: 21 weeks p.a., Mar/Jul. TP: 36. RA: yes. NN: no.

Australia

1 (***) DAIRY TECHNOLOGY

A number of courses of various lengths for dairy operatives: for example, twenty-one weeks in each of two consecutive years for Certificate of Competency in dairy manufactures. A third year of training leads to Diploma of Dairy Technology.

Purpose: To train technicians and technologists for the dairy manufacturing industry.

Entry standard: Secondary education plus experience in the industry; age 17+.

AUS 39

Burnley Horticultural College,
Swan Street, Burnley, Victoria 3121.

Administration: Division of Agricultural Education of the Department of Agriculture.

Finance: State and Federal Governments.

Cal: Feb/May, May/Aug, Sep/Dec. TP: 120. RA: no. NN: yes.

1 (***) HORTICULTURE

Three years for Diploma in Horticultural Science.

Purpose: To improve skills, knowledge and competence of people working in fruit, vegetable and plant production.

Entry standard: Secondary schooling up to at least Form V; good knowledge of English and chemistry.

2 (***) SUNDRY

Various practical short courses in horticulture and its branches, and in agricultural science.

Purpose: To improve skills.

Entry standard: Variable.

AUS 40

Melbourne College of Textiles,
Cumberland Road, Pescoe Vale, Melbourne 3044.

Administration: Largely autonomous.

Finance: State Government.

Cal: 2 semesters beg. Feb. & Jul. TP: c. 620. RA: no.
NN: yes.

1 (***) WOOL TECHNOLOGY

Two years full-time for Certificates in Sheep Production and Wool Handling, and in Wool Technology.

Purpose: To provide training for sheep farmers, wool classers and shed supervision, and wool brokers and buyers.

Entry standard: Completion of Form V secondary education.

AUS 41

Gordon Institute of Technology,
Fenwick Street, Geelong, Victoria 3220.

Administration: Largely autonomous.

Finance: State Government.

Cal: Feb/May, May/Aug, Aug/Dec. RA: no. NN: yes.

1 (***) FOOD SCIENCE

Two years full-time for Diploma of Foods and Food Science.

Purpose: To train individuals for laboratory research posts.

Entry standard: Form V, with competence in English, chemistry, physics and maths.

2 (**) WOOL TECHNOLOGY

Two-and-a-half years full-time for woolclassing certificate

Purpose: To train woolclassers.

Entry standard: Form V, with competence in English, chemistry, physics and maths.

3 (**) NUTRITION

Three years full-time for Bach. of App. Sci. (Nutrition).

Purpose: To train individuals for laboratory research posts.

Entry standard: Form V, with competence in English, chemistry, physics and maths.

AUS 42Royal Melbourne Institute of Technology,

124 La Trobe Street, Melbourne, Victoria 3000.

Administration: Largely autonomous.

Finance: State and Federal Governments.

Cal: 2 semesters p.a. beg. Mar. & Jul. TP: 110. RA: no.
NN: yes.

1 (**) APPLIED BIOLOGY

Two years for Assoc. Dipl. of Appl. Biology.

Purpose: To train individuals for research laboratory posts.

Entry standard: HSC or equivalent in English, chemistry, physics and maths.

2 (**) FOOD SCIENCE

Four years for B.Appl.Sci. (Food Science and Technology).

Purpose: To train individuals for posts in research laboratories.

Entry standard: HSC or equivalent in English, chemistry, physics and maths.

AUS 43Victorian School of Forestry,

Creswick, Victoria 3363.

Administration: Forestry Commission.

Finance: State and Federal Governments.

Cal: Feb/May, May/Aug, Sep/Dec. TP: 60. RA: yes. NN: no.

1 (**) FORESTRY

Three years full-time for the Associate Diploma of Forestry. A further three years' field service and a thesis for the Diploma of Forestry (Victoria).

Purpose: To train staff for the Forestry Commission.

Entry standard: HSC in physics and chemistry.

AUS 44La Trobe University,

Bundoora, Victoria 3033.

Administration: Established in 1964, accepted its first students in 1967. Largely autonomous.

Finance: Federal Government.

Cal: Mar/May, Jun/Aug, Sep/Nov. TP: c. 4,500, incl. 230 in Sch. of Agric. RA: yes. NN: yes.

Australia

1 (***) AGRICULTURE

Four years for B.Agr.Sc. pass or hons. Subjects include agricultural economics, agriculture and rural sciences, farm management, soil science.

Entry standard: Usual university entrance (matriculation).

2 (***) AGRICULTURE

Two years for higher degree of M.Agr.Sc. in similar subjects as first degrees and including agronomy, plant-breeding, - physiology, - pathology, animal physiology.

Entry standard: Relevant first degree.

AUS 45

University of Melbourne,
Parkville, Victoria 3052.

Administration: Largely autonomous.

Finance: State and Federal Governments.

Cal: Mar/May, Jun/Aug, Sep/Oct (exam. term Oct/Dec). TP: 325 in Fac. of Agric. & For., 265 in Fac. of Vet. Sci. RA: yes. NN: yes.

1 (***) SUNDRY

Three years for B.Agr.Sc.; four years for B.Agr.Sc.Hons. and for B.Sc.Forestry (it is possible to take B.Sc.Forestry in 2 years after three-year diploma course at Creswick); five years for B.V.Sc. ord. and Hons. First degree level courses in agricultural economics, agriculture and rural sciences, animal science, agricultural engineering, marine science, soil science, surveying, veterinary science, agricultural extension.

Entry standard: Usual university matriculation.

2 (***) SUNDRY

Usually one year for M.Sc., M.Agr.Sc., M.Eng.Sc., M.Vet.Sc., M.Vet.St. and M.For.Sc. Also one year for postgraduate Dip.Agr.Extn. Higher level courses are as for first degrees but include also agricultural chemistry, agronomy, agricultural engineering, plant-breeding, - pathology, - physiology.

Entry standard: Relevant first degree.

AUS 46

Monash University,
Clayton, Victoria 3168.

Administration: Largely autonomous.

Finance: Federal Government.

Cal: Mar/Oct in 3 terms. TP: c. 10,000 in univ. RA: yes. NN: yes.

1 (***) SUNDRY

Three years for B.Sc. or B.Ec. pass, four years for Hons. Subjects include agricultural economics, earth science.

Entry standard: Usual university entrance (matriculation).

2 (***) SUNDRY

Master degree courses include agricultural economics, environmental studies, plant pathology, plant physiology.

Entry standard: Relevant first degree.

WESTERN AUSTRALIA

Of Western Australia's 2.5 million square kilometres, about 11 per cent are taken up in agricultural areas and 52 per cent in pastoral areas. In the south-west of the State agricultural areas are relatively fully developed, although with some further clearing still occurring on the western and south-eastern fringes. Property sizes range from 100 hectares for typical dairy or orchard farms, to 3-5000 ha. for large cereal and grazing farms. Stock includes some 30 million sheep and two million cattle, with major crops being wheat (2.5 million hectares), and barley (0.7 million ha). Other crops include oats, lupins, pasture seeds, apples and oranges, and a wide range of other tropical and temperate fruit and vegetables. Pastoral areas include leasehold properties with areas up to one million hectares. In the far north of the State they carry cattle, and in the east and near-north sheep, at relatively low stocking rates. There were some 21,000 farm or pastoral properties in 1975.

In 1973-74, the gross value of principal agricultural products was \$443.7 m. for wheat, \$250.7 m. for wool, \$109.7 m. for meat, \$48 m. for barley and \$25.2 m. for oats. Important current trends would be associated with the development of grain lupins as an export alternative to wheat for some areas, the development of a sheep meat trade with the Middle East, improved economic farm management, stabilization of the beef and dairy industries, and agricultural development on the Ord River Irrigation Project in the north of the State.

The State's agriculture is served by a well-organized Department of Agriculture including research and extension activities. Such activities are conducted from Perth and 25 district offices located throughout the State, by a professional staff of some 300. There is considerable co-operation between the extension activities of this organization, and the functioning of the State's Education Department, Rural Youth movement and Institute of Technology; as well as the two Universities and local sections of the Commonwealth Scientific and Industrial Research Organization. There are no specific training programmes in Western Australia for Forestry or Fisheries.

AUS 47Agricultural High Schools,

c/o Secondary Education Division of the Education Department,
36 Parliament Place, West Perth, W.A. 6005.

Administration: Secondary Education Division of the Education Department.

Finance: State Government.

Cal: Feb/May, May/Aug, Sep/Dec. TP: c. 150. RA: yes.

1 (**) AGRICULTURE

Two-year certificate course in agriculture, possibly in association with completing a matriculation level course of non-agricultural subjects. This course is available at four residential agricultural high schools located in agricultural areas of the State.

Purpose: To provide an appropriate education for boys intending to return to their home farms, or take up careers in industries associated with agriculture.

Entry standard: By selection after age 15 and completion of three years of secondary education.

Australia

- AUS 48 Technical Education Division,
Education Department, 36 Parliament Place, West Perth, W.A. 6005.
- Administration: Technical Education Division of the Education Department.
- Finance: State Government.
- 1 (**) SUNDRY
The Department organizes courses at various technical colleges, including short courses in sheep and wool and general agricultural subjects, such as dairy technology. Also part-time certificate courses in agricultural mechanics, agriculture, horticulture, sheep and woolclassing, and a part-time diploma course in agricultural technology.
- Entry standard: Exact entry requirements vary according to the course taken.
-
- AUS 49 Muresk Agricultural College,
Muresk, W.A. 6401.
- Administration: Western Australian Institute of Technology.
- Finance: Federal Government.
- Cal: Mar/Jul, Jul/Nov. TP: 148. RA: yes. NN: yes (conditional).
- 1 (**) AGRICULTURE
Two-year full-time course for the Associate Diploma in Agriculture (UG3 level).
- Entry standard: Age 17+. Satisfactory performance in tertiary admissions examination or equivalent. At least one year's practical farm experience (overseas students must have some practical farm experience in Western Australia prior to enrolment).
-
- AUS 50 Murdoch University,
Murdoch, W.A. 6153.
- Administration: Largely autonomous. Founded 1973.
- Finance: Mainly State Government.
- Cal: Mar/Nov (2 semesters). TP: 1,200. RA: some. NN: yes.
- 1 (***) AGRICULTURE
Degree courses in agricultural studies in the Schools of Environmental and Life Sciences, and of Veterinary Studies.
- Entry standard: Usual university entrance (matriculation).
- 2 (***) AGRICULTURE
Postgraduate agricultural studies in the Schools of Environmental and Life Sciences, and of Veterinary Studies.
- Entry standard: Appropriate first degree or equivalent status.
-
- AUS 51 University of Western Australia,
Nedlands, W.A. 6009.
- Administration: Largely autonomous.
- Finance: State and Federal Governments.
- Cal: Mar/May, May/Aug, Sep/Oct. TP: (in Fac. of Agric.) 160.
RA: yes. NN: yes.

1 (***) SUNDRY

First degree courses in agricultural economics, agriculture and rural science, agronomy, animal husbandry, soil science, surveying. For B.Ec. and B.Sc., three years for pass and four years for honours; for B.Sc. (Agric.) four years for pass or honours.

Entry standard: Usual university entrance (matriculation).

2 (***) SUNDRY

Higher degree courses in agricultural economics, agriculture and rural science, agricultural micro-biology, agronomy, plant physiology, soil science. One year full-time for M.Sc. or M.Sc. (Agric.).

Entry standard: Appropriate first degree or equivalent status.

FIJI

The objectives of Fiji's agricultural development are to increase production for the domestic and export markets and raise rural incomes.

The Extension Services will continue to be the primary medium through which agricultural development will be effected. The main thrust of extension efforts will be directed at motivating increased agricultural production. To achieve this objective, more trained extension workers, together with adequate facilities, will be made available to ensure regular contact with farmers. Suitable training programmes will be required for both extension workers and farmers.

The Fiji College of Agriculture will continue to train sub-professional staff. To meet the increasing demand for these, the expansion programme already commenced will continue during the early years of the Plan period (1976-80). The result will be an almost doubled output from pre-service courses by 1980. The expansion and upgrading of in-service training facilities will also provide greater opportunities for extension staff to train for more specialized skills.

The training of farmers is equally important. The emphasis in vocational training for youth will be on short courses to supplement a village and settlement level youth programme. Adult farmer training programmes will be expanded and multi-purpose training centres, like those at Navuso and Tutu, will be established in Vanua Levu and the Western Division. For maximum effectiveness such centres will need to be an integral part of a national programme of adult education. More use will also be made of demonstration farms and of "on farm" training. Special attention will be given to the provision of land for those being trained as farmers.

The Forestry Training School in Lololo will continue to train school-leavers and suitable in-service unestablished staff as forest guards. This course may be extended from the present eighteen months to two or three years, in order to provide enough time for theoretical as well as practical training.

FIJ 1

Marist Training Centre,
Taveuni.

Administration: Roman Catholic Church.

Finance: Government of Fiji and the Roman Catholic Church.

1 (*) RURAL SKILLS

Basic adult education for young married couples, for six months divided into four periods of four weeks at the Centre, and three periods of three weeks in the home village. Courses are largely unstructured but may include agriculture, handyman skills in building and mechanics, simple domestic economy, child care, etc.

Purpose: To strengthen relationship with the community and to provide basic skills according to need.

Entry standard: None.

Lan: Fijian. Cal: Jan/Jun, Jul/Dec. TP: 24 couples p.a.
NN: not as trainees, but observers welcome.

2 (**) RURAL SKILLS

Volunteers' course comprising two years of voluntary work helping village projects but with formal instruction in agriculture, carpentry and mechanics on one day each week.

Purpose: To help integrate youth into rural life and encourage self-supporting activities such as market gardening.

Entry standard: School leavers.

Lan: Fijian. Cal: Feb/Dec. TP: 40. RA: yes. NN: no.

3 (*) RURAL SKILLS

Comprehensive course for young men over 18, lasting two years, with alternating periods of three weeks at the Centre and five weeks at the home village. Formal instruction includes agriculture, carpentry, basic mechanics, etc.

Purpose: To integrate participants into rural life.

Entry standard: Form IV (= 10 years schooling), 18 years +, access to land.

Cal: Feb/Dec. TP: 40. NN: not as trainees, but observers welcome.

FIJ 2 Navuso Agricultural School,
Private Mail Bag, Suva.

Administration: The Methodist Church.

Finance: Government of Fiji and the Methodist Church.

1 (*) AGRICULTURE

Student farmer scheme, with three years individual farming under supervision of school staff. Profits held in trust for development of the students' own land after leaving the scheme.

Purpose: To give young farmers the best practical introduction to working their own small farms.

Entry standard: No specific educational qualification.

Cal: Feb/Jun, Jul/Nov. TP: 36. NN: not as trainees, but observers welcome.

2 (**) RURAL SKILLS

Adult training in short one- or two-week courses, at a residential multi-purpose training centre.

Purpose: To improve techniques of rural men and women.

Entry standard: Practical experience.

Cal: Feb/Jun, Jul/Nov. TP: 300 p.a. RA: yes. NN: not as trainees, but observers welcome.

3 (**) AGRICULTURE

Two-year general course in tropical agriculture. Forty per cent of the first year is in theory including crop and animal production, business principles and farm management, farm mechanics and carpentry. Most of the second year work is practical on the school farm and school farm enterprises.

Purpose: To prepare young men as farmers or for employment as skilled agricultural workers.

Entry standard: Form IV (= 10 years schooling), 17+, one year's work experience.

Cal: Feb/Jun, Jul/Dec. TP: 70 p.a. RA: yes. NN: yes.

FIJ 3 Ratu Kadavulevu School,
Private Mail Bag, Suva.

Administration: Department of Education.

Finance: Government of Fiji.

Cal: Feb/May, Jun/Aug, Sep/Nov. TP: 40. RA: yes. NN: no.

1 (**) AGRICULTURAL ENGINEERING

Two-year course in agricultural engineering for tropical schools. Training includes mechanics, elementary crop husbandry and land use, construction and maintenance of agricultural machinery with practical work on the school's mechanized farm.

Purpose: To provide stages 1 and 2 for pupils intending to proceed to stage 3 of the apprentice training course with firms or government departments. The City and Guilds of London course which is taken is considered equivalent to the first two years of an Apprenticeship in Agricultural Engineering.

Entry standard: Form 1V (= 10 years schooling).

FIJ 4 Forestry Training School,
Lololo, Lautoka.

Administration: Department of Forestry.

Finance: Government of Fiji.

Cal: Jan/Dec, Jan/Aug. TP: 24. RA: yes. NN: yes.

1 (**) FORESTRY

Eighteen-month course for Forest Guard Certificate.

Purpose: To train forest guards for government service.

Entry standard: Fiji Junior (= 10 years schooling).

FIJ 5 College of Agriculture,
P.O. Box 358, Suva.

Administration: Ministry of Agriculture, Fisheries and Forests.

Finance: Government of Fiji.

Cal: Feb/Jun, Jul/Nov. TP: 117. RA: yes. NN: yes.

1 (**) AGRICULTURE

Three-year course for Diploma in Tropical Agriculture, covering animal sciences and general agriculture.

Purpose: To produce agriculturalists with scientific training.

Entry standard: New Zealand School Certificate or equivalent (11 years schooling).

2 (**) FISHERIES

Three years for Diploma in Tropical Fisheries. Part only at College, other parts at University of the South Pacific, Derrick Technical Institute and the Fisheries Division of the Fiji Ministry of Agriculture, Fisheries and Forests. Training includes basic sciences in the first year and theoretical and practical work in the second and third years.

Purpose: To produce middle level staff, mainly for government employment as extension officers, research assistants, to man demonstration and exploration vessels, etc.

Entry standard: New Zealand School Certificate or equivalent (11 years schooling).

FIJ 6 University of the South Pacific,
Suva.

Administration: University of the South Pacific.

Finance: Regional Governments. Overseas grants.

Cal: Mar/Jun, Aug/Nov. TP: 35 (these courses). RA: yes.
NN: yes.

1 (***) AGRICULTURE

Bachelor of Agriculture degree course over three and a half years, including one semester of practical farm training. The remainder of the course is shared with the Regional College of Tropical Agriculture in Western Samoa.

Purpose: To produce graduate agriculturalists locally. The course started in 1975 so will produce the first graduates in 1978.

Entry standard: University matriculation.

2 (***) RURAL DEVELOPMENT

Eighteen-month course for Diploma in Rural Development.

Purpose: To prepare staff for management posts in agencies involved in rural development.

Entry standard: University matriculation plus five years' field experience.

NEW HEBRIDES

Agricultural policy in the New Hebrides is implemented through the agriculture, veterinary and forestry sections of the Department of Agriculture. The current main objectives of the Department are to increase production for the domestic market thereby diminishing imports of agricultural products; to increase income and security of producers by diversification; to maintain the country's relatively pest- and disease-free status; to achieve self-sufficiency in timber and timber products; and to improve animal slaughtering methods and meat hygiene with a view to making the country's meat product internationally acceptable.

The main work of the Department is through research and extension activities. Education and training of junior staff is provided by the Tagabe Agricultural School, and by the two training centres set up by the Department at Santo and Lakatoro.

There is no specific instruction in agriculture in English- or French-speaking primary schools in the New Hebrides, but three secondary schools offer courses of instruction with an agricultural bias.

NH 1

Tagabe Agricultural School,
Near Vila.

Administration: Department of Agriculture of the Condominium. There is a 125 acre demonstration station.

Finance: Condominium funds. Established with CDW Aid.

Lan: Eng. & French. Cal: Feb/Nov. TP: 20-24 p.a. RA: yes.

1 (**) AGRICULTURE

Three years of training in general agriculture, with final year mainly on extension teaching methods. The first two years cover elementary science and general agriculture, including crop and animal husbandry, vegetable production, management of cattle, pigs and poultry, use of mechanical implements; with separate courses in English and French.

Purpose: Mainly to train junior extension agents for posts in the Department of Agriculture.

Entry standard: In English: New Hebrides Senior Primary Leaving Certificate plus three years' secondary education. In French: Certificat d'Etudes Primaires plus three years' secondary education.

2 (**) AGRICULTURE/HORTICULTURE

Refresher courses in Dec/Jan for former students. Also short courses for vegetable growers.

NH 2

Navota Farm Training Centre,
South Santo.

Administration: Presbyterian Church. The farm is 1,000 acres with a herd of 500 cattle.

TP: c. 12 p.a.

1 (**) ANIMAL HUSBANDRY

One-year courses, mainly practical, in stock farming including gardening and other subjects.

NH 3

Department of Agriculture Training Centres.

Administration: Department of Agriculture. There are two centres - at Santo and Lakatoro - and a third is projected for Tanna.

1 (**) AGRICULTURE

Short courses on various agricultural topics, lasting one to six weeks, for about eighteen trainees per course. Also in-service training courses for junior staff of the Department of Agriculture.

NEW ZEALAND

In New Zealand no clear national system of education and training in agriculture has yet emerged, and this can be attributed mainly to the country's essentially regional pattern of agricultural development - a pattern which dates back to a former provincial system of government.

In those early days, much agricultural training was given "on-the-job" by private and local groups trading in agricultural produce. As each province set up its own education system, these groups became involved in agricultural education policy, often taking the initiative while the provincial boards tended to respond to local demands and pressures rather than develop new policy. Although the provincial system of government came to an end a hundred years ago, legacies from this historical past are still very obvious in the type of agricultural training provided in New Zealand today - in the continuation of local traditions and structures, and in the strong beliefs in the value of local participation and in training which links theory to practice by on-the-job training.

In 1970, a conference on Training in Agriculture was convened with full support from the Government of the day, the Ministry of Agriculture and Fisheries, the Education Department, the universities, and organizations such as the Young Farmers Clubs and Federated Farmers. One of the important conference resolutions resulted in the setting up in 1971 of an Agricultural Training Council with a main function of co-ordinating and further developing the various types and levels of agricultural education available throughout the country. The Council seeks to help all sections of the farming industry to define their training needs and, where necessary, it also helps in setting up training programmes to fill these needs, and in fitting local plans - especially in the area of examinations and certificates - into a national system. The Trades Certification Board, a national examining authority, working in close association with the ATC, has recently introduced examinations in farming, and cadets in provincial schemes are encouraged to sit for these exams and obtain a nationally acceptable certificate of training. Not surprisingly, perhaps, it is farmers who exercise major control in the ATC council.

The attitude towards agricultural teaching in schools has changed over the years. From 1920 over a period of some thirty years, it was an important subject in the secondary school curriculum; indeed, agriculture was a core subject in many schools and school farms were established. But doubts about the appropriateness of specific agricultural instruction at this level arose, and the number of schools teaching the subject began to decline. Emphasis now is much more on broader subjects like geography, social studies, biology and general science, on which agricultural studies can be based. A recently introduced Sixth Form Certificate provides scope for schools to offer agriculture as a sixth form study.

Specific agricultural education and training tends now to be administered by the Technical Division, rather than the Secondary Division, of the Education Department, through its regional technical institutes and the Technical Correspondence Institute. The Ministry of Agriculture and Fisheries, previously concerned only with adult farmer education, has extended its activities, and is now involved in the running of Flock Farm and Telford Farm Training Institutes, and supports and encourages the Young Farmers Clubs and the Farm Cadet Schemes, in addition to setting up courses for farmers and young farmers at regional and national levels. It also plays a leading part in the work of the Agricultural Training Council.

New Zealand has two universities offering specialist teaching in agriculture - Lincoln College, which developed from a school of agriculture opened in 1880, and Massey University, founded in 1926 as an agricultural college. As well as their continuous involvement in agricultural education in New Zealand, both institutions have made a significant contribution to agricultural education in the developing countries of South East Asia, the Pacific, Africa and South America, by providing training in agricultural and horticultural science to over 500 students from these regions since the mid 1950s.

- NEZ 1 New Zealand Federation of Young Farmers' Clubs,
c/o M.A.F., Education House, 178/182 Willis Street, Wellington 1.
- Administration: Independent.
- Finance: Some support from Ministry of Agriculture and Fisheries.
TP: 10,000 members in 350 district clubs.
- 1 (*) AGRICULTURE
Club activities are directed mainly towards agricultural instruction and include field days for farm visits. There are residential leadership schools.
- Purpose: To increase Young Farmers' skills.
- Entry standard: None, except involvement in farming.
-
- NEZ 2 New Zealand Federation of Country Girls Clubs,
c/o M.A.F., Education House, 178/182 Willis Street, Wellington 1.
- Administration: Independent but assisted by Ministry of Agriculture and Fisheries.
TP: 3,000.
- 1 (*) RURAL SKILLS
Club activities include lectures, demonstrations and competitions related to agricultural and rural life.
- Entry standard: None, except interest in rural life.
-
- NEZ 3 National Park Ranger Training Centre,
Turangi.
- Administration: NZ National Park Authority.
- Finance: Government of New Zealand.
TP: 10 max. RA: yes. NN: yes.
- 1 (**) NATIONAL PARK RANGER
Practical field training, generally for one year, for National Park Rangers. Specific training requirements of overseas governments can be met.
- Purpose: To provide practical field training for National Park Rangers from Nepal, Papua New Guinea and South Pacific countries.
- Entry standard: Participants to be nominated by their respective governments.

New Zealand

NEZ 4

Farm Cadet Training Scheme,

Federated Farmers of New Zealand, (Inc.), Wool House,
139/141 Featherston Street, (P.O. Box 715), Wellington, C.1.

Administration: Federated Farmers of New Zealand. There are 16 separate schemes run by the various provincial districts of the Federation. Each scheme is autonomous in terms of local management, being governed by a Board of Management made up of local educational and farming representatives, and Federated Farmers members.

Finance: Individual schemes and Federated Farmers, with a per capita annual grant from the Ministry of Agriculture and Fisheries.

TP: c. 900 m. & f. RA: yes.

1 (**) AGRICULTURE

Cadets are assigned to an approved farmer/tutor for practical training. Wages are negotiated locally based on ruling rates for agriculture workers. Field officers and supervisors help on a voluntary basis to ensure the well-being and progress of each cadet. Most schemes provide for block courses or day release classes which cadets attend to augment their studies. Academic subjects can be studied by correspondence courses through the Technical Correspondence Institute. Cadets are encouraged to take Trade Certification examinations in farming and farm management. Average duration of training is three years, on a variety of farms, leading to a Certificate of Competence. A further two years' endorsement training can be undertaken.

Purpose: To provide supervised training, both practical and theoretical, for young people interested in making farming their career.

Entry standard: A minimum of at least two years' secondary schooling, plus good physique, and an aptitude for farming. Age 16-18.

NEZ 5

Technical Correspondence Institute,

Box 30-355, Lower Hutt.

Administration: The Institute organizes correspondence courses for the NZ Trades Certification Board's exams, which are also taken by students prepared at technical institutes. Some of the courses available are:

1 (**) AGRICULTURE

Trade Certificate in Farming, often taken by farm cadets under the Federated Farmers' Scheme (NEZ 4).

2 (**) FARM MANAGEMENT

Trade Certificate in Farm Management, which is recognized for entry to the Government Land Settlement Ballot Scheme and is often taken after the Trade Certificate in Farming.

3 (**) HORTICULTURE

Trade Certificate in Horticulture, usually lasting three years during apprenticeship.

4 (**) AGRICULTURAL INDUSTRY

Two years for Stock and Station Industries Certificate, dealing with soil and plant science, animal science, farm practice and agricultural industries.

5 (**) SUNDRY

Other courses cover subjects such as agricultural pesticides, sheep-dairy- or arable-farming. Each of these lasts about two years and is intended mainly for farmers and farm workers. In horticulture, there are a number of non-examination courses as well as one leading to the National Diploma in Horticulture set by the Royal NZ Institute of Horticulture and usually taking five years. There is also a course in preparation for the Dairy Factory Manager's Registration Examination.

NEZ 6Flock House,

Nr. Bulls, N. Island.

Administration: Ministry of Agriculture.

Finance: Government of New Zealand.

TP: c. 60 p.a. RA: yes.

1 (**) AGRICULTURE

One-year course of mainly practical training in basic skills associated with all aspects of farming including husbandries, horticulture, farm construction and engineering. Students prepare for Trades Certification Boards examinations in farming through the Technical Correspondence Institute.

Entry standard: Three years secondary schooling. Age 16-18.

NEZ 7Telford Farm Training Institute,

Otanomomo, No. 1 R.D., Balclutha, S. Island.

Administration: Private, but working closely with Ministry of Agriculture and Fisheries.

Finance: Significant grants from Government of New Zealand.

Cal: intakes Jan & May. TP: 30 per course. RA: yes.

1 (**) AGRICULTURE

One year instruction, mainly practical, to give wide experience of sheep, crop and dairy farming as well as basic training in farm management.

Purpose: To provide practical training for entrants into farming.

Entry standard: Three years' secondary schooling. Age 16+.

NEZ 8Tutira Training Station,

Guthrie-Smith Trust Board, Post Box 765, Hastings.

Administration: Guthrie-Smith Trust Board.

Finance: The Trust.

Cal: Jan/Dec. TP: 8 p.a. RA: yes.

1 (**) ANIMAL HUSBANDRY

One year of theory and practice in sheep and cattle farming, and in farm forestry (timber production and care of woodlands on farms), on 2,000 acres.

Purpose: To provide practical training for entrants into farming.

Entry standard: Three years' secondary schooling. Under 18.

New Zealand

- NEZ 9 Smedley Station,
Tikokino, Waipawa County, nr. Hawkes Bay.
- Administration: Private.
- Finance: Trust.
- Cal: from Jan. TP: 8 p.a. RA: yes.
- 1 (**) SHEEP FARMING
Two years practical training, mainly in sheep farming, followed by examinations by Department of Agriculture and Fisheries, with possible further scholarship under the Inglis Farm Bursary Scheme for study at Massey University for Dip. Agric.
- Purpose: To provide practical training for entrants into farming.
- Entry standard: Three years secondary schooling. Age 16-18.
-
- NEZ 10 Waikato Technical Institute,
Box 982, Hamilton.
- Administration: Department of Education. Waikato has agricultural courses developed to meet the needs of the local farm cadet scheme. There are Day Release, Block Release and Evening Class courses.
- Finance: Government of New Zealand.
- RA: no.
- 1 (**) FARM MANAGEMENT
Regular courses leading to the NZ Trades Certification Board's Certificate in Farming and Certificate in Farm Management.
- 2 (**) SUNDRY
A number of short courses on subjects such as herd testing, artificial insemination, etc.
- 3 (**) ANIMAL AND FIELD HUSBANDRY
Four-month full-time course in animal and field husbandry, from February to May.
-
- NEZ 11 Taranaki Technical Institute,
Taranaki Polytechnic, Box 740, New Plymouth.
- Administration: Department of Education.
- Finance: Government of New Zealand.
- Cal: from Feb & Jul.
- 1 (**) DAIRY FARMING
Five-month course held twice yearly in dairy farming, including pasture growth, soils and fertilizer, animal health.
- Entry standard: School leavers with some secondary education and mostly resident on farms near New Plymouth.
-
- NEZ 12 Nautical School,
Customs Buildings, Quay Street, Auckland.
- Administration: Ministry of Transport (Marine Division).
- Finance: Government of New Zealand.
- Cal: throughout year. TP: variable. NN: no.

1 (**) FISHERIES

Four to six weeks for Skipper of Coastal Fishing Boat (up to 75 miles off coast); Mate of Deep Sea Fishing Boat; Skipper of Deep Sea Fishing Boat.

Purpose: To train commercial fishermen.

Entry standard: Candidates are selected on age and sea experience.

2 (**) FISHERIES

One to two-week course for Skipper of In-shore Fishing Boat (inside 12-mile limit).

Purpose: To train commercial fishermen.

Entry standard: Twelve months sea service including six on fishing boat. Age 19+.

3 (**) FISHERIES

One to two-week courses for qualified Fishing Deck Hand.

Purpose: To train commercial fishermen.

Entry standard: Twelve months sea service, including three in fishing vessels over 30 ft. in length. Age 17+.

4 (**) FISHERIES

Short courses arranged at other ports, according to need. Correspondence courses are also arranged.

NEZ 13

School of Nautical Studies,
Otago Polytechnic, York Place, Dunedin.

1 (**) FISHERIES

The courses are exactly as those described in NEZ 12.

NEZ 14

Nautical School,
Pearse House, Willis Street, Wellington 1.

1 (**) FISHERIES

The courses are exactly as those described in NEZ 12.

NEZ 15

Fishermen Cadet Training Scheme,
Manukau Technical Institute, Auckland.

Administration: Department of Education.

Finance: Government of New Zealand.

1 (**) FISHERIES

Three-month Block Release courses over in-service period up to three years. These can lead to Certificates of Qualified Fishing Deck Hand or In-shore Fishing Skipper, or Coastal Fishing Vessel Skipper.

Entry standard: For lowest level certificate, age 17+ with School Certificate passes in maths or physics. For other Certificates, relevant experience and mature age.

NEZ 16

Fishermen Cadet Training Scheme,
Otago Polytechnic, Dunedin.

1 (**) FISHERIES

The courses are exactly as those described in NEZ 15.

- NEZ 17 M.A.F. Training Programmes,
Ministry of Agriculture and Fisheries, Education House,
178/182 Willis Street, Wellington 1.
- Administration: The Ministry of Agriculture and Fisheries administers training
programmes, as follows:
- 1 (**) SEED TESTING
Three year training programme for Seed Testers, beginning with
two weeks induction, and followed by practical work under super-
vision in various sections supplemented by seed technology lectures.
After 18 months trainees sit an internal examination for an
Intermediate Certificate of Proficiency in Seed Technology. If
they are successful at the examination after the full training
programme is completed they are awarded an Advanced Certificate
of Proficiency in Seed Technology. Training is also given at the
Seed Testing Station to seed industry personnel in the trade and
to overseas students.
- 2 (**) LIVESTOCK OFFICER
The Livestock Officer training programme begins with two weeks'
instruction by the Ministry of Agriculture and Fisheries, followed
by one year's probation. The Livestock Officer Certificate is
an examination after a period of two years on-the-job training.
- Purpose: To train Livestock Officers to work in a wide field of activities
including the regulatory aspects of disease control, animal health
education, disease testing and agricultural pest destruction.
- Entry standard: A good general education and at least two years' farming experience.
- NEZ 18 Trentham School for Survey Technicians,
Trentham, Wellington.
- Administration: Department of Land and Survey.
- Finance: Government of New Zealand.
- Cal: Jan/Apr, May/Aug, Sep/Dec. TP: 10 per course. NN: only
as part of foreign aid programme.
- 1 (**) LAND SURVEYING
Three-month course in land surveying for Survey Technicians
Certificate or for NZ Certificate in land surveying.
- Purpose: In-service training for technicians and trainees in Lands and
Surveys.
- Entry standard: Candidates put forward by Lands and Surveys Department.
- NEZ 19 Lincoln College,
Canterbury.
- Administration: The college, established in 1880, was named Lincoln College in
1962 and is a constituent College of the University of Canterbury.
It has a single Faculty of Agriculture and Horticulture. There are
seven farms totalling over 5,000 acres. Three research institutes -
Agricultural Engineering, Agricultural Economics Research, and
Tussock Grasslands and Mountain Lands - are on the campus and
the college co-operates closely with the Wool Research Organiza-
tion and the Crop Research and Botanical Divisions of the D.S.I.R.
nearby.
- Finance: Government of New Zealand.
- Cal: Feb/Jun, Jul/Nov. TP: 12,000 full-time. RA: yes.
NN: yes.

1 (**) AGRICULTURE

One-year course, starting in March, for Diploma in Agriculture, which can be followed by more advanced Diplomas in Field Technology or in Farm Management.

Entry standard: Secondary education with passes in four School Certificate subjects, plus two years continuous farm experience.

2 (**) FARM MANAGEMENT

One-year course for Diploma in Farm Management for holders of Diploma in Agriculture; and one-year course for Diploma in Field Technology for holders of Diploma in Agriculture or in Horticulture.

Entry standard: Diploma in Agriculture or in Horticulture.

3 (**) HORTICULTURE

One-year course for Diploma in Horticulture.

Entry standard: Secondary education with passes in four School Certificate subjects, plus one year's practical experience.

4 (**) HORTICULTURAL MANAGEMENT

One-year advanced course for Diploma in Horticultural Management.

Entry standard: Diploma in Horticulture.

5 (**) MEAT TECHNOLOGY

Two-year course including a twelve week period of study at the College for Certificate in Meat Inspection.

Entry standard: Entrants must be staff members of Ministry of Agriculture and Fisheries as Assistant Meat Inspectors.

6 (**) WOOLCLASSING

Twelve-week course from end of May, for Certificate in Wool.

Entry standard: Entrants must be over 18 years of age, unless they have had previous wool experience.

7 (**) WOOL TECHNOLOGY

Two semesters either consecutively or in separate years, starting March or July, for Diploma in Wool Technology.

Entry standard: A satisfactory standard of secondary education, the Lincoln College Certificate in Wool or equivalent, and at least 20 weeks practical experience.

8 (**) SUNDRY

Three years for B.Agr., B.Hort., or B.Agr.Com. Four years for B.Agr.Sc., B.Hort.Sc., or for Honours in B.Agr.Sc., B.Hort.Sc. or B.Agr.Com.

Entry standard: Usual university entrance, or pass in English and from 3-5 other subjects in the examination of the University Entrance Board. Age 16+.

9 (**) AGRICULTURE/HORTICULTURE

One or two years postgraduate work for M.Agr.Sc. or M.Hort.Sc.

Entry standard: Appropriate first degree.

10 (**) SUNDRY

Two years postgraduate research for Ph.D. in various specialities.

Entry standard: Appropriate first degree.

11 (***) SUNDRY

Five courses for postgraduate Diplomas of the University of Canterbury, as follows: one year for Diploma in Agricultural Science and Horticultural Science, designed to introduce graduates in other fields; one year Diploma in Natural Resources (intended for graduates in Agriculture, Forestry, Horticulture, etc.); one year Diploma in Agricultural Engineering, designed to introduce graduates in other fields; two years for Diploma in Landscape Architecture.

Entry standard: Appropriate first degree.

NEZ 20

Massey University,
Palmerston North.

Administration: Established in 1926, as Massey Agricultural College, and became a fully autonomous University in 1964, having previously been associated with the University of New Zealand for degree-granting purposes. There are 1,160 hectares of farmland for teaching and research. Adjacent to the campus are the N.Z. Dairy Research Institute, the Grasslands, Applied Biochemistry and Plant Physiology Divisions of D.S.I.R. and the N.Z. Poultry Research Centre, which co-operate in teaching and research. The Faculties dealing directly with Agricultural Technology are: the Faculty of Agricultural and Horticultural Science, Food Science and Bio-technology and Veterinary Science. Other Faculties which contribute indirectly to the teaching of agriculture include Science, Social Science and two special Schools - Education and Business Studies.

Finance: Government of New Zealand.

Cal: Mar/May, Jun/Aug, Sep/Oct. TP: 3,000 incl. 500 in Agric. & Hort., 400 in Vet. Sci., 200 in Food Sci. and Bio-Tech. RA: yes. NN: yes.

1 (***) AGRICULTURE

One-year course for Diploma in Agriculture, starting August. The course includes lectures, demonstrations and farm visits.

Entry standard: Secondary education with four School Certificate passes, at least 18 months practical farming experience, minimum age 19 years.

2 (***) HORTICULTURE

One-year course for Diploma in Horticulture, starting February. Options: Nursery Management, Orchard Management, Vegetable Production, Amenity Horticulture.

Entry standard: Secondary education and one year's practical experience in horticulture.

3 (***) DAIRY TECHNOLOGY

One academic year course spread over three years for Diploma in Dairy Technology.

Entry standard: Good general education, with four months experience in an approved dairy plant; age 18+.

4 (***) MEAT TECHNOLOGY

Course of three academic terms spread over three years for Diploma in Meat Technology.

Entry standard: Good general education, with experience in the meat industry; age 18+.

5 (***) WOOL TECHNOLOGY/WOOLCLASSING

Course of two terms each of 14 weeks, spread over two years, for the Diploma in Wool and Wool Technology. Practical experience in industry is required, sandwiched with the academic sections of the course. This course is part of the requirement for registration as a National Woolclasser. There is also a 14-week course for the Certificate in Woolclassing, primarily for sheep farmers.

Entry standard: Good general education, age 18+.

6 (***) SUNDRY

First degree courses in Agriculture, Horticulture, Food Science and Bio-technology, Veterinary Science. Agricultural courses offer considerable diversification including the technology of soil, plant and animal management, rural valuation, agricultural engineering, marketing and resource management, the processing of agricultural products and waste treatment. Three years for B.Sc., B.Agr., B.Hort.; four years for B.Sc.(Hons.), B.Agr.Sc., B.Hort.Sc., B.Tech.; five years B.V.Sc. Honours courses are provided in all faculties.

Entry standard: Pass in English and at least three other subjects in the Examination of the University Entrance Board, or equivalent university entrance. Age 16+.

7 (***) SUNDRY

University Certificates of Proficiency can be taken in any single subject of a degree course.

8 (***) SUNDRY

One year postgraduate Diplomas in Agriculture, Horticulture, Technology, Veterinary Science.

Entry standard: Appropriate first degree.

9 (***) SUNDRY

Two to three years for M.B.A. (Agric.) requiring also approved practical experience in business administration; one to two years for M.Agr.Sc., M.Hort.Sc., M.V.Sc., M.Tech., M.Sc. Two to three years for Ph.D.

Entry standard: Appropriate first degree.

NEZ 21

University of Waikato,
Hamilton.

Administration: Established 1964. Largely autonomous.

Finance: Government of New Zealand.

1 (***) BIOLOGY/RURAL SCIENCE

There is no Faculty of Agriculture but there are B.Sc. courses in Biological Science and in Rural Science.

Entry standard: Usual university entrance.

NEZ 22

University of Otago,
P.O. Box 56, Dunedin.

Administration: Founded in 1871 but operated as a constituent college of the University of New Zealand until 1961.

Finance: Government of New Zealand.

1 (***) WILDLIFE MANAGEMENT

One-year course for Diploma in Wildlife Management.

2 (***) LAND SURVEYING

Three-year diploma course in surveying, and a B.Sc. (Surveying) course. From 1975 a four-year course for degree of Bachelor of Surveying starts and will gradually phase out the Diploma and B.Sc. (Surveying) courses.

PAPUA NEW GUINEA

The Papua New Guinea Government has developed a set of National Aims which emphasise equality, rural development and decentralization. Under these guidelines the various aspects of agriculture have received increased priority from the Government. Short term results such as an expansion of the agricultural training colleges and the recruitment of women for agricultural training are already apparent. In the longer term, a review of agricultural development policies in keeping with the philosophy of the National Aims is proceeding in harmony with the emergence of nationalist ideals.

In the field of education, there has been a renewed interest in the teaching of agriculture in primary schools. The Departments of Education and Agriculture have combined to prepare an "Agricultural Life" syllabus and this is being utilized by a number of schools on a pilot basis. There is also a strong emphasis placed on farming subjects at secondary school level.

Young people who are not able to continue in formal further education beyond primary level are catered for by Vocational Training Centres, dedicated to providing practical training in activities that generate employment opportunities. There are now nearly one hundred Vocational Training Centres throughout the country, the majority in rural areas, and each centre develops programmes linked to the needs of the community it serves. Centres also often become involved in small scale development projects - by providing training in rice, coconut or coffee cultivation, for instance, they are virtually ensuring that these crops will be grown locally. Such development projects are the result of co-operation and co-ordination between the various Government departments.

Mission activity is widespread and in rural areas is invariably linked to agricultural development.

In agricultural extension, research into the effectiveness and political impact of the present service has resulted in a growing awareness of the need for structural reform and for more effective training programmes but concrete proposals have yet to emerge. Working parties have investigated and made recommendations for important changes in the structure of both university and agricultural education.

PNG 1

Yangpela Didiman Senta,
P.O. Box 39, Banz WHD.

Administration:

Yangpela Didiman Clubs are similar to YFC or 4 H Clubs elsewhere in that they provide opportunities for village boys and girls including school leavers to prepare themselves for rural life and self-employment. Many of the clubs are attached to schools. Most produce food and have fund raising projects to help village development. As far as possible the clubs are managed by the young members themselves with the minimum of adult leadership. About 40% of members are female and in 1974 a special Yangpela Didiman Women Programme was organized with help from the Thailand Rural Reconstruction Movement (TRRM) and the German Freedom from Hunger Campaign (FFHC) aimed at improving the status of women in society.

1 (*) RURAL DEVELOPMENT

Projects carried out by clubs include village gardening, poultry and pig keeping, fish culture, honey production, growing English potatoes and silk breeding.

2 (*) HOME SCIENCE

Special courses for women covering nutrition and home-making.

PNG 2

The Farmer Training Scheme,

Department of Agriculture, Stock and Fisheries, P.O. Box 2417, Konedobu.

Administration: Department of Agriculture, Stock and Fisheries.

Finance: Government of PNG.

Lan: Pidgin, Motu. Cal: varying. TP: 1,500 p.a. RA: yes. NN: no.

1 (*) AGRICULTURE

Farmers are appointed as trainees and work with agricultural officers, accompanying them on visits to farms, and undertaking formal lessons. Courses last mainly 2-4 weeks.

Purpose: To give farmers new ideas.

Entry standard: Practical farming experience.

PNG 3

Vocational Training Centres,

Department of Education, P.O. Box 2051, Port Moresby.

Administration: Technical Division of the Department of Education. Vocational Centres were developed to train young people to live and work usefully in their own community; thus they provide training courses which vary from area to area. There are now about one hundred centres throughout the country and most offer training in agriculture, in order to introduce young people to the production principles of the cash crops being encouraged by the Agriculture Department, but also to augment the food supply of the Centres. Development projects require co-ordination and co-operation of various Government departments - Lands Department is involved in surveys and provision of land for development projects, the Agriculture Department supports programmes on the use of draught animals, and so on. Further details of a particular Vocational Training Centre are given in PNG 4, as a sample.

1 (**) RURAL DEVELOPMENT

Courses up to two years in duration are offered in various aspects of rural development, including agriculture, rice growing, animal husbandry, general building, driver maintenance, mechanics, fishing, boat building, business procedures. Much of the training is practical.

Purpose: To provide courses in practical skills designed to suit the needs of the locality.

PNG 4

Hawain River Vocational Training Centre,

P.O. Box 256, Wewak, East Sepik Province.

Administration: Department of Education. The centre has 200 acres of good land with about 50 acres under cultivation or used for cattle paddocks. (See also PNG 3).

Finance: Government of PNG to a minor extent. The centre has to be largely self-supporting through fees, sale of products and self-sufficiency in food.

Cal: Apr/Mar. TP: 60. RA: yes. NN: no (but visitors welcome if they stay in motels in Wewak, 15 miles away).

1 (**) AGRICULTURE/RURAL SKILLS

One-year training (46 weeks) mainly through practical work on farm projects with cattle, pigs, poultry, coffee and copra production. Cocoa has been planted but it is not yet producing. Trainees are taught basic skills for carpentry, building, furniture making, boat construction and repair, and market gardening. Apart from the main agricultural projects, two and a half hours daily are occupied in growing subsistence food.

Purpose: To train indigenous boys in agriculture, animal husbandry and basic rural skills.

Entry standard: Primary school standard six certificate. Age 15+.

PNG 5 Laloki Co-operative College,

Laloki, Port Moresby.

Administration: Started in 1972 by the PNG Co-operative Education Trust with the co-operation of the Australian Administration and ILO/UNDP. The College replaced the Co-operative Education Centre which had existed for about ten years.

Finance: By the three sponsoring bodies. (The Co-operative Education Trust receives its income from a levy of all Co-ops.) Government of PNG pays most expenses of trainees.

TP: (in 1972) 242 on 13 courses.

1 (*) CO-OPERATIVE STUDIES

Courses for staff of Co-operative Societies include ten weeks basic secretary's course for small village society secretaries; also, a ten-week continuation course for secretaries of small and medium size societies.

Entry standard: For basic course: no qualification other than ability to understand simple English and maths. For continuation course, entrants must have done the basic course and have had two years' employment as a Co-op. secretary.

2 (**) CO-OPERATIVE STUDIES

Forty-week course for Certificate in Co-operative Management, in two parts with twelve months practical experience in between.

Entry standard: Form Three high school pass or equivalent.

3 (**) CO-OPERATIVE STUDIES

Three-stage course of sixty weeks instruction combined with field work, spread over a two-year period, covering all aspects of co-operative management including agricultural marketing and extension techniques.

Entry standard: Government staff.

4 (**) CO-OPERATIVE STUDIES

Ten-week intensive course designed to help field officers studying the full three-stage trainee course as above but by correspondence through the Department of Education's School of Extension Studies. Also short sandwich courses of one and two weeks for senior and junior field officers.

5 (**) CO-OPERATIVE STUDIES

The College has a well-equipped Training Material Development Centre, and this prepares material for the extension services of the Co-operative Education Trust, for use in field courses for members and committee members. These field courses are organized by three education officers supported by part-time area trainers.

- PNG 6 Agricultural College,
Popondetta.
- Administration: Department of Agriculture, Stock and Fisheries.
- Finance: Government of PNG.
- Cal: Feb/Jun, Jul/Nov. TP: 80 m. & 20 f. p.a. RA: yes.
NN: yes.
- 1 (**) AGRICULTURE
Two-year certificate course in agriculture.
- Purpose: To train staff for the agricultural service and for farming.
- Entry standard: Three or four years secondary schooling.
-
- PNG 7 Agricultural College,
Mount Hagen.
- Administration: Department of Agriculture, Stock and Fisheries.
- Finance: Government of PNG.
- Cal: Feb/Jun, Jul/Nov. TP: 35 p.a. RA: yes. NN: not as yet.
- 1 (**) AGRICULTURE
Two-year certificate course in highlands agriculture.
- Purpose: To train staff for the agricultural service and for farming.
- Entry standard: Three or four years secondary schooling.
-
- PNG 8 P.N.G. Forestry College,
Bulolo.
- Administration: Department of Forests.
- Finance: Government of PNG.
- TP: 120 all courses. RA: yes. NN: yes.
- 1 (**) FORESTRY
Six- to eight-month course for Certificate of Forestry.
- Purpose: To offer practical training in forestry.
- Entry standard: Form 3 or 4.
- 2 (**) FORESTRY
Two years for Higher Certificate of Forestry, and three years for Diploma in Forestry.
- Purpose: To train technical assistants and officers in forestry.
- Entry standard: For Higher Certificate, candidates should hold Certificate of Forestry and have practical field experience; for diploma, candidates should have Form 4 with upper pass in English, maths and science.
-
- PNG 9 Vudal Agricultural College,
Keravat, New Britain Island.
- Administration: Department of Agriculture, Stock and Fisheries.
- Finance: Government of PNG.
- Cal: Feb/Jun, Jul/Nov. TP: 100 m. & 20 f. p.a. RA: yes.
NN: yes.

1 (***) AGRICULTURE

Three-year post-secondary diploma course in tropical agriculture, including home economics for women students.

Purpose: To train agricultural staff and farmers.
Entry standard: Four years secondary schooling with upper passes in English, maths and science.

PNG 10 Fisheries College,
New Ireland.

Administration: Department of Agriculture, Stock and Fisheries.
Finance: Government of PNG and Japanese aid.
TP: 125. RA: yes. NN: yes.

1 (***) FISHERIES

Two years for certificate and three years for diploma in fisheries.

Purpose: To train technicians and technologists for the fishing industry.
Entry standard: Form 4.
Note: This college is planned to open in 1977.

PNG 11 Fisheries Training Centre,
Madang.

Administration: Department of Agriculture, Stock and Fisheries.
Finance: Government of PNG.
Cal: Feb/Jun, Jul/Nov. TP: c. 24. RA: yes. NN: no.

1 (***) FISHERIES

In-service training courses: one year for fisheries extension service officers; an additional year, making two years total, for inspection and enforcement.

Purpose: Training for fisheries staff.
Entry standard: Secondary schooling plus practical experience in fisheries work.
Note: To revert to farmer training courses in 1977.

PNG 12 P.N.G. University of Technology,
P.O. Box 793, Lae.

Administration: Autonomous.
Finance: Government of PNG.
Cal: Mar/May, May/Aug, Sep/Dec. RA: yes. NN: yes.

1 (***) SURVEYING

Two-year undergraduate certificate in surveying.

Entry standard: School Certificate in five subjects.

2 (***) FORESTRY

Degree course in forestry: two years applied forestry subjects for candidates who have completed two years basic science at University of PNG.

Purpose: To train professional forestry officers.
Entry standard: PNG Form 6 or UPNG Preliminary Year, plus two years basic science subjects at UPNG.

3 (***) RURAL TECHNOLOGY

One-year post-diploma or postgraduate course (to begin 1977) for Diploma in Rural Technology.

- Purpose:** To train agricultural engineers for rural councils and for agricultural extension services.
- Entry standard:** Diploma of Tropical Agriculture, or degree in agriculture or engineering.

PNG 13

University of Papua New Guinea,

Goroka Teachers College, P.O. Box 1078, Goroka.

- Administration:** Autonomous. The Goroka Teachers College became a campus of the University of PNG in 1975.

- Finance:** Government of PNG.

Cal: Feb/May, Jul/Nov. TP: 20-30. RA: yes. NN: no.

1 (***) AGRICULTURAL EDUCATION

One-year post-diploma or post-certificate course for Diploma in Agricultural Education.

- Purpose:** To train agricultural instructors for vocational centres (certificate entry) and agricultural teachers for secondary schools (diploma entry).

PNG 14

University of Papua New Guinea,

P.O. Box 4820, University Post Office, Port Moresby.

- Administration:** Autonomous. Teaching for degree courses started in 1967.

- Finance:** Government of PNG.

Cal: Feb/May, Jul/Oct. TP: 90 in Fac. of Agric. RA: yes. NN: yes.

1 (***) AGRICULTURE

Four year course for B.Agric. (started in 1973). Final year conducted at the University of Technology, Lae.

- Purpose:** To train professional agriculturalists.
- Entry standard:** PNG Form 6 or preliminary year studied at University after secondary education. 17+.

PNG 15

Animal Husbandry In-service Training Centre,

3-Mile, Lae.

- Administration:** Department of Agriculture, Stock and Fisheries.

- Finance:** Government of PNG.

Cal: all year. TP: 48 p.a. RA: yes. NN: no.

1 (***) ANIMAL HEALTH AND HUSBANDRY

Ten-week courses for animal health assistants, covering both animal husbandry and health, and including cattle, pig and poultry husbandry. Theoretical training at the Centre, with practical work at the cattle breeding and research station at Eraps.

- Purpose:** To train staff to give assistance to small scale farmers in all aspects of cattle, pig and poultry production.
- Entry standard:** Staff of the Department of Agriculture, Stock and Fisheries holding certificates or diploma in agriculture and having special interest in livestock.

SOLOMON ISLANDS

The major cash crop of the Solomon Islands has until recently been copra, a substantial proportion of which has been produced by village-based projects. Latterly, cattle projects are being rapidly developed although there is as yet little cash return, in view of the long-term nature of the investment. Cocoa is also grown on a small scale, as are chillies and turmeric. The major subsistence crops are sweet potato, taro, bananas and yams. Agricultural training is aimed at increasing the proficiency of both agricultural staff and farmers in the various aspects of the major cash crops, as well as taking into account the need to replace expatriate staff with local officers.

As far as formal education is concerned, primary education - over six or seven years - is largely conducted in village schools and thus is never greatly removed from the agriculture going on around them. Secondary schools are few and tend to separate children from their homes. Most mission-run secondary schools attempt to include some agricultural theory and practice in their courses, though at present the Government secondary school has no commitment to practical agriculture. But it is hoped that the 'New Secondary Schools' now being established to run two-year courses for primary school leavers will provide, nearer the scholars' homes, a type of education and training more closely allied to local community needs. At tertiary level, the majority of training is conducted overseas. About 40 students are engaged in agricultural courses in Papua New Guinea, Fiji and Australia. This means they can benefit from a standard of training far exceeding that previously offered at the Kukum Farm Institute, Honiara, where the major difficulty was the justification of a considerable expenditure based on a very small trainee throughput.

The Ministry of Agriculture and Lands runs sixty or so short courses each year for farmers and staff. The rapid development of the cattle industry has meant that considerable emphasis has been placed recently on training in this aspect of agriculture; however, courses are also offered on a variety of other subjects including cocoa, coconuts, spice cultivation, pest control and the use of fertilizers. The Ministry also runs a one-year course for school leavers who are hoping to study agriculture overseas. This takes the form of practical attachments to various branches of the Ministry.

The official policy of handing over district administration to Local Council authorities has required additional training inputs. At present, in each of the seven local council areas there is a Senior Field Officer who has about twenty technically qualified staff (with at least a Certificate in Agriculture), plus a slightly greater number of Extension Assistants having no formal training. The additional training of these Extension Assistants is seen as a matter of urgent importance.

SOL 1Agricultural Training Centres,

c/o Ministry of Agriculture and Lands, P.O. Box 25, Honiara.

Administration:

Ministry of Agriculture and Lands. There are twenty-six centres including four residential District Training Centres, five residential Village Training Centres, thirteen non-residential Village Demonstration Centres, and four Rural Training Centres.

Finance:

Government of the Solomon Islands.

TP: 20 per course. RA: at 9 centres.

Solomon Islands

1 (*) AGRICULTURE
Various training courses for farmers and traders.

Entry standard: Farming experience.

2 (**) RURAL SKILLS
Various training courses for primary school leavers (these are largely at Rural Training Centres run variously by missions and local councils).

Entry standard: Primary school level.

3 (**) AGRICULTURE
Courses on various aspects of agriculture for agricultural officers.

4 (**) RURAL EDUCATION
Courses of training for teachers of agriculture.

SOL 2 Honiara Technical Institute,
P.O. Box G.23, Honiara.

Administration: Ministry of Education and Cultural Affairs. Started in 1969 with help from UNDP/ILO.

Finance: Government of the Solomon Islands.
Cal: Jan/Mar, Apr/Jun, Jul/Sep, Sep/Dec. TP: c. 500, incl. 200 part-time. RA: yes. NN: yes.

1 (*) OUTBOARD MOTOR SERVICING
Two-week full-time non-residential course in outboard motor operating and servicing. (Similar courses, and instruction in building canoes and small craft, are also available at nine other centres.)

Entry standard: No previous formal training necessary, but some knowledge and operating experience of engines preferred.

2 (**) MARINE MECHANICS
Basic trade course of four terms in diesel engine mechanics. Successful candidates will receive a certificate and may continue to more advanced courses.

Entry standard: Minimum Form II level, age 16.

3 (**) DRAUGHTING
Six terms full-time for draughting assistants.

Entry standard: Minimum Form II level.

4 (**) SURVEYS
Two-year full-time course for survey technicians.

Entry standard: Form V, with a marked aptitude for maths.

SOL 3 St. Dominic's Community Development Centre,
Vanga Point, Gizo.

Administration: Started in 1971 by the Roman Catholic Church.

Finance: Government assistance up to 1975 and some overseas aid.
TP: 43 (in 1975) incl. 33 non-Catholics. RA: yes. NN: not as trainees, but observers welcome.

1 (**) RURAL SKILLS
Two-year course of four terms, each term including three weeks'

carpentry and building, three weeks' farm mechanics and nine weeks' agriculture; practical work and theory.

Purpose: To raise living standards, improve agricultural skills, and awaken community responsibilities and qualities of leadership.

Entry standard: Primary school leavers after two or three years work experience in their own villages.

2 (**) RURAL DEVELOPMENT

Various short adult courses on themes related to rural development, such as book-keeping and investment. There is also extension work by regular visits of the teachers from the centre to ex-students in villages. Students are encouraged to form small co-operative ventures to raise cash to inject into their area.

TONGA

Agriculture is the basis of the economy in Tonga - with its warm wet climate and large areas of good soil - and accounts for more than half of the GDP. Seventy-four per cent of the labour force is employed in agriculture, forestry and fishing. These are pre-dominantly small farmers growing their own food and producing a few cash crops. Agricultural products make up the country's major exports - copra, bananas and desiccated coconut together providing over 90% of the value of exports.

The 1970/77 Development Plan gave high priority to the expansion and diversification of agriculture and the establishment of training facilities. Agricultural policy aims at the development and application of improved crop, animal husbandry and processing techniques, and the improvement of general standards of agricultural knowledge through formal and informal methods. A well-trained team of agricultural staff is essential to ensure that knowledge gained by research is transmitted to the farming community, and to assist in the adoption of new techniques. Further expansion or establishment of training centres for staff and farmers is therefore an important element in the Development Plan.

The Department of Agriculture provides advisory services and training through its extension staff. It organizes one-day courses for farmers on topics such as banana production and provides training in subjects such as bee-keeping, maintenance of motor boat engines for fishing boat owners, care of livestock, coconut re-planting, and so on. The home economics section provides training for women in villages on the growing and preparation of vegetables. The extension service uses radio as well as publications and publicity.

Staff training provided by the Department of Agriculture includes in-service programmes at the Government Farm in Tongatapu (which also provides practical training in livestock management for farmers); courses for veterinary staff and livestock assistants; reafforestation schemes; refresher courses for staff of the Coconut Re-Planting Scheme; and practical instruction in extension methods. Some staff members receive overseas training.

Unemployment is a major problem, with a rapidly increasing population. The provision of educational training appropriate to the manpower needs of the economy is obviously vital. In secondary education, the Plan puts particular emphasis on technical and agricultural education and on vocational guidance. It provides for further development of Tonga College to enable it to provide a full secondary education in technical and agricultural subjects, and for the improvement of training of teachers for agricultural education.

TON 1

Training Centre of the Department of Agriculture,
P.O. Box 14, Nuku'alofa.

Administration: Department of Agriculture.

Finance: Government of the Kingdom of Tonga.

TP: c. 20 p.a. on staff course, variable on short courses. NN: not as trainees, but observers welcome.

1 (*) AGRICULTURE

Short courses of one day to one week in duration, in various topics for farmers: for example, pest control.

Purpose: To improve farmers' techniques.

Entry standard: Practical experience.

2 (***) AGRICULTURE

One-year course for staff of the Department of Agriculture at their experimental farm, and largely supervised by the farm staff. Subjects covered include crop husbandry, plant protection, animal husbandry, soil science, weed control, pasture management, practical gardening, human nutrition and communication. Women who take the course are trained as home economics extension agents.

Purpose: To train junior staff for the agricultural service. After work experience some staff go for degree or diploma courses overseas.

TON 2

Fisheries Training Centre,
Nuku'alofa.

Administration: Fisheries Division of Department of Agriculture.

Finance: Government of the Kingdom of Tonga with assistance from Australian Aid Funds.

TP: not yet fixed. NN: no.

1 (**) FISHERIES

Basic training for potential fishermen in subjects such as engine maintenance, net making and mending, elementary seamanship. This course is planned to start in 1976.

Purpose: Practical training for fishermen.

Entry standard: Primary education.

TON 3

Hango Agricultural College,
Box 16, 'Ohonua, 'Eua.

Administration: Free Wesleyan Church of Tonga. Started in 1969.

Finance: Subscriptions and donations from many countries. The College is expected to be self-supporting soon.

TP: 18 p.a. (but expected to expand)

1 (**) AGRICULTURE

Two-year course in agriculture by assistance with practical farming through supplies of imported seeds, etc. This replaces the previous three-year course.

Purpose: To train young men in the application of improved farming methods to local conditions, and to assist them when they begin farming on their own account.

Entry standard: School Certificate, age 17+. Many students are young men who have been out of secondary school for five years.

WESTERN SAMOA

The economy of Western Samoa is heavily dependent upon agriculture. Bananas, coconuts and cocoa are the primary agricultural crops though recently emphasis has been placed on diversification of agriculture and livestock development. The current agricultural development plan gives great attention to increasing primary production, especially of the basic crops, and derivatives such as copra, both for domestic use and export. With this will go integrated development in forestry, fisheries and new crops, as well as in the livestock industry.

Problems such as under-employment and the need for village development loom large in the agricultural sector, much of which is on a subsistence basis. The plan recognizes that a major national goal must be to mobilize and use fully the country's human and natural resources, but this can only be done through training and education.

It is planned to make greater efforts to convey the results of research to farmers through an improved extension service. The Department of Agriculture plans to strengthen all its extension and communications sections, including those of the Fisheries Division.

At present, agricultural education at the diploma level is provided through the South Pacific Regional College of Tropical Agriculture at Alafua closely integrated with the University of the South Pacific.

WS 1

South Pacific Regional College of Tropical Agriculture,
Alafua, P.O. Box 890, Apia.

Administration: Founded in 1966 and administered by the Ministry of Agriculture.

Finance: Government of Western Samoa with grants from FAO and New Zealand.

Cal: Mar/May, Jun/Aug, Sep/Nov (but first yr. students start Jan).
RA: yes. NN: yes.

1 (**) AGRICULTURE

Three years for Diploma in Tropical Agriculture, including six months practical work on approved farms or estates, and project work in the third year.

Purpose: Mainly to train staff for agricultural services throughout the South Pacific.

Entry standard: At least three years' secondary schooling, and preferably New Zealand School Certificate or equivalent, with 40% marks in English and 50% in maths or a science. Age 17+.

2 (**) SUNDRY

Seminars and short courses are offered in topics such as bee-keeping, fisheries, forestry, food processing and human nutrition.

3 (***) AGRICULTURE

A degree course was initiated in 1975 for Bach.Ag., divided between the Regional College and the University of the South Pacific in Fiji. The course will last three and a half years and includes one semester of practical farming in Fiji.

Entry standard: Usual university entrance.

CYPRUS

The agricultural policy of the Government of the Republic of Cyprus is outlined in the emergency plan for economic action for the years 1975-76. This has as its main objectives: a) the creation of employment opportunities in agriculture to absorb the idle labour force, b) the increase of agricultural output to meet domestic demand, c) the orientation of agricultural production towards the export market, and d) the promotion of those agricultural sectors which yield the desired results in the shortest possible time. Agricultural education and training are geared mainly towards the implementation of these aims.

Training of the rural population in agricultural and home economics subjects is provided through the Extension Service of the Ministry of Agriculture and Natural Resources. There are five-year and annual programmes of training for farmers, rural women and youth, prepared within the framework of the official agricultural policy. The extension methodology - of personal contacts, group methods including farmers' training centres, and mass media - is used intensively for the purpose.

Nearly half of the Island's farming families are dependent for their livelihood to a large extent, if not entirely, on vine cultivation. Part of the grape production is used nowadays for exports of table grapes, for raisin making, and for the production of raw grape alcohol but most goes into wine. Training for grape production is therefore important but is mostly carried out through demonstration vineyards, started in 1962 with imported vine varieties from France, Italy, Spain and Portugal, and managed by the viticulture and oenology section of the Department of Agriculture. There are three such demonstration vineyards, one near Paphos and two near Limassol, intended to improve techniques as well as introduce better varieties of vine. Although there are no formal courses, growers attend in groups for instruction in pruning, cultivation and the proper use of fertilizers, control of vine pests and diseases, vinification of grapes, etc.

CYP 1Agricultural Training Centres,

c/o Department of Agriculture, Nicosia.

Administration: Department of Agriculture. There are three centres: at Morphou, at Trikoukkia, and within the "Margo" project. This last is in co-operation with the U.N. Development Programme. Staff of the Extension Centre collaborate with specialists from the Ministry of Agriculture and Natural Resources.

Finance: Government of Cyprus.

Lan: Greek and Turkish. TP: 24-30 per centre. RA: yes.
NN: no.

1 (*) RURAL SKILLS

Theoretical and practical training courses of 3-15 days in subjects concerning agriculture and home economics.

Purpose: To give systematic training to farmers, rural men and women in new techniques and practices for agriculture and home-making.

Entry standard: None.

2 (**) SUNDRY

Various in-service training courses for Ministry staff and for workers such as spraying contractors and pruners.

Note: It is understood at time of going to press that training at these Centres has been temporarily suspended.

Cyprus

- CYP 2 Evening Centres in Rural Areas,
c/o Ministry of Education, Nicosia.
- Administration: Ministry of Education.
- Finance: Government of Cyprus.
Lan: Greek. RA: no. NN: no.
- 1 (**) RURAL SKILLS
The centres provide educational and recreational facilities for rural youth. Educational activities refer mainly to agriculture, handicrafts and domestic science, but other areas are also catered for according to need and interest.
- Purpose: To encourage youth to stay in rural areas and to provide opportunities for further educational growth.
- Entry standard: Primary education, and some secondary education.
-
- CYP 3 Cyprus Co-operative College,
P.O. Box 4538, Nicosia.
- Administration: Started in 1974 by the Cyprus Co-operative Movement.
- Finance: Cyprus Co-operative Movement.
Lan: Mainly Greek, some courses in Eng. TP: c. 200 p.a.,
40 per course. RA: no. NN: no.
- 1 (**) CO-OPERATIVE MANAGEMENT
Training courses of three days up to three months in all aspects of the work of co-operatives including marketing.
- Purpose: To train staff of co-operative societies.
- Entry standard: Variable according to course. In-service.
-
- CYP 4 Cyprus Forestry College,
Prodromos.
- Administration: Established in 1951 by the Forestry Department of the Ministry of Agriculture and Natural Resources.
- Finance: Government of Cyprus.
Cal: Oct/Dec, Jan/Apr, May/Jul, plus vacation term in Aug.
TP: 36. RA: yes. NN: yes; in 1974/5 12 students from overseas included 3 from Commonwealth countries. Scholarships are available from the Cyprus Gov. for Commonwealth students and from C.F.T.C. for Rhodesian Africans.
- 1 (***) FORESTRY
Two-year training course in all aspects of forestry to sub-professional (technical) level. Practical work is included. Cypriot students must do an extra year as forestry trainees to obtain practical experience before entering the forestry service.
- Purpose: To train supervisory staff in the general principles of forestry and their application to forestry practice in the Mediterranean area.
- Entry standard: School Leaving Certificate (= 6 years secondary schooling) to include English and good maths. Age range 18-30, physical fitness essential. Practical experience in forestry preferred.

MALTA

In view of its size, Malta does not have the normal rural development problems encountered in larger countries. The policies for its zones are intimately linked with the preservation of green areas and the raising of the socio-economic level of the farming community. These are achieved by a) restricting building in 'green' areas; b) soil conservation legislation; c) improvement schemes for farmhouses, including installation of amenities; d) financial assistance for the purchase of agricultural equipment; e) an extension service to enable farmers to become acquainted with modern techniques in production and pest and disease control; and f) providing marketing facilities, including exports.

Farming topics as such are not taught as part of the general curricula in primary and secondary school, though some students at technical school take GCE 'O' level in horticulture. However, the Department of Education operates a specific Agricultural School in co-ordination with the Department of Agriculture and Fisheries. The school is at secondary level, and is designed for children from farming communities, affording both the necessary formal education and theoretical and practical instruction in farming methods.

In Malta, it is not economically feasible to provide facilities for agricultural education at tertiary level in conformity with international standards, and all specialist and general staff are trained overseas. The presence of a nucleus of trained professional staff, however, makes possible a limited amount of postgraduate supervision in appropriate subjects.

MLT 1

Department of Agriculture and Fisheries,
Valletta.

Administration: Department of Agriculture and Fisheries.

Finance: Government of Malta.

1 (*) AGRICULTURE

The extension service of the Department of Agriculture and Fisheries holds throughout the year several half-day seminars, usually on Sunday mornings, for farmers and herdsman.

2 (**) SUNDRY

The Department could accept trainees with secondary level education for training in fields such as plant protection, horticulture, animal husbandry. There would be no formal instruction but knowledge and experience could be acquired working with local colleagues under qualified supervision.

3 (***) AGRICULTURE/HORTICULTURE

Postgraduate training could be given by attachments for holders of degrees or diplomas in agriculture or horticulture. This would be in short periods and trainees would help with departmental projects, probably working in association with the Department of Biology at the University.

MLT 2

Agricultural Trade School,
Ghammieri.

Administration: Department of Agriculture and Fisheries jointly with the Department of Education.

Finance: Government of Malta.

Lan: Maltese. Cal: Oct/Jul. RA: no. NN: no.

1 (**) AGRICULTURE/HORTICULTURE

Two-year course for pupils over twelve years. Theoretical and practical lessons are given in horticulture and livestock husbandry, the emphasis, however, being on practical training.

Purpose: To equip children from farming communities with knowledge of farming methods, in addition to a formal education.

MLT 3

Royal University of Malta,

Msida.

Administration: Autonomous. There is no Faculty of Agriculture but the Department of Biology has research interests in the marine field.

Finance: Government of Malta.

Cal: Oct/Dec, Jan/Mar, Apr/May. RA: no. NN: yes.

1 (***) AGRICULTURE/FISHERIES

The M.Sc. course includes the scientific basis of agriculture and fishery techniques covering insect and disease control and marine pollution.

Entry standard: Appropriate university degree.

2 (***) SUNDRY

Apart from registered students working for a degree, the Department of Biology could accept short-period graduate trainees in topics such as pollution and its effects on marine organisms or mariculture, plant protection or applied entomology and marine topics, possibly with attachments also to the Department of Agriculture and Fisheries.

Entry standard: Appropriate university degree.

UNITED KINGDOM

Over the last quarter of a century, domestic agricultural production has more than kept pace with population growth. United Kingdom farmers have increased their contribution to the nation's food supply to about two-thirds of the total supply of foodstuffs which can be produced here. This has been achieved with a much reduced work force, a declining acreage and a level of support which bears comparison with that given to some other major industries.

The Government take the view that a continuing expansion of food production in Britain will be in the national interest. The basic conclusion that a continuing increase in the output of our own agriculture over the next five years will be economically worthwhile is drawn from an assessment of the price and availability of imported food and of feed for livestock. Expectation is that the cost of importing food and feed will be higher, relative to other prices, than over most of the past two decades. On this view, price trends will themselves provide an incentive for higher output; but the objective of Government policy will be to provide farmers with a prospect of stability in their returns at levels encouraging the greater home production which would give the country an insurance against periods of shortage and higher prices.

UK agricultural policy now operates within the framework of the European Community's Common Agricultural Policy. During the transitional period, which ends in December 1977, UK price levels are being gradually aligned with those of other member states and guaranteed price arrangements for those commodities subject to organization of the market are being phased out.

Early in 1975, following consultations with the interests concerned, the Government published the White Paper "Food from our Own Resources", setting out the basic approach to the development of UK agriculture between now and the 1980s. The White Paper's main conclusions were that i) the likely levels of world and Community prices for major foodstuffs between now and the early 1980s, and the risks of possible shortage and sharp price fluctuation, justify a policy of expansion of food production in the UK; ii) the net product of the agricultural industry should be capable of a continuing expansion of about 2½ per cent a year on average, and this is the objective at which the Government and industry should aim; iii) within this overall objective most benefit is likely to come from higher output of milk (with its by-product, the beef from the dairy herd) and sugar beet. Cereals and sheepmeat should also make a significant contribution.

Agricultural education has also been subject to reassessment and this has resulted in a new pattern of training, with completely new courses, being introduced over the last two years or so. The new system is devised to offer a school leaver progression up the educational ladder in agriculture, in a similar way to the opportunities available in other careers. Farmers' sons, for instance, have incentives to leave school before they have attained the full measure of their ability, often before they have reached 'A' level standard. The new courses for National Certificate (NC), Ordinary National Diploma (CND) and Higher National Diploma (HND) enable them to qualify after leaving school in a variety of subjects related to agriculture and forestry. And as the OND and HND in these subjects are usually 'sandwich', i.e. periods of study alternating with periods of related practical training, trainees are ensured a close integration between teaching and practice. Many agricultural colleges also offer post-diploma courses for specialization in

subjects like farm management or management studies, or in agricultural engineering, which are particularly suitable for trainees seeking employment rather than working on family farms. This whole scheme is under-pinned by the New Entrant Apprenticeship Scheme, administered by the Agricultural Training Board, which provides three years of supervised work/training to craftsman level.

Employment in forestry may be in either the state or the private sector, and, in both, there are three general levels, craft, supervisory and managerial. The Forestry Commission is the largest employer and, like the major private forestry interests, requires degrees for managerial posts at the highest levels. Apart from degrees, national qualifications are City and Guilds Forestry examinations, National Certificate in Supervisory Studies, OND or ND in Forestry and Membership of the Institute of Foresters of G.B.

It is recommended that organizations and individuals from overseas should exercise care when selecting courses of training in the UK. It should be borne in mind that whereas the purpose of training for UK students (for whom the courses are mostly intended) is to make them more efficient farmers in their own country, the purpose for which students from developing countries are being trained is usually to make them more efficient as extension agents or teachers. A British course in science or technology will not in itself do this. Nowadays the UK farmer is often of graduate or equivalent qualification so there is no need for extension workers of lesser qualification; there is also a bias towards "high" technology at most levels of training in the UK, which is not always appropriate to developing-country conditions. The question should always be asked whether the course or specialization is appropriate to the circumstances of the work of the trainee.

UK 1

Agricultural Training Board,

Bourne House, 32/4 Beckenham Road, Beckenham, Kent BR3 4PB.

Administration: The Board is responsible to Agricultural Ministers and because its key role is to develop workers' skills to match advances in technology it co-operates closely with the Agricultural Development and Advisory Service of the Ministry of Agriculture and Fisheries. It operates through seven regional offices.

Finance: Mainly grant aided by the Ministry of Agriculture from the Annual Farm Price Review.

1 () AGRICULTURE/HORTICULTURE**

The Board administers the New Entrant (Apprenticeship) Training Scheme, which provides training over three years in general farm craft and general horticulture as well as in six specialized aspects of agriculture (milk, sheep, pig, beef, poultry production, machinery operation and maintenance) and five specialized horticulture topics (fruit, bulb and corm, glasshouse crop, outdoor vegetable production, plant nursery practice). Trainees are placed on selected holdings and receive regular visits from training advisers, who review progress and advise on the next stage; they attend, without loss of pay, recognised courses of part-time further education by day-release or block-release. Successful completion of the apprenticeship and of the practical proficiency tests results in the award of the Craftsman Certificate.

Entry standard: Selection by Local Committee of the Board, mainly on motivation and capability of benefiting from the training. This implies a reasonable but unspecified standard of primary education.

UK 2 Council for Technical Education and Training for Overseas Countries
Eland House, Stag Place, London SW1.

Administration: The Council for Technical Education and Training for Overseas Countries (TETOC) was set up in 1962 to help developing countries to produce the trained men and women needed to build up their economics, particularly middle-level personnel for industrial and commercial employment.

Although the Council does not run courses as such, it assists with the development of institutions overseas, and is concerned with the availability to trainees from overseas of facilities in Britain for technical and managerial training both in institutions and in industry.

UK 3 to UK 51 Colleges - Agricultural and Technical.

Note: Most of the following institutions run courses for National Certificates (NC), Ordinary National Diplomas (OND), Higher National Diplomas (HND), etc. in subjects related to agriculture and forestry. A sandwich course is one where periods of instruction alternate with periods of practical training. Although certain agricultural colleges have been described fairly fully, it is not thought necessary to do this in every case, and training officers requiring fuller details are recommended to write direct to the college in question. Most of the colleges are residential and provide places for both male and female students. The college year usually begins in September. Entry standards are normally:

Entry standard: For National Certificate: good general education including English, maths and science, and preferably completion of part-time course in agriculture and one year's practical experience.

For Ordinary National Diploma: GCE 'O' level in four subjects, including relevant sciences, plus one year's practical experience.

For Higher National Diploma: GCE in six subjects including science and maths, two of which must be at 'A' level; or NC or OND in relevant subject.

UK 3 Askham Bryan College of Agriculture and Horticulture,
Askham Bryan, York YO2 3PR.

1 (**) AGRICULTURE/HORTICULTURE - for NC.

2 (**) AGRICULTURE - animal production or crop mechanization.

UK 4 Aylesbury College of Further Education,
Department of Agriculture, Hampton Hall, Stoke Mandeville, Bucks.

1 (**) AGRICULTURE - preliminary and for City & Guilds Stage II.

2 (**) AGRICULTURAL BUSINESS - for NC and OND.

UK 5 Berkshire College of Agriculture,
Hall Place, Burchetts Green, Maidenhead, Berks.

1 (**) AGRICULTURE - for NC.

2 (**) AGRICULTURE - farm and grassland management.

- 3 (**) AGRICULTURE - general or merchanting, for OND.
- 4 (**) ANIMAL CARE/VETERINARY - for veterinary nursing auxiliaries.

UK 6

Bicton College of Agriculture,
East Buddleigh, Devon EX9 7BY.

- 1 (**) AGRICULTURE - for NC.
- 2 (**) AGRICULTURAL BUSINESS
- 3 (**) FORESTRY - for City & Guilds Stage I.
- 4 (**) AGRICULTURE - farm and grassland management.

UK 7

Birmingham College of Food and Domestic Arts,
Summer Row, Birmingham B3 1JB.

- 1 (***) FOOD TECHNOLOGY - for HND and College Diploma.

UK 8

Bishops Burton College of Agriculture,
York Road, Bishops Burton, Beverley HV17 8QG.

- 1 (**) AGRICULTURE - for NC.
 - 2 (**) SUNDRY - farm management, mechanization, animal husbandry, etc.
 - 3 (**) AGRICULTURE/AGRICULTURAL BUSINESS - for OND.
- Note: The College has links with the Lesotho College of Agriculture.

UK 9

Brooksby Agricultural College,
Brooksby, Near Melton Mowbray, Leics. LE14 2LJ.

- 1 (**) AGRICULTURE/AGRICULTURAL BUSINESS - for NC.
- 2 (**) FARM MANAGEMENT AND ORGANIZATION
- 3 (**) AGRICULTURE - for OND.
- 4 (**) SUNDRY - farm management, machine operation, etc.

UK 10

Broomfield College,
The Derbyshire College of Agriculture, Morley, Derby DE7 6DN.

- 1 (**) AGRICULTURE - preliminary course.
- 2 (**) AGRICULTURE - with dairy farming, for NC.
- 3 (**) DAIRY FARMING

- UK 11 Carmarthen Technical and Agricultural College,
Pibwrlwyd, Carmarthen, Dyfed, Wales.
- 1 (**) AGRICULTURE - with rural home economics or dairying, for NC.
 - 2 (**) AGRICULTURAL MECHANICS - for City & Guilds 015.
 - 3 (**) AGRICULTURAL BUSINESS/SCIENCE - for OND.
 - 4 (**) AGRICULTURAL ENGINEERING - for OND.
- UK 12 Chadacre Agricultural Institute,
Chadacre, Shimpling, Bury St. Edmunds, Suffolk IP29 4DU.
- 1 (**) AGRICULTURE - for NC.
- UK 13 Cheshire College of Agriculture,
Reaseheath, Nantwich, Cheshire.
- 1 (**) AGRICULTURE - for NC.
 - 2 (**) DAIRY HUSBANDRY/AGRICULTURAL ENGINEERING
 - 3 (**) FOOD TECHNOLOGY/DAIRYING - for OND.
- UK 14 Chippenham Technical College,
Cocklebury Road, Chippenham, Wilts. SN15 3QD.
- 1 (**) AGRICULTURE/AGRICULTURAL ENGINEERING - for OND.
- UK 15 College of Agriculture and Horticulture,
Oakland, St. Alban's, Herts.
- 1 (**) AGRICULTURE/HORTICULTURE - for NC.
 - 2 (**) AGRICULTURE AND LIVESTOCK/HORTICULTURE - supplementary.
 - 3 (**) HORTICULTURE - for OND.
- UK 16 Cumbria College of Agriculture and Forestry,
Newton-Rigg, Penrith, Cumbria.
- Cal: Sep/Jun. RA: for 100 m. & 15 f. NN: yes.
- 1 (**) AGRICULTURE
One year full-time for NC in agriculture, with option in hill and upland farming.
- Entry standard: Good general education in maths and science, with a preliminary part-time course in agriculture and one year's work experience.
- 2 (**) AGRICULTURE/DAIRY FARMING
One-year supplementary course in agriculture (dairy farming) for holders of NC in agriculture.

3 (**)
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* FORESTRY

Block release in two separate six-week periods during two years of practical training for City & Guilds Forestry Stage 1 at Junior Craft level, intended to meet the needs of those gaining their first few years forestry experience. Emphasis is on the practical application of the knowledge taught.

4 (**)
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* FORESTRY

Block release in a single six-week period for City & Guilds Forestry Stage 11 at General Craftsman level, for those who have completed Stage 1 or have the Woodman's Certificate or Junior Certificate from the Royal Forestry Societies.

5 (**)
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* FORESTRY

Three years sandwich for OND in forestry - years one and three are spent at the College, year two at an approved forestry unit on practical work.

Entry standard:

GCE 'O' level in at least four subjects including relevant sciences, or equivalent, plus one year's practical experience.

6 (**)
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* AGRICULTURAL ENGINEERING/LIVESTOCK

Two years sandwich for agricultural service engineers, and for the National Stockman's Certificate in poultry practice.

UK 17

Dorset College of Agriculture,
Kingston Maurward, Near Dorchester, Dorset.

1 (**)
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* AGRICULTURE - for NC.

2 (**)
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* ANIMAL HUSBANDRY - beef and dairy cattle.

UK 18

Durham Agricultural College,
Houghall, Durham DH1 3SG.

1 (**)
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* AGRICULTURE - for NC.

2 (**)
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* AGRICULTURE/FARM MANAGEMENT

3 (**)
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*
* AGRICULTURE - for OND.

UK 19

Gloucestershire College of Agriculture,
Hartpury House, Near Gloucester.

1 (**)
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* AGRICULTURE - for NC.

UK 20

Glynlifon College of Further Education,
Clynnog Road, Caernarvon, Gwynedd LL54 5DU, Wales.

1 (**)
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* AGRICULTURE/HOME ECONOMICS - introductory course.

UK 21

Hadlow College of Agriculture and Horticulture,
Hadlow, Tonbridge, Kent.

1 (**)
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* AGRICULTURE/HORTICULTURE - with fruit cultivation,
for NC.

2 (**)
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*
* FRUIT CULTIVATION

3 (***) AGRICULTURE/HORTICULTURE - with fruit cultivation, for OND.

4 (***) FRUIT CULTIVATION - management and planning.

UK 22

Hampshire College of Agriculture,
Sparsholts, Winchester, Hants.

1 (***) AGRICULTURE/DAIRY FARMING/FARM SECRETARIAL - for NC.

2 (***) FARM MANAGEMENT/LIVESTOCK - supplementary.

3 (***) AGRICULTURE - for OND.

UK 23

Isle of Ely College of Further Education and Horticulture,
Ramnoth Road, Wisbech, Cambs. PE13 2JE.

1 (***) HORTICULTURE - introductory, and general.

UK 24

Kesteven Agricultural College,
Caythorpe Court, Grantham, Lincolnshire.

1 (***) AGRICULTURE/LIVESTOCK/ARABLE FARMING - for NC.

2 (***) AGRICULTURAL ENGINEERING/LIVESTOCK - for City & Guilds 030 and 015.

3 (***) AGRICULTURAL MECHANIZATION/LIVESTOCK/ARABLE

4 (***) LIVESTOCK - one year in tropical poultry farming.

Note: The College has old-established links with Africa.

UK 25

Lackham College of Agriculture,
Lacock, Chippenham, Wilts. SN15 2NY.

1 (***) AGRICULTURE/HOME ECONOMICS - for NC.

2 (***) AGRICULTURAL MECHANICS - for City & Guilds 015.

3 (***) AGRICULTURAL ENGINEERING - for OND and City & Guilds 030.

UK 26

Lancashire College of Agriculture,
Bilsborrow, Preston, Lancs. PR3 0RY.

1 (***) AGRICULTURE/DAIRYING - for NC.

2 (***) AGRICULTURE - for OND.

3 (***) AGRICULTURE - for HND.

4 (***) ANIMAL NUTRITION/CROPS - post-HND courses.

- UK 27 Lindsey College of Agriculture,
Riseholm, Lincoln.
- 1 (**) AGRICULTURE/AGRICULTURAL BUSINESS - for NC.
 - 2 (**) FARM MANAGEMENT/MECHANIZATION
 - 3 (**) AGRICULTURE/AGRICULTURAL BUSINESS - for OND.
- UK 28 Llysfasi College of Agriculture,
Near Ruthin, Clwyd, Wales.
- 1 (**) AGRICULTURE/DAIRYING/AGRICULTURAL BUSINESS -
for NC.
 - 2 (**) FARM MANAGEMENT - thirty-week course.
- UK 29 Mander College Farm,
Silsoe, Beds. MK45 4OU.
- 1 (**) AGRICULTURE/HORTICULTURE - preliminary course.
- UK 30 Merrist Wood Agricultural College,
Worplesdon, Near Guildford, Surrey.
- 1 (**) AGRICULTURE/HORTICULTURE - for NC.
 - 2 (**) HORTICULTURE/ARBORICULTURE - for OND.
 - 3 (**) AGRICULTURE/HUSBANDRY/FARM MANAGEMENT
 - 4 (**) ARBORICULTURE - post-OND.
- UK 31 Mid-Glamorgan College of Agriculture,
Pencoed, Bridgend, Mid-Glamorgan, Wales.
- 1 (**) AGRICULTURE - introductory course.
- UK 32 Montgomery College of Further Education,
Newtown, Powys, Wales.
- 1 (**) AGRICULTURE - introductory course.
 - 2 (**) AGRICULTURAL MECHANICS - for City & Guilds 015.
- UK 33 Norfolk Schools of Agriculture and Horticulture,
Easton, Norwich, Norfolk NR9 5DX.
- 1 (**) AGRICULTURE/HORTICULTURE - preliminary course.
 - 2 (**) AGRICULTURE - for NC.
 - 3 (**) ANIMAL HUSBANDRY - pigs.

- UK 34 Northampton College of Agriculture,
Moulton, Northampton NN3 1RR.
- 1 (**) AGRICULTURE/HOME ECONOMICS - for NC.
 - 2 (**) LIVESTOCK/FARM MANAGEMENT
 - 3 (**) AGRICULTURE/LIVESTOCK - for OND.
 - 4 (**) AGRICULTURE - pre-university course.
- UK 35 Northumberland College of Agriculture,
Ponteland, Newcastle-upon-Tyne NE20 OAQ.
- 1 (**) AGRICULTURE/AGRICULTURAL BUSINESS - for NC.
 - 2 (**) AGRICULTURAL MECHANICS/FARM MANAGEMENT
 - 3 (**) SHEEP/FARM MANAGEMENT/ARABLE/MECHANIZATION
- UK 36 Nottinghamshire College of Agriculture,
Brackenhurst, Southwell, Notts.
- 1 (**) AGRICULTURE/HOME ECONOMICS - for NC.
 - 2 (**) AGRICULTURAL ENGINEERING/MECHANICS - for City & Guilds 015.
 - 3 (**) AGRICULTURE/FOOD TECHNOLOGY
 - 4 (**) AGRICULTURE/FOOD TECHNOLOGY - for OND.
- UK 37 Pershore College of Horticulture,
Avon Bank, Pershore, Hereford and Worcester.
- 1 (**) HORTICULTURE - for NC.
 - 2 (**) HORTICULTURE - post-NC.
 - 3 (**) HORTICULTURE - commercial and plant nursery, for OND.
- UK 38 Plumpton Agricultural College,
Plumpton, Near Lewes, East Sussex.
- 1 (**) AGRICULTURE/LIVESTOCK - for NC.
 - 2 (**) AGRICULTURE - for OND.
- UK 39 Rycotewood College,
Priest End, Thame, Oxon OX9 2BR.
- 1 (**) AGRICULTURAL ENGINEERING - for City & Guilds 030.
 - 2 (**) AGRICULTURAL ENGINEERING - for City & Guilds 030 and OND.

UK 40

Seale Hayne Agricultural College,
Newton Abbot, Devon.

Administration:

This is a direct grant college financed by the Department of Education and Science and administered by a Board of Governors including nominees of the DES, Ministry of Agriculture, Fisheries and Food, and the Devon and Cornwall County Councils. There is a 400 acre farm mainly for livestock production based on the efficient utilization of home produced feed, particularly grass. Cereals are grown for sale. There is a large dairy herd and a herd of pedigree cattle for beef production. Bacon pigs are kept and there is a sheep flock. Academic work is controlled by four departments: agriculture, agricultural business and management studies, food technology, biological and physical sciences. There is a machinery section providing workshop practice and practical use of machinery.

1 (**) AGRICULTURE/FOOD TECHNOLOGY

Three years sandwich for OND in agriculture, and in food technology (dairy technology).

2 (***) FARM MANAGEMENT

One year full-time for Farm Management Diploma for those who already have OND in agriculture.

3 (***) FOOD TECHNOLOGY/APPLIED BIOLOGY

Three years sandwich for HND in food technology offering specialization in general food technology or in dairy technology. Also two years full-time for HND in applied biology with specialization in either crop and animal biology or micro-biology and food science. These courses are provided jointly with Bristol Polytechnic.

4 (***) FARM MANAGEMENT

One-year supplementary course for Farm Management Diploma for holders of HND in agriculture or a relevant degree. Also one year for Diploma in Management Studies for holders of degrees or diplomas in agriculture - this is an advanced national award of high standing.

UK 41

Shropshire Farm Institute,
Walford, Baschurch, Shrewsbury.

1 (**) AGRICULTURE - for NC.

2 (**) FARM MANAGEMENT/AGRICULTURE - supplementary

3 (**) FARM MANAGEMENT - thirty-week course

4 (**) AGRICULTURE - for OND.

UK 42

Shuttleworth Agricultural College,
Old Warden Park, Biggleswade, Bedfordshire.

1 (**) AGRICULTURE

2 (**) AGRICULTURE - for OND.

3 (***) AGRICULTURE - for HND.

4 (***) SURVEYING

- UK 43 Somerset College of Agriculture and Horticulture,
Cannington, Near Bridgewater, Somerset TA4 2L9.
- 1 (**) AGRICULTURE/HORTICULTURE/DAIRYING - for NC.
 - 2 (**) AGRICULTURE/DAIRY HUSBANDRY
 - 3 (**) FOOD TECHNOLOGY - for OND.
- UK 44 Staffordshire College of Agriculture,
Rodbaston, Penkridge, Stafford.
- 1 (**) HORTICULTURE - introductory course.
 - 2 (**) AGRICULTURAL MECHANICS/BUSINESS
 - 3 (**) AGRICULTURE/HOME ECONOMICS - for NC.
- UK 45 Studley College,
11 Waterloo Place, Leamington Spa, Warwickshire.
- 1 (**) DAIRYING/FOOD TECHNOLOGY - diploma courses, for women.
- UK 46 Usk College of Agriculture,
Usk, Gwent NP5 1XJ, Wales.
- 1 (**) HORTICULTURE - introductory course.
 - 2 (**) AGRICULTURE/HOME ECONOMICS/DAIRY/POULTRY - for NC.
 - 3 (**) ANIMAL HUSBANDRY - pigs - advanced course.
 - 4 (**) LIVESTOCK/AGRICULTURE - for OND.
- UK 47 Warwickshire College of Agriculture,
Moreton Hall, Moreton Morrell, Warwick.
- 1 (**) AGRICULTURE - preliminary course.
 - 2 (**) AGRICULTURE/MECHANIZED CROP PRODUCTION - for NC.
 - 3 (**) LIVESTOCK - horses and mechanized production.
- UK 48 Waterperry Horticultural School,
Whatley, Oxfordshire.
- 1 (**) HORTICULTURE - diploma courses, for women.
- UK 49 Welsh Agricultural College,
Llanbadarn Fawr, Aberystwyth, Dyfed SY23 3AL, Wales.
- Administration: Founded in 1971 on site shared with the College of Librarianship (linked to the University College of Wales) and the Aberystwyth College of Further Education. The College has two farms and a laboratory unit on a total of about 250 hectares. One farm concen-

trates on milk production and the other on beef and sheep. The laboratory includes demonstration plots, greenhouses and a machinery handling area.

Finance: Eight County Education Authorities in Wales.

TP: 150. RA: yes.

1 (**) AGRICULTURE

Three year sandwich for OND in agriculture. Emphasis in all courses is on livestock production based on grass and grassland products under lowland, marginal land and hill conditions.

Entry standard: GCE in four subjects including maths and a science, or certain City & Guilds Stage II examinations, or high level pass in NC in agriculture.

2 (***) AGRICULTURE

Three years sandwich for HND in agriculture, similar to 1 above.

Entry standard: GCE in six subjects including science and maths, two of which should be at 'A' level, or ONC or OND in certain sciences, or OND in agriculture.

3 (***) MEAT TECHNOLOGY

Post-HND course in the production and marketing of beef and sheep. This course includes meat technology given in co-operation with the Blackpool College of Art and Technology.

UK 50

Welsh College of Horticulture,
Northop, Near Mold, Clwyd, Wales.

1 (**) HORTICULTURE - introductory course.

2 (**) HORTICULTURE/HORTICULTURAL MACHINERY

3 (**) HORTICULTURE - for NC.

UK 51

Writtle Agricultural College,
Writtle, Chelmsford, Essex CM1 3RR.

Administration: Formerly the Essex Institute of Agriculture, the College is administered by Essex County Council through a governing body including representatives of the Council and also of the professions and of organizations of employers and employees in agriculture. Founded in 1893. College farms total 388 acres and are run commercially. There is a herd of around 100 pedigree British Friesians grazed on irrigated paddocks in summer with winter feed on arable by-products, a commercial pig herd of 60, mainly for bacon, and an intensive beef unit. Experimental work is linked to the National Institute of Agricultural Botany and to the Processors and Growers Research Organization. Horticultural crops are produced on a commercial scale with about 50 acres of fruit crops, and a commercial glasshouse unit covering over one acre.

TP: 350 m. & f. RA: for 200.

1 (**) AGRICULTURE/HORTICULTURE

Day release course for City & Guilds Stage I Agriculture (010), Stage I and II Horticulture (011) and the Agricultural Mechanics Certificate (015).

2 (**) SUNDRY

Short courses for the Agricultural Training Board (1-3 days in management for farmers, managers, supervisors, etc.) and for teachers, park employees and amateur gardeners.

3 (**) AGRICULTURE

One-year full-time for NC in agriculture.

4 (**) BEEKEEPING/WELDING

Evening courses in welding, beekeeping and hivemaking are held each winter and spring, and a practical beekeeping course in the apiary in the summer.

5 (**) AGRICULTURE/HORTICULTURE

Three years sandwich for OND in agriculture or in commercial horticulture.

6 (**) AGRICULTURE/HORTICULTURE

One term full-time supplementary to OND in agricultural management studies or horticultural management studies, and in mechanization of protected crop production (horticulture).

7 (**) HORTICULTURE

One year full-time for College Advanced Diploma in Horticulture, and for finals of National Diploma for those who have passed Intermediate Exam for National Diploma in horticulture.

8 (**) AGRICULTURE/HORTICULTURE

Three years sandwich for HND in agriculture or in commercial horticulture.

9 (**) AGRICULTURAL MANAGEMENT/MECHANIZATION

One year full-time post-HND for Diploma in Management Studies (agriculture) given in conjunction with Anglian Regional Management Centre, and for advanced Diploma in Farm Mechanization.

UK 52

Harpers Adams Agricultural College,

Newport, Shropshire TF10 8NB.

Administration:

Direct grant supported by Department of Education and Science; not controlled by any Local Authority but the Board of Governors include representatives of some County Councils as well as of bodies such as DES, Ministry of Agriculture, Fisheries and Food, National Union of Agricultural Workers, National Farmers Union and the Royal Agricultural Society of England.

There is a 350 acre College Farm which is also used as a Regional Trial Centre for the National Institute of Agricultural Botany. The pig unit has a good reputation and is run as a self-contained business. The National Institute of Poultry Husbandry within the College provides the largest poultry teaching centre in UK.

TP: 300, incl. 20 from overseas. RA: c. 220 m. & f.

1 (**) POULTRY PRODUCTION

Two years sandwich in poultry for OND.

2 (**) AGRICULTURE

One-year full-time pre-HND course in agriculture.

Entry standard:

Candidates with good 'O' levels or CSE 1 but who have not the necessary 'A' levels for direct entry to HND courses.

3 (***) POULTRY PRODUCTION

One year full-time in poultry management for holders of OND.

4 (***) AGRICULTURE/POULTRY

Three years sandwich for HND in poultry or agriculture.

5 (***) AGRICULTURAL BUSINESS/MARKETING

Three years sandwich for HND in agricultural marketing and business administration.

UK 53

Royal Agricultural College,

Cirencester, Gloucestershire.

Administration: Founded 1845 for "teaching the Science of Agriculture and the various sciences connected therewith and the practical application thereof in the cultivation of the soil and the rearing and management of stock" by royal charter. The Royal Agricultural College thus pioneered agricultural education in UK. Farms total 1,300 acres and are run commercially as a source of revenue and as a basis for teaching and demonstration.

The 600 acres at the College are farmed intensively for the production of cereals, potatoes, milk, lamb and bacon. The remaining 700 acres alongside the River Thames on different soils are farmed for arable crops and beef production. The College is entirely independent.

Finance: Mainly receipts from fees and income from farms. The College receives no direct financial aid from the Government and is not controlled by any Local Authority.

TP: 700 m. only. RA: for 240.

1 (*) AGRICULTURE

One-year farming course for the more mature student or the late entrant to farming.

Entry standard: No specific academic entry standard.

2 (**) AGRICULTURE/FARM MANAGEMENT

Two years for College Diploma in agriculture, for those intending to make careers in farming but whose academic level is not high enough for HND. The course has a special emphasis on farm and estate management.

Entry standard: Five 'O' levels in GCE including English and a science.

3 (***) AGRICULTURE

Three years sandwich for HND in agriculture including one year of supervised practical training on an approved farm.

Entry standard: Four passes at 'O' level and an 'A' level pass in science with a further subject studied to advanced level in GCE.

4 (***) RURAL ESTATE MANAGEMENT

Three-year course for the Diploma in Rural Estate Management, giving full exemption from the written examinations of the Royal Institution of Chartered Surveyors whose final practical examination can be taken by diplomates who have completed 21 months employment with an approved chartered surveyor.

Entry standard: Five 'O' levels in GCE and two specified 'A' levels. Holders of a relevant university degree may be accepted into the second year of the diploma course.

5 (***) FARM MANAGEMENT

There is a one-year course College Diploma in advanced farm management for those well qualified in agriculture or estate management wanting further supervised training.

Entry standard: A first degree in agriculture, HND, NDA or Estate Management Diploma, or the College Diploma in Agriculture.

UK 54 Royal Horticultural Society,
Wisley, Surrey.

1 (**) HORTICULTURE

Although mainly for reasearch and demonstration, the Wisley Gardens of the Royal Horticultural Society have a two-year course in horticulture.

UK 55 Royal Botanic Gardens,
Kew, Richmond, Surrey.

Administration: Ministry of Agriculture, Fisheries and Food. Kew is a research institution concerned with the classification and identification of plants. It has large living collections and many other facilities, and botanists from developing countries come to Kew to work on the material there.

1 (**) HORTICULTURE

Three-year Student Gardener's course, including practical work in the Gardens together with a comprehensive course of lectures and demonstrations in horticulture, and leading to the Kew Diploma.

Entry standard: Standard equivalent to GCE in four subjects, and at least three years practical experience in an approved horticultural establishment.

UK 56 Central Council for Agricultural and Horticultural Co-operation,
301/344 Market Towers, New Covent Garden, 1 Nine Elms Lane,
London SW8 5NQ.

Administration: Established in 1967 by Act of Parliament to promote co-operation in agriculture and horticulture, to advise the Government on relevant matters and to administer grants for co-operative activities in production and marketing. The Council has fourteen members appointed by the Ministers concerned with agricultural development in the UK, six being independent and eight selected from nominations made by farmers unions and central co-operative associations.

TP: c. 1,500 in 1974/5 attended courses and seminars.

1 (**) CO-OPERATIVE STUDIES

Short courses lasting one or two days intended to give practical help to farmers who have become co-operative directors, and for co-operative secretaries and marketing managers on specialist aspects of their work. Also occasional open courses for advisers, students and others, and assistance with private seminars and other in-company training schemes.

UK 57 Agricultural Co-operative Association Limited,
Agriculture House, 25 Knightsbridge, London SW1.

Administration: The Association is a non-trading, non-profitmaking and politically neutral body, whose main functions are the co-ordination and development of agricultural co-operation in Britain.

1 (**) CO-OPERATIVE STUDIES

Training courses for senior co-operative officers. These have been extended to different parts of Africa - see entry for Plunkett Foundation, UK 58.

UK 58

Plunkett Foundation for Co-operative Studies,
31 St. Giles, Oxford OX1 3LF.

Administration:

Founded in 1919. The Founder's main interest was in the social and economic development of rural communities so that most of the work of the Foundation is concerned with agricultural and related co-operation. The work of the Foundation is being integrated with that of the Federation of Agricultural Co-operatives (UK) Limited.

Finance:

Private.

1 (**) CO-OPERATIVE STUDIES

Training courses in agricultural co-operation in Great Britain. Also seminars concerning agricultural co-ops, and correspondence courses for the secretaries of co-operatives.

2 (**) CO-OPERATIVE STUDIES

Correspondence courses for Junior Government Field Officers overseas, with examinations held annually in overseas centres. To support the correspondence courses a three-week residential training course (seminar) is held annually in a developing country.

3 (**) CO-OPERATIVE STUDIES

Six-week management training course, held annually in a developing country, drawing participants from surrounding countries. It is intended for managers of marketing societies or of large primary co-operatives or for middle ranking Government officials.

4 (**) CO-OPERATIVE STUDIES

In 1975 there was a twelve-week training course at Oxford followed by a two week tour, on the business problems of agricultural co-operatives. Most of the twenty participants were from Commonwealth countries and were senior employees of co-ops., marketing boards and co-operative banks. The course was sponsored by ODM/British Council.

UK 59

Institute of Animal Technicians,
16 Beaumont Street, Oxford.

Administration:

The Institute is responsible for setting examination, and holders of the qualifications gained by these examinations are registered with the Institute. Training for animal technicians is provided at twenty four technical colleges.

1 (**) ANIMAL TECHNOLOGY

Course for Intermediate examination in animal technology, requiring about 150 hours of instruction plus one or two years practical work. Trainees must be enrolled in a research or veterinary laboratory.

Entry standard:

Minimum age 16½ years. Holders of GCE 'O' level or equivalent in English and a science or maths may be exempted from part of the course. (Overseas students are eligible to enrol.)

2 (**) ANIMAL TECHNOLOGY

Course for Associate Certificate examination in animal technology, requiring about 350 hours study plus four or five years practical experience, for holders of Intermediate examination.

3 (**) ANIMAL TECHNOLOGY

Course for Fellowship Diploma examination in animal technology, requiring about 600 hours of instruction plus six or seven years practical experience, for holders of the Associate Certificate.

UK 60

Animal Nursing Auxiliaries Committee,

Royal College of Veterinary Surgeons, 32 Belgrave Square,
London SW1X 8PQ.

1 (**) ANIMAL HEALTH

Two years training for Animal Nursing Auxiliary, including full-time paid employment of not less than 35 hours per week in an approved training centre, veterinary practice or veterinary centre with facilities for training in modern operative procedures and post-operative treatment. Theoretical training takes place in part-time courses (evening or half-day release) often provided by Local Education Authorities. There are also full-time residential courses of one or two terms at certain institutions such as Berkshire College of Agriculture (see UK 5/4).

Purpose:

To train auxiliaries to assist veterinary surgeons in work with small animals. (Auxiliaries are not entitled to practise veterinary medicine or surgery.)

Entry standard:

GCE in three subjects including English and a science or maths.
Age 17+, in suitable employment.

UK 61

Ministry of Agriculture, Fisheries and Food,

Great Westminster House, Horseferry Road, London SW1P 2SE.

1 (**) ANIMAL HEALTH

Short in-service training for lay assistants at various regional centres, usually of one week on general background and three days on blood sampling techniques, etc. followed by prolonged field training. Courses are conducted by the Ministry's veterinary staff and after training the assistants work with qualified vets. mainly in the field, with duties including blood testing of poultry and cattle, collection of milk samples, etc.

Entry standard:

GCE in four subjects including English and a science, or a technical college Diploma in Agriculture. Car drivers, with a background of agriculture.

UK 62

Cardiff College of Food Technology and Commerce,

Colchester Avenue, Cardiff CF3 7XR, South Wales.

1 (***) FOOD TECHNOLOGY

Three-year sandwich course for HND in applied biology with a bias to food science.

Entry standard:

GCE 'O' level in maths, physics and English with biology and chemistry studied beyond 'O' level and two passes in science subjects at 'A' level, or equivalent OND/ONC.

UK 63

Hollings College,

Old Hall Lane, Wilmslow Road, Manchester M14 6HR.

1 (***) MEAT TECHNOLOGY

One-year full-time courses for College Diploma in Meat Technology for Advanced Certificate of Institute of Meat and for Royal Society of Health Meat Inspection Certificate.

Entry standard:

GCE with one 'A' level.

UK 64

Leather Department,

Northampton College of Technology, St. George's Avenue,
Northampton NN2 6JB.

1 (***) LEATHER TECHNOLOGY

Specialized training starting September for six to thirteen weeks in one of five different aspects of leather technology for those with a diploma in leather technology. This course is sponsored by UNIDO. Also an intensive eight-week course starting in May on vegetable tannage for practising tannery technologists.

UK 65

Sheffield Polytechnic,

Pond Street, Sheffield S1 1WB.

1 (***) LAND USE

Two years full-time for Polytechnic Diploma in Land Use Studies.

Entry standard:

One GCE 'A' level or relevant OND/ONC.

UK 66

High Wycombe College of Technology and Art,

Queen Alexandra Road, High Wycombe HP11 2JZ.

Administration:

Local Education Authority. The College is close to the Forestry Produce Research Institute at Princes Risborough and to the Timber Research and Development Association at High Wycombe, which is itself the main centre of the wooden furniture industry.

Finance:

Local government.

1 (**) TIMBER TECHNOLOGY

Twelve-week course in timber technology for overseas students, dealing mainly with timber drying and preservation and including visits to saw mills, etc.

Entry standard:

Good English and arithmetic.

2 (**) TIMBER TECHNOLOGY

Twelve-week course in saw doctoring and another for a Certificate in Saw Mill Management and Production for those who have already taken the saw doctoring course.

3 (***) TIMBER TECHNOLOGY

Three-year full-time course at degree level for Diploma in Advanced Timber Technology. Also, three-year general course for a College Diploma in Timber Technology covering entrance to the timber trade and timber-using industries.

Entry standard:

GCE in five subjects, with one at 'A' level.

4 (****) TIMBER STUDIES

One-year postgraduate course in timber studies, commerce and management for holders of Diploma in Advanced Timber Technology.

UK 67

Forest Products Research Laboratory (TIMBERLAB),

Princes Risborough, Aylesbury, Bucks.

Administration:

The Laboratory is part of the Ministry of Technology, and its main aim is to assist industry and the timber user in the more efficient use of wood and wood products. The overall research programme covers the main fields of timber research and is primarily of an 'applied' nature, although a few long-term projects on fundamental studies are always in progress.

1 (**) TIMBER TECHNOLOGY/FORESTRY

A range of courses is organized at the Laboratory to meet the need for training facilities that are not available elsewhere. Present courses include: wood technology, timber construction technology, stress grading, control of insects and rot in buildings, timber drying (supervision), timber drying (practical), saw maintenance, cutter maintenance.

Note: Individual courses of training for specialists from developing countries can be arranged.

UK 68

White Fish Authority,

Sea Fisheries House, 10 Young Street, Edinburgh EH2 4JQ.

Administration: The Authority is a statutory body responsible to the UK Minister of Agriculture, Fisheries and Food and to the Secretaries of State for Scotland, Wales and Northern Ireland.

Finance: The administrative costs are financed by a levy on the Industry and by Treasury loans. Research is subsidized by the Ministry of Agriculture. Local Education Authorities provide premises for courses. Individual port associations often have their own training officers and make their own local arrangement, W.F.A. then providing maintenance grants for the trainees.

TP: In the year 1974/75, the WFA was responsible for financing by training grants 450 fishermen who attended up-grading courses, 88 engineers attending special courses, and 636 new entrants enrolling for training course - in addition to those on the courses below.

1 (**) FISHERIES/FISH DETECTION

The Authority has a mobile training unit used for instructing in-shore and distant water fishermen in the use and interpretation of electronic detection equipment. It can move from port to port and give short courses while fishermen are between sea trips. In the first two years, courses were attended by 345 fishermen in ports as far apart as the North of Scotland and the South West of England. The Unit also gives three-day sonar courses, financed by the Herring Industry Board.

2 (**) FISHERIES

Three-day training courses in fishing industry management, at the Authority's premises in Hull.

3 (**) FISHERIES

Short highly specialized courses covering all types of fishing gear and fish detection etc. are planned, using a specially designed flume tank.

UK 69

Hull Nautical College,

Church Street, Humberside, Yorkshire HU1 3BW.

Administration: Kingston upon Hull Education Authority. The courses are used by trainees sponsored by the White Fish Authority and the Regional Fishing Industry Organization.

Finance: Local government.

Cal: from mid-Sep. TP: c. 800. RA: yes. NN: yes.

1 (**) NAVIGATION/FISHERIES

Courses on all aspects of navigation for fishermen, and simulated exercises on trawling and mid-water gear fishing, using an active simulator designed and developed by the White Fish Authority.

2 (**) SUNDRY

Various courses of one to forty-eight weeks in duration, and at variable levels, for deckhands, junior mate, mate, skipper, chief engineer, engine man, cook, fisheries instructor/manager, etc., and in specialized subjects such as radar and navigation.

UK 70

Lowestoft College of Further Education,

Herring Fishing Score, Lowestoft, Suffolk.

Administration: East Suffolk County Council through Lowestoft Education Committee. The courses are used by trainees sponsored by the White Fish Authority and the Regional Fishing Industry Organization.

Finance: Local government.

TP: c. 40. RA: no.

1 (**) FISHERIES/NAVIGATION

Full range of courses including eighteen weeks for Second Hand (Full) and Skipper (Full). Three weeks for Radar Observer and other short courses for entrants to the fishing industry.

UK 71

The Nautical College,

Fleetwood, Broadwater, Fleetwood, Lancs FY7 8JZ.

Administration: Lancashire Education Committee. The courses are used by trainees sponsored by the White Fish Authority and the Regional Fishing Industry Organization.

RA: yes. TP: c. 24.

1 (**) FISHERIES

Twelve-week course in pre-sea (fishing) for entrants to fishing.

Entry standard: Secondary schooling, age 16-18.

2 (**) FISHERIES

Full range of courses including sixteen to eighteen weeks for Second Hand and Skipper for those with sea-going experience, for Radar Observers, etc.

UK 72

Grimsby College of Technology,

Nan's Corner, Grimsby, Lincolnshire.

Administration: County of Humberside Education Authority. The courses are used by the White Fish Authority and the Regional Fishing Industry Organization.

Finance: Local government.

Cal: from mid-Sep. RA: yes. NN: yes.

1 (**) FISHERIES

Full range of short courses for fishermen and associated workers: for Skipper, Mate, Second Mate, Marine Engineer, Cook, etc, and on radar, refrigeration, fishing gear technology, fisheries education administration.

Entry standard: Varies according to course taken, but usually includes previous experience.

2 (**) FISHERIES

One-year Master Fisherman's course, covering navigation, seamanship, communications fishing method and gears, echo-sounding and sonar, engineering, fish food technology.

Entry standard: GCE 'O' level including maths and English.

3 (***) FISHERIES

One-year diploma course in fisheries management, particularly for overseas students.

Entry standard: GCE in five subjects including one at 'A' level, or good relevant ONC.

4 (***) FOOD TECHNOLOGY/MECHANICAL ENGINEERING

Three years sandwich for HND in food technology or in mechanical engineering (including refrigeration).

Entry standard: GCE in five subjects including one at 'A' level, or a good relevant OND or NC.

5 (***) FOOD TECHNOLOGY/FISH PROCESSING

One-year full-time postgraduate course for Diploma in Food Technology - Fish Processing, designed to give students an understanding of aspects of food handling, processing and distribution. The structure of the course is on a 'unit' basis enabling each student to have an individually designed programme. Emphasis is on study of methods to make more effective use of existing food materials, to reduce waste and spoilage and to explore new sources, and visits to major government and industrial processing centres are included. The course is supported and recognized by the British Council, various overseas governments and award-granting organizations.

Entry standard: Degree or equivalent, though exceptions may be made for entrants having considerable industrial or research experience.

UK 73

Marine and Technical College,

St. George's Avenue, South Shields, South Tyneside, Tyne and Wear NE34 6ET.

Administration: Local education authority.

Finance: Local government.

Cal: Sep/Jul. TP: c. 24 p.a. NN: yes.

1 (**) FISHERIES

Short twelve to eighteen-week courses, full and special, for Second Hand and Skipper of sea going fishing boats.

Entry standard: Sea going experience and preferably secondary education.

UK 74

Plymouth Polytechnic,

Drake Circus, Plymouth, Devon PL4 8AA.

Administration: Devon County Council. The courses are used by trainees sponsored by the White Fish Authority and the Regional Fishing Industry Organization.

Finance: Local government.

Cal: Sep/Jul. TP: c. 30. RA: no, but assistance given. NN: yes.

1 (**) FISHERIES

Range of short courses including eight weeks for Second Hand (Special) and Second Hand (Limited), twelve weeks for Skipper (Limited) and Second Hand (Full), four months for Skipper (Full).

Entry standard: Mainly appropriate sea service in fishing craft.

2 (***) FISHERIES/NAUTICAL SCIENCE

Four years sandwich for B.Sc. (Hons) in fisheries science; also four years for B.Sc. in nautical studies. Four-and-a-half years for HND in nautical science.

Entry standard: Usual degree course entrance, or OND or NC in nautical science.

UK 75

University of Bristol,
Senate House, Bristol BS18 1TH.

Administration: Founded 1909. The University has a Department of Agriculture and Horticulture, which is at the Long Ashton Research Station, Long Ashton, Bristol BS18 9AF.

1 (***) AGRICULTURE/HORTICULTURE

Postgraduate training and research in various aspects of agricultural and horticultural sciences.

UK 76

The University of Bristol School of Veterinary Science,
Langford House, Langford, Bristol BX 7DU.

(Pre-Clinical School at Park Row, Bristol BX1 5LS).

Administration: The School of Veterinary Science is part of the Faculty of Medicine and works in association with the Meat Research Institute and the Veterinary Field Station which are also at Langford. The Veterinary Field Station does special work on tsetse flies and trypanosomiasis.

TP: c. 150 in Sch.Vet.Sci. RA: yes. NN: yes.

1 (***) VETERINARY SCIENCE

Five years for B.V.Sc.

Entry standard: Usual university entry with chemistry and either biology or zoology at 'A' level and preferably 'A' level physics.

2 (***) VETERINARY SCIENCE

One year for M.Sc. for Hons. graduates in veterinary science.

UK 77

University of Bath,
Claverton Down, Bath BA2 7AY.

1 (***) HORTICULTURE/CROP SCIENCE

Four-year sandwich course for B.Sc. Hons. in horticulture and horticultural engineering. Also four-year sandwich course for B.Sc.Hons. in crop protection.

Entry standard: Usual university entrance; maths, chemistry and biology must be offered (chemistry beyond 'O' level) and 'A' levels must be in science subjects or maths.

UK 78

University of Birmingham,

Department of Local Government and Administration, Institute of Local Government Studies, P.O. Box 263, Birmingham B15 2TT.

Administration: The Institute has organized special courses for local government staff in Mauritius, Nigeria and Malaysia. Other courses for those of other governments in topics related to rural development could be organized. The courses are supported by ODM, Ford Foundation, UN, etc.

1 (***) RURAL DEVELOPMENT

There are four-month courses starting in April, September and November in different fields of study for overseas graduates concerned in local government. One topic is planning and management of rural development.

2 (***) CONSERVATION

One-year international M.Sc. course under the Department of Botany in genetic conservation and utilization (see INT 44/1).

UK 79

University of Bradford,

Project Planning Centre for Developing Countries, Richmond Road, Bradford, Yorks BD7 1DP.

Administration:

The Centre was founded in 1969, to focus attention on project planning and evaluation problems mainly in developing countries. Apart from research it organizes short courses, some sponsored by ODM.

1 (***) RURAL DEVELOPMENT

Short courses for middle and senior level officials concerned with project planning and management for rural development, for human resources (mainly health and education in rural areas), for banking (including rural credit schemes). The industrial projects course is being extended to cover small rural industries, in the future.

UK 80

Bristol Polytechnic,

Ashley Down Road, Bristol B57 9BU.

1 (***) APPLIED BIOLOGY/FOOD TECHNOLOGY

Two years full-time for HND in applied biology given in co-operation with Seale Hayne Agricultural College in Devon (see UK 40) and with a bias to either food science and micro-biology, or animal and crop biology. Also three-year sandwich course for HND in food technology, also in co-operation with Seale Hayne College, with a possible option in dairy technology.

Entry standard:

GCE 'O' level in maths, physics and English, and 'A' level in two science subjects, biology and chemistry must have been studied beyond 'O' level; or ONC in sciences.

2 (***) ESTATE MANAGEMENT

Three years for B.Sc. in valuation and estate management.

Entry standard:

GCE in five subjects including two at 'A' level or four with three at 'A' level.

UK 81

University of Cambridge,

Cambridge CB2 1TN.

Administration:

Agriculture is taught as part of the work of the Applied Biology Department. Agricultural economics teaching is organized by the Department of Land Economy, 19 Silver Street, Cambridge CB3 9EP. The National Institute of Agricultural Botany is at Cambridge University. There are links (IUC) in land economy and estate management with the University of Nigeria and in land economy with the University of Kumasi in Ghana.

RA: yes, normally arranged at colleges. NN: yes.

1 (***) APPLIED BIOLOGY/AGRICULTURAL ECONOMICS

Three years for B.A. Hons. (Part II Tripos) in applied biology or in agricultural economics.

2 (***) SUNDRY

One year full-time for postgraduate diploma in nutrition, applied biology, or agricultural economics. Also a one year postgraduate diploma in land economy (in the Department of Land Economy) including planning use of land resources to meet social demands, formulation of agricultural policy in national development, economics of production and marketing in agriculture and forestry. There are diploma courses in development open to officials of civil services from Britain and overseas, dealing with the planning of economic and social development including land policy and rural development (Overseas Studies Committee, c/o University College). There are also a number of certificate courses open to graduates of any university in subjects such as plant biochemistry.

Entry standard: Usual university entrance.

UK 82

University of Cambridge,

School of Veterinary Medicine, Madingley Road, Cambridge.

Administration: The School of Veterinary Medicine is responsible both to the Faculties of Medicine and Biology (B).

TP: c. 150 in the Fac.Vet.Scis.

1 (***) VETERINARY SCIENCE

Six years for degree of Vet. MB. The first three years of this course = B.A. in medicine or natural science.

UK 83

University of East Anglia,

Norwich NOR 88C.

Administration: There is an Overseas Development Group in the School of Social Studies, established in 1967 to undertake research on development, planning, economic and sociological problems in developing countries and carry out consultancy work. There is a School of Environmental Sciences with a Fisheries Laboratory, a Food Research Institute and a coastal ecology research station. The University has a link (IUC) in development studies with University Sains Malaysia.

TP: c. 100 taking development studies. NN: yes.

1 (***) DEVELOPMENT STUDIES/ENVIRONMENTAL SCIENCES

Three years for B.A. Hons. in development studies, covering rural development and natural resources development. Also, B.Sc. courses (in School of Environmental Sciences) are integrated and balanced with some specialization in the third year in biological or environmental sciences, including environmental planning, soil science, and tropical resources and development.

2 (***) DEVELOPMENT ECONOMICS

One year for M.A. in development economics.

UK 84

University of Exeter,

Exeter EX4 4QJ.

NN: yes.

1 (***) ECONOMICS/AGRICULTURAL ECONOMICS

Within the Faculty of Social Science there is a three-year course leading to B.A. Hons. in economics and agricultural economics.

Entry standard: Usual university entrance.

- UK 85 University of Hull,
Hull HU6 7RX.
- Administration: Founded as a University College in 1928 and became a University in 1954. Largely autonomous.
- Finance: Usual university grants.
- 1 (***) FISHERIES
Higher degree course: one year, for B.Phil. in the economics of fisheries.
- UK 86 University of Leeds,
Leeds CS2 9JT.
- Administration: Although the University has no Faculty of Agriculture there is a Board of Studies in agricultural sciences and courses are arranged under the supervision of the Department of Plant Sciences. There is a University farm and an Animal Nutrition Research Unit. The Marine Biological Laboratory is at Robin Hood's Bay on the Yorkshire Coast.
- NN: over 1,000 overseas students in the Univ. as a whole.
- 1 (***) ANIMAL PHYSIOLOGY/AGRICULTURE
Three years for B.Sc. Hons. in animal physiology and nutrition or in agricultural sciences.
- Entry standard: Usual university entrance.
- 2 (***) AGRICULTURAL ECONOMICS
One year for M.A. in agricultural economics.
- UK 87 City of Leicester Polytechnic,
P.O. Box 143, Leicester LE1 9BH.
- 1 (***) ESTATE MANAGEMENT
It has a two-year full-time course for the Polytechnic Diploma in Estate Management (Technician).
- Entry standard: Five passes in GCE including one at 'A' level and with good English and maths; or equivalent OND or ONC.
- 2 (***) ESTATE MANAGEMENT
Three-year full-time course for B.Sc. Estate Management.
- Entry standard: Five passes in GCE including two at 'A' level or four with three at 'A' level; or a good OND/ONC in construction.
- UK 88 University of Liverpool,
Faculty of Veterinary Science, P.O. Box 147, Liverpool L69 3BX.
- Administration: There is a Veterinary Field Station and a Marine Biological Station, at Port Erin, Isle of Man. There is a link (IUC) in veterinary medicine with the University of Ibadan in Nigeria.
- TP: c. 250 students in Vet.Sci.Fac. NN: yes.
- 1 (***) VETERINARY SCIENCE
Five years for B.V.Sc.
- Entry standard: Usual university entrance.
- 2 (***) VETERINARY SCIENCE
Further year for M.V.Sc. with possible specializations in avian medicine or applied parasitology.

- UK 89 Loughborough University of Technology,
Loughborough LE11 3TU.
- Administration: Established as Loughborough College of Technology in 1952 and became a university in 1966.
- 1 (***) CO-OPERATIVE STUDIES
One-year postgraduate course for diploma in co-operative development overseas for DLUT (university diploma). The course is actually held at the Co-operative College at Stamford Hall and is sponsored by ODM.
- UK 90 University of London,
The Royal Veterinary College, Royal College Street,
London NW1 OTU.
- Administration: The College is a constituent college of the University of London.
TP: c. 350. NN: yes.
- 1 (***) VETERINARY SCIENCE
Four years and two terms for B.Vet.Med.
- 2 (***) VETERINARY SCIENCE/ANIMAL HEALTH
One-year postgraduate course for M.Sc. in veterinary pathology and for the diploma of animal health.
- UK 91 University of London,
Wye College, Ashford, Kent TN25 5AH.
- Administration: The College is a constituent college of London University but is situated about 60 miles out of London. It incorporates the Swanley Horticultural College (for women). There are links (IUC) in agriculture, with Ahmadu Bello University in Nigeria and with Makerere University in Uganda, and in applied nutrition with the University of Malaysia.
- TP: 400 in Coll. as a whole. RA: yes.
- 1 (***) AGRICULTURE/HORTICULTURE
Three years for B.Sc. (Hons.) in agriculture, or agricultural sciences or agricultural economics or horticulture.
- 2 (***) SUNDRY
One further year for M.Sc. in landscape ecology; one or two years for M.Sc. in agricultural economics or in applied plant sciences. There is also a one year postgraduate diploma in farm business administration.
- 3 (***) SOIL SCIENCE/LAND USE
The College runs annual short courses for surveyors and assistant surveyors employed in the Ministry of Agriculture, Fisheries and Food covering soil examination, soil management, and land use classification.
- UK 92 National College of Agricultural Engineering,
Silsoe, Bedford MK45 4DT.
- Administration: Set up in 1962 as one of the National Colleges under the scheme proposed by the National Advisory Council on Education for Industry and Commerce. Closely associated with the National Institute of

Agricultural Engineering nearby. The College has links (IUC) in agricultural engineering with Njala University College of the University of Sierra Leone, with Makerere University, Uganda, and with the University of Nairobi, Kenya.

Cal: Sep/Jun. RA: yes. NN: yes.

1 (***) AGRICULTURAL ENGINEERING

Three years degree course for B.Sc. (CNAAB) in agricultural engineering or for B.Sc. Hons. also in agricultural engineering.

Entry standard: Five GCE passes including two at 'A' level of which one must be in maths or physics, or four passes with three at 'A' level. Alternatively good ONC/OND with English and science subjects.

2 (***) AGRICULTURAL ENGINEERING

One year for postgraduate diploma (CNAAB), one year for postgraduate certificate, and one year for M.Sc. in agricultural engineering.

Entry standard: First degree in agricultural engineering.

UK 93

University of Newcastle Upon Tyne,

Faculty of Agriculture, Newcastle Upon Tyne NE1 7RU.

Administration: There is an Agricultural Experimental Station at Morpeth and a University farm. The Agricultural Research Laboratories are at Wylam.

TP: 450 in Fac.Agric. NN: yes.

1 (***) SUNDRY

Three years for B.Sc. in agriculture or agricultural engineering, agricultural sciences, or agricultural economics. Four years for B.Sc.Hons. in agriculture, agriculture and environmental sciences, agriculture and food marketing, agricultural biochemistry, agricultural economics, agricultural engineering, agricultural mechanization, agricultural zoology, plant science, soil science.

Entry standard: Usual university entrance.

2 (***) SUNDRY

One year for M.Sc. in agricultural engineering, agricultural science, agricultural economics, agriculture and food marketing and two years for M.Sc. in agriculture. Also a one year post-graduate diploma in hydrology.

UK 94

North East London Polytechnic,

Romford Road, Stratford, London E15 4BH.

1 (**) LAND SURVEYING/ESTATE MANAGEMENT

Sandwich course lasting three years for the Polytechnic Diploma in Land Surveying. Also a three-year sandwich course for the Polytechnic Technicians in Estate Management.

Entry standard: Slightly lower than degree course entry but good maths required for land surveying course.

2 (**) LAND SURVEYING

Three years for B.Sc. (Hons.) in land surveying sciences.

Entry standard: Five passes in GCE including two at 'A' level or four with three at 'A' level or equivalent.

UK 95

University College of North Wales,

Department of Forestry and Wood Science, Memorial Buildings,
Bangor, Gwynedd, North Wales LL57 2DG.

Administration: The University has a Marine Science Laboratory which includes the Nuffield Fish Physiology Laboratories. The Departments of Forestry and Wood Science and of Agriculture are part of the Faculty of Science.

Cal: Oct/Dec, Jan/Mar, Apr/Jun. TP: c. 2,500 in Univ. as a whole. RA: yes. NN: yes.

1 (***) AGRICULTURE/FORESTRY

Three years for B.Sc. General or B.Sc.Hons. in forestry or wood science, in agricultural botany, or in agricultural biochemistry. Also three years for B.Sc.Hons. in agriculture and in agricultural economics.

Entry standard: Usual university entrance.

2 (***) SUNDRY

One year postgraduate diploma in forestry or in wood science, in agriculture, agricultural botany, agricultural economics, agricultural biochemistry, agricultural science, animal nutrition, and animal parasitology. Also M.Sc. courses of one or two years in animal nutrition, animal parasitology and ecology.

UK 96

University of Nottingham,

School of Agriculture, Sutton Bonington, Loughborough,
Leicestershire LE1Z 5RD.

Administration: The School of Agriculture includes the University Faculty of Agricultural Science and is about ten miles from the main University which is in Nottingham.

TP: c. 400 in Fac.Agric. NN: yes (300+).

1 (***) SUNDRY

Three years for Ord. or Hons. B.Sc. in agriculture, agricultural botany, agricultural zoology, animal physiology or applied biochemistry, environmental physics and soil science, food science, horticulture, nutrition, plant science, or poultry science technology. Also three years for B.A. Hons. in economics and agricultural economics (joint degree with the Department of Economics at University Park, Nottingham).

2 (***) SUNDRY

One year for M.Sc. in food science. Higher degree courses are available in relevant subjects, e.g. Ph.D. in farm management.

UK 97

University of Oxford,

Oxford OX1 3BD.

Administration: There is an Institute of Agricultural Economics, a Department of Agricultural Economics, a Department of Agricultural Science and a Department of Forestry, which jointly run the B.A.Hons. course. The Department of Forestry includes the Commonwealth Forestry Institute, which provides training facilities for undergraduates and postgraduates from Commonwealth countries and where people from

developing countries may undertake research work on problems concerning their countries under the supervision of the staff of the Institute. It also organizes courses and seminars on topics of interest to Commonwealth countries. There is a link (IUC) in forestry with the University of Ibadan, Nigeria.

The University's Queen Elizabeth House, 21 St. Giles, Oxford OX1 3LA, was established in 1954 for the study of problems in overseas territories then British administered, and provides a residential centre for senior administrators from countries receiving technical assistance.

1 (***) AGRICULTURE/FORESTRY

Three years for B.A. Hons. in agriculture and forestry science with an option in economics.

2 (***) AGRICULTURE/FORESTRY

One-and-a-half-year diploma course in agricultural sciences. One year for M.Sc. in agricultural economics, and in forestry and land use.

3 (***) AGRICULTURAL ECONOMICS/DEVELOPMENT STUDIES

One, two or three terms of supervised studies, at Queen Elizabeth House, in a wide range of subjects including agricultural economics, development planning, etc.

UK 98

University of Reading,

Faculty of Agriculture and Food, London Road, Reading RG1 5AQ.

Administration:

The University is closely associated with a number of research institutions under the Agricultural Research Council (see UK 140).

There is a College of Estate Management and an Agricultural Extension and Rural Development Centre. The Faculty of Agriculture and Food includes a Department of Agricultural Development overseas. The National Institute for Research in Dairying and the National College for Food Technology are constituent institutions of the University. There are links (IUC) in agriculture with the Universities of Dar es Salaam, Tanzania, of Nairobi, Kenya, and of Mauritius; in food technology, and in agricultural extension and rural development with the University of Ife, Nigeria.

TP: Fac. Agric. and Food has over 1,000 students incl. large no. from overseas.

1 (***) SUNDRY

Three years for B.Sc. Hons. in agriculture, agricultural botany, agricultural economics, food science, horticulture, botany, horticultural science, physiology and biochemistry of farm animals, soil science. Also four-year sandwich courses for B.Sc. Hons. in food technology and in biochemistry engineering. (These courses are given at the National College of Food Technology.)

2 (***) SUNDRY

Postgraduate courses include one year for diploma in agricultural economics and in agricultural extension or rural social development. One year for M.Sc. in various agricultural specialities including tropical agricultural development and in agricultural extension. One year for M.A. in rural social development. There are two-year courses for M.Agr. Eng. and for M.Agr. Sc.

3 (***) RURAL DEVELOPMENT/AGRICULTURAL EXTENSION
Short two to three-week courses, also a nine-month diploma course with assistance from ODM. About half the participants are from developing countries.

4 (***) SURVEYING

The University provides in-service courses for surveyors and assistant surveyors employed by Ministry of Agriculture, Fisheries and Food of one to three weeks in communication and also short courses on planning and evaluation for staff recently promoted to surveyor and senior surveyor.

UK 99

College of Estate Management,

Faculty of Urban and Regional Studies, University of Reading, Whiteknights, Reading RG6 2BU.

Administration:

The College has a link (IUC) in estate management with the University of Ife in Nigeria.

1 (***) SURVEYING

The College of Estate Management organizes correspondence courses for the professional examinations of the Royal Institution of Chartered Surveyors. Staff of Ministry of Agriculture, Fisheries and Food are encouraged to take these courses and also to attend pre-examination refresher courses at the College.

2 (***) ESTATE MANAGEMENT

Three years for B.Sc. in estate management.

3 (***) RURAL PLANNING

One further year for M.Sc. in rural planning.

UK 100

Polytechnic of the South Bank,

Borough Road, London SE1 OAA.

1 (***) FOOD TECHNOLOGY

There is a two-year full-time course for HND in food technology and a one-year full-time course for the College Diploma in Refrigeration Engineering for Road Transport.

2 (***) FOOD TECHNOLOGY/ESTATE MANAGEMENT

Included in courses available at this Polytechnic are four-year sandwich courses for B.Sc. in food science and estate management.

UK 101

Sunderland Polytechnic,

Chester Road, Sunderland, Co. Durham SR1 3SD.

1 (***) NAUTICAL STUDIES

Three years full-time for B.Sc. and B.Sc.Hons. in environmental science and for B.Sc. in nautical studies.

Entry standard:

Five GCE with two 'A' levels or four with three 'A' levels in specified subjects.

UK 102

University of Surrey,

Guildford, Surrey GU2 5XH.

Administration:

There is a link (IUC) in nutrition with the University of Ibadan, Nigeria.

NN: yes (300).

1 (***) FOOD SCIENCE

Three years for B.Sc. with possible specialization in nutrition (food science).

UK 103

Institute of Development Studies,

Andrew Cohen Building, University of Sussex, Falmer, Brighton BN1 9RE, Sussex.

Administration: The Institute was established by ODM in 1966 in association with the University. The four main areas of research are: rural development, human resources, national planning and government, and relations between rich and poor countries. Typical research projects include the implications of agricultural development in Bihar (India), and surveying life in 3,000 villages in less developed countries.

Finance: ODM.

1 (***) DEVELOPMENT STUDIES

Training by study seminars, study groups, and short courses for senior administrators from developing countries as well as for government officials in donor countries concerned with the developing world. Also short courses for university teachers from developing countries and for graduates proceeding to development studies. Topics for such courses include land tenure, distribution of rural income, etc.

UK 104

University College of Swansea,

Department of Social Administration, Singleton Park, Swansea, Glamorgan SA2 8PP.

Administration: This is a constituent institute of the University of Wales.

1 (***) RURAL DEVELOPMENT

One-year Masters Degree course in social planning including an option in rural development.

Entry standard: At least second class honours degree.

UK 105

Thames Polytechnic,

Wellington Street, Woolwich, London SE18 6PF.

1 (***) BUSINESS STUDIES

Three years sandwich for HND in business studies with bias to rural land use studies.

2 (***) ESTATE MANAGEMENT

Three years full-time for B.Sc. in estate management.

UK 106

Victoria University of Manchester,

Faculty of Economic and Social Studies, Department of Economics, Dover Street, Manchester M13 3PL.

Administration: There is a centre for urban and regional research undertaking projects such as landscape evaluation.

TP: 1,000 in Fac.Econ. & Social Studies. NN: yes.

1 (***) AGRICULTURAL ECONOMICS

Three years for B.A. (Econ.) in agricultural economics.

Entry standard: Usual university entrance.

2 (***) AGRICULTURAL ECONOMICS/DEVELOPMENT

One to three years for M.A. (Econ.) in agricultural economics or for M.A. in general economics including agricultural economics. One year for postgraduate diploma in economic development with option in agricultural development for holders of a degree in economics or related fields.

UK 107

University College of Wales,

Old College, Aberystwyth, Dyfed, Wales SY23 2AX.

Administration: This is a constituent institute of the University of Wales. The Welsh Plant Breeding Station is nearby. Agriculture, etc. comes within the Faculty of Rural Science.

TP: c. 200 in Fac.Rur.Sci. NN: yes.

1 (***) SUNDRY

Three years for B.Sc. Hons. in agriculture, agricultural botany, or agricultural economics.

Entry standard: Usual university entrance.

2 (***) SUNDRY

There are one year postgraduate diplomas in agriculture, agricultural botany, agricultural economics, agricultural bio-chemistry (soil science). One or two-year courses for M.Sc. in agriculture, agricultural engineering, agricultural botany (plant breeding) and agricultural economics, with special courses in genetics and plant breeding, grassland studies, ruminant health and production.

UK 108

Wolverhampton Technical Teacher College,

Compton Road West, Wolverhampton WV3 9DX.

Administration: This is a constituent college of the School of Education of the University of Birmingham. Established 1961 to train for teaching careers in further education.

Cal: Sep/Dec, Jan/Mar, Apr/Jun. TP: cap. 400. RA: for 144.

1 (***) AGRICULTURAL EDUCATION

Twelve-week course starting mid-September for teachers of natural resources subjects in overseas colleges.

2 (***) AGRICULTURAL EDUCATION

One year full-time (or two years sandwich or day release) for Certificate of Education of University of Birmingham School of Education for trainee teachers of agricultural subjects.

Entry standard: Age 24 plus. University degree or diploma, or HND, or ND, or City and Guilds full Technology Certificate, etc. in relevant subjects.

UK 109

Directorate of Overseas Surveys,

Kingston Road, Tolworth, Surbiton, Surrey.

Administration: This is one of the scientific units of the Ministry of Overseas Development. Its work is undertaken at the request of overseas Governments and is part of the British aid programme.

1 (***) SURVEYING/LAND DEVELOPMENT

Practical training attachments to the Mapping Division are arranged for a limited number of Government-sponsored technician cartographers, photogrammetrists and photographers. A limited number of overseas surveyors are given practical field experience by attachment to Directorate field survey parties working in their own country. The Land Resources Division arranges instructional attachments and provides a number of short training courses for professional personnel.

UK 110

Tropical Products Institute,

56/62 Gray's Inn Road, London WC2.

Administration:

Founded 1894, the Institute is administered by ODM since 1965. The Tropical Stored Product Centre at Slough is part of it. It is concerned with cereals and other durable foods and deals with problems of storage, insect infestation, etc. It has an Industrial Development Department at Culham, Oxford, which is concerned with the use of agricultural products, etc. production of bread from cassava, design of machines to process cashew nuts, etc. The main purpose is research and advice on the use of tropical products. TPI considers training to be one of its most important duties. It provides training for scientists from developing countries and also for those from the more developed countries who will be working overseas.

TPI is not an academic establishment nor does it award degrees or diplomas. The training provided is of a practical nature and is designed to equip trainees to do specific jobs and to help them solve their own problems.

Training can be given in most sections of TPI and trainees normally work alongside the Institute's own staff on a programme designed to meet their individual needs.

1 (***) FOOD TECHNOLOGY

One-month formal course in the storage of durable agricultural products in the tropics, followed by individual training where necessary. The total period of training is usually at least three months. This course is organized by the Institute's Storage Department (Tropical Stored Products Centre) at Slough, Berkshire.

2 (***) FOOD TECHNOLOGY

Three-month courses in food technology including a period working in industry. These courses are organized by TPI on behalf of United Nations Industrial Development Organization and financed by ODM and UNIDO. Each course covers a specific subject. So far courses have been held in Cereal Processing (2) and Fruit and Vegetable Processing (2). Courses are held every 18 months and details are circulated to governments by UNIDO to whom applications must be submitted.

Entry standard:

Trainees are normally graduates or have other appropriate qualifications and relevant experience and must be fluent in the English language.

AGRICULTURE IN SCOTLAND

About 6.5m hectares of Scotland's 7.7m hectares of land are in some form of agricultural use and 0.8m hectares is forest and scrub land; but nearly three-quarters of the agricultural land is hill or rough grazings used also to a large extent as deer forest and for sporting purposes.

Cool summers and mild winters, together with varied soil types and geographic patterns make for a wide diversity of agricultural practices, and the production of grass as a crop which enables all the year round grazing of stock on the hills and uplands is a feature unique in Europe. While these same climatic and environmental factors tend to reduce the importance of cereal cropping in Scotland, dairy farming provides the second largest farm group, and in many regions there are concentrations of units devoted to intensive production of pigs, poultry, horticulture and fruit.

Scottish agriculture is a modern efficient industry with livestock and livestock products accounting for more than 75 per cent of the country's agricultural output. Having the backing of eight Government-financed Agricultural Research Institutes and another two Institutes funded by the Agricultural Research Council, many breeds of cattle and sheep have been developed; and the high standard of animal health achieved facilitates the free movement of Scottish livestock in world markets. Tenure of about 18,000 crofts by some 14,000 crofters (occupying 0.8m hectares) is a distinctive feature of the Highlands and Islands where generally their land only is rented and Government grants and loans enable them to maintain their buildings for farming and other occupations.

Government policy generally since 1947 has been the promotion and maintenance of a stable industry, at minimum production costs, commensurate with proper remuneration and living conditions; and an adequate return on capital investment which is encouraged by a substantial measure of grant aid.

About 900 new entrants are introduced to Scottish agriculture each year and at least two-thirds of those take advantage of the Government facilities for education and training.

The educational requirements of agriculture for all areas of Scotland are covered at diploma level by three Central Institution Colleges of Agriculture, at Edinburgh, at Aberdeen, and at Auchincruive, Ayr. These Colleges, which are 100 per cent grant assisted, provide courses in agriculture and horticulture reaching to HND and OND (except in Edinburgh), with over 100 diplomas being awarded annually; and they run specialist post-diploma courses and various short courses. Most diplomates return to practical agriculture, and over half are farmers' sons. These three Agricultural Colleges also provide comprehensive advisory services, backed by experimental and development work, to commercial agriculture and horticulture in their areas. The Universities of Edinburgh and Aberdeen provide courses leading to Ordinary, Honours and Higher Degrees in agriculture and related subjects.

Below diploma level agricultural education is provided by Local Education Authority (Further Education) Colleges and Centres, preparing students for the City and Guilds London Institute examinations (normally to Stage II in three years) and the craft proficiency standards required for associated training. Most students qualify through Day Release or Block Release attendances. At three LEA Agricultural Colleges (in Aberdeen, West Lothian, and Fife) one-year full-time courses are run for the National Certificate of Agriculture - NCA; and in Fife also a NC Horticulture Course is available. Short courses in specific subjects are run at about 20 other Centres, and at Elmwood in Fife students can obtain an Agriculture Secretarial Diploma or qualify for National Certificates in Secretarial, Farm Management, Agricultural Engineering, and Food Technology.

Training at craft level is the responsibility of the Agriculture Ministers operating through the State-aided Agricultural Training Board and whose Regional activities in Scotland are guided by a Scottish Training Committee widely representing the industry and education interests. A steady progress has been made in the provision of a wide range of short courses both on and off the farm, and covering all activities of the Industry. Recruitment of young persons for formal three year apprenticeship training is particularly encouraging. Tests of competence at craft level are taken independently by the Scottish Association of Young Farmer's Clubs.

UK 111

Aberdeen Technical College,
Gallowgate, Aberdeen ABG 1DN.

1 (**) AGRICULTURAL MECHANICS
Day release course in agricultural mechanics for City & Guilds 015.

UK 112

Clinterly Agricultural College,
Aberdeenshire.

Cal: Sep/Jun. NN: yes.

1 (**) AGRICULTURE/AGRICULTURAL MECHANICS
Day release course in agriculture Stage I and Stage II for City & Guilds 010, in farm operation and control for City & Guilds 020, and in farm business management for City & Guilds 025. There are also block release courses (sandwich) in agriculture for City & Guilds 010 Stage II and in agricultural mechanics for City & Guilds 015. There are also short link courses for school leavers to introduce them to agricultural subjects.

2 (**) AGRICULTURE
One year full-time for NC in agriculture.

Entry standard: Two passes in GCE or equivalent and one year's work experience.
Age 17 plus.

UK 113

Dumfries Technical College,
Church Street, Dumfries DG1 1EB.

1 (**) AGRICULTURAL MECHANICS
Block release (sandwich) course in agricultural mechanics for City & Guilds 015.

UK 114

Elmwood Agricultural and Technical College,
Cupar, Fife.

Cal: Sep/Jun. NN: yes.

1 (**) SUNDRY
Eight one-year full-time courses in subjects such as agricultural farm organization and management, horticulture and agricultural secretarial for NC or City & Guilds or Scottish Certificate of Education examinations.

2 (**) SUNDRY
There is also a two-year full-time course for Diploma for agricultural secretaries. There are short full-time courses as required in

subjects such as animal or crop husbandry, farm machinery, potato varieties and diseases. There are also eight block release or sandwich courses for various certificates in agriculture, horticulture, etc. and a similar number of day release courses. In addition there are link courses for school leavers in agriculture, horticulture and agricultural engineering.

Entry standard: As required for the specific examinations.

UK 115

Kingsway Technical College,
Old Glamis Road, Dundee DD3 8LE.

1 (*) HORTICULTURE
One year full-time for Scottish Certificate of Education in horticultural science.

Entry standard: No particular qualification.

2 (**) HORTICULTURE
Day release course for City & Guilds 011 in Horticultural Studies I and II.

UK 116

Inverness Technical College,
Longman Road, Inverness.

1 (**) FORESTRY
Block release in two separate six week periods within two years of practical training for Forestry Stage I City & Guilds Certificate at junior craft level, intended to meet the needs of those gaining their first few years forestry experience. Emphasis is on the practical application of the knowledge taught.

2 (**) FORESTRY
Also City & Guilds Forestry Stage II block release for a single six week period, at general craftsman level.

Entry standard: Entrants must have completed the Stage I Certificate or have the Woodman's Certificate or the Junior Certificate from the Royal Forestry Societies.

UK 117

Oatridge Agricultural College,
West Lothian.

1 (**) AGRICULTURE/AGRICULTURAL MECHANICS
Block release or sandwich for City & Guilds 010 Agriculture Stages I and II, City & Guilds 015 Agricultural Mechanics, City & Guilds 020 Farm Enterprise Operation and Control and City & Guilds 025 Farm Business Management. Also day release course for Agriculture Stage I and II and Farm Business Management. There is a school pupil link course in agriculture.

2 (**) AGRICULTURE
One year full-time for NC in agriculture.

Entry standard: Scottish Certificate of Education or GCE with two 'O' levels or City & Guilds Stage I. Age 17 plus with one year's practical experience.

3 (**) SUNDRY
Short full-time ad hoc in animal husbandry, crop husbandry, farm machinery, suckler beef management.

- UK 118 Stevenson College of Further Education,
Edinburgh.
- 1 (**) AGRICULTURAL MECHANICS
Block release or sandwich course for City & Guilds 015 in agricultural mechanics.
- UK 119 Woodburn House,
Glasgow.
- 1 (*) HORTICULTURE
One year full-time pre-employment in horticulture with no entry qualification. Also short link course for school pupils in horticulture.
- 2 (**) HORTICULTURE
Day release for City & Guilds 011 in horticulture Stages I and II.
- UK 120 Day Release Centres in Scotland.
- Apart from any listed separately there are 24 others which have day release courses in agricultural and horticultural subjects, such as agriculture for Stage I or Stage II of City & Guilds 010, and in agricultural mechanics for City & Guilds 015. Some of the centres also have link courses to introduce school leavers to agricultural subjects. Further information about these is available from:
- Scottish Education Department (Further Education Division),
8 George Street, Edinburgh EH2 2PF.
- UK 121 Buchan Technical College,
Argyll Road, Fraserburgh, Aberdeenshire AB4 5RF.
- Administration: Grampian Regional Council Education Committee.
- RA: no. NN: yes, Commonwealth citizens can attend as trainees but not as observers and would not be admissible to the D.O.T. examinations unless holding British nationality.
- 1 (**) NAUTICAL STUDIES/NAVIGATION
Courses of thirteen weeks for Second Hands and for Skippers starting in August, November or March.
- Entry standard: Four years at sea on board a fishing vessel for Second Hands course. For Skippers course, one year at sea after obtaining Second Hand Certificate.
- Note: Trainees are not prepared for skills of fishermen but are given the knowledge for passing the Department of Trade examinations for competency in handling vessels at sea.
- UK 122 Glasgow College of Nautical Studies,
21 Thistle Street, Glasgow G5 9XB.
- Administration: Corporation of Glasgow Education Authority.
- Finance: Local Government.
- Cal: Aug/Jun. RA: no.

1 (**) NAUTICAL STUDIES/NAVIGATION

Eight weeks for Second Hand (special) and Skipper (limited) and Second Hand (limited). Twelve weeks for Second Hand (full) and four months Skipper (full).

Entry standard: Four or five years suitable sea service in fishing craft. Age 21 plus except for course for Second Hand (limited) - age 19 plus.

Note: These courses are used by trainees sponsored by the White Fish Authority and the Regional Fishing Industry Organization.

UK 123

Leith Nautical College,

59 Commercial Street, Edinburgh EM 6NH.

Administration: Scottish Education Department. These courses are used by trainees sponsored by the White Fish Authority and the Regional Fishing Industry Organization.

Finance: Government.

Cal: Aug/Jul. TP: c. 20 per course. RA: yes.

1 (**) NAUTICAL STUDIES/NAVIGATION

Fifteen/sixteen-week courses for Second Hand/Skipper of fishing boats.

Entry standard: Set by the Department of Trade and Industry and includes some previous work experience.

UK 124

Robert Gordon's Institute of Technology,

Schoolhill, Aberdeen AB9 1FR.

Administration: Local Education Authority. These courses are used by trainees sponsored by the White Fish Authority and the Regional Fishing Industry Organization.

TP: c. 80. RA: no except British Sailors Society Hostel.

1 (**) NAUTICAL STUDIES/NAVIGATION

Fourteen-week courses for Second Hand for Skipper.

Entry standard: Sea service as set by Department of Trade and Industry.

2 (***) RESOURCES PLANNING

Two years full-time for M.Sc. of the University of Aberdeen in rural and regional resources planning.

Entry standard: Hons. degree in agriculture, architecture, botany, engineering, economics, forestry, geography, geology, soil science or zoology.

UK 125

Torry Research Station,

P.O. Box 31, 135 Abbey Road, Aberdeen AB9 8DG.

Administration: Ministry of Agriculture, Fisheries and Food.

Finance: Ministry of Agriculture, Fisheries and Food.

Cal: spring/autumn. TP: 40-50 p.a. RA: no, but help given.
NN: yes, occasionally through ODM.

1 (***) FISHERIES

One or two courses a year, lasting seven working days, in the technology of fish handling and processing.

Purpose: Improvement of trainee's technical competence in the job, and to establish closer links between Torry and the industry. The main role of the Station is to meet the needs of UK industry.

Entry standard: No particular requirements but participants are expected either to be experienced in management in the fish industry, or to have a suitable science degree or technical qualification.

UK 126 University of Aberdeen,
Aberdeen AB9 1AS.

Administration: The University has a Department of Forestry and a Department of Agriculture which together with the North of Scotland College of Agriculture (see following entry UK 127) forms the School of Agriculture. There is an Institute of Marine Biochemistry; other affiliated institutes are the Torry Research Laboratory (UK 125) and the Marine Laboratory of the Department of Agriculture and Fisheries of Scotland.

1 (***) FORESTRY
Three years full-time for B.Sc. (For), designated and four years B.Sc. (For) Hons.

Entry standard: Scottish Certificate of Education pass on the higher grade in chemistry and in a science, plus maths and physics on ordinary grade if not passed in higher; or GCE passes at 'A' level in two approved science subjects including chemistry, also physics and maths at 'O' level if not passed at 'A'. Direct entry to second year may be granted to holders of first degrees which include sufficient science subjects or GCE at 'A' or equivalent in chemistry, geology, physics or biology or botany or zoology (with high standards).

UK 127 North of Scotland College of Agriculture,
(University of Aberdeen), 581 King Street, Aberdeen AB9 1UD.

1 (**) AGRICULTURE/HORTICULTURE
Two years full-time or sandwich for OND in agriculture or horticulture or dairying.

Entry standard: Scottish Certificate of Education or four GCE 'O' levels in selected subjects; or NC in agriculture or horticulture or poultry at distinction level.

2 (***) SUNDRY
Three years full-time or sandwich for HND in agriculture, or in horticulture, or in dairying and food technology.

3 (***) CROP SCIENCE
Short full-time ad hoc courses in potato varieties and diseases.

4 (***) FARM MANAGEMENT
One-year full-time post-diploma in farm business organization and management.

5 (***) SUNDRY
Four years for B.Sc. (Agric.) in general agriculture. Five years full-time for B.Sc. Hons. in agricultural economics or animal science or plant science.

Entry standard: Usual university entrance with certain subject requirements according to course taken.

UK 128

University of Edinburgh,

Old College, Southbridge, Edinburgh EH8 9YL.

Administration: The University has a Department of Forestry and Natural Resources and a Faculty of Veterinary Medicine. It established jointly with ODM in 1970 a Centre for Tropical Veterinary Medicine (Easterbush, Midlothian). It has a Department of Agriculture which together with the East of Scotland College of Agriculture, forms the Edinburgh School of Agriculture (see next entry UK 129).

1 (***) FORESTRY

Four years for B.Sc. (Ecol. Sc.) with Hons. in ecology, forestry, resource management, or wild life and fish management. The first year course is mainly basic science and specialization is mostly in the fourth year. Practical work in field courses takes place in vacations.

Entry standard: Scottish Certificate of Education or GCE 'O' level in English and a foreign language plus higher or 'A' levels in chemistry and two from biology, maths, physics. Exemption from first year study is possible with three 'A' levels in high grades in relevant subjects.

2 (***) VETERINARY SCIENCE

Five years is required for B.V.M. and S.

3 (***) VETERINARY SCIENCE

One year postgraduate diploma in diagnostic veterinary pathology and in tropical animal health and production, tropical veterinary medicine and veterinary state medicine. Seven years after graduation it is possible to take D.V.M. and S.

4 (***) VETERINARY SCIENCE

Tuition (at the Centre for Tropical Veterinary Medicine) in the principles and practice of tropical veterinary medicine for people recruited by ODM for overseas posts, and for overseas students taking University Diploma in Tropical Veterinary Medicine. Also, training can be provided in research techniques.

UK 129

Edinburgh School of Agriculture,

(East of Scotland College of Agriculture), West Mains Road, Edinburgh EH9 3JG.

Administration: The School comprises the Department of Agriculture of University of Edinburgh and the East of Scotland College of Agriculture.

Cal: Sep/Jun. RA: yes.

1 (***) AGRICULTURE

Three years full-time or sandwich for HND in agriculture.

Entry standard: Scottish Certificate of Education with two passes at higher level and three at 'O' level; or four at 'O' level and one at 'A' level.

2 (***) CROP SCIENCE

One year full-time post-diploma in crop protection.

Entry standard: Degree in agriculture or HND plus one year's experience.

3 (***) SUNDRY

Short full-time courses as required in a number of subjects e.g. potato varieties and diseases.

4 (***) SUNDRY

Three years for B.Sc. (Ord.) and four years for B.Sc. Hons. in agriculture, or crop production or agricultural sciences, or agricultural economics.

UK 130

University of Glasgow,
Glasgow G12 8QQ.

Administration: The University has a Department of International Economic Studies and a Veterinary School. Qualifying courses for students reading for B.Sc. in agricultural sciences of the University are provided at the West of Scotland Agricultural College (see following entry UK 131). The University has a link (IUC) in veterinary medicine with the University of Nairobi, Kenya.

1 (***) VETERINARY SCIENCE
Five years full-time for B.V.M.S.

2 (***) VETERINARY SCIENCE
A further one year full-time or two years part-time for M.V.M.
after which two more years for D.V.M.

3 (***) DEVELOPMENT STUDIES
Nine-month course for a diploma in development policy, with option in agriculture and economic development, intended as pre-service and in-service training for those working on the practical side of development.

Entry standard: Usual hon. degree but some non-graduates are admitted if they have relevant experience.

UK 131

West of Scotland Agricultural College,
Auchincruive, Ayrshire KA6 5HW.

1 (*) POULTRY SCIENCE
One year full-time for Scottish Certificate in poultry husbandry.

Entry standard: No entry qualifications.

2 (**) AGRICULTURE/POULTRY SCIENCE
Two years sandwich for OND in agriculture or in poultry husbandry.

3 (**) HORTICULTURE/FOOD TECHNOLOGY
Three years sandwich for OND in food technology (dairy technology) or in horticulture.

4 (**) DAIRY SCIENCE/BEEKEEPING
Short full-time ad hoc in milk production technology and in beekeeping. Block release or sandwich courses in milk recording, cheese making and yoghurt and ice cream.

5 (***) AGRICULTURE
Three years full-time or sandwich for HND in food technology (dairy technology) or in agriculture.

6 (***) SUNDRY
Three years for B.Sc. (Agric.Sci.) and four years for Hons. The Hons. course provides specialization in agricultural botany, agricultural economics, agricultural chemistry, agricultural zoology, or animal nutrition. Also four years full-time for B.Sc.Hons. in horticulture (joint course with the University of Strathclyde and the University of Glasgow).

7 (***) SUNDRY
One year postgraduate in agricultural engineering for College Diploma. Two years post-HND or postgraduate course for membership of Institute of Biology, parts I and II.

United Kingdom

UK 132 Paisley College of Technology,
High Street, Paisley PA1 2BE.

Administration: Local Education Authority.

1 (***) LAND ECONOMICS

Four year sandwich for B.Sc. in land economics. The third year consists of professional training.

Entry standard: Five GCE passes including two at 'A' level or four with three at 'A' level.

UK 133 Stirling University,
Stirling FK9 4LA.

Administration: Started in 1967. Largely autonomous. The University has a unit of aquatic pathobiology.

1 (***) AQUATIC VETERINARY STUDIES

One-year courses for M.Sc. in aquatic veterinary studies.

UK 134 University of Strathclyde,
Church Street, Glasgow G1 1XW.

Administration: Founded by Royal Charter in 1964. The University has a link in land economy and in estate management with the University of Nigeria.

1 (***) HORTICULTURE/FOOD SCIENCE

Three years for B.Sc. and four years for B.Sc. Hons. in food science or in horticulture.

2 (***) DEVELOPMENT STUDIES

Two years for M.Sc. in development economics which can include agricultural and economic development as an option (first or upper second B.Sc. economics degree needed for entry). This course is given at the David Livingstone Institute of Overseas Development Studies, McCance Building, 16 Richmond Street, Glasgow G1 1XQ.

3 (***) SUNDRY

One year for postgraduate diploma in food and agricultural marketing or in environmental control engineering and resource utilization.

NORTHERN IRELAND

The land area of Northern Ireland is approximately 3.3 million acres of which 2,700,000, including 600,000 of rough grazing, are in agricultural use. The climate is temperate and equable, with prevailing south-westerly winds, but also humid, making the province suitable for the production of grass rather than for cropping, and resulting in concentration on livestock production. Agriculture is one of the most important industries employing about 8½ per cent of the total working population. Farming employs about 21,000 workers in addition to owners and their wives, the majority being members of the farmer's family. A further 20,000 workers are employed in industries ancillary to agriculture mainly in the processing of agricultural products such as meat, bacon, milk and eggs and also on the input side in the manufacture of feedingstuff and fertilizer. The industry provides 9 per cent of the total gross production of Northern Ireland, cattle and milk accounting for over half of the total gross output and pigs about one-seventh.

Northern Ireland farming is highly mechanized with 33,000 tractors in use and nearly all farms have a mains electricity supply. The traditional mixed farm with a large number of small enterprises has been replaced to a great extent by a more specialized unit with one main enterprise and only one or two subsidiary enterprises. There are nearly 34,000 farm businesses with an average size of 50 to 60 acres. The system of tenure is almost entirely one of owner occupation but a system of conacre (seasonal) letting is practised on about 20 per cent of the total agricultural areas, which brings a certain degree of flexibility into what would otherwise be a fairly rigid system of tenure. Since the beginning of the 1960s the number of farms has fallen by about 15,000 as the smaller uneconomic units are amalgamated with larger ones; thus farms are constantly decreasing in number and increasing in size and the type of farming has become more specialized.

The Northern Ireland Department of Agriculture operates partly as an agent for the Ministry of Agriculture, Fisheries and Food in the fields of economic support for agriculture and the implementation of the European Economic Community Common Agricultural Policy. The Department acts in its own right in the fields of research, education and advisory work; livestock improvement and animal health; crop improvement and plant health; improvement of the organization and efficiency of the marketing of agricultural products; development and control of processing and handling of agricultural products; arterial drainage and the control and development of inland navigation and recreational use of water; development of fisheries and provision of angling facilities; and commercial forestry together with the provision of forest parks and other forest amenities.

There is a long tradition of agricultural education in Northern Ireland and there are now three agricultural colleges - Greenmount Agricultural and Horticultural College near Antrim, Loughry College of Agriculture and Food Technology near Cookstown and Enniskillen Agricultural College. Agricultural subjects are not taught in primary schools in Northern Ireland but in some areas advisory officers of the Department of Agriculture teach such subjects in secondary schools and in other cases agricultural subjects are taught by the schools' rural science teachers.

UK 135Northern Ireland Department of Agriculture,

Dundonald House, Upper Newtonwards Road, Belfast BT4 35B.

The Department of Agriculture assists with part-time and day release courses in agricultural science and husbandry at a number of technical colleges as preliminary to entry to a full certificate course at an agricultural college.

UK 136Enniskillen Agricultural College,

Enniskillen, Co. Fermanagh.

Administration:

Department of Agriculture. The College lands cover about 235 acres and include a farm, run on commercial lines, with a dairy herd, a beef herd, and pigs, sheep and poultry. The College is linked to the Grassland Experimental Centre at Castle Archdale.

TP: 30 p.a. RA: yes.

1 ()** AGRICULTURE

One year certificate in agriculture equivalent to the NC in agriculture but with no formal entry requirements as it is intended for farmers and skilled workers.

Entry standard:

At least one year of practical experience. Age 17 plus.

UK 137 Greenmount Agricultural and Horticultural College,
Antrim, Co. Antrim.

Administration: Department of Agriculture. The College was established in 1912 by the Department of Agriculture and Technical Instruction. The College farms total over 500 acres and cover a number of specific enterprises. There is a dairy herd, a beef herd, a pig unit, a commercial sheep flock, a poultry plant, workshops, etc.

1 (**) AGRICULTURE/HORTICULTURE

One year for NC in commercial horticulture covering crop production of all types and one year for NC in agriculture with emphasis on livestock production.

Entry standard: No special entry qualifications, though good general education required for this course which is intended for farmers and skilled workers.

2 (**) AGRICULTURE/ANIMAL HUSBANDRY

One-year course in agriculture, intended for holders of a Certificate in Agriculture, for study in depth of two topics chosen from dairying, beef and sheep production, poultry, pigs. This leads to advanced NC in agriculture.

Entry standard: Minimum of four GCE 'O' level passes or appropriate national examination in agriculture.

3 (**) AGRICULTURE/ANIMAL HUSBANDRY

Two years for OND in agriculture with a bias towards animal husbandry.

UK 138 Loughry College of Agriculture and Food Science,
Cookstown, Co. Tyrone BT80 9AA.

Administration: This is a recognized college of Queens University of Belfast for which it gives degree courses. It also retains a number of courses below degree level on similar lines to other Colleges of Agriculture. The college has Departments of Agriculture, Communications, Engineering, Agricultural Science, Dairy Technology, Food Technology, and Poultry.

RA: yes.

1 (**) AGRICULTURE

Short full-time practical training courses of eight to ten weeks for new farmers and farm workers in pig production, milk production, beef production with certificates awarded after one year's subsequent work under occasional supervision.

2 (**) AGRICULTURE

Other courses of practical refresher training last sixteen weeks in various subjects.

3 (**) AGRICULTURE

One-year certificate course in agriculture with emphasis on livestock production for farmers and skilled operatives without education entry qualifications (usually with 45 participants). Also sixteen-week short certificate courses in agriculture.

4 (**) POULTRY HUSBANDRY/FOOD TECHNOLOGY

Three years sandwich for OND in poultry husbandry or in food technology (milk technology or general food technology).

5 (***) POULTRY HUSBANDRY/FOOD TECHNOLOGY

Three years sandwich for HND in poultry husbandry or in food technology (milk technology or advanced food technology).

6 (***) POULTRY, DAIRY OR FOOD SCIENCE

Postgraduate courses include fifteen months full-time for M.Agric. in poultry technology or dairy technology and M.Sc. (Food Science).

7 (***) AGRICULTURAL COMMUNICATION

One year full-time or three years part-time for post-HND or degree course in agricultural communication (Dip.Agr.Comm.) giving academic studies and practical training for agricultural advisory work or agricultural extension or other educational or training posts.

Entry standard: Degree or diploma in agriculture or a related subject.

UK 139

The Queens University of Belfast,

Faculty of Agriculture and Food Science, Newforge Lane,
Belfast BT9 59.

See also Loughry College of Agriculture and Food Science (UK 138).

1 (***) SUNDRY

Four years full-time for B.Agr. (Gen.) pass or hon. and for B.Agr. (Spec.) Hons. in agricultural bacteriology, agricultural chemistry, agricultural zoology, general agriculture, agricultural botany, or mycology and plant pathology. Also B.Sc. pass or hon. courses in food science.

Entry standard: Five GCE passes including English and two at 'A' level or four passes including English plus three 'A' levels. A science at 'A' level and maths at 'O' are essential. For the general agriculture course, farming experience and vacation work on farms are required.

This section lists a selection of the numerous research institutes in the United Kingdom. Postgraduate students and research workers, including those from developing countries, are accepted at many of these research centres, while others may provide advice or assistance to training officers seeking such facilities in a particular field.

UK 140

Agricultural Research Council,

160 Great Portland Street, London W1N 6DT.

The Agricultural Research Council is a Government-sponsored body, responsible for the organization and development of agricultural research and food research in Britain. The Council finances fourteen State-aided research institutes in England and Wales and nine directly controlled institutes. The eight State-aided institutes in Scotland are financed by the Department of Agriculture and Fisheries for Scotland, with the advice of the Council. The Council would be able to provide information about all the institutes which it supports, only some of which are listed here.

Entries UK 141 to 151 undertake work particularly relevant to developing countries.

UK 141 Rothamsted Experimental Station,
Harpenden, Herts.

This is the oldest Agricultural Research Station in the world and is now financed mainly through the Agricultural Research Council. It has experimental stations at Woburn in Bedfordshire and Broom's Barn (Sugar Beet) in Suffolk. Its work is divided under fourteen departments and concerns all aspects of research on arable crops except plant breeding. It co-operates closely with the Long Ashton Research Station of Bristol University and with East Malling Research Station at Maidstone in Kent.

UK 142 Pest Infestation Laboratory,
London Road, Slough, Bucks.

UK 143 Macaulay Institute for Soil Research,
Craigiebuckler, Aberdeen.

UK 144 National Institute of Agricultural Engineering,
Wrest Park, Silsoe, Bedfordshire.

The Institute has an Overseas Department. It has set up Agricultural Mechanization Centres in several developing countries. Some of these undertake the training of mechanics and machine operators. The Institute works with the Intermediate Technology Development Group to develop simple tools and machines.

UK 145 National Institute of Agricultural Engineering,
Scottish Station, Penicuk, Midlothian.

UK 146 Animal Virus Research Institute,
Pirbright, Surrey.

Started in 1924 under the Ministry of Agriculture but re-constituted in 1951 and now grant aided. It acts as the World Reference Laboratory for foot -and-mouth-disease. It also does research in African swine fever, African horse sickness, and rabies.

UK 147 Hannah Dairy Research Institute,
Ayr.

UK 148 Institute for Research on Animal Diseases,
Compton Manor Estate, Newbury, Berks.

The Institute is run by the Agricultural Research Council and is concerned with diseases of farm animals, mainly cattle, sheep and pigs.

UK 149

Grassland Research Institute,
Hurley, Near Maidenhead, Berks.

The Institute is financed by the Agricultural Research Council. It is the location of the Commonwealth Bureau of Pastures and Field Crops. It is concerned with growth and utilization of grass and other forage crops.

UK 150

National Institute for Research in Dairying,
Shinfield, Reading, Berks RG2 980.

Founded in 1912 and now financed largely by the Agricultural Research Council. The Institute forms part of the University of Reading. Its main concern is with problems of milk production and utilization. The Commonwealth Bureau of Dairy Science and Technology is nearby.

UK 151

National Institute of Agricultural Botany,
Huntingdon Road, Cambridge CB3 0LB.

The Institute is primarily concerned with serving the agricultural industry in Britain, but its work is widely known overseas, and as a result it has provided technical assistance to other countries. A considerable number of visitors from overseas are received every year.

Through various inter-governmental aid schemes and through its own Fellowship scheme, students and technicians are received for training and experience in the activities of the Institute.

At the request of both FAO and OEEC the Institute has organized training courses sponsored by these two bodies: for example, the training course on seed testing and seed production for representatives of developing countries arranged by the Ministry of Agriculture, Fisheries and Food as part of the British contribution to the FAO World Seed Campaign.

UK 152

Cotton Research Corporation,
14 Grosvenor Place, London SW1.

Formerly the Empire Cotton Growing Corporation, its work is largely financed by the several Governments for which it works. It provides staff for service overseas at Government Centres, usually administered by Ministries of Agriculture. It has advisory staff at Government Research Stations in Kenya, Malawi, Nigeria, Swaziland, Tanzania, Uganda and Zambia.

UK 153 to UK 166

The following research institutions can often provide fisheries research training facilities, sometimes with opportunities for postgraduate degree work.

UK 153

Fisheries Laboratory,
Lowestoft.

Investigation of marine fish resources, their conservation, ecology and rational exploitation. Fish biology and behaviour. Marine fish cultivation. The Laboratory has a special teaching arrangement with the University of East Anglia.

- UK 154 Fisheries Radiobiological Laboratory,
Hamilton Dock, Lowestoft.

Control and monitoring of radioactive waste disposals to surface waters and the seas. Impact of radioactivity on the aquatic environment.
- UK 155 Fisheries Laboratory,
Burnham-on-Crouch.

Investigation of shellfish resources, their conservation and rational exploitation. Marine pollution and its effects on living resources.
- UK 156 Fisheries Experiment Station,
Conway, Wales.

Artificial cultivation of shellfish. Shellfish biology.
- UK 157 Fisheries Laboratory,
Port Erin, Isle of Man.

Marine fish cultivation.
- UK 158 Salmon and Freshwater Fisheries Laboratory,
Whitehall Place, London SW1.

Salmon and freshwater fish investigations in England and Wales.
- UK 159 Fish Diseases Laboratory,
Weymouth.

Fish virology and bacteriology.
- UK 160 Torry Research Station,
Aberdeen.

Fish handling and processing. (See UK 125).
- UK 161 Humber Laboratory,
Hull.

Catch utilization.
- UK 162 Marine Laboratory,
Aberdeen.

Investigation of the marine fish and shellfish resources sought by Scottish vessels, their conservation, ecology and management. Studies on the effects of marine pollution. Fish pathology and parasitology. Fish capture studies. Salmonid cultivation. The Laboratory has a special teaching arrangement with the University of Aberdeen.

- UK 163 Freshwater Fisheries Laboratory,
Pitlochry.

Salmon and freshwater fish investigations in Scotland.
- UK 164 Marine Biological Association of the UK,
The Laboratory, Citadel Hill, Plymouth.

The Association has a number of senior university and research staff from overseas working on attachments for sabbatical periods. At a lower level some research workers on attachment combine their research with studies for a higher degree at Exeter but the number who can be accepted must be very limited because the MBA staff qualified to supervise higher degree work is few.

Short courses are organized twice a year, at Easter in marine phycology and at the end of the summer vacation in marine physiology for second or third year undergraduates for a total of 60-80 participants from a large number of universities and not particularly from Exeter.
- UK 165 Scottish Marine Biological Association,
Dunstaffnage Marine Research Laboratory, P.O. Box No.3, Oban, Argyll PA34 4AD.

Founded 1897 for research and education in marine science, the Association accepts a few graduates on attachment for research and supervised preparation of higher degrees of Stirling, Glasgow, Strathclyde and Dundee Universities. Most are from Stirling, where students registered for higher degrees in marine biology usually do their studies at the SMBA Research Laboratory at Oban.

The Association's Marine Station at Millport, Isle of Cumbrae runs an aquarium and holds courses in marine biology. There are two research vessels.
- UK 166 to 170 These research institutes are supported by the National Environment Research Council.
- UK 166 Institute for Marine Environmental Research,
67/69 Citadel Road, Plymouth PL1 3DH.
- UK 167 Institute of Marine Biochemistry,
St. Fittick's Road, Aberdeen AB1 3RA.
- UK 168 Unit of Marine Invertebrate Biology,
Menai Bridge, Gwynedd.
- UK 169 Freshwater Biological Association,
The Ferry House, Far Sawrey, Ambleside, Cumbria LA22 0LP.
- UK 170 River Laboratory,
East Stoke, Wareham, Dorset BH20 6BB.

UK 171

Forestry Commission,
25 Savile Row, London W1.

This has a good deal to offer for trainees on attachment or observers. It is particularly good at cost budgetting, nursery production, work study and harvesting of small dimension timber.

UK 172

Forest Research Station,
Alice Holt Road, Farnham, Surrey.

The station is operated by the Forestry Commission and aims to increase wood production by the treatment of sites, tree breeding, etc.

UK 173

Forest Research Station,
Edinburgh Centre of Rural Economy, Bush Estate, Near Edinburgh.

The Centre is operated by the Forestry Commission mainly to improve timber production by site treatment and tree breeding.

UK 174

Timber Research and Development Association,
26 Stone Street, London WC1.

UK 175

Institute of Tree Biology,
Edinburgh Centre of Rural Economy, Bush Estate, Near Edinburgh.

The Institute is being established by the National Environmental Research Council for fundamental research into factors affecting the health and growth of trees.

UK 176

Hydraulics Research Station,
Wallingford, Oxford OX10 8BA.

This station is under the Department of Environment and financed by the Government. Amongst other topics it is concerned with flood relief and the control of rivers and estuaries.

UK 177

Centre for Overseas Pest Research,
College House, Wrights Lane, London W8.

Administered as a direct dependency of OMD. It amalgamates the Anti-Locust Research Centre in London, Tropical Pesticides Headquarters and Information Unit, Tropical Pesticides Research Unit, and the Termite Research Unit. Its main function is to help overseas Governments and particularly those in the Tropics over pest problems in agriculture and in public health. It organizes training, and consultancy is an important part of the service.

UK 178

Natural Rubber Producers' Research Association,
19 Buckingham Street, London WC2, and at 56 Tewin Road,
Welwyn Garden City, Herts.

Founded in 1938 and financed largely from Malaysia. The Association works closely with the Rubber Institute of Malaya and undertakes research into scientific and technical problems in improving natural rubber production.

UK 179

Soil Association,
Walnut Tree Manor, Haughley, Stowmarket, Suffolk IP14 3RP.

Through its subsidiary, the Haughley Research Farms, the Association has laid down many of the essential conditions for a comparative investigation of the effects on the biological chain of soil/plant/animal/man/health of three different methods of husbandry. It is also concerned with the acute environmental problems created by present-day scientific and technological development.

UK 180

British Veterinary Association,
7 Mansfield Street, Portland Place, London W1M OAT.

The aim of the Association is advancement of knowledge in veterinary science. Full membership is open to persons on the Registers of the Royal College of Veterinary Surgeons and, in some cases, associated membership may be open to overseas veterinary workers.

The Association helps in arranging postgraduate refresher courses in a variety of subjects, some of which would aid individuals from developing countries. It is necessary to have veterinary qualifications acceptable to the Royal College of Veterinary Surgeons to permit practising in Britain.

UK 181

Animal Diseases Research Association,
408 Gilmerton Road, Edinburgh, Scotland.

Financed by the Department of Agriculture and Fisheries of Scotland, by Local Authorities and by Agricultural Societies. There are ten Inter-related Departments.

UK 182

Rowett Research Institute,
Bucksburn, Aberdeen, Scotland.

The aim of this Institute which houses the Commonwealth Bureau of Animal Nutrition is to advance understanding of the energy and material requirements of animals of agricultural importance, so as to enhance the quantity and quality of their production to meet the needs of man. The Institute provides living accommodation for research workers, especially from overseas parts of the Commonwealth, and facilities for postgraduate research and training in technical methods.

INTERNATIONAL AND REGIONAL

In this chapter, the information usually given at NN indicating whether nationals of other countries can be accepted is omitted except where there is a regional or other limitation on entrants to a course. Otherwise it can be assumed that courses are intended to be international.

The accepted initials for major international bodies are used, namely:

ECA	United Nations Economic Commission
FAO	Food and Agriculture Organization of the United Nations
IBRD	International Bank for Reconstruction and Development
ILO	International Labour Organization
OAS	Organization of American States
OECD	Organization for Economic Co-operation and Development
UN	United Nations
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Organization
USAID	United States Agency for International Development
WHO	World Health Organization

Otherwise initials are only used where the context makes it clear that they refer to a body already described in the same entry.

- INT 1 African Institute of Economic Development and Planning (IDEP),
B.P. 3186, Dakar, Senegal.
- Administration: Autonomous, but dependent on UN Economic Committee for Africa (ECA).
- Finance: UN.
- Lan: Eng. & French. Cal: Jan/Jul, Oct/Dec. TP: c. 40 per course. RA: no, but assistance given. NN: yes, all Africa.
- 1 (***) DEVELOPMENT PLANNING
Three-month course from October on planning techniques and development for African civil servants.
- 2 (***) DEVELOPMENT PLANNING
Six-month training course starting January for research fellows with three months lectures and tutorials in various fields of development and planning followed by three months research on a selected subject under Institute staff supervision.
- Purpose: To train specialists and senior officers in Government service or institutions for economic development and planning.
- Entry standard: University degree or equivalent plus relevant experience for courses one and two.
- 3 (***) RURAL DEVELOPMENT
Study groups, seminars, conferences, etc. are organized at Dakar in agrarian development. Similar courses and seminars are organized in different regions of Africa.
- INT 2 Agricultural Co-operative Development International,
1430 K Street, N.W. Washington, D.C. 2005, U.S.A.
Lan: Eng. & Spanish. TP: c. 30 per course.

1 (**) CO-OPERATIVE MANAGEMENT

Short courses in various locations and on different themes all associated with the development of co-operatives e.g. a course in 1975 in the Philippines with participants from most Asian countries on fertilizer production and procurement by co-operatives.

INT 3

Agricultural University,

389 Stradsbrink, Wageningen, The Netherlands.

Administration: Each year the Netherlands Government, the Netherlands Universities Foundation for International Co-operation, the Institute of Social Studies, and other Centres of Higher Education in the Netherlands co-operate in organizing courses of particular relevance to developing countries.

Finance: Mainly Netherlands Government.

Cal: Oct/Jun. RA: yes.

1 (****) SOIL SCIENCE AND WATER MANAGEMENT

Two years for M.Sc. in soil science and water management, including soil survey and land classification, soil fertility, soil and plant analysis and water management.

Purpose: To train specialists in soil science and water management for developing countries.

Entry standard: B.Sc. degree.

INT 4

Bangladesh Academy for Rural Development,

P.O. Kotbari, Comilla, Bangladesh.

Administration: See BAN 6. Apart from courses arranged nationally the Academy is used internationally for courses of one week to six months for those involved in rural development and nominated by agencies.

1 (****) SUNDRY

Topics of such courses are principles and practice of rural development, rural sociology, agricultural mechanization and extension, co-ops. and rural business management, rural administration and rural works, agricultural economics, etc.

INT 5

Bari Institute,

Via Amendola 165, 70126 - Bari, Italy.

Administration: Organized by OECD/Council of Europe as part of the International Centre for Advanced Mediterranean Agronomic Studies. The Bari Institute forms the Mediterranean Agronomic Institute for Land and Water Management and Rural Territory Development Planning.

Finance: International European sources.

Lan: Eng. or French. Cal: Oct/Jul. RA: yes.

1 (****) DEVELOPMENT PLANNING

Nine-month course in development planning for rural territories, with field studies in Southern Italy.

Entry standard: Participants must be graduates in agriculture, or forestry, or rural studies or agricultural engineering or a similar subject.

- INT 6 Caribbean Agricultural Research and Development Institute,
University of the West Indies, St. Augustine, Trinidad, West Indies.
- Administration: Autonomous. Controlled by member states of the Caribbean Community. CARDI took over the Regional Research Centre which was the Agricultural Research arm of the Faculty of Agriculture, U.W.I. CARDI was founded in 1975.
- Finance: Contributions from member countries.
- 1 (***
****) FOOD PROCESSING
Courses through resident programmes, workshops and seminars for the in-service training of agricultural officers, co-operative officers, etc. in the application of new technologies for the production, processing, storage and distribution of agricultural products.
- Entry standard: In-service.
- 2 (***
****) AGRICULTURAL RESEARCH
Training of graduates for research in any theme related to agriculture or development projected by any member state. Training will be carried out in association with U.W.I. and trainees may register for M.Sc. and Ph.D. degrees in the Faculty of Agriculture.
- Entry standard: Relevant first degree and selection for research capabilities.
Note: CARDI also expects to extend the application of new technologies related to agriculture by using mass media especially films to reach the rural community.
- INT 7 Caribbean Fisheries Training and Development Institute,
Western Main Road, Chaguaramas, Trinidad.
- Administration: Joint project of Governments of Barbados, Guyana, Trinidad and Tobago with FAO. Founded in 1974.
- Finance: UNDP and the three Governments.
Cal: Jan/Nov. TP: 45 p.a. RA: yes. NN: yes, but to date from 3 countries only, from other Carib. countries later.
- 1 (**
*) FISHERIES
Eleven months for Diploma in Deep Sea Fishery, for Trawler Skippers.
- Entry standard: Full primary and some secondary education plus sea experience and capability in maths.
- 2 (**
*) SUNDRY
The Institute plans to organize seminars and short courses on fish handling, quality control, fish processing, fishery extension work, fish marketing and product promotion, etc. It will also offer advisory services to the participating countries in various aspects of fisheries development.
- INT 8 Caribbean Meteorological Institute,
Husbands, St. James, (P.O. Box 130, Bridgetown), Barbados, W.I.
- Administration: Established in 1967 as a joint project of UNDP and World Meteorological Organization which terminated in 1972.
- Finance: The Institute is now financed collectively by 14 Caribbean Governments (all Commonwealth).
Cal: from May or Sep. TP: c. 50 p.a. incl. c. 6 in Agro-Met. RA: no, but advice given. NN: yes, from East Africa.

1 (**) AGRO-METEOROLOGY

Fifteen-week course, plus two months supervised on-the-job training at a suitable Meteorological Office, for meteorological assistants (Class IV of WMO regulations) divided into Aero-Meteorological and Agro-Meteorological observers.

Purpose: To train meteorological assistants for service in the Caribbean area.
Entry standard: GCE 'O' level in maths and physics.

2 (***) AGRO-METEOROLOGY

Eighteen weeks for senior meteorological assistants in agro-meteorology (Class III of WMO regulations). This is one of six specializations possible in courses at this level but the availability of the speciality depends on the staffing position which varies from year to year. Supplementary supervised on-the-job training may be required in some cases.

Purpose: To train senior meteorological staff for the Caribbean area.
Entry standard: Class IV Certificate plus some years meteorological experience.
Note: In association with the University of the West Indies (Cave Hill Campus in Barbados) the Institute runs a B.Sc. degree course in meteorology but this has no special bias towards agro-meteorology. Ad hoc courses are conducted from time to time in topics such as agro-meteorological observing practices.

INT 9

Caribbean Rural Development and Advisory Training Services (CARDATS)

St. Georges, Grenada.

Administration: United Nations Development Programme.

Finance: Mainly UNDP. Some support from FAO.

CARDATS is staffed by a team of local experts on rural development whose advice on agricultural extension and rural development training is made available on request to any Authorities in the Caribbean.

INT 10

Coady International Institute,

St. Francis Xavier University, Antigonish, Nova Scotia, Canada.

Administration: The Institute was founded in 1959 within the St. Francis Xavier University which had already achieved an international reputation for work in social action in the fields of co-ops. and community development in the Atlantic Provinces of Canada. The Institute is autonomous within the University and has its own residential and training facilities.

The Antigonish Movement which is associated with its founder, Dr. Coady, is based on the idea that social reform must come through the education of the individual and be made effective through group action. It is regarded as particularly relevant to social development in low-income areas of the world.

Cal: May/Nov. TP: c. 100 p.a. RA: yes. NN: from 99 countries incl. all Cw.

1 (***) CO-OPERATIVE MANAGEMENT

Seven-week vacation course June/August in social development with emphasis on co-ops. and intended for Government officials and staff of voluntary agencies, etc. engaged in development projects.

Entry standard: Experience in development work and some post-secondary education.

2 (***) RURAL DEVELOPMENT

Five-and-a-half-month diploma course in social development intended for leaders in community or Government projects, particularly co-ops. Although not specifically concerned with agriculture the course stresses the co-operative approach to development including agricultural aspects of rural development.

Entry standard: Good English, several years experience in development work and preferably a university degree.

INT 11

Delft University of Technology,

NUFFIC, Molenstraat 27, The Hague, The Netherlands.

Administration: See INT 3.

1 (***) HYDROLOGY/HYDRAULIC ENGINEERING

One-year courses leading to a diploma in hydraulic engineering including tropical irrigation or in hydrology.

Purpose: To train experts for developing countries.

Entry standard: A degree in civil engineering or a related subject and at least three years practical experience. For the hydrology course holders of degrees in forestry or agricultural engineering can be accepted if they have had experience in hydrology.

Eastern Caribbean Institute of Agriculture and Forestry.

See TT 5.

INT 12

F.A.O.,

Viale delle Terme di Caracalla, Rome 00100, Italy.

Administration: FAO is part of the United Nations. Amongst its regular activities it organizes numerous working parties, consultation with groups of experts, Government consultation meetings, regional conferences, and meetings of committees and commissions annually. In addition it occasionally organizes training courses, seminars, and other group training activities.

1 (***) SUNDRY

Typical of FAO training activities are:

Seminars

- Land settlement and land tenure problems with particular reference to arid and semi-arid areas;
- Training facilities for land tenure, settlement and production structure specialists;
- Reclamation and development of lands under dry farming;
- Forest tree physiology;
- Fish marketing (OAS/FAO);
- Trypanosomiasis (FAO/WHO);
- Group for Assistance on Storage of Grains in Africa (technical seminar);

Training courses

- Wildlife and park management for field personnel in Africa;
- Agricultural planning (fifteen weeks);

Workshop

- Farm management in the Far East.

Short courses at the request of FAO member countries in agricultural planning, sector and project analysis, etc.

Entry standard: Seminars, etc. are intended for qualified and experienced trainees who are selected usually by the member nations in consultation with FAO.

- INT 13 International Agricultural Centre,
Lawickse Allee 11, P.O. Box 88, Wageningen, The Netherlands.
- Administration: See INT 3.
- These are courses planned for 1976/7. Similar, not necessarily identical, courses are likely to take place in subsequent years.
- 1 (**) PIG HUSBANDRY/POULTRY HUSBANDRY
Six-month international courses on pig and poultry husbandry.
- Purpose: Refresher and up-dating courses for practical farmers.
- Entry standard: Secondary School Certificate with several years experience in pig or poultry farming.
- 2 (***) AGRICULTURE
Individual specialist programmes in agricultural sciences usually from 3-6 months.
- Entry standard: Scientists with several years field experience.
- 3 (***) SUNDRY
International courses on plant protection (3½ months), potato production (3 months), plant breeding (3 months), vegetable growing (3½ months), land drainage (3½ months), dairy cattle husbandry (1 month), rural extension (1 month).
- Purpose: To refresh or extend knowledge for those with practical experience from developing countries.
- Entry standard: Relevant degree.
-
- INT 14 International Board for Plant Genetic Resources,
c/o F.A.O., Plant Production and Protection Division, Viale delle Terme di Caracalla, Rome 00100, Italy.
- Administration: Started in 1974 but is only now beginning to be active.
- 1 (***) PLANT GENETICS
The major training activity so far is an annual grant to the Department of Botany, University of Birmingham, to double the number of students from 10 to 20 in the M.Sc. course in genetic conservation and utilization (see INT 44/1).
- Further training activities will be in the form of fellowships for research workers and for national or regional workshops, and training courses for various levels of personnel engaged in genetic resources work.
-
- INT 15 International Centre for Advanced Technical and Vocational Training,
Via Ventimiglia 201, Turin, Italy.
- Administration: ILO.
- Finance: ILO and national sponsoring organizations.
- Lan: Eng. or French (separate courses). TP: c. 1,000 p.a., 20-30 per course. NN: from 40 Cw. territories. 35 participants in Agric. from 12 Cw. countries recently.
- 1 (**) SUNDRY
The primary activity of the Centre is a series of training courses at post-experience level for managers, training officers, etc. including those from the agricultural sector. Most courses result

from specific demands from governments, organizations or agencies for courses designed to meet particular requirements. Hence most courses are restricted to nominees of the sponsoring body. However, some courses are open to any nominees having adequate technical qualifications and having financial support.

Some relevant courses have been in - Management of the agricultural enterprise; Production management for processing agricultural products; Management of the forestry training institution; Management of agricultural co-ops; Training of rural workers.

Most courses last 12 weeks.

Entry standard: Variable depending on the topic but all require some seniority and considerable work experience.

INT 16 International Centre for Insect Physiology and Ecology,
Box 30772, Nairobi, Kenya.

Administration: The Institute is located on the Chiromo Campus of the University of Nairobi.

1 (***) RESEARCH TECHNIQUES
Ad hoc special training courses for postgraduates and for senior technicians in research techniques related to insect studies.

INT 17 International Co-operative Alliance,
11 Upper Grosvenor Street, London W1X 9PA, UK.

Administration: Founded in 1895 as a world wide confederation of co-operative organizations of all types. Affiliates in 64 countries and two regional offices, in Tanzania (INT 18) and in India (INT 19).

1 (*) CO-OPERATIVE MANAGEMENT
Short courses in various locations e.g. in 1975, two week seminar on assistance for co-ops. in developing countries held in Dresden, GDR, and attended by 50 member organizations; and a world conference on co-operative fisheries held in Tokyo.

INT 18 International Co-operative Alliance,
Regional Office for East and Central Africa, P.O. 946, Moshi, Tanzania.

Administration: See INT 17. This regional office opened in 1968.

1 (*) CO-OPERATIVE MANAGEMENT
Short courses usually of one week in various locations in East and Central Africa e.g. in 1975 one-week courses for co-op. leaders - on multi-purpose co-ops. in rural development held in Dar es Salaam, and on fishermen co-ops. held in Kampala.

INT 19 International Co-operative Alliance,
Regional Office and Education Centre for South East Asia, 43 Friends' Colony, New Delhi, India.

Administration: See INT 17. This regional centre opened in 1960.

1 (**) CO-OPERATIVE MANAGEMENT

Short courses at various locations in South and South-East Asia e.g. a three-week course in Gujarat in India on the development of dairy co-ops. with 25 participants from Asian countries; a three-week course on agricultural co-operative marketing in Tokyo with 25 participants from Asian countries and Australia.

INT 20

International Co-operative Training Centre,

Co-operative College, Stanford Hall, Loughborough, Leicestershire, UK.

Administration:

The centre is part of the Co-operative College set up more than 50 years ago by the British Co-operative Union. It organizes a variety of courses of which the following are typical.

1 (***) CO-OPERATIVE MARKETING

Three-month short course in 1975 on co-operative marketing, for about 12 staff of co-ops. in developing countries, assisted by British Government/British Council.

2 (***) CO-OPERATIVE MANAGEMENT

Three-month specialist courses are planned in 1976/7 in management of a co-operative enterprise, and in education and training for co-ops., intended for 10 participants each, all from developing countries and all doing relevant work.

3 (**) CO-OPERATIVE MANAGEMENT

Ten-month course for Certificate in Co-operative Management and Administration awarded by the British Co-operative Union, for 15 participants, men or women, all of whom must be doing relevant work in a developing country.

4 (****) CO-OPERATIVE MANAGEMENT

Ten-month (October/June) course for Diploma in Co-operative Development awarded jointly with Loughborough University of Technology. Candidates should either have a university degree or qualifications indicating ability to benefit from a university level course.

5 (****) CO-OPERATIVE MANAGEMENT

Special one-month course in Ghana organized for the Ghana Co-operative College on the training of teachers of co-op. staff, with 20 participants.

6 (****) CO-OPERATIVE MANAGEMENT

Three-month course on education and training for co-ops. for 12 participants from developing countries.

7 (****) CO-OPERATIVE MANAGEMENT

A new activity is a two month seminar April/June 1977 described as a Workshop for Policy Makers. This is intended for senior co-operative staff to enable them to work on case studies, analyse problems of co-operation in their own countries and join in group evaluation. Participants will be limited to 10 and all will need good English. They are expected to be Permanent Secretaries, Registrars or Senior Officials of major co-operative organizations.

INT 21

International Crop Research Institute for Semi-Arid Tropics,
1-11-256, Begumpet, Hyderabad 500016, A.P., India.

Administration: ICRISAT was established in 1972 on a site of 1,400 hectares provided by Government of India, near Hyderabad. The station includes two different soil types typical of semi-arid tropical countries. Its research programme has four main objectives - as a World Centre for the improvement of yield and quality of sorghum, pearl millet, pigeonpea, chickpea and groundnuts; to develop farming systems for the better use of national and human resources in seasonally dry semi-arid tropics; to evaluate ways of overcoming difficulties for agricultural development in such areas; and to co-operate with national and regional research programmes through conferences, training programmes, and help with extension activities.

Finance: Supported by the Consultative Group on International Agricultural Research representing 29 organizations including 17 Governments. Major financial support has come from the Governments of Canada, Federal Republic of Germany, Norway, Sweden, Switzerland, Thailand, UK and USA and from IBRD, UNDP, etc.

TP: 20. RA: yes, a temporary hostel for 20 men. A new hostel is being built for 1977. NN: in first two years, 12 trainees from Nigeria (all in crop production), 14 from India, one from Bangladesh, and 5 from outside Cw.

The training programme is being developed insofar as temporary accommodation permits but will not be fully active until the building programme is completed mid 1977. Meanwhile training opportunities are provided for one or two years for research fellows, for research scholars for as long as required by university regulations, and for in-service trainees.

1 (**) FARM MANAGEMENT

Two months short-term in-service training for Engineering Apprentices in farm development and management.

2 (***) RESEARCH TECHNIQUES

Six months in-service special training in entomology, pathology, physiology, or agricultural economics.

3 (***) CROP HUSBANDRY

Long-term in-service training in crop production or improvement of specific crops, from six to ten months, and farming systems for six months from May. Starting dates for the crop courses are May for sorghum, millet, groundnuts and pigeonpea and September for chickpea.

4 (***) AGRICULTURAL RESEARCH

Research Fellowships and Scholarships for one or two years.

Purpose: Research training is intended to develop technical and managerial skills in specialized sciences related to increased food production in semi-arid tropics. Production training is largely focused on practical skills in identifying and reducing factors which limit crop production and in assessing and adapting improved crop and management techniques.

Entry standard: For 2, 3, 4 above, trainees should be scientists specializing in relevant subjects with good knowledge of English. Priority is given to candidates from semi-arid tropic programmes linked to ICRISAT. Intensive two-month pre-course English is essential for trainees without competence in English. Research programmes require qualifications acceptable to the university concerned.

- INT 22 International Development Research Centre,
Box 8500, Ottawa, Canada K1G 3H9.
- Administration: Founded in 1970 by Act of the Canadian Parliament to finance research by scientists in developing countries.
- Finance: Canadian Government.
- 1 (***) SUNDRY
The Centre does not provide courses but includes training fellowships in most of its research projects. These cover all aspects of development and particularly plant science, animal sciences, fisheries, forestry, nutrition and home sciences. The training of young scientists can be on projects in their own region or at academic institutions elsewhere, and at undergraduate or graduate level.
- Purpose: To support and conduct research in developing countries in the fields of agriculture, food and nutrition sciences and in other fields associated with development.
-
- INT 23 International Institute for Aerial Survey and Earth Sciences,
P.O. Box 6, Enschede, The Netherlands.
- Administration: See INT 3.
- 1 (***) SUNDRY
There are a number of courses of varying lengths in geomorphology and geographical landscape analysis, in soil surveys, in forest surveys and in rural surveys leading to certificates, diplomas or M.Sc. degree.
- Purpose: To train experts for developing countries.
- Entry standard: B.Sc. in a relevant subject according to the course.
-
- INT 24 International Institute of Tropical Agriculture,
Oyo Road, P.M.B. 5320, Ibadan, Oyo State, Nigeria.
- Administration: Established in 1967 when the Nigerian Government made available land for the Institute which is administered by a Board of Trustees drawn from 11 countries including five in Africa.
- Finance: Initial capital funds for building came from Ford Foundation. Other agencies such as Rockefeller Foundation, Canadian International Development Agency, USAID and the Netherlands Government provided funds for equipment. The same Agencies together with the World Bank and the Governments of UK, Belgium and the Federal Republic of Germany provide operating funds and funds for special projects.
- Lan: Eng. but French speakers accepted on some courses. TP: 30 per course. RA: yes.
- Research is divided into four programmes: 1) Farming Systems including soil fertility, soil erosion, pest control; 2) Grain Legume improvement; 3) Cereal improvement and 4) Root and Tuber improvement. The training programme is an important part of IITA total activities and is designed to develop research skills in order to improve quantity and quality of food in the lowland humid tropics. Trainees work in close association with IITA scientists in all disciplines. As well as training for research workers, IITA has production training schemes primarily for extension leaders providing a training period of about 6 months when every aspect of producing a specific crop is taught. The intention is to "train the trainers".

Since 1973 IITA has also had a co-operative programme through which it assists on-the-spot with research management for food crop production. These joint projects with a number of countries include variety testing and crop management experiments and are linked to opportunities for training at Ibadan for national research and extension workers.

Typical courses are:-

1 (***) CROP PRODUCTION

Three months in maize production technology for extension supervisors and research workers, held in 1974.

Entry standard: At least two years education beyond secondary school level and already holding or named for extension supervisory duties or research in maize production improvement.

2 (***) CROP PRODUCTION

Fifteen-week training course in grain legume production technology for research workers in tropical Africa, late 1976.

Entry standard: Two years education beyond secondary school level.

3 (***) CROP PRODUCTION

Eight-week training in cassava production technology for research workers and extension leaders concerned with the improvement of cassava production in tropical Africa, early 1976.

Entry standard: Two years education beyond secondary school level.

4 (***) SOIL AND WATER CONSERVATION

Four-week training course and workshop for soil and water conservation for workers engaged in research in these fields in the humid tropics of Africa, Asia and Latin America, early 1976.

Entry standard: Ph.D. or M.Sc. in relevant fields. B.Sc. acceptable if with field experience or relevant research.

INT 25

International Laboratory for Research on Animal Diseases,

P.O. Box 47543, Nairobi, Kenya.

Administration: Initiated in 1973 as a result of the report of the Consultative Group on International Agricultural Research to the Government of Kenya which agreed to its location in Nairobi. (The Consultative Group was founded in 1971, sponsored by the World Bank, FAO and UNDP.)

While awaiting the construction of permanent premises to be completed in 1977/8 ILRAD uses space provided by the University of Nairobi Medical School and the WHO Immunology Training Centre.

Finance: Government of Kenya with World Bank, FAO and UNDP assistance.
RA: yes.

1 (***) SUNDRY

There will probably not be regular courses but training is an essential part of the project. Provision is made for research workers spending a sabbatical year at ILRAD and for visiting scientists. Special training assistance can be arranged to help develop national institutes and programmes.

Purpose: The research and training laboratory will concentrate on a few important problems to ensure maximum benefit from the work of the small permanent staff, supplemented by a large number of post-graduate students and other researchers from many countries. The

primary purpose is therefore to develop immunological procedures for the prevention of trypanosomiasis and East Coast fever in cattle. Increased livestock production in Middle Africa South of the Sahara depends largely on progress in control of these two infections. ILRAD, apart from its research work, organizes discussion groups, seminars, workshops and conferences; and conducts formal and on-the-job training of scientists and specialist technicians. Training at the post-doctoral level is one of the major activities.

INT 26

International Livestock Centre for Africa,
P.O. Box 5689, Addis Ababa, Ethiopia.

Finance:

Mainly World Bank.

1 (***) SUNDRY

This Centre expects to inaugurate training courses before the end of 1976. In the first phase, courses for livestock specialists in-service training will be arranged on subjects to be defined after discussion with specialists in African livestock. A workshop on evaluation and mapping of tropical range land is planned for late in 1976 for research scientists and specialists in development. Another topic for planned meetings/workshops is methodology in the field of animal production.

Full scale postgraduate training will not start until the building of premises is completed probably in mid 1978.

INT 27

International Rice Research Institute,
P.O. Box 583, Manila, The Philippines.

Administration:

Private, non-profit making.

Finance:

Originally established by equal finance from Ford Foundation, Rockefeller and USAID. Assisted in 1972 by British aid through IRRI Rice Varietal Improvement Programme.

Cal: from Jun/Jul each yr. TP: c. 100 p.a. RA: yes.

1 (**) RICE PRODUCTION

Six-months training in rice production including half the time on practical field work.

2 (**) RICE PRODUCTION

Four-months training in multiple cropping, for food production in a tropical environment.

3 (***) RICE PRODUCTION

Degree courses are given in association with the University of the Philippines and other universities; programmes at IRRI usually last two years.

4 (***) RESEARCH TECHNIQUES

There are postgraduate non-degree courses, usually one year, to enable senior graduates to gain research experience.

INT 28

Japan International Co-operation Agency,
42 Ichgayahonmura-cho, Shinjuku, Tokyo, Japan.

1 (**) CO-OPERATIVE MANAGEMENT

Short courses in Japan, in English, e.g. in 1975, four weeks for 15 participants from S.E. Asia on the role of co-ops. in agricultural development; three weeks also for participants from S.E. Asia on agricultural co-ops. in community development; and three months for 20 participants from Asian and African countries on multi-purpose agricultural co-operatives.

INT 29

Kristianstad-Blekinge Slakteriforening,
Box 568, 291 25 Kristianstad, Sweden.

Administration: This is a large producer co-operative owned by 7,000 cattle- and pig-raising farmers in Sweden and employing 1,000 persons in the slaughterhouse, factory and head office. On average 11,000 pigs and 600 cattle are slaughtered each week and the factory produces weekly about 100 tons of different meat products with an additional 100 tons of canned products. There is also a central kitchen producing 25,000 hot meals each day which are sent out in special containers to 150 schools and 50 industrial establishments.

1 (**) MEAT TECHNOLOGY

Many trainees from other countries have attended to study both practical and theoretical aspects of meat plant operation. Such training is by a period of attachment from one to six months and includes training, lectures and discussions with specialists in the subjects of most relevance to the trainee's home country. A text-book in English covering the whole syllabus is available. Short courses have been arranged on behalf of UNIDO. Courses deal mainly with abattoir management, meat plant technology, and economic subjects. The importance of meat inspection is stressed but no specialized training is given in this (courses are available at the Royal Veterinary College in Stockholm).

INT 30

Mount Carmel International Training Centre for Community Services,
12 David Pinsky Street, Haifa, Israel.

Administration: Started in 1961 partly as a result of the UN Regional seminar for African women in Addis Ababa in 1960. The International Training Centre is part of the Mount Carmel Training Centre and arranges courses in co-operation with the Foreign Training Department of the Ministry of Agriculture of Israel as well as with International Agencies such as UNIDO.

Finance: From three main sources, the Israel Association for International Co-operation, the Haifa Municipality and the Swedish International Development Authority (SIDA), but with support for scholarships from specialized agencies of UN and from other International Organizations.

Cal: variable. TP: c. 200 p.a. RA: yes.

The whole purpose of the Centre is to assist development in the poorer and less privileged parts of the World by providing training and educational opportunities for women and especially to inculcate a pioneering spirit in middle level personnel. By 1974 nearly 2,000 had attended seminars and courses at the Centre. Twenty-three Commonwealth countries have sent participants, mainly Africa but with significant numbers also from India (70) and Cyprus (50). Food and applied nutrition and rural community development have always received high priority in programmes at the Centre.

1 (***) COMMUNITY DEVELOPMENT

Eight-month course November/June on rural community development, in two sections, with basic concepts and part of the applied studies and methods given at Mount Carmel Training Centre, and practical work in vegetable gardening and poultry husbandry and studies of extension methods given at the Ruppin Agricultural College.

International

Purpose: To train rural community development workers for developing countries.

Entry standard: Intended for women engaged in planning supervision and training of field workers in community development, agriculture, health and education in rural areas. However, applications from men can also be considered. Full secondary education plus relevant professional training plus three years practical experience and good English.

2 (***) SUNDRY

The International Training Centre also has courses on subjects such as promotion and marketing of handicrafts. There are also short two-week study tour courses e.g. one on rural community development early in 1976 with students from eight Asian, African, and Caribbean countries. Such short intensive study tours are intended for planners and administrators to observe and compare projects and techniques in rural development work. There are usually 12-15 participants.

INT 31

National Agricultural College,

P.O. Box 7, Deventer, The Netherlands.

Administration: See INT 3.

1 (***) SUNDRY

International courses in farm management and co-operation, tropical animal production and farm mechanization. All three courses last an academic year (10 months) and lead to a diploma.

Purpose: To provide thorough practical and theoretical courses for trainees from developing countries.

Entry standard: Certificate from a School of Agriculture and relevant field experience.

INT 32

National Board for Vocational Education,

Hakaniemenkatu 2, 00530 Helsinki 53, Finland.

Administration: Department of Forestry Education of the Government of Finland.

Finance: Government of Finland.

Cal: variable. TP: 20 per course. RA: yes. NN: courses are entirely international but each course may be focused on a particular region.

1 (***) TIMBER TECHNOLOGY

Four week seminar in 1976 for experts from African countries in the use of timber for the production of wood-base panels. Other courses are planned for future years lasting three or four weeks to cover subjects such as saw milling, wood preservation, forestry planting.

Purpose: Training for developing countries.

Entry standard: Intended for qualified people with experience in Forest Products Industries.

INT 33

Organization of American States,

17th Street and Constitution Avenue, N.W. Washington, D.C. 20006, USA.

Administration: OAS is the oldest of the International Regional Organizations and was established in 1890 at a conference of American States but its recent activities are governed by its charter, amended in 1970. Amongst the member states are Barbados, Jamaica, and Trinidad and Tobago.

One of the three Councils under the General Assembly is concerned with education, science and culture. Amongst the specialist organizations dependent on OAS is the Inter-American Institute of Agricultural Sciences. The Regional Development Programme of OAS provides technical assistance and training to accelerate economic and social development of particular regions either within one country or of several countries together. Training is closely linked with technical assistance through the Programme for Training in Project Formulation and Evaluation (CETREDE), the Inter-American Centre for the Integrated Development of Land and Water (CIDIAT), and two fellowship programmes. There is also a Regional Programme for Assistance in Institutional Development (PRADI) which strengthens training institutions concerned with evaluation and management of natural resources.

1 (***) DEVELOPMENT STUDIES

CETREDE course are usually for three months and include theory and practical training in the techniques of project formulation and evaluation mostly related to agro-industrial projects. One such course took place in Port of Spain in 1973 with 19 participants all professionally qualified and mostly with some project experience.

2 (***) SUNDRY

The Fellowships Programme under the Department of Regional Development offers places at Delft University of Technology, and at the Institute of Social Studies, The Hague, The Netherlands, and at the University of Ghent, Belgium on courses in subjects such as applied hydrology, regional development planning, environmental science and technology and soil science. Such courses last an academic year with English as the language of instruction and are intended for university graduates in relevant subjects and with some years job experience. The number of fellowships on each course varies from two to six per annum and applicants must be permanently resident in an OAS member state.

INT 34

Panafrican Institute for Development (PID),

3 Rue de Varembe, P.O. Box 38, 1211 Geneva 20, Switzerland.

Administration: International, non-profit making.

Finance: Grants from various sources.

Lan: Eng. at Buea, French at Douala. TP; c. 55 p.a. (at Buea) from 16 countries mostly Cw. RA: yes.

1 (***) DEVELOPMENT STUDIES

One-year course in promotion of integrated development organized in Cameroon at Du Sautoy College, Buea, and at Ecole des Cadres, Douala.

Purpose: Training for intermediate level staff.

Entry standard: Full secondary education plus field experience plus one or two years in-service training. The course is mainly for Government officials who are usually nominated.

2 (***) DEVELOPMENT STUDIES

Short courses by itinerant teams, national or regional refresher courses, seminars, etc. (in-service training).

3 (***) AGRICULTURAL PROJECT MANAGEMENT

Higher in-service training for project design and management for senior officials is to be extended shortly to English speaking countries, following a very successful series of four agricultural seminars totalling sixteen weeks in two years for French speaking countries.

- INT 35 Regional Centre for Graduate Study and Research in Agriculture (SEARCA),
The Philippines.
- Administration: SEARCA is one of the activities organized through the South-East Asian Ministers of Education Organization (SEAMEO) in Bangkok whose member nations include Singapore and Malaysia, with Australia and New Zealand as associate members. There are six regional centres/projects and each regional centre specializes, that in the Philippines being concerned with agriculture.
- Finance: In the first five years of operation up to 1974, ordinary funds were provided on a fifty/fifty basis by the Philippines and US Governments with special funds from the South-East Asian Ministers of Education Secretariat and donations from member Governments and from other Governments including Canada and from a number of international agencies including Colombo Plan.
- 1 (***) AGRICULTURE
SEARCA runs a graduate programme divided into two semesters annually, those attending achieving 70 postgraduate degrees in the first five years.
- Note: SEARCA has organized a series of training programmes for farmers, rural teachers and specialists, rural women and out of school youths, and sponsored jointly with the Asian Institute of Management a four week seminar on agricultural project development, evaluation and management; however its main activities concern research and information rather than training.
- INT 36 Regional Centre for Training Animal Health Assistants,
c/o Ministry of Agriculture, P.O. Box 1001, Georgetown, Guyana.
- Administration: The Centre has been set up by the Governments of countries in the Caribbean area with the support of WHO and administered through Caricom with a Technical Advisory Board. It is part of the Regional Educational Programme for Animal Health Assistants (REPAHA). Construction of permanent buildings has commenced for completion with the second year class opening in autumn 1976.
- Finance: Caribbean Governments, through REPAHA.
Cal: Sep/Dec, Jan/Apr, Apr/Jul. TP: 34 incl. 31 from 12 Cw. countries. RA: yes. NN: yes, from any Caribbean country. At a later stage it may be possible to accept trainees from other regions.
- 1 (**) ANIMAL HEALTH
Two years for Certificate of Animal Health Assistant. First year students were accepted in September 1975. They have an 18-week preparatory course in English, maths, biology, chemistry, physics, and animal husbandry followed after a short break by a 20-week pre-clinical course in animal husbandry, anatomy, physiology, parasitology, microbiology, after which there will be four weeks of field studies. The second year course will continue academic studies but with considerable practical work.
- Purpose: To train assistants for the Veterinary Services throughout the Caribbean.
- Entry standard: Ordinarily GCE or equivalent including a science but mature students recommended by a Ministry of Agriculture or Health may be accepted with lower standards. There is an entrance examination and an aptitude test for all candidates, who are accepted on a quota basis for the member countries.

INT 37

Settlement Study Centre,
Rehovot, P.O. Box 555, Israel.

1 (***) CO-OPERATIVE STUDIES

Courses concerned with co-operative studies e.g. one for 25 university graduates from Asian countries for nine months from July 1975 on comprehensive rural residential development planning.

INT 38

South Pacific Commission Community Education Training Centre,
Box 5083, Raiwaqa Post Office, Suva, Fiji.

Administration: Established in 1963 at Samabula in Fiji to serve as a spearhead of development in rural areas for the whole Pacific region. It is a multi-purpose educational facility set up as a field project of the South Pacific Commission which itself is a consultative and advisory body to the Governments responsible for the administration of the island territories of the South Pacific region.

Finance: South Pacific Commission, Government of Fiji, FAO, and a number of Agencies such as Freedom from Hunger

TP: c. 30 p.a. RA: yes. NN: yes, regional. Most courses are attended by women from about a dozen territories including Australia and New Zealand.

1 (**) HOME ECONOMICS

Ten-month course in home economics for women who are to be employed as community welfare officers. The course includes training in the production of food crops and the techniques of soil cultivation. While at the centre, students have their own individual garden plots and are trained to produce and use local food efficiently.

2 (**) HOME ECONOMICS

In some years there are special nine-month courses in home economics for teachers. Refresher courses for former trainees are also held from time to time.

3 (***) HOME ECONOMICS

Women students in the final year of the diploma course at Fiji College of Agriculture (FIJ 5/1) have an option of attending a specially planned course at CETC for training in home economics for field extension work amongst farm families.

INT 39

South Pacific Commission (Tropical Agriculturalist),
Post Box D.5., Noumea Cedex, New Caledonia.

Administration: South Pacific Commission.

Finance: South Pacific Commission.

1 (*) SUNDRY

The Commission's Agriculturalist organizes Territorial and Sub-regional Training Courses for farmers and for the staff of Departments of Agriculture in the Pacific Islands. Courses planned for 1975 include:

- a) Sub-regional - eight days in weed control in vegetables - Tonga.
- b) Sub-regional - eight days in food crops, nutrition, home economics - Cook Islands.
- c) Territorial - eight days in vegetable production and marketing - Cook Islands.
- d) Territorial - eight days in atoll agriculture - Gilbert Islands.
- e) Territorial - five days in pig and poultry production - New Caledonia, Western Samoa.

Entry standard: Depending on course.

INT 40

Swedish Co-operative Centre,

Katarinavagen 15, Fack, S-104 65, Stockholm, Sweden.

1 (**) CO-OPERATIVE MANAGEMENT

Short courses in Sweden in English e.g. two in 1975 for participants from Tanzania and Kenya on co-operative management.

INT 41

Training Centre for International Development in Forestry and Wood-using Industries,

National Board of Forestry, P.O. Box 12233, Helsinki 12, Finland.

1 (**) TIMBER TECHNOLOGY/FORESTRY

Centre for UNIDO courses in English of two weeks to one year in forestry and wood-using techniques. The Centre also assists educational institutions in the developing countries in these fields.

INT 42

U.N. Asian Development Institute,

Sri Ayudhya Road, P.O. Box 2-136, Bangkok, Thailand.

Administration:

Established in 1963 by ECAFE which is now known as ESCAP - Economic and Social Commission for Asia and the Pacific. Its purpose is to assist countries in the region to develop their own institutions for development including training and research, to assist those countries in formulation of development strategies, and to provide a forum for exchange of ideas concerning development planning as well as facilities for interdisciplinary research.

Finance:

UNDP and Governments.

Cal: Jan/Dec. TP: about 200 p.a. incl. 50 from 15 Cw. territories. RA: ADI arranges reduced rate accommodation with local hotels for participants in its training programmes. NN: nationals of member countries of the UN ESCAP are eligible upon nomination through official channels.

1 (***) SUNDRY

Many topics including subjects related to rural development, e.g. a three-month course in rural development banking, 1976; one-and-a-half-month courses in farm management and small farm development, and in development of commercial agriculture, 1977; a one-and-a-half-month course in farm price policy for selected commodities in 1978.

Purpose:

Problem-oriented training.

Entry standard:

A university degree and five years of experience.

Note: Training can take the form of regional, sub-regional and country courses. There are also workshop seminars and consultative group meetings. Agricultural policy and use of natural resources are two of about ten main topics for training, research and advisory services. Rural development is one of six main areas of concentration for the period 1976/78. It is planned to produce an inventory of training and research institutions.

Training courses may be of up to twelve weeks, seminars are usually shorter, up to six weeks, and workshops of two to three weeks. Participants at all three are limited to twenty-five in order to ensure participation in discussions. All courses, etc. are given in English and all participants' expenses are met by ADI.

Country level courses are tailor-made for the country concerned which bears all expenses other than for the attendance of international expert staff.

Most regional courses have been held at Bangkok but it is intended in 1976/78 to have at least half of them in other cities in the region. But this assumes that countries will act as hosts and provide accommodation, etc.

INT 43

U.N. Economic Commission for Africa,
P.O. Box 3001, Addis Ababa, Ethiopia.

Administration: UN through ECA.

1 (***) SUNDRY

The Social Development Section sponsored a series of training seminars 1968/1972 at the Rural Development College, Holte, Denmark in association with DANIDA. Ten Commonwealth countries in Africa sent participants to the last of these training seminars which was at the level of senior personnel concerned with training policy.

The same Section has organized a series of Itinerant Training for Trainers and Planners in programmes to improve the quality of rural life. Training workshops have been held in recent years under this programme in nine African Commonwealth countries. The Social Development Section plans a sub-regional workshop for senior personnel on the subject of integrated rural development in 1976 in Botswana. Participants are expected from eight Commonwealth countries in East, Central and Southern Africa. There will also be a national follow-up workshop in Zambia for participants at previous Itinerant Training Courses; and a short refresher course in Sierra Leone for former students of the Pan-African Institute for Development.

In 1977 there will be a regional workshop covering all-Africa organized by ECA and the Pan-African Institute for Development for administrators of national institutions concerned with integrated rural development. Plans also exist for follow-up workshops in specialist fields requested by Governments and voluntary agencies and arising from the Itinerant Training Programme. These workshops will be run in conjunction with the African Training and Research Centre for Women.

ECA encourages attendance by trainees from Africa at courses organized through the U.K. ODM at various British universities and at International Centres in the Netherlands.

INT 44

University of Birmingham Department of Botany International Course,
P.O. Box 363, Birmingham B15 2TT, U.K.

Administration: Department of Botany, University of Birmingham. Started in 1969.

Finance: University of Birmingham with assistance from FAO through the FAO Unit of Crop Ecology and Genetic Resources (see INT 14/1).

Cal: from Sep. TP: increased from 5 in 1969 to 11 in 1973 and is now 20 because FAO finances additional places for participants from developing countries. RA: yes. NN: yes, participants have come from Australia, Canada, India, Kenya, Malaysia, Nigeria, Sri Lanka and Uganda as well as from non-Cw. countries.

1 (***) CONSERVATION

International course in genetic conservation; twelve months for M.Sc. made up of nine months lectures, seminars and practical classes followed by three months of project work. For participants requiring pre-course experience, two months optional collecting and gene bank experience in July to August is available at specialized centres in Turkey, Italy, Germany and at Kew, England, with possibilities of similar opportunities at certain tropical centres. The course itself includes taxonomic methods, population genetics, genecology, agro-ecology, biological statistics, data processing, plant exploration and breeding and utilization, etc.

Purpose: To provide training for scientists from developing and developed countries in the theory and practice of genetic conservation in order to lessen the loss of wild varieties of major crop plants through modern agricultural methods, land clearance, etc.

Entry standard: Equivalent of a good honours degree in biology, botany genetics, plant breeding, agricultural botany or agriculture or in specialized related fields. The course is of interest to crop ecologists, genetic conservationists, plant introduction officers, plant breeders and quarantine officers or those intending such careers.

INT 45

University Center for Co-operatives,

University of Wisconsin, 524 Lowell Hall, 610 Langdon Street,
Madison, Wisconsin, U.S.A.

1 (**) CO-OPERATIVE MANAGEMENT

Short courses in U.S.A. for Co-operative and Government Officials from developing countries or for those engaged in social development work. Topics of courses in 1975 were "Co-operatives in Developing Economics", "Co-operative Management", "Co-operative Education and Management".

APPENDIX

COMMONWEALTH FUND FOR TECHNICAL CO-OPERATION

Established in 1971, the Commonwealth Fund for Technical Co-operation is an inter-governmental multilateral development fund administered by the Commonwealth Secretariat. Through the Fund, technical assistance is made available to Commonwealth developing countries to assist them in meeting national development priorities.

Through the General Technical Assistance Programme of the Fund, advisory or operational experts are made available in a wide range of interrelated fields of social and economic development. Technical assistance may be provided, for example, in agriculture and rural development and may include both the identification of training requirements and the preparation and implementation of training programmes.

The Fund's Education and Training Programme supports the education and training of personnel from one Commonwealth developing country in other Commonwealth developing countries through the award of fellowships. Awards are made for:-

- a. Courses of training at technical, professional and vocational institutions and universities in Commonwealth developing countries;
- b. Training attachments that are designed to give trainees experience of innovations and techniques that have been developed in other Commonwealth developing countries;
- c. Study visits that enable students to obtain first hand knowledge of developments in other Commonwealth developing countries;
- d. Seminars/workshops that have a clearly defined developmental objective and are strongly oriented towards training.

In the making of CFTC Education and Training awards, priority is given to projects in the broad field of agriculture and rural development.

Further information is available from:-

The Managing Director,
Commonwealth Fund for Technical Co-operation,
Commonwealth Secretariat,
Marlborough House,
Pall Mall,
London SW1Y 5HX.

FOOD PRODUCTION AND RURAL DEVELOPMENT DIVISION

The Food Production and Rural Development Division was set up in November 1975 following a meeting of Commonwealth Ministers of Agriculture in London in March 1975 to consider how to accelerate improvements in food production and the quality of rural life for the vast majority of Commonwealth members who live in rural areas and depend on agriculture for their livelihood. The main function of the Division is to act as a clearing house of information relevant to the subject of food production and rural development and of specific interest to member countries, and fostering co-operative Commonwealth action.

In pursuance of these objectives the Division, (i) assists member governments in the preparation of projects for assistance and in obtaining such assistance where requested, (ii) provides advice and promotes the exchange of information and experience in recruitment and training of staff and arranges training facilities if requested, (iii) organizes studies and the exchange of views among experts from various parts of the Commonwealth on problems of specific interest to member countries, (iv) initiates or co-ordinates regional seminars, and (v) identifies, evaluates, and assists in appropriate field operations of the Commonwealth Fund for Technical Co-operation.

Further information is available from:

The Director,
Food Production and Rural Development Division,
Commonwealth Secretariat,
Marlborough House,
Pall Mall,
London SW1Y 5HX.

SOME OTHER COMMONWEALTH AND INTERNATIONAL AGENCIES

Association of Commonwealth Universities,
36 Gordon Square, London WC1H 0PF,
England.

A voluntary organization financed by the subscriptions of its member institutions, ACU exists to promote contact and co-operation among member universities throughout the Commonwealth. It organizes meetings and a quinquennial congress, helps to promote the movement of university staff and students from one Commonwealth country to another and provides information about Commonwealth universities.

Colombo Plan Bureau,
12 Melbourne Avenue, Colombo 4,
Sri Lanka.

Originally a Commonwealth scheme for a co-operative programme for the economic development of South and South-East Asia, the Colombo Plan now numbers eleven Commonwealth countries among its 27 members.

Commonwealth Agricultural Bureaux,
Farnham House, Farnham Royal,
Slough SL2 3BN, England.

The CAB, governed by an Executive Council composed of nominees of contributing Commonwealth Governments, began in 1929 and now comprises three Institutes and eleven Bureaux which collect, collate and disseminate information of value to research workers in agricultural sciences, forestry, nutrition, and food science and technology, throughout the Commonwealth and increasingly throughout the world. No formal instruction is given, but arrangements can be made for scientists to study at the Mycological Institute, Ferry Lane, Kew, Surrey; and at the Commonwealth Bureau of Helminthology, The White House, 103 St. Peter's Street, St. Albans, Herts.

The other addresses are:

- Commonwealth Bureau of Agricultural Economics,
Dartington House, Little Clarendon
Street, Oxford OX1 2HH, England.

- Commonwealth Bureau of Animal Breeding and Genetics,
Animal Breeding Research Organization,
The King's Buildings, West Mains Road,
Edinburgh EH9 3JX, Scotland.
- Commonwealth Bureau of Animal Health,
Central Veterinary Laboratory, New
Haw, Weybridge, Surrey, England.
- Commonwealth Bureau of Animal Nutrition,
Rowett Research Institute, Bucksburn,
Aberdeen AB2 95B, Scotland.
- Commonwealth Bureau of Dairy Science,
and Technology,
National Institute for Research in
Dairying, Shinfield, Reading RG2 9AT,
England.
- Commonwealth Forestry Bureau,
Commonwealth Forestry Institute,
South Parks Road, Oxford OX1 3RD,
England.
- Commonwealth Bureau of Horticulture
and Plantation Crops,
East Malling Research Station, Near
Maidstone, Kent, England.
- Commonwealth Bureau of Pastures and
Field Crops,
Hurley, Near Maidenhead, Berkshire,
England.
- Commonwealth Bureau of Plant Breeding,
and Genetics,
Department of Applied Biology, Downing
Street, Cambridge CB2 3BX, England.
- Commonwealth Bureau of Soils,
Rothamsted Experimental Station,
Harpenden, Herts, England.
- Commonwealth Institute of Entomology,
56 Queen's Gate, London SW7 5JR,
England.
- Commonwealth Institute of Biological
Control,
Gordon Street, Curepe, Trinidad,
West Indies.

Commonwealth Association of Surveying and Land Economy,
12 Great George Street,
London SW1P 3AD, England.

Membership of CASLE is open to professional societies in Commonwealth countries which cover one or more of the following activities: surveying and mapping, including all aspects of land, aerial, hydrographic and mining surveying; quantity surveying and building surveying; and land economy, including the valuation or appraisal of real estate, land management and town planning.

Commonwealth Development Corporation,
33 Hill Street, London W1A 3AZ, England.

The CDC is a statutory British body which undertakes, either alone or in association with others, projects for the promotion or expansion of a wide range of economic enterprises. Originally established to assist the economic development of the then dependent territories of the Commonwealth, CDC now extends its operations to independent Commonwealth members and, with special approval, to a few non-Commonwealth countries.

Commonwealth Forestry Association,
18 Northumberland Avenue,
London WC2N 5BJ, England.

The Association's objects are to foster public interest in forestry; to secure general recognition of the dependence of timber supply on forestry management; to collect and circulate information; and to form a centre and a means of communication for those concerned with forestry and forest products.

Commonwealth Foundation,
Marlborough House, Pall Mall,
London SW1Y 5HU, England.

The objects of the Foundation are to encourage and support fuller representation at conferences of professional bodies within the Commonwealth; assist such bodies to hold more conferences between themselves; facilitate the exchange of visits among professional people,

especially the younger element; stimulate the flow of information between professional organizations; assist, on request, with the setting-up of national professional institutions and associations; promote the growth of Commonwealth-wide associations or regional Commonwealth associations, and in exceptional cases to help associations or individuals whose activities lie outside the strictly professional field but fall within the general ambit of the Foundation's operations.

Contributions to the resources of the Foundation are made on an agreed scale by participating Commonwealth governments.

Commonwealth Scholarship and Fellowship Plan,
- addresses in individual Commonwealth countries may be obtained from
Departments/Ministries of Education.

The CSFP was launched at the first Commonwealth Education Conference in 1959. The Plan operates through a co-ordinated series of bilateral arrangements under which member governments award scholarships at their universities or other institutions of higher learning to men and women from other Commonwealth countries. Fellowships and other senior awards are also offered by some countries under the Plan. These include visiting professorships, senior medical fellowships and academic staff fellowships.

Commonwealth Scientific Committee,
Africa House, Kingsway, London
WC2B 6BD, England.

The terms of reference of the CSC are to consider the best means of ensuring the fullest possible collaboration between the government civil scientific organizations of the Commonwealth. It provides the scientific agencies of developing Commonwealth countries with information and advice, assists them in planning their development and research activities, and advises aid authorities in Commonwealth donor countries on scientific assistance to developing countries.

Commonwealth Veterinary Association,
360 Bronson Avenue, Ottawa, Ontario
K1R 6J2, Canada.

The interests of the veterinary and allied sciences are promoted within the Commonwealth by this Association, which aims to effect close links between member associations; encourage the creation of national associations; facilitate the dissemination of knowledge and information; and promote the interchange of veterinary surgeons and students.

Division of Education for Rural Development, UNESCO,
Place de Fontenoy, 75 Paris 7e, France.

ECA/FAO,
Joint Agriculture Division, Economic
Commission for Africa, P.O. Box 3001,
Addis Ababa, Ethiopia.

Food and Agricultural Organization of
The United Nations,
Agricultural Education and Training
Services, Via delle Terme di Caracalla,
00100 Rome, Italy.

FAO exists to raise levels of nutrition, to improve the efficiency of production and distribution of food and agricultural products, and to better the conditions of rural populations.

Royal Agricultural Society of the
Commonwealth, Robarts House,
Rossmore Road, London W1N 6NP,
England.

The principal object of this federation of national agricultural societies within the Commonwealth is to encourage and arrange the interchange of knowledge and experience in the practice and science of agriculture with a view to improving methods of both crop production and the breeding of livestock, to increasing the efficiency of agricultural implements and machinery, and to encouraging the exchange and settlement of young farmers within the Commonwealth.

Standing Committee on Commonwealth
Forestry,
25 Savile Row, London W1X 2AY,
England.

Provides continuity between the quinquennial Commonwealth Forestry Conferences at which are discussed questions of forestry policy in the Commonwealth and wider technical aspects of forestry.

United Nations Development Programme,
UN Headquarters, New York, USA.

UNDP provides technical assistance to developing countries.

United Nations Children's Fund,
UN Headquarters, New York, USA.

UNICEF assists the governments of the developing countries with projects concerning child health including nutrition and hence food production. It is financed by voluntary contributions from governments and from the public.

A SHORT SELECTED BIBLIOGRAPHY OF OTHER USEFUL REFERENCE BOOKS

Study Abroad XX - 1975-6/1976-7	UNESCO, Paris 1974
Commonwealth Universities Year Book, 1975	ACU
Scholarship Guide for Commonwealth Postgraduate Students	ACU (Third edition expected November, 1976)
Awards for Commonwealth Universities Staff	ACU (Reissued October, 1975)
Financial Aid for First Degree Study at Commonwealth Universities	ACU (Issued as a Student Information Paper)
Directory of Education and Training Resources in the Developing Countries of the Commonwealth	Commonwealth Secretariat, 1974
Job Training and Social Development Programmes	Commonwealth Secretariat (Commonwealth Youth Programme) 1974
World Directory of Veterinary Schools, 1971	FAO/WHO
World Directory of Schools for Animal Health Assistants, 1971	FAO/WHO
Directory of Fisheries Training Institutions, (FAO Fisheries Technical Paper No. 129)	FAO, 1974
Agricultural Education in Asia, 1971	UNESCO
Educational Opportunities in Africa, 1974	International University Exchange Fund
Training in Africa, Directory	Regional Offices for Education in Africa, for UNESCO, 1974
Directory of Activities of International Voluntary Agencies in Rural Development	ECA for United Nations, October, 1972
Inventory of International and Regional Centres in the Colombo Plan Region, 1972	Colombo Plan Bureau
Development - A Bibliography	FAO (Second Edition June, 1974)
Attacking Rural Poverty, 1974	ICED for World Bank through John Hopkins University Press
Education and Rural Development (World Year Book of Education, 1974)	Evans Bros.
Education for Rural Development - Case Studies for Planners	World Bank and UNICEF through Praeger, NY (1975)

INDEX TO COURSES AND INSTITUTIONS

This index refers to the codes used for each course rather than to the pages to enable users to find easily the country, as well as the level of training, in which they are interested. The index combines references to institutions as well as to course subjects. Courses are listed alphabetically in full capitals. Under each course the level is indicated by asterisks and the country by the code (see Key pp. ix-x). The list of contents on page iii gives the page numbers of entries for each country. Institutions are also listed alphabetically and are easily distinguished because they are not given full capitals.

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Agrindus Institute IND 1
AGRONOMY
(**) AUS 1/1 5/2
CAN 6/1 18/1 72/1
NIG 29/1
(**) AUS 11/1 13/2 30/1 32/1 51/1
IND 100/2 112/2
(**) AUS 13/3 22/2 30/2 32/2 44/2 45/2
51/2
IND 74/2 82/2 96/2 97/2 99/2
107/2 108/2 116/2
Agro-Technical Training Centre,
Manga Burreh SIL 2

AGRO-METEOROLOGY		
(**)	INT 8/1 8/2	
(***)	CAN 51/3	
Ahmadu Bello University, Kaduna State		NIG 41
Algonquin College of Applied Arts and Technology		CAN 32
Allahabad Agricultural Institute		IND 57
All India Institute of Hygiene and Public Health, Calcutta		IND 77
Amarpurkashi Agro-Industrial Polytechnic		IND 6
Andhra Pradesh Agricultural University		IND 78
ANIMAL BEHAVIOUR		
(**)	CAN 72/1	
(***)	AUS 2/3	
Animal Diseases Research Association, Scotland		UK 181
ANIMAL CARE/HEALTH/SCIENCE		
(*)	KEN 7/4	
(**)	TT 3/1	
(**)	BOT 9/2	
	CAN 3/1 30/1	
	JAM 5/1	
	NEZ 10/2 11/1	
	UK 59/1 59/2	
(**)	AUS 5/2	
(**)	BAN 8/1	
	CAN 4/1 30/2 40/1 41/1 44/1 46/2	
	72/1 78/3	
	GHA 22/1	
	IND 14/1 15/1 16/1 17/1 18/1	
	19/1 20/1 21/1 22/1 23/1	
	96/1 99/1	
	INT 36/1	
	KEN 19/1	
	MAW 8/2	
	MAY 20/1 21/1 22/1 24/1	
	NIG 29/1 31/3 31/4 35/1 36/1 46/1	
	SWA 10/2	
	UGA 14/1	
	UK 5/4 60/1 61/1	
	ZAM 22/1	
(***)	IND 128/2	
	INT 22/1	
	MAY 24/2	
	NIG 36/2 46/2	
	PNG 15/1	
	UK 26/4 59/3 80/1 86/1 98/1 127/5	
(***)	CAN 73/2 80/3	
	IND 75/1 78/2 80/2 97/2	
	NIG 43/3 46/3	
	UK 90/2 95/2	
Animal Health and Industry Training Institute, Kabete		KEN 19
Animal Husbandry In-service Training Centre, Lae		PNG 15
ANIMAL HUSBANDRY/PRODUCTION		
(*)	KEN 5/1 7/2	
	NIG 10/1	
(*)	AUS 16/1 17/1	
	CAN 30/1	
	NEZ 8/1 10/3	
	NH 2/1	
	SWA 8/1	
	UK 17/2	
(**)	AUS 5/1 5/2 6/2	
	CAN 4/1 6/1 30/3	
	IND 14/1 15/1 16/1 17/1 18/1 19/1	
	20/1	
	INT 13/1	
	KEN 18/1	
	MLT 1/2	
	NIG 31/3 35/1 36/1 46/1	
	SNG 2/1	
	TAN 21/2	
	TT 5/1	
	UGA 14/1	
	UK 3/2 8/2 33/3 46/3 117/3	
	137/2 137/3	
(***)	AUS 11/1 32/1 51/1	
(**)	BAN 12/1	
	IND 61/1 62/1 63/1 74/1 76/1 80/1	
	84/1 86/1 96/1 97/1 107/1	
	112/2 116/1 128/2 129/1 131/1	
	INT 31/1	
	NIG 36/2	
	PNG 15/1	
(***)	AUS 13/4 32/1	
	BAN 12/2 12/3	
	IND 74/2 75/1 104/1 107/2 108/2	
	112/1 116/2 117/2 128/1 136/2	
	INT 26/1	
Animal Husbandry School, Rajasthan		IND 14
Animal Nursing Auxiliaries Committee, London		UK 60
ANIMAL PHYSIOLOGY		
(***)	UK 96/1	
(***)	AUS 2/3 13/3 29/2 30/2 44/2	
(***)	IND 80/2	
	NIG 43/3	
ANIMAL PRODUCTION		
see ANIMAL HUSBANDRY		
ANIMAL SCIENCE		
see ANIMAL CARE		
Animal Virus Research Institute, Surrey		UK 146
Annamalai University		IND 79
APICULTURE		
see BEE-KEEPING		
APPLIED BIOLOGY		
see AGRICULTURAL BIOLOGY		
APPROPRIATE TECHNOLOGY		
(**)	BOT 5/3	
Arapai Agricultural College		UGA 9
ARBORICULTURE		
see FORESTRY		
Armidale Technical College		AUS 3
ARTIFICIAL INSEMINATION		
see ANIMAL CARE		
ARTS AND CRAFTS		
(*)	STV 1/1	
	ZAM 4/2	
(**)	PNG 4/1	
	TAN 2/2 5/2	
(**)	BOT 11/1	
(**)	SIL 10/1	
(***)	INT 30/2	
Askham Bryan College of Agriculture and Horticulture		UK 3
Assam Agricultural University		IND 80
Association of Youth Clubs, Nairobi		KEN 1
Auchi Polytechnic		NIG 20
Australian National University		AUS 2
Aylesbury College of Further Education		UK 4
Azimio Cottage Industries Training Centre		TAN 5

Bahamas Agricultural Research Training and Development	BAH 1	Brikama Post-Secondary College	GAM 3
Balwant Vidyapeeth Rural Institute	IND 38	Brisbane Technical College	AUS 15
Banaras Hindu University	IND 82	Bristol Polytechnic	UK 80
Bangladesh Academy for Rural Development	INT 4	British Columbia Institute of Technology	CAN 17
Bangladesh Agricultural University	BAN 12	British Columbia Vocational School, Burnaby	CAN 11
Bangladesh Co-operative College	BAN 3	British Columbia Vocational School, Dawson Creek	CAN 9
Bangladesh Forest College for Rangers	BAN 5	British Columbia Vocational School, Terrace	CAN 12
Bangladesh Forest School	BAN 4	British Veterinary Association	UK 180
Bangladesh Rice Research Institute	BAN 15	Brooksby Agricultural College	UK 9
Bangladesh Veterinary Institute	BAN 8	Broomfield College	UK 10
Barbados Community College	BAR 3	Buchan Technical College	UK 121
Bari Institute	INT 5	Buhemba Rural Aid Centre	TAN 1
Bast Muri Christian Rural Institute	NIG 3	Bukalasa Agricultural College	UGA 10
BEEF PRODUCTION		Bukura Institute of Agriculture	KEN 16
see LIVESTOCK DEVELOPMENT/		Bumpe High School	SIL 5
PRODUCTION/HUSBANDRY		Bunda College of Agriculture	MAW 9
BEE-KEEPING/APICULTURE		Bunso Training School	GHA 2
(**) UK 51/4		Bunumbu Project	SIL 10
WS 1/2		Bunumbu Teachers College	SIL 10
(**) TAN 23/1 23/2		Burnham Agricultural Institute	GUY 3
UK 131/4		Burnley Horticultural College	AUS 39
(***) CAN 51/3		Busitema Agricultural School of Mechanization	UGA 8
Belimbing Logging Training Centre	MAY 11	Butimba College of National Education	TAN 10
Benue Bible Institute	NIG 5		
Berkshire College of Agriculture	UK 5		
Bicton College of Agriculture	UK 6		
Bidhan Chandra Krishi Vishwa Vidyalaya	IND 84	Camosun College	CAN 14
Birmingham College of Food and Domestic Arts	UK 7	Canberra Technical College	AUS 3
Bishop Burton College of Agriculture	UK 8	Canberra Technical Institute	AUS 1
Bogra Government Technical Institute	BAN 9	Cape Coast Agricultural College	GHA 15
Bolgatanga Agricultural College	GHA 14	Cardiff College of Food Technology and Commerce	UK 62
BOTANY		Caribbean Agricultural Research and Development Institute	INT 6
(**) NIG 33/1		Caribbean Fisheries Training and Development Institute	INT 7
(***) BAN 14/1		Caribbean Meteorological Institute	BAR 3, INT 8
(***) GHA 23/3 24/5			
HK 3/1		Caribbean Rural Development and Advisory Training Services (CARDATS)	INT 9
IND 94/1 100/2 126/1 128/2 130/1 137/1		Cariboo College	CAN 10
JAM 9/1		Carmarthen Technical and Agricultural College	UK 11
KEN 25/1		C.B. Alexander Agricultural College	AUS 5
MAY 25/1		Central Agricultural Station, Nassau	BAH 3
NIG 41/1 42/1 43/2 44/1 45/1 46/2		Central Council for Agricultural and Horticultural Co-operation, London	UK 56
SIL 12/1		Central Food Technological Research Institute, Mysore	IND 88
TT 6/2		Central Forest Rangers College, Maharashtra	IND 67
UGA 15/1 95/1 96/1		Central Institute of Fisheries Education, Bombay	IND 89
(***) BAN 14/2		Central Institute of Fisheries Operatives, Ernakulam	IND 29
GHA 23/5		Central Leather Research Institute, Madras	IND 90
IND 78/2 79/2 82/2 84/2 86/2 103/2 108/2 109/2 113/2 118/1 125/1 126/2 130/2 136/2 137/2		Central Polytechnic, Madras	IND 25
NIG 41/2 45/2		Central Training Institute for Poultry Production and Management, Kamataka	IND 91
UK 95/2		Centralia College of Agricultural Technology	CAN 46
Botswana Agricultural College	BOT 9		
Botswana Brigades	BOT 5		
Botswana Enterprises Development Unit	BOT 8		
Botswana Extension College	BOT 3		
Botswana Training Centre	BOT 10		
Botswana Vocational Training Centre	BOT 11		
Boys School, Kano State	NIG 8		

Centre for Overseas Pest Research,
London UK 177
Chadacre Agricultural Institute UK 12
Cheshire College of Agriculture UK 13
Chinese Agricultural Mission,
Manzini SWA 3
Chipembi Farm College ZAM 14
Chippenham Technical College UK 14
Christian Training Centre, Benue
State NIG 9
Christian Rural Development,
Plateau State NIG 11
Christian Rural Service, Kampala UGA 2
City of Leicester Polytechnic UK 87
Clifton Dupigny Technical College DOM 1
Clinterly Agricultural College UK 112
Coady International Institute INT 10
COCOA PRODUCTION
(*) GHA 2/1
(**) GHA 2/2 2/3
Coimbatore Water and Agricultural
Development Project IND 7
Colby College of Agriculture MAW 5
Collège d'Alma CAN 62
Collège de Chicoutimi CAN 65
Collège de Joliette CAN 63
Collège de la Gaspésie CAN 66
Collège d'Enseignement Général
et Professionnel CAN 69
Collège de Rimouski CAN 67
Collège de Rouyn-Noranda CAN 68
Collège de Sainte-Foy CAN 64
College of Agriculture, Suva FIJ 5
College of Agriculture and
Horticulture, Herts UK 15
College of Arts and Technology,
Kingston JAM 8
College of Estate Management,
Reading UK 99
College of Fisheries, Navigation,
Marine Engineering and Elec-
tronics CAN 26
College of New Caledonia CAN 15
College of Science and Technology,
Rivers State NIG 33
College of the Bahamas BAH 2
College of Veterinary Medicine,
Haryana IND 15
College of Veterinary Medicine,
Punjab IND 16
Community Centres: Pioneer
Youth Corps TT 1
COMMUNITY DEVELOPMENT
(*) TT 1/1 2/1
(**) JAM 1/2
(**) BOT 9/3
(***) IND 40/2 56/3
(***) INT 30/1 30/2
(***) CAN 6/2 18/2
(***) IND 56/4
see also DEVELOPMENT STUDIES
Concordia University CAN 75
Confederation College of Applied
Arts and Technology CAN 33
CONSERVATION
(***) INT 24/4
UK 44/1 78/2
Continuation Schools, Accra GHA 3
CO-OPERATION/CO-OPERATIVE STUDIES
(*) BAN 1/1
NIG 11/1
PNG 5/1

(**) BAN 1/2 3/1
BOT 7/1
IND 8/1
NIG 14/1 15/1
SWA 7/1
ZAM 11/1 12/1
(**) BOT 10/1
CYP 3/1
GUY 6/1
IND 71/1
INT 17/1 18/1 19/1
KEN 15/1 15/2
MAY 18/1
MRS 2/1
PNG 5/2 5/3 5/4 5/5
SWA 10/1
TAN 7/1 7/3 7/4
(**) AUS 4/1
BAN 6/1 6/2
CAN 75/2 76/1
INT 2/1 15/1 20/1 20/2 20/3 28/1
40/1 45/1
KEN 15/3
MAY 18/2 18/3
MRS 2/4
NIG 21/1 22/1 23/1 24/1 24/2 25/1
26/1
SRI 17/1 17/2
UGA 10/2 11/1
UK 56/1 57/1 58/1 58/2 58/3 58/4
(***) IND 72/1 72/2 86/1
INT 10/1 20/4 20/5 20/6 31/1
KEN 15/4
SRI 17/3
(***) IND 55/3 73/1 73/2
INT 4/1 20/7 37/1
NIG 24/3
SRI 17/4 17/5 17/6
UK 89/1
Co-operative College, Anambra
State NIG 23
Co-operative College of Kenya KEN 15
Co-operative College of
Malaysia MAY 18
Co-operative College, Moshi TAN 7
Co-operative College, Oyo State NIG 24
Co-operative Development Centre,
Gaborone BOT 7
Co-operative Development Centre,
Mbabane SWA 7
Co-operative Training Centres,
New Delhi IND 71
Co-operative Training Colleges,
New Delhi IND 72
Co-operative Training School,
Bendel State NIG 21
Cotton Research Corporation,
London UK 152
Council for Technical Education and
Training for Overseas Countries,
London UK 2
CROP SCIENCE/PRODUCTION/HUSBANDRY
(**) DOM 1/1 1/2
(**) NIG 18/1
(**) CAN 3/1 4/1 30/3
TT 5/1
UK 3/2 117/3
ZAM 22/1
(***) CAN 80/2
IND 128/2
INT 24/1 24/2 24/3

CROP SCIENCE/PRODUCTION/HUSBANDRY (cont.)

UK	26/4	77/1	80/1	127/3	129/2	
	129/3	129/4				
(***) CAN	80/3					
GHA	23/5					
IND	83/3					
INT	13/3	21/3				
NIG	43/3	46/3				
Cumbria College of Agriculture and Forestry				UK	16	
Cyprus Co-operative College				CYP	3	
Cyprus Forestry College				CYP	4	

DAIRY HUSBANDRY

(**) NEZ	5/5	11/1				
UK	16/2	22/1				
ZAM	14/1					
(**) IND	57/2					
TAN	18/1					
UGA	14/1					
UK	10/3	13/2	43/2			
(***) IND	126/1					
UK	80/1					
(***) IND	96/2	121/1				
INT	13/3					

Dairy Science College Institute of Agriculture, Gujarat	IND	92	
Dairy Training School, Naivasha	KEN	20	

DAIRY TRAINING/TECHNOLOGY

(**) AUS	3/1	3/4	25/3	48/1		
JAM	4/1					
UK	26/1	28/1				
(**) AUS	5/1	5/2	27/1	38/1		
CAN	18/1					
IND	31/1					
KEN	18/1	20/1				
MAW	8/2					
NEZ	20/3					
UK	13/3	43/1	45/1	46/2	131/3	
	131/4					
(***) AUS	9/1					
CAN	80/2					
IND	76/1	92/1	97/1	111/2	113/1	
	120/1	122/1	126/1			
UK	127/2	138/6				
(***) AUS	13/4					
CAN	80/3					
IND	74/2	76/2	78/2	97/2	103/2	
	108/2	113/2	115/2	116/2	117/2	
	120/2	121/1	122/2			

Darling Downs Institute of Advanced Education	AUS	19	
Darwin Community College	AUS	14	
Day Release Centres in Scotland	UK	120	
Delft University of Technology	INT	11	

DEVELOPMENT STUDIES

(**) CAN	22/1					
NIG	40/1					
(***) CAN	54/1					
INT	34/1	34/2				
TAN	30/1					
UK	83/1					
(***) INT	1/1	1/2	5/1	33/1	33/2	
NIG	47/1					
TAN	29/4					
UK	97/3	98/2	103/1	106/2	130/3	
	134/2					

DIESEL ENGINE MAINTENANCE see MARINE MECHANICS

Directorate of Overseas Surveys, Surrey	UK	109	

Dookie Agricultural College	AUS	35	
Dorset College of Agriculture	UK	17	
DRAUGHTING			
(**) SOL	2/3		
Dumfries Technical College	UK	113	
Durham Agricultural College	UK	18	

EARTH SCIENCES

(***) AUS	29/1					
CAN	51/2	57/1	58/1			
(***) AUS	46/1					
Eastern Caribbean Institute of Agriculture and Forestry	TT	5				
Eastern Forest Rangers College, West Bengal	IND	68				
Ecole de Pêches, Gaspé	CAN	71				

ECOLOGY

(**) CAN	20/1	75/1				
(***) AUS	10/1	20/1				
MAY	25/1					
UK	128/1					
(***) UK	91/2	95/2				
Edinburgh School of Agriculture	UK	129				
Egerton Agricultural College	KEN	18				
Elmwood Agricultural and Technical College	UK	114				
Embu Institute of Agriculture	KEN	17				

ENGINEERING/POWER TECHNOLOGY

(**) BAN	10/2					
IND	38/2	44/2	50/2	51/2	52/2	
	55/2					
(***) UK	72/4					
(***) IND	103/2	114/2	125/1			
INT	11/1					
Enniskillen Agricultural College	UK	136				
ENTOMOLOGY (AGRICULTURAL)						
(**) CAN	6/1					
(***) AUS	32/1					
IND	83/2	100/2				
(***) AUS	32/2					
IND	80/2	82/2	96/2	97/2	107/2	
	116/2					
MLT	3/2					

ENVIRONMENTAL STUDIES/SCIENCE/ TECHNOLOGY

(**) AUS	14/1					
CAN	1/4	2/2	20/1	22/1		
(***) CAN	54/1	55/1	58/1			
UK	83/1	93/1	96/1	101/1		
(***) AUS	2/3	10/2	12/2	46/2		
CAN	7/1					
INT	33/2					
UK	134/3					

ESTATE MANAGEMENT

see AGRICULTURAL/FARM MANAGEMENT						
Etawah Pilot Project, Lucknow	IND	13				
Evening Centres in Rural Areas, Nicosia	CYP	2				

EXTENSION (RURAL/AGRICULTURAL)

(**) IND	10/2					
(**) GRE	1/2					
IND	34/1	35/1	36/1	37/1	42/1	
	43/1	47/1	48/1	59/1		
MAW	6/1					
NIG	29/1					
TT	3/3					
ZAM	22/1					
(***) AUS	32/1	45/1				
IND	59/2	59/3	60/2	60/3	61/1	62/1
	63/1	64/1	83/2			
MAY	24/2					

EXTENSION (RURAL/AGRICULTURAL)

(cont.)

(***) AUS	9/2	13/4	22/2	28/2	45/1	
BAN	12/3					
GHA	23/5					
IND	62/2	63/2	64/2	74/2	76/2	99/2
	107/2	108/2				
INT	4/1	13/3				
NIG	43/3					
UK	98/2	98/3	138/7			
Extension Department in Home Science Colleges				IND	64	
Extension Education Institute, Gujarat				IND	62	
Extension Education Institute, Haryana				IND	61	
Extension Education Institute, Hyderabad, A.P.				IND	63	
Fairview College				CAN	3	
Faith and Farm (S.U.M.), Plateau State				NIG	3	
Family Farms Limited, Magoye				ZAM	4	
Fanshawe College of Applied Arts and Technology				CAN	34	
F.A.O. see Food and Agricultural Organization						
Farm Cadet Training Scheme, Wellington				NEZ	24	
Farmers' Training Centre, Kenema				SIL	1	
Farmers' Training Centre, Masiaka				SIL	8	
Farmers' Training Centres, Sarawak				MAY	6	
Farmers' Training Institute, Batkanu				SIL	3	
Farmers' Training Centres, Lusaka				ZAM	5	
Farmer Training Centres, Maseru				LES	1	
Farmer Training Centres, Nairobi				KEN	4	
Farmer Training Centres, New Delhi				IND	10	
Farmer Training Scheme, Konedobu				PNG	2	
Farmer Training Scheme, Peradeniya				SRI	2	
Farm Institutes, Accra				GHA	9	
Farm Institutes, Kano				NIG	14	
Farm Institutes, Sarawak				MAY	17	
FARM HOME ECONOMICS see HOME ECONOMICS						
FARM MANAGEMENT see AGRICULTURAL/FARM MANAGEMENT						
FARM MECHANIZATION see MECHANIZATION						
Farm Mechanization Training Centre, Anuradhapura				SRI	5	
Farm Mechanization Training Centre, Navrongo				GHA	5	
Farm Settlement Scheme, Oyo State				NIG	15	
Farm Schools, Peradeniya				SRI	10	
FARM SURVEYING see SURVEYING						
FARM TECHNOLOGY see AGRICULTURAL TECHNOLOGIES						
Federal Marine Fisheries School, Lagos State				NIG	19	

Field Assistant Training Centre

Makali

SIL 7

FIELD RESEARCH

(**) AUS 3/3

FISH AND WILDLIFE BIOLOGY

(***) CAN 51/2

Fish Diseases Laboratory,

Weymouth

UK 159

Fish Farming Pilot Extension

Scheme, Domasi

MAW 2

FISHERIES

(*) GHA 1/2

IND 3/1

MAW 2/1 3/1

MRS 1/2

SRI 1/2

ZAM 6/1 7/1 8/1 9/1

(**) CAN 23/1 23/2 26/1 29/1 59/1

IND 11/1 11/2 12/1

MAY 7/1 8/1 9/1 10/1

NIG 19/1 19/2

SRI 7/1

TON 2/1

ZAM 6/2

(**) CAN 23/3 71/1 71/2

INT 7/1 7/2

KEN 14/1

MAW 3/2

NEZ 12/1 12/2 12/3 12/4 13/1 14/1

15/1 16/1

NIG 19/3

TAN 24/2

WS 1/2

(**) BAN 7/1

CAN 26/3 42/2 45/3

FIJ 5/2

IND 25/1 26/1 27/1 28/1 29/1

MAY 24/1

NIG 19/4 19/5

PNG 10/1 11/1

TAN 24/1

UGA 12/1

UK 68/1 68/2 68/3 69/1 69/2 70/1

71/1 71/2 72/1 72/2 73/1 74/1

125/1

(***) BAN 12/1

GHA 23/3

IND 105/1

INT 22/1

SIL 12/2

SRI 17/3

TAN 31/1

UK 72/3 72/5 74/2

(***) BAN 12/3

CAN 18/2

IND 89/1 105/2

MLT 3/1

SIL 12/3

SNG 4/1

UK 85/1

Fisheries College, New Ireland

PNG 10

Fisheries Experiment Station,

Wales

UK 156

Fisheries Laboratory, Burnham-

on-Crouch

UK 155

Fisheries Laboratory, Isle of Man

UK 157

Fisheries Laboratory, Lowestoft

UK 153

Fisheries Radiobiological

Laboratory, Lowestoft

UK 154

Fisheries Training Centre, Madang

PNG 11

Fisheries Training Centre,

Mpulungu

ZAM 9

Fisheries Training Centre, Mpwapwe MAW 3
 Fisheries Training Centre, Mwekera ZAM 8
 Fisheries Training Centre, Nchelenge ZAM 7
 Fisheries Training Centre, Nuku'alofa TON 2
 Fisheries Training Centre, Pictou CAN 29
 Fisheries Training Centre, Sinazongwe ZAM 6
 Fisheries Training Centres, Colombo SRI 7
 Fisheries Training Institute, Andhra Pradesh IND 12
 Fisheries Training Institute, Comilla BAN 7
 Fisheries Training Institute, Entebbe UGA 12
 Fisheries Training Institute, Madhya Pradesh IND 26
 Fisheries Training School, Mombasa KEN 14
 Fishermen Cadet Training Scheme, Auckland NEZ 15
 Fishermen Cadet Training Scheme, Dunedin NEZ 16
 Fishermen's Training Centres IND 11
 Fishermen's Training Institute, Penang MAY 10
 FISHING BOAT BUILDING/MECHANICS
 (*) MAW 3/1
 (**) CAN 59/1
 (**) AUS 34/1
 (*) CAN 71/1
 MAW 3/3 3/4
 (**) IND 29/1
 UGA 12/1
 Flinders University of South Australia AUS 29
 Flock House, N.Island NEZ 6
 Food and Agricultural Organization INT 12
 FOOD SCIENCE AND NUTRITION/FOOD TECHNOLOGIES
 (*) BOT 3/1
 (**) AUS 34/1
 GRE 2/1
 WS 1/2
 ZAM 19/1
 (**) AUS 18/1 41/1 41/3 42/2
 CAN 6/1 14/2 17/1 20/1 21/1 26/3
 27/3 49/2 73/1
 IND 30/1 60/1 60/3
 MAY 22/1
 NIG 43/1
 TT 4/1
 UK 13/3 36/3 36/4 40/1 43/3
 45/1 131/3 138/4
 (**) AUS 9/1 11/1 12/1 30/1
 CAN 51/2 57/1
 GHANA 23/3
 IND 85/1 88/1 108/1 128/2
 INT 22/1
 KEN 25/1
 MAY 24/2
 NEZ 20/6
 NIG 44/1 46/2
 TT 6/2
 UK 7/1 40/3 62/1 72/4 72/5 80/1
 93/1 96/1 98/1 100/1 100/2
 102/1 127/2 134/1 138/5 138/6
 139/1

(***) AUS 12/2 13/4
 CAN 21/2
 GHANA 23/5
 IND 77/1 78/2 85/2 118/1 119/1
 125/1
 INT 6/1
 JAM 9/2
 NIG 46/3 47/1
 TT 6/3
 UK 81/2 93/2 96/2 110/1 110/2
 134/3
 Forest Products Research Laboratory (TIMBERLAB), Bucks UK 67
 Forest Ranger Training School, Kenema SIL 6
 Forest Research Institute, U.P. IND 93
 Forest Research Station, Edinburgh UK 173
 Forest Research Station, Surrey UK 172
 Forestry College, Masindi UGA 13
 Forestry Commission, London UK 171
 FORESTRY/FORESTRY RESOURCES
 (**) BOT 5/2
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 (**) BAN 4/1
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 (**) AUS 2/1 22/1 45/1
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 (**) AUS 2/2 11/2 22/2 45/2
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 Forestry School for Guards,
 Sarawak MAY 16
 Forestry School, Hinton CAN 5
 Forestry Training Institute,
 Arusha TAN 23
 Forestry Training School, Lololo FIJ 4
 Forestry Training School, Londiani KEN 23
 Forest School, Selangor MAY 14
 Forest School, Sepilok MAY 15
 Fourah Bay College, Freetown SIL 12
 4B Clubs and Land Settlement
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 4B Clubs, Gaborone BOT 1
 4H Clubs, Kingston 10 JAM 2
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Gambia College GAM 3
 Gandhigram Rural Institute IND 40
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 Georgian College of Applied Arts
 and Technology CAN 35
 Ghana Nautical College GHA 6
 Ghana Women's and Young Adults'
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 Gilbert Chandler Institute of Dairy
 Technology AUS 38
 G.K. Institute of Rural Education,
 Maharashtra IND 41
 Glasgow College of Nautical
 Studies UK 122
 Glenormiston Agricultural College AUS 36
 Gloucestershire College of
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 Education UK 20
 Golden Grove Technical College ANT 1
 Gordon Institute of Technology AUS 41
 Government Agricultural School,
 Chirgaon (Jhansi), U.P. IND 43
 Government Agricultural School,
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 Gramsevak Training Centres IND 59
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 Grassland Research Institute,
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 Greenmount Agricultural and
 Horticultural College UK 137
 Griffith University AUS 20
 Grimsby College of Technology UK 72
 Gujarat Agricultural University IND 97
 Guru Nanak University IND 98
 Guyana Co-operative Union Farm
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 Guyana National Service GUY 2
 Guyana School of Agriculture GUY 7

Hadlow College of Agriculture
 and Horticulture UK 21
 Hampshire College of Agriculture UK 22
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 Programme STV 1
 Hango Agricultural College TON 3
 Hannah Dairy Research Institute UK 147
 Hardy Senior Technical Institute SRI 11
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 Hawain River Vocational Centre PNG 4
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 (***) IND 90/1
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(*) LES 1/2
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 (**) TT 3/2
 (**) INT 38/1
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 (***) GHA 23/3
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 Honiara Technical Institute SOL 2
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 (*) BOT 3/1
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 (**) JAM 7/1
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Jamaica School of Agriculture	JAM	7	La Trobe University	AUS	44
James Cook University of North Queensland	AUS	21	"Leadership by Doing" Programme	GHA	1
Jamia Rural Institute	IND	44	LEATHER		
Japan International Co-operation Agency	INT	28	see HIDES AND LEATHER TECHNOLOGY		
Jawaharlal Nehru Krishi Vishwa Vidyalaya	IND	107	Leather Department, Northampton College of Technology	UK	64
John S. Donaldson Technical Institute	TT	4	L'Ecole Forestière, Duchesnay	CAN	70
			Leith Nautical College	UK	123
			Lesotho Agricultural College	LES	5
			Lethbridge Community College	CAN	1
			Lilongwe Land Development Training Centre	MAW	6
Kadoorie Agricultural Aid Association	HK	1	Limuru Boys' Centre	KEN	8
Kaduna Polytechnic College of Science and Technology	NIG	28	Lincoln College	NEZ	19
Kalulushi Farm College	ZAM	13	Lindsey College of Agriculture	UK	27
Karamoja Agricultural Project	UGA	1	LIVESTOCK DEVELOPMENT/PRODUCTION/HUSBANDRY		
Kasturba Rural Institute	IND	45	(*) BOT 5/1		
Kelsey Institute of Applied Arts and Sciences	CAN	78	(**) CAN 77/1		
Kemptville College of Agricultural Technology	CAN	47	DOM 1/2		
Kendal Farm School	TT	3	(**) CAN 10/1		
Kenya National Youth Service	KEN	6	LES 5/2		
Kenya Polytechnic	KEN	24	UK 24/1 24/2 38/1		
Kenyatta University College	KEN	22	ZAM 17/1		
Kerala Agricultural University	IND	111	(**) CAN 3/1		
Kesteven Agricultural College	UK	24	NEZ 17/2		
Khareberia Project	IND	3	NIG 34/1 35/1		
Kibaha Education Centre	TAN	2	UK 16/6 22/2 24/3 24/4 34/2 34/3		
Kigumba Co-operative College	UGA	11	46/4 47/3		
Kilacha Production and Training Centre	TAN	3	(***) AUS 11/1		
Kingsway Technical College	UK	115	TT 6/2		
Kivukoni College	TAN	25	(***) INT 26/1		
Kleruu College of Education	TAN	11	NIG 43/3		
Knox Development Foundation (Knox Community College)	JAM	1	Livestock Services Training Centre	NIG	35
Koforidua Agricultural College	GHA	16	Llysfasi College of Agriculture	UK	28
Konkan Krishi Vidyapeeth	IND	112	Lok Bharati	IND	46
Kristianstad-Blekinge Slakteriforening	INT	29	Longeronong Agricultural College	AUS	37
Kulp Bible School	NIG	1	Loughborough University of Technology	UK	89
Kunduchi Fisheries Institute	TAN	31	Loughry College of Agriculture and Food Science	UK	138
Kurukshetra University	IND	113	Lowestoft College of Further Education	UK	70
Kuru-Kuru Co-operative College	GUY	6	Loyalist College of Applied Arts and Technology	CAN	37
Kwadaso Agricultural College	GHA	11	Luanshya Youth Development Scheme	ZAM	3
Kwara College of Technology	NIG	25	Lutheran Farmer Training Centre	SWA	2
			Lushoto Institute of Rural Orientation	TAN	8
			Lushoto Integrated Development Project	TAN	26
			Lyamungu Institute	TAN	30
Lackham College of Agriculture	UK	25			
Lakehead University	CAN	52	Maasai Rural Training Centre	KEN	7
Lakeland College	CAN	4	Macauley Institute for Soil Research	UK	143
Laloki Co-operative College	PNG	5	Macquarie University	AUS	10
Lancashire College of Agriculture	UK	26	Mahatma Phule Krishi Vidyapeeth	IND	115
LAND ECONOMICS/USE/DEVELOPMENT			M.A.F. Training Programmes, Wellington 1	NEZ	17
(*) MAY 5/1			Makerere University	UGA	15
(**) CAN 30/1			Malaspina College	CAN	8
(***) AUS 20/1			Malawi College of Forestry	MAW	7
GHA 24/5			Malawi Young Pioneers	MAW	1
KEN 25/1			Malta - Department of Agriculture and Fisheries	MLT	1
UK 65/1 132/1			Mananga Agricultural Management Centre, Tshaneni	SWA	9
(****) AUS 2/3					
CAN 72/3			Mander College Farm	UK	29
GHA 24/7					
INT 3/1 12/1 13/3					
UK 81/2 91/3 109/1					
LAND HUSBANDRY					
(****) MAW 11/1					
Land Husbandry Training Centre	MAW	11			
LAND SURVEYING					
see SURVEYING					

Mara Institute of Technology, Petaling Jaya	MAY 21	Meat Inspector Training School, Athi River	KEN 21
Mara Institute of Technology, Selangor	MAY 22	MECHANIZATION (AGRICULTURAL/FARM)	
Marathvada Krishi Vidyapeeth	IND 116	(*) SRI 5/1	
Marine and Technical College, Tyne and Wear	UK 73	(**) KEN 13/1	
Marine Aquaculture Unit, Changi	SNG 4	UK 47/2 50/2	
Marine Biological Association of the UK, Plymouth	UK 164	(**) NIG 28/3	
MARINE BIOLOGY		UGA 8/2	
(**) CAN 21/1 28/1		UK 24/3 27/2 35/3	
(***) AUS 11/1 21/1 22/1 29/1 32/1		ZAM 22/1	
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IND 79/2 89/1		(***) IND 96/2 103/2	
MLT 3/1 3/2		Meerut University	IND 117
SIL 12/3		Melbourne College of Textiles	AUS 40
Marine Diesel Training Centre, Narayananj	BAN 11	Memorial University of Newfoundland	CAN 28
MARINE ENGINEERING/MECHANICS		Merrist Wood Agricultural College	UK 30
(*) SOL 2/1		Mid-Glamorgan College of Agriculture	UK 31
ZAM 6/1		Mikolongwe Veterinary Training School	MAW 8
(**) CAN 23/1 23/2 29/1		Milton Margai Teachers' College, Goderich	SIL 9
GHA 6/3		Ministry of Agriculture, Fisheries and Food, London	UK 61
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TON 2/1		Mixed Farming Centre, Yundum	GAM 1
ZAM 6/2		Mkata Institute	TAN 22
(**) CAN 12/1 13/1 23/3 26/2		Mlingano Institute	TAN 19
(**) BAN 9/2 11/1		Monash University	AUS 46
IND 29/1		Montgomery College of Further Education	UK 32
KEN 24/2		Morne Fortune Technical College	STL 2
NIG 33/1		Mount Carmel International Training Centre for Community Services	INT 30
SRI 7/2		Mpika College of Agriculture	ZAM 17
(***) UK 72/4		Mpwapwa Institute	TAN 21
Marine Fisheries School, Kuala Trengganu	MAY 9	Mtwara Institute	TAN 14
Marine Fisheries School, Penang	MAY 8	Murdoch University	AUS 50
Marine Products Processing Training Centre, Mysore	IND 30	Muresk Agricultural College	AUS 49
MARINE SCIENCE		Muri Christian Training School	NIG 4
(**) CAN 23/3		Murutunguru Rural Development Training Centre	TAN 9
(**) CAN 19/1 20/1 25/1 28/1 72/1			
(**) AUS 45/1			
CAN 57/1			
(***) AUS 11/2 45/2			
CAN 20/2 25/2 28/2 72/3			
Marine Laboratory, Aberdeen	UK 162		
Marist Training Centre, Taveuni	FIJ 1		
Maritime Forest Ranger School	CAN 24		
MARKETING			
see AGRICULTURAL ADMINISTRATION/ FARM BUSINESS			
Maseru Agricultural Training School	LES 6		
Massey University	NEZ 20		
Mazabuka Veterinary Training School	ZAM 18		
Mbamba Christian Rural Centre	NIG 2		
Mbegani Fisheries Centre	TAN 24		
McGill University	CAN 72		
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(**) AUS 34/1			
CAN 1/2 27/1			
(**) AUS 27/1			
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(***) UK 49/3 63/1			

National Institute of Agricultural Engineering, Bedfordshire	UK	144	Norfolk Schools of Agriculture and Horticulture	UK	33
National Institute of Agricultural Engineering, Midlothian	UK	145	Northampton College of Agriculture	UK	34
National Institute of Technology, Kuala Lumpur	MAY	23	North East London Polytechnic	UK	94
National Park Ranger Training Centre	NEZ	3	Northern College of Applied Arts and Technology	CAN	39
National Rubber Producers' Research Association, Herts.	UK	178	Northern Forestry Rangers College, U.P.	IND	69
National Service Scheme	GHA	26	Northern Ireland Department of Agriculture	UK	135
National Sugar Institute, Uttar Pradesh	IND	123	North of Scotland College of Agriculture	UK	127
National Union of Youth Organization, Kampala	UGA	4	Northumberland College of Agriculture	UK	35
National University of Malaysia	MAY	26	Nottinghamshire College of Agriculture	UK	36
National Youth Council, Accra	GHA	1	Nova Scotia Agricultural College	CAN	30
National Youth Service and Youth Camps	TT	2	Nova Scotia Technical College	CAN	31
National Youth Pioneer Corps, Kuala Lumpur	MAY	2	NUTRITIONAL BIOCHEMISTRY see FOOD AND NUTRITION		
National Youth Service, Colombo	SRI	1	Nyankpala Agricultural College	GHA	10
National Youth Service Corps, Lagos State	NIG	47	Nyegezi Institute	TAN	16
NATURAL RESOURCES			Nyerere Community Farm	JAM	3
(***) AUS 11/1 20/1					
(***) CAN 51/3 53/2			Oatridge Agricultural College	UK	117
(***) NEZ 19/11			OCEANOGRAPHY		
Natural Resources Development College, Lusaka	ZAM	19	(***) GHA 23/3		
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(**) NIG 31/1			(***) AUS 28/1		
(***) BAR 3/1			Ohawu Agricultural College	GHA	12
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Nautical School, Auckland	NEZ	12	Ontario - Ministry of Colleges and Universities	CAN	32 to 45
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(**) CAN 23/1 23/2 29/1 59/1			Organization of American States	INT	33
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(**) CAN 13/1 14/1			Osmania University	IND	125
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(**) CAN 26/3			OX TRAINING		
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(***) UK 74/2 101/1			(**) KEN 16/2		
Navoto Farm Training Centre	NH	2			
Navuso Agricultural School	FIJ	2	Pabna Technical Institute	BAN	10
New Amsterdam Government Technical Institute	GUY	4	Paisley College of Technology	UK	132
New Brunswick School of Fishing	CAN	23	Panafrican Institute for Development (PID)	INT	34
Newcastle Technical College	AUS	3	Panjab University	IND	126
Newfoundland College of Trades and Technology	CAN	27	Panjab Agricultural University	IND	128
New Hebrides - Department of Agriculture Training Centres	NH	3	Pershire College of Horticulture	UK	37
New Liskeard College of Agricultural Technology	CAN	48	PEST CONTROL/MANAGEMENT		
New South Wales - Department of Technical Education	AUS	3	(**) AUS 3/1		
New Zealand Federation of Country Girls Clubs	NEZ	2	(**) CAN 4/1		
New Zealand Federation of Young Farmers' Clubs	NEZ	1	(***) CAN 19/2		
Ngogwe Baskerville School	UGA	6	Pest Infestation Laboratory, Bucks.	UK	142
Nhlangano Farmers Training Centre	SWA	1	Pig and Poultry Research and Training Institute	SNG	2
Niagara College of Applied Arts and Technology	CAN	38	PLANT PATHOLOGY/PHYSIOLOGY		
Niagara Parks Commission School of Agriculture	CAN	50	(**) CAN 72/1 78/3		
Njala University College	SIL	11	(***) AUS 22/1 32/1		
Nkumbi International College	ZAM	15	IND 83/2 100/2		
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 IND 76/2 78/2 80/2 82/2 96/2 97/2
 114/2 116/2 117/2
 INT 14/1
 UK 81/2
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 (***) CAN 6/1 21/1 30/2 30/3
 MLT 1/2
 (***) AUS 30/1
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 UK 93/1 96/1 107/1 127/5 139/1
 (***) AUS 13/3 30/2 44/2 45/2
 CAN 18/2 21/2 56/2 73/2 80/3
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 Plumpton Agricultural College UK 38
 Plunkett Foundation for Co-operative Studies UK 58
 Plymouth Polytechnic UK 74
 P.N.G. Forestry College, Bulolo PNG 8
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 Polytechnic of the South Bank, London UK 100
 Postgraduate College of Animal Sciences, U.P. IND 75
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 (***) AUS 3/1 3/4
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 Punjabrao Krishi Vidyapeeth IND 129
 Queens University of Belfast UK 139
 Queensland Agricultural College AUS 18
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 (***) KEN 7/1
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 (***) CAN 6/1
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 (***) INT 26/1
 Ratanpur Agricultural Implement Repair and Training Centre BAN 2
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 Regional Centre for Graduate Study and Research in Agriculture (SEARCA), The Philippines INT 35
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 Regional Training Centre for Inland Fisheries Operatives, Agra IND 28
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 (***) CAN 49/2
 (***) INT 6/2 16/1 21/2 21/4 27/4
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 RESOURCES TECHNOLOGY/DEVELOPMENT/PLANNING
 (***) CAN 4/1 35/1 43/1 72/1
 (***) UK 124/2 134/3
 Rhymesbury Settlement Scheme JAM 4
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 (***) INT 27/1 27/2
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 (***) BAN 15/1
 Ridgetown College of Agricultural Technology CAN 49
 River Laboratory, Dorset UK 170
 Riverina College of Advanced Education AUS 8
 Robert Gordon's Institute of Technology UK 124
 Roseworthy Agricultural College AUS 28
 Rothamsted Experimental Station UK 141
 Rowett Research Institute UK 182
 Royal Agricultural College UK 53
 Royal Botanic Gardens, Richmond, Surrey UK 55
 Royal Horticultural Society, Wisley, Surrey UK 54
 Royal Melbourne Institute of Technology AUS 42
 Royal University of Malta MLT 3
 Rural Agricultural School, U.P. IND 48
 Rural Bible School, Benue State NIG 6
 RURAL DEVELOPMENT/PLANNING
 (*) BOT 1/1 3/1 4/1
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 (***) AUS 23/1
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 (***) JAM 6/4
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 (***) BAN 6/1 6/2
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 (***) FIJ 6/2
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RURAL EXTENSION

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Rural Extension Programme,
 Sarawak

MAY 3

Rural Higher Institute,
 Maharashtra

IND 52

RURAL INDUSTRY MANAGEMENT

(**) BOT 8/1

(***) AUS 28/1

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 MANAGEMENT

Rural Institute, Maharashtra

IND 50

Rural Institute, Mysore

IND 49

Rural Institute of Higher Studies,
 Bihar

IND 53

Rural Institute, Wardha

IND 51

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(**) IND 38/2 44/2 50/2 51/2 52/2 55/2

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(*) BAN 1/1

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(**) AUS 23/1

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(**) AUS 34/1

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(**) AUS 26/1 27/1

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(**) AUS 18/1 39/2

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ZAM 22/1

(***) AUS 22/1 30/1 44/1 45/1 51/1

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(***) AUS 22/2 28/2 30/2 44/2 45/2 51/2

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Rural Training School, Emerald AUS 17

Rural Training Centres, Gaborone BOT 2

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Rycotewood College UK 39

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Saskatchewan Technical Institute CAN 79

Sault College of Applied Arts and
 Technology CAN 42

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Sawmilling and Technical Training
 Centre, Sarawak MAY 12

School Agricultural Programme,
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School of Agriculture and Animal
 Husbandry NIG 34

School of Agriculture, Kabba NIG 29

Schools Agricultural Project SWA 5

School of Agriculture, National
 Roots Crops Research Institute NIG 27

School of Agriculture, Zaira,
 Kaduna State NIG 30

School of Co-operation, Polgolla SRI 17

School of Forestry, Ibadan NIG 39

School of Forestry, Jos NIG 38

School of Forestry, Obubra NIG 37

School of Forestry, Sunyani GHA 21

School of Nautical Studies,
 Dunedin NEZ 13

School of Veterinary Science and
 Animal Husbandry, Assam IND 17

Scottish Marine Biological
 Association UK 165

Seale Hayne Agricultural College UK 40

Sekondi Agricultural College GHA 17

Selkirk College CAN 16

Seneca College of Applied Arts
 and Technology CAN 43

Sese Farm School UGA 5

Settlement Study Centre, Israel INT 37

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(**) AUS 3/4 15/1 16/1 34/1 48/1

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(**) AUS 40/1

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KEN 19/1

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(***) AUS 12/1

Sheffield Polytechnic UK 65

Sheridan College of Applied Arts and Technology	CAN	44	Staff Training Centre, Kerala	IND	27
Shri Ramakrishna Mission	IND	55	State Forest Service College, Assam	IND	81
Shropshire Farm Institute	UK	41	Stevenson College of Further Education	UK	118
Shuttleworth Agricultural College	UK	42	Stirling University	UK	133
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Soil Association, Suffolk	UK	179	(*) MRS 2/1 2/2		
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South Gujarat University	IND	134	UK 94/1		
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