

estimated, and the proportion of financial requirements likely to be available from domestic resources or needing to be obtained from abroad must be calculated. The provision of adequate production incentives, education and training, extension schemes, research and development, transport and distribution, storage and protection are all important aspects of the problem.

4. This paper begins by tracing the development of trends in world food production, noting the recent improvement in total world food production, but equally highlighting the continuing lack of progress in many developing countries, especially in the Most Seriously Affected (MSA) countries. An outline of the main proposals on international food policy at the World Food Conference of 1974 is followed by a review of progress and developments in the main international institutions concerned with food production and supplies, including those established as a result of the World Food Conference. The somewhat limited progress towards an international system of world food security in the negotiations for a new International Grains Arrangement to replace the International Wheat Agreement is described; world food security is, however, to be the subject of a separate study in due course, and is discussed in this paper only to a limited degree insofar as it arises in the broader treatment of food policy or in the examination of specific institutions. A section on the provision of external financial resources emphasises the inadequacy of present resource flows into agriculture and examines the role of the World Bank and of the International Fund for Agricultural Development (IFAD). There are reviews of both the domestic food and food aid policies of the United States and the European Community, the two groups whose policies probably are of most concern to developing countries. The paper concludes with a more extensive review of the factors influencing the supply of the most important agricultural inputs, and a postscript on the Fourth Session of the World Food Council held in June of this year.

## II. Recent Trends in Food Production and Consumption in Developing Countries

### (i) World Food Supply

5. The improvement in the world food supply position which began in 1975 continued in 1976, mainly as the result of a substantial increase in world cereal production and stocks. A major factor in 1976 was favourable weather in nearly all the major cereal producing areas of the world, so that a record world wheat crop of 418 million tonnes was harvested, while coarse grain output rose to a new peak of 704 million tonnes. In addition world rice output was comparatively heavy. World cereal stocks at the end of the 1976-77 season were estimated at 162 million tonnes as against 123 million tonnes a year earlier, thanks to the improved 1976 harvests and the reduced import demand for grain from India, the Soviet Union and Latin America. World meat production increased by 3 per cent in 1976, both in developed and developing countries. World sugar output increased by 7½ per cent in 1976-77, and output of oils and fats went up by 6 per cent. The world catch of fish in 1976 is provisionally estimated at a new record of 73 million tonnes.

Table A - Indices of World and Regional Food Production, 1971 to 1976, and Annual Rates of Change, 1961-70 and 1970-76

	1971	1972	1973	1974	1975	1976	Change 1975 to 1976	Annual rate of change	
	1961-65 = 100							1961-70	1970-76
	Per cent								
<u>Developing Market Economies</u>	125	125	129	132	141	146	+4	3.3	2.8
Africa	121	119	115	123	125	131	+4	2.7	1.2
Far East	126	122	133	130	143	145	+1	3.5	2.8
Latin America	128	129	132	139	144	155	+8	3.5	3.3
Near East	126	136	129	140	150	157	+4	3.0	4.2
<u>Asian Centrally Planned Economies</u>	126	125	130	133	137	140	+2	2.9	2.4
Total developing countries	126	125	130	133	140	144	+3	3.1	2.7
<u>Developed Market Economies</u>	123	122	125	128	132	134	+1	2.2	2.4
Western Europe	120	119	123	129	127	127	-1	2.3	1.6
North America	124	122	124	126	135	139	+3	2.1	3.1
Oceania	127	126	138	131	141	149	+6	2.9	3.1
<u>Eastern Europe and the U.S.S.R.</u>	126	123	146	138	131	144	+10	2.9	1.9
Total developed countries	124	122	131	131	132	137	+4	2.4	2.3
World	125	123	130	132	135	140	+4	2.7	2.4

Note: Food production covers crops and livestock only. In addition to other non-food products, the index numbers now also exclude coffee, tea, linseed and hempseed, and are therefore not completely comparable with those published earlier.

Source: FAO, Conference Document C77/2 and Fourth World Food Survey, 1977.

6. World food production increased by 4 per cent in 1976, the largest rise since 1973; output in developing countries went up by 3 per cent. Nevertheless despite the good 1976 increases the annual average rates of growth in food production during 1970-76 in developed and developing countries of 2.3 and 2.7 per cent respectively continued below the corresponding rates for the nineteen-sixties of 2.4 and 3.1 per cent. In the developing countries the greatest improvement in food production in 1976 was in Latin America, where output increased by 8 per cent, more than twice the annual average growth rate of the seventies. In the Far East food production was up by 1 per cent in 1976, this representing only about one-third of annual average growth this decade, but in Africa, where the average growth rate for the seventies was low at 1.2 per cent, food production expanded in 1976 by 4 per cent.

7. The generally inadequate rates of growth in world food production become much more apparent when allowance is made for population growth, and production is reported on a per caput basis. Despite per caput food production in all regions except Africa being at or close to peak levels in 1976, the FAO index number (1961-65 = 100) of per caput output in the developing market economies was only 104, one point higher than in the previous year, and only 2 points higher than the 1971 figure of 102. Furthermore, while the annual average rate of increase in per caput food production in the developing market economies in the nineteen sixties was 0.7 per cent, growth was reduced to only 0.2 per cent per annum between 1970 and 1976. Only in the developing market economies of the Near East has a significant annual rate of growth of 1.4 per cent taken place this decade in per caput food production; in Latin America and the Far East growth has been only 0.5 and 0.2 per cent respectively, while in Africa per caput food production since 1970 has declined at an annual average rate of 1.4 per cent, resulting in a 1976 per caput output 6 per cent less than in 1961-65.

8. Food production has fared worse in the 46 Most Seriously Affected (MSA)<sup>1</sup> countries than in other developing countries, their production rising by only 2.1 per cent per annum in 1970-76 as against an increase of 2.8 per cent for the developing market economies as a whole. The total population of the MSA countries is nearly 1.1 billion, slightly more than a quarter of the world population. Per caput food output of the group of MSA countries actually fell by 0.4 per cent a year during 1970-76. Even between 1975 and 1976, when the growth rate for world food production was the best since 1973 and per caput production in developing countries increased by 0.5 per cent, in all MSA countries there was a reduction in per caput output of 1.4 per cent, while in African MSA countries the contraction was 3.3 per cent.

9. The group of Least Developed Countries (LDCs)<sup>2</sup> falls very largely within the wider MSA grouping and therefore reflects much the same food production difficulties. There is, moreover, a lack of aggregated statistical data on the food production of the LDCs. For this reason and because of the overlap between the two groupings any separate analysis of LDC performance is both difficult and of doubtful value. Hence further treatment of the developing countries in this study is limited to MSA and non-MSA countries.

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<sup>1</sup> The MSA countries are listed in Annex I.

<sup>2</sup> The LDCs are listed in Annex II.

Table B - Rates of Growth in Food Production: World and Regions

Region	Total		Per caput	
	1961 to 1970	1970- 76 (Per cent per annum)	1961 to 1970	1970- 76
Developing market economies	3.3	2.8	0.7	0.2
MSA countries	3.1	2.1	0.7	-0.4
Non-MSA countries	3.3	3.4	0.6	0.7
Africa	2.7	1.2	0.1	-1.4
Latin America	3.5	3.3	0.8	0.5
Near East	3.0	4.2	0.3	1.4
Far East	3.5	2.8	0.9	0.2
Other developing market economies	2.1	1.5	-0.4	-1.0
Asian centrally planned economies	2.7	2.4	0.9	0.6
All developing countries	3.1	2.7	0.7	0.3
Developed market economies	2.2	2.4	1.2	1.5
North America	1.9	3.1	0.7	2.1
Western Europe	2.3	1.6	1.6	1.0
Oceania	2.9	3.1	1.1	1.3
Other developed market economies	3.3	2.1	1.8	0.6
Eastern Europe and the USSR	2.9	1.9	1.9	1.0
All developed countries	2.4	2.3	1.4	1.4
World	2.7	2.4	0.8	0.5

Source: FAO, Fourth World Food Survey

(ii) World Grain Production

10. Following a period of considerable instability in 1972-74, total world grain output recovered by 1 per cent in 1975, despite a disastrous harvest in the Soviet Union. A much more pronounced improvement in world cereal output took place in 1976, when total cereal output (including rice in milled equivalent) went up by 9 per cent to a new record of 1,355 million tonnes. The main factors in this expansion were favourable climatic conditions in most producing areas and the increase in planted areas in response to high prices. World wheat output went up by 17 per cent to a new record of 418 million tonnes, while coarse grain output advanced to some 704 million tonnes, also a new peak. World rice production of 233 million tonnes, milled equivalent, while heavy, was, however, 3 per cent smaller than the very good 1975 output. A very important feature of the increase in cereal output in 1976 was that some 70 per cent of the expansion in wheat and coarse grain production took place in the Soviet Union where a record grain harvest of 215 million tonnes was achieved. As a result of the record 1976 grain output and fall in import demand from countries such as India, Brazil, Mexico and especially the Soviet Union, world cereal stocks (excluding those in China and the Soviet Union) for the crop year ending in 1977 rose sharply to some 164 million tonnes, 32 per cent greater than in the previous year, and the highest since 1972-73.

11. As of mid-March 1978 world cereal output in 1977 was estimated at 1,336 million tonnes, 1 per cent down on 1976, but the second highest on record. Wheat production, however, declined by 8 per cent as the result of smaller harvests in North America, Latin America, Africa, China, the Soviet Union and Australia. This was largely offset by the 4 per cent rise in world rice output which took place mainly in the Far East, notably in India, and by the 1 per cent increase in production of coarse grains which occurred principally in the United States, Argentina and the EEC. As a consequence of the heavy 1977 world output of cereal crops the total carry-over of cereal stocks from the 1977-78 season is forecast to rise by 9 per cent to 178 million tonnes, 19 per cent of world consumption (excluding the Soviet Union and China) and above the minimum safe level of global stocks of 17-18 per cent suggested by FAO.

Table C - World Production of Cereals  
(million tonnes)

	1975	1976	1977 <sup>p</sup>	1978 <sup>f</sup>
Wheat	355	418	386	408
Coarse Grains	649	704	708	721
Rice (milled)	240	233	242	250
Total cereals	1,244	1,355	1,336	1,380
of which:				
Developed market economies	472	480	492	..
Developing market economies	354	367	368	..
Centrally planned economies	419	508	476	..

p = provisional.

f = forecast.

### (iii) Grain Production in Developing Countries

12. Output of cereals in developing countries grew relatively substantially in 1976, the expansion from 354 million tonnes in 1975 to 367 million tonnes (market economy countries) representing a rise of over 3 per cent. However, whereas between 1972-73 and 1975-76 cereal production in developing countries grew more rapidly than that of the world as a whole (12 per cent as against 6 per cent), due mainly to favourable monsoons which had boosted rice output in Asia, this was not the case in 1976-77, when the increase in world cereal output of no less than 9 per cent was to a large degree attributable to the great recovery in wheat and coarse grain output in the Soviet Union. For the developing countries the overall increase in cereal output in 1976 of some 13 million tonnes was considerably smaller than the record expansion in output in 1975 of 29 million tonnes. The reason for this was the slight fall in the rice output of the developing countries, occasioned by smaller crops in India and Bangladesh as the result of less favourable monsoon conditions. In 1975, by contrast, the rice output of developing countries had gone up by 15 million tonnes. Preliminary estimates indicate only a marginal further increase to 368 million tonnes in 1977; the improvement in Far East rice production was largely offset by poorer Latin American and African wheat crops.

13. The effects of favourable weather on the out-turn of world cereal crops must always be borne in mind. Indeed in developing countries weather conditions can be a critical factor in determining the level of food supplies. In 1976, for example, the early conclusion of the monsoon damaged rice crops in India, Bangladesh and Thailand, whereas in 1975 the sustained rainfall conditions in many Asian countries had boosted the major monsoon paddy crops. Likewise, although the increased world cereal output in 1975 and 1976 was to some extent due to an enhanced use of inputs and to improved monetary incentives to farmers in the form of higher prices, the major factor in the expansion was the generally favourable weather in many producing states. A continuation of good weather in the majority of developing countries in the next few seasons cannot be taken for granted. A recurrence of adverse climatic factors in some areas may be expected quite shortly and could easily reduce developing country cereal output below the trend and result in short supplies.

### (iv) Grain and Other Food Imports into Developing Countries

14. Grain imports by developing countries rose to a new peak of 52.9 million tonnes in 1975 (Appendix Table 4), some 11 per cent higher than in 1974, reflecting strong demand for cereals and also probably some element of stockbuilding. Imports of rice fell in favour of wheat and maize purchases. Following the sharp rise in the cost of cereal imports in 1973 and 1974, which placed severe strains on their foreign reserves, developing countries faced a bill for cereal imports in 1975 only 3 per cent greater than in 1974. Since their volume had risen appreciably there was in fact a fall in the unit cost of cereal imports. Nevertheless, the total value of developing country cereal imports in 1975 of \$10.6 billion was some two and a half times that of 1972 (Appendix Table 5). In 1976 both volume and value of cereal imports fell, the latter more than the former. Some developing countries can finance a rising volume of food imports without serious difficulties through increased export earnings, but this is not so for most of them.

15. Cereal imports by the MSA countries, which were around the nineteen million tonnes level in 1974-75 and in 1975-76, declined to 16.5 million tonnes in 1976-77, some 3.2 million tonnes less than actual imports in the previous season, but still 2.9 million tonnes above the 1971-75 average. The decline in MSA import requirements in 1976-77 mainly reflected the fall in demand from Asia following the good 1976 cereal crops there. Nevertheless, larger imports were required by Africa, and the import requirements for the 43 MSA countries other than Bangladesh, India and Pakistan were in fact put at 9.6 million tonnes, 1.2 million tonnes more than in the previous year. Over the longer-term perspective of the last decade a rather similar pattern has been apparent, with Indian cereal imports declining, but those of all other MSA countries as a group tending to rise. This pattern is again being followed in 1977-78 when India will account for only 0.3 million tonnes of the total estimated MSA requirements of 14.8 million tonnes. Although as a group developing countries are net importers of cereals, certain of them are regular exporters, for example, Argentina of wheat and coarse grains, and Thailand and Burma of rice. Others, however, are intermittent exporters, as for instance India in 1977-78, selling on world markets only in times of abundant domestic supplies. In 1975 developing market economy countries exported 15.2 million tonnes of cereals, only 29 per cent of their overall imports of 52.9 million tonnes.

16. A feature of recent years has been the relatively small component of food aid in the cereal imports of developing countries. Food aid averaged over 12 million tonnes a year during 1970-72, forming 36 per cent of cereal imports, but the run-down in United States stocks resulted in a severe cut in aid in the critical season 1973-74, and although aid shipments subsequently recovered somewhat to some 8.0 to 9.0 million tonnes, they continue well below the levels of the sixties. The annual food aid target of 10 million tonnes of grain a year set by the World Food Conference in 1974 has still not been reached, shipments in 1976-77 being estimated at 8.9 million tonnes, and although the outlook for 1977-78 is rather better, the total is likely to remain short of the target.

17. The following table illustrates the rise in developing country cereal imports and the declining proportion received as food aid.

Table D - Developing Countries' Imports of Cereals and Share as Food Aid

<u>Period</u>	<u>Total</u>	<u>Food Aid</u>	<u>per cent</u>
		(million tonnes)	<u>of total</u>
Average 1961-63	25.1	14.3	<u>57</u>
1970	33.5	12.7	<u>38</u>
1971	36.6	12.7	<u>35</u>
1972	34.5	11.8	<u>34</u>
1973	45.6	9.6	<u>21</u>
1974	48.8	7.7	<u>16</u>
1975	54.4	8.4	<u>15</u>
1973-75 average	49.6	8.6	<u>17</u>

Source: World Food Council, 1977.

18. Food aid levels have historically been related to the availability of food surpluses, and the decline in the nineteen-seventies reflected the reduction in world grain stocks. Although the recovery in grain stocks in 1976-77 and 1977-78 has been accompanied by a moderate rise in the volume of cereal food aid it seems unlikely that this will return to the levels prevailing during the nineteen-sixties for a number of reasons. Firstly, in the present depressed state of the world economy donors find it more costly to sustain very high levels of food aid programmes. Secondly, there is an awareness that excessive food aid may discourage self-reliance in food production in developing countries. Thirdly, there is widespread agreement in the international community that world grain stocks ought not be run-down through disposal programmes to the point where future crop shortfalls could result in severe grain shortages and high prices. Rather, part of the current world grain surplus should be converted into security reserves, nationally-held but internationally co-ordinated and financed. Such security reserves would limit the quantities of grain available for normal food aid.

19. Against the low level of food aid in cereals in recent years and the unlikelihood of significant increases in the future should be placed the notable increase in food aid in several non-cereal commodities. Aid shipments of skimmed milk powder rose from 76,500 tonnes in 1974 to 121,500 in 1975 and to 150,000 tonnes in 1976 and were likely to reach about 250,000 tonnes in 1977-78. Food aid in butter oil was some 50,000 tonnes in 1976 and was likely to grow in 1977-78. Although food aid in dairy products in the last two decades has been subject to great instability since it has depended upon the fortuitous production of surpluses, its recent recovery owes much to the increasingly high levels of surpluses in the E.E.C., where the inability to restrain dairy production to any significant degree means that availabilities are likely to remain high in at least the medium-term. Since the absorptive capacity of developing countries for milk products now appears to be greater than was originally thought, higher levels of food aid in dairy products could be sustained, especially as there is a large "concealed surplus" of skim milk powder currently disposed of at subsidised prices for use as animal feeding stuffs. Food aid in vegetable oils recovered from an average of 113,000 tonnes in 1974 and 1975 to over 200,000 tonnes in 1976 and may rise further in 1977-78. Nevertheless it is likely to remain below the average annual level for the nineteen-sixties of some 380,000 tonnes since the United States, the principal supplier, now appears to be marketing its oil surpluses more successfully on a commercial basis than was the case ten years ago. Broadly speaking, non-grain food aid (which also includes a small volume of fish) in the past has accounted for between 10 to 20 per cent of total aid, but it could assume a more important role in the future, especially because of its generally high nutritive value.

#### (v) Future Trends in Food Production

20. While most developing countries have development plans which aim at self-sufficiency in grains, or at least reduced dependence on imports, projections made by various authorities - largely based on extrapolation of past trends - foresee that the import requirements of developing countries will continue to increase, at least into the 1980s. On the basis of current resources and trends in management the FAO forecast in 1974 that food production in developing countries would increase by 2.6 per cent a year

to 1985, or slightly less than the population increase of 2.7 per cent per annum. Using a 'trend' growth in incomes, food demand was projected to rise by 3.6 per cent a year. On these assumptions FAO estimated a net foodgrain deficit for importing developing countries by 1985 of some 85 million tonnes, including rice in the form of paddy, or 72 million tonnes, with rice on a milled basis. A study published by the World Bank in November 1976 put the 1985 net grain deficit at some 75 million tonnes. Studies of the likely deficit by the USDA and IFPRI (International Food Policy Research Institute), based upon various assumptions of income growth, produced ranges of 34-68 million tonnes and 41-83 million tonnes respectively for the 1985 grain deficit. The two higher income estimates, if corrected for differences in data, show a fair degree of concurrence with the FAO and World Bank estimates of the 1985 deficit; essentially these range from 70 to 80 million tonnes.

21. The emergence of such large deficits in the overall grain requirements of developing countries suggests the impossibility of meeting these needs by importing. It is clear that the developing countries as a group would be quite incapable of meeting the foreign exchange costs (\$12-15 billion) of importing some 70-80 million tonnes of grain annually, although some individual countries would no doubt have the capability to import large quantities of grain. For food aid to even meet, say, a quarter of requirements, would involve the provision of up to 20 million tonnes of cereals a year, more than twice the amount currently being made available. Thus, while developing countries can be expected to continue importing cereals to the extent that their foreign exchange resources permit, and while food aid will continue to play an important role, especially for the Food Priority Countries (FPCs)<sup>1</sup>, it is clear that the main thrust to meet cereal shortages must come from an intensification of measures within the developing countries to raise their own cereal output. This will, of course, require greatly increased financial, material and technical assistance from the international community. In this context the inadequacy of present external resource flows to food production is apparent; totalling \$3.7 billion in 1975, they increased only marginally in 1976 to \$3.9 billion, although a more marked recovery to \$4.5 billion is provisionally estimated for 1977. The World Food Conference target of \$5.3 billion required from external resources to raise the rate of growth in food output in developing countries to 4 per cent per annum has been revised to \$8.3 billion in 1975 figures and at current values must be in the region of \$10 billion. It thus appears that less than half the external resources required are currently being made available.

22. There must be special concern about future levels of food production in the 46 MSA countries on the basis of the recent output trends set out earlier in Table B. In per caput terms food output in the MSA countries has been declining in the present decade. Furthermore, in contrast

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<sup>1</sup> Forty-three Food Priority Countries were identified by the World Food Council in 1976. The criteria for identification were (i) low per caput income; (ii) a high projected cereal deficit by 1985; (iii) a high degree of protein-calorie malnutrition; (iv) inadequate increase in food production; (v) serious balance of payments constraints and (vi) a potential for rapid and socio-economically well-distributed increase in food production. The FPC countries are listed in Annex III.

to all developing market economies, which together recorded an increase during the year in their cereal output of 13 million tonnes to 367 million tonnes, total cereal production in MSA countries fell marginally in 1976 from 189 million tonnes in 1975 to 188 million tonnes. An improvement in total MSA cereal production in 1977 to 196 million tonnes was primarily a reflection of improved crops in India since output in all other MSA countries only advanced from 87 to 88 million tonnes.

23. Despite the very serious situation in the MSA countries, the prospects for increasing food production in developing market economies may now be somewhat better than they appeared in 1974. Although in 1970-76 the average annual rate of increase in food production in developing market economy countries was only 2.8 per cent, the two years of good weather after 1974 resulted in food production in these countries rising by 7 and 4 per cent respectively in 1975 and 1976. Food production in these countries will continue to be subject to the vagaries of weather, but improved cultivation techniques, the better supply of inputs and the use of new varieties of cereals all hold out the possibility that in the period up to 1985 the average annual rate of increase in food production in developing countries may be rather higher than the 2.6 per cent forecast. It is encouraging to observe that in 1974-76, although not unfortunately in 1977, food production in the developing market economies rose on average by 4 per cent, the figure called for in the Second Development Decade.

### III. Proposals on Food Policy at the World Food Conference, 1974

24. Any review of international food policy at the present must start with the comprehensive programme of action proposed at the World Food Conference, and must analyse subsequent developments in institutions, activities, and policies. The major aims of the Food Conference included the formulation of programmes to increase food production in developing countries, to improve the distribution and consumption of food, to strengthen world food security and to bring about a more orderly system of agricultural trade and adjustment. In all the Conference adopted no less than 22 resolutions, intended to cover all aspects of the world food problem. The first resolution set out the objectives and strategies of food production, while most of the remaining 21 resolutions were concerned with ways of achieving these objectives. It may be, in retrospect, that all 22 resolutions were too diffuse in coverage, and that, although they referred to all the main issues and requirements, they lacked precise proposals as to the attainment of the desired objectives. Nevertheless, the World Food Conference also made concrete proposals for the establishment of new bodies, for example the International Fund for Agricultural Development and the World Food Council, and thus laid the bases from which further international action in the sphere of food policy could evolve.

25. The first resolution of the Conference declared that the "highest priority should be given to policies and programmes for increasing food production and improving food utilisation in developing countries, so as to achieve a minimum agricultural growth rate of 4 per cent per annum" and that "all Governments should accept the removal of the scourge of hunger and malnutrition as the objective of the international community as a whole . . . within a decade . . ." The initiatives called for by the remaining