COUNTRY ACTIVITIES - FOUR CASE-STUDIES

75. The purpose of this section of the report is to provide a selection of brief country profiles to illustrate the circumstances and influences on the choice of health status indicators. The main lessons learned from the case-studies are drawn together at the end of the section. Four developing countries which are members of the Commonwealth have been chosen. The selection was governed primarily by the need to cover a range of national settings with regard to:

a). basic demographic characteristics - in particular, population size, growth rate, and mortality experience;

b). geographic circumstances, including size, location and climatic factors;

c). economic profile;

d). the nature and scale of major health problems;

e). data sources within the country for the construction of indicators.

However, it must be added here that although considerable care and attention has been given to producing up-to-date and reliable accounts of the situation in the four countries, the difficulty of obtaining the necessary information without country visits has proven to be a major obstacle. The recommendations to this report include the need and possible ways to improve the distribution and exchange of materials between the Commonwealth countries.

76. The countries which are considered are Bangladesh, Malaysia, Sierra Leone, and the Solomon Islands. Table 3 summarises some of the key demographic and socio-economic characteristics at the national scale. Each case-study includes a brief discussion of the country setting. This is followed by a short description of the principal health concerns and the strategies and programmes which have been adopted in response. Particular attention is paid to the implementation of PHC and the organizational structures involved. These are relevant to the description which is given of the existing information and sources available for the construction of health status indicators in each country, together with some examples of evaluation activities.

TABLE 3

Key demographic and socio-economic characteristics for the four selected countries.

Characteristic	Bangladesh[1]	Malaysia[2]	Sierra Leone[3]	Solomon Is[4]
Population (1000s)	93179('82)*	15204('84)	3700('84)[6]	259('83)
Land area (1000 sq km)	144	330	73	27
Av. density (per/sq km)	647('82)	46('84)	51('84)	10('83)
Density range (per/sq km)	38-1358('81)	11-4229('84)	13-566('74)[7]	3-439('76)
Annual growth rate (%)	2.4('74-'81)	2.7('82)	2.6('75-'80)	3.4('83)
Crude death rate per 1000	11.9('82)	5.1('84)	19.2('75-'80)	11.0('83)
Crude birth rate per 1000	34.8('82)	31.2('84)	45.5('75-'80)	44.6('83)
Infant mort. rate per 1000	122('82)	19.3('82)	208('80)	46('84)
Life expect. (M) at birth. (F)	55.9('82) 56.9	67.7('82) 72.5	44.3 47.5	- -
(Both)	-	-	45.9('75-'80)	54.0('83)
% pop.<15yrs	47.0('81)	38.1('82)	40.0('74)[8]	48.0('76)
% pop. urban	15.2('81)	39.9('80)	20.0('79)[8]	10.0('80)
Adult literacy rate (%)	29.2('81)	72('80)	15('79)	25-30('83)
GNP per capita(US$)	123('83-'84) [5]	1994('84)	320('84)[9]	615('83)

Sources: [1] Unless otherwise stated, WHO/SEARO (1983)
[2] Ministry of Health, Malaysia (1985)
[3] Unless otherwise stated, UNFPA-SL (1984)
[4] Ministry of Health and Medical Sciences, Solomon Is.(1985a)
[5] Ministry of Health and Population Control, Bangladesh(1985)
[6] World Bank (1984)
[7] Okoye (1980)
[8] Ministry of Health, Sierra Leone (1984)
[9] Ministry of Health, Sierra Leone (1985)
* Year to which figures refer.

BANGLADESH

77. The Republic of Bangladesh is the second largest developing country in the Commonwealth, with an estimated population of over 93 million in 1982 (Bangladesh Bureau of Statistics, BBS, 1982). The country is surrounded on three sides by India; in the south-east it shares a short border with Burma, while the Bay of Bengal provides the southern boundary of some 600 kilometres of marshy coastline. For the most part, Bangladesh forms the flat alluvial delta of the great river system comprising the Ganges, Brahmaputra and Meghna rivers. Bangladesh is a hot, humid, monsoonal country with seasonal rainfall augmented by annual flooding, often with disasterous consequences.

78. Since 1947, Bangladesh has suffered under the combined effects of an almost stagnant, traditional subsistence economy and a greatly increasing rate of population growth, estimated at 2.4% per annum between 1974 and 1981 and attributed to continuing high fertility and declining mortality (UNFPA-B, 1978). Since 1971, rural poverty has greatly intensified as Bangladesh has suffered from the loss of the West Pakistan markets, the demands of economic, social and administrative reconstruction after the civil war, floods and droughts, and shifts in the pattern of international trade and prices. Today, the economic structure is dominated by subsistence agriculture and a narrow-based modern sector, with low productivity and income, precarious employment, and a limited capacity for generating domestic resources and foreign exchange. One of the symptoms of the growing pressures on the land is the failure of food production to keep up with population growth. In 1982, the average population density was 647 persons per kilometre square - one of the highest in the world - though this varied widely from 38 in Bandarban to 1358 in Dhaka District (BBS, 1982). The per capita GNP was just US$ 123 in 1983/4 (Ministry of Health and Population Control, MHPC-B, 1985), with almost half of all rural households landless, and over two-thirds of the population illiterate.

Health profile

79. The health, nutritional and socio-economic problems of Bangladesh are of vast dimensions (MHPC, 1985). These interact with each other and are aggrevated by the rapidly growing population. Diseases aetiologically related to environmental sanitation and personal hygiene predominate. Communicable conditions, including malaria, diarrhoeal diseases, tuberculosis, leprosy, intestinal helminthiasis, and diseases preventable by vaccines, together with malnutrition, are the major causes of mortality and morbidity (WHO/SEARO, 1983). Diarrhoea is associated with nearly 80% of infant deaths and 60% of deaths in the 1-5 year age group. Almost two-thirds of rural children under 6 years were reported to be chronically under-nourished in 1975/76 (UNFPA-B, 1978).

80. The health strategy in Bangladesh is based essentially on the PHC approach, with an emphasis on the rural areas where over three-quarters of the population live. Priorities include:

a). ensuring safe deliveries in the rural areas by training traditional birth attendants (TBAs);

b). controlling diarrhoeal diseases;

c). providing immunization against major communicable diseases through EPI, including providing tetanus toxoid to pregnant mothers and women of child-bearing age;

d). promoting community participation in the efforts to improve health status.

81. Central to the provision of PHC services are the village voluntary health workers (VHWs) and TBAs. At the next level in the health services heirarchy, the union level, are health and family welfare centres serving populations of, on average, 20,000 people. Through these static units, domiciliary health and family planning services are also provided. Above this level are the upazila (thana or sub-district) health centres, covering populations of between 150,-300,000 which represent the first referral centre in the PHC network. These provide a wide range of promotive, preventive and curative services, delivered in terms of in-patient, out-patient and domiciliary care. Disease-specific programmes, such as EPI campaigns, ORT education and the prevention of blindness, are now administered from these upazila centres rather than as vertical programmes. Finally, district hospitals and specialized institutes and hospitals complete the health services heirarchy. In addition to these government-provided services there is a private sector offering 'modern' and unani, ayurvedic and homeopathic systems of medicine.

82. In 1985, it was estimated that 'health coverage' extended to approximately 45% of the population (MHPC-B, 1985). The principal obstacles facing the further progress of the national strategy for HFA, as assessed by the Ministry of Health and Population Control, include:

a). financial and manpower constraints. The health sector (excluding the Population Control wing) received 2.5% of the total public expenditure in 1985;

b). lack of proper mechanisms for channelling the essential inter-sectoral collaboration.

c). low levels of literacy, extreme poverty and lack of awareness of health. These contribute to limited community participation which, in turn, is aggrevated by the lack of suitable administrative networks at the community level to assist in the processes of decentralizing decision-making, mobilizing local resources and promoting health education;

d). inefficient application and utilization of available resources owing to inadequate planning and management capabilities and to the absence of essential information;

e). poor integration of services at the upazila level. For instance, MCH services are currently under the direct control of the family planning administrative system rather than run in conjunction with the general health services.

Health information, indicators and evaluation

83. Monitoring and evaluation both of the overall health strategy based on the PHC approach and of disease-specific programmes, is carried out by a wide variety of organizations (MHPC-B, 1985). Within the government sector, three ministries are particularly involved: the Ministry of Health and Population Control, the Ministry of Planning, and the Ministry of Finance. Other ministries may also participate in the evaluation of specific programmes, such as the Ministry of Local Government, Rural Development and Co-operatives in the case of water and sanitation programmes. These various ministries are more or less

concerned with different objectives in terms of evaluation, with the Ministry of Health and Population Control perhaps the most directly concerned to evaluate impact. In addition to these government activities, donor agencies may carry out evaluations of particular programmes to which they are contributing; for example, UNICEF have been involved in the monitoring of the ORT programme (MHPC-B, 1985). Other relevant organizations and institutes which may provide expertise or alternative sources of health information include the Bangladesh Medical Research Council, the National Institute of Preventive and Social Medicine, the Bangladesh Institute of Development Studies, the Bangladesh Bureau of Statistics, and the International Centre for Diarrhoeal Diseases Research (ICDDR-B).

84. Recent national-level initiatives in the evaluation of PHC have tended to be carried out as part of global and regional efforts to monitor progress towards the goal of HFA/2000, which were discussed earlier in the report (para. 65). A country profile was prepared in 1980 which included 77 indicators, some of which were health-related, for example, the infant mortality rate. During 1982, a special task force was appointed to examine the changes in the profile, and in the following year a government committee provided the necessary information to construct the recommended 12 global indicators, three of which refer to health status. In 1985, a report was produced which uses the common framework and format, developed in conjunction with WHO, to evaluate the strategies of HFA/2000 (MHPC-B, 1985). Although this report concentrates on indicators for the evaluation of operational performance, it also presents values for a number of health status indicators, as shown in Table E (Appendix III). As regards assessing the impact of PHC activities, the report concludes by suggesting that:

> "Although no significant impact has been made on the vital statistical parameters, such as infant mortality rates, maternal mortality rates and life expectancy, the change in health strategy.... has greatly improved the delivery of PHC at the periphery. It is envisaged that in a few years' time there will be a significant lowering of these vital health statistics parameters". (MHPC-B, 1985).

85. Although there are a number of different sources of information for constructing these and other health status indicators in Bangladesh, it is generally recognized that many of these are inadequate in terms of quality, quantity and availability. The weakness in the existing health information system is seen as one of the major obstacles both to the improvement and planning of PHC and the evaluation of impact. The newly-established Health Information Unit, under the Ministry of Health and Population Control, is primarily responsible for collecting and summarizing information derived from the health services. The reporting networks are, however, poorly developed and efforts to strengthen these rely heavily on the village-level health workers collecting information within the community. The situation is a reflection of the generally poor state of statistical systems in Bangladesh (UNFPA-B, 1978). Although a major step forward was taken with the amalgamation of statistical services under the Bangladesh Bureau of Statistics in the late 1970s, this does not seem to encompass the information network related to the health services.

86. It was mentioned earlier in the report (para. 51), that the decennial censuses have traditionally provided one of the most important sources of basic demographic information, especially on mortality, but in Bangladesh problems of under enumeration, delays in the availability

of information, and their comparative infrequency (the last one was conducted in 1981), reduce their relevance for the investigation of short-term trends, especially at the sub-national level. Equally, the vital registration system was described as being in a 'confused state of non-operation' during an assessment made by UNFPA (1978). This cannot be relied upon as a continuous source of information on births and deaths, except in the small number of sample registration areas in which reporting is more or less complete, and in MATLAB Thana where a comprehensive demographic surveillance system has been in operation for over 20 years (Chowdhury et al, 1981; D'Souza, 1984). Finally, a source of existing (historical) information is also provided by a number of ad hoc demographic and health-related surveys, such as the Bangladesh Fertility Survey, and by comparatively small-scale (by national standards) intensive and exploratory studies. Khan et al (1985), for instance, carried out a study in 1982/83 of maternal mortality in 240 rural villages, using TBAs to collect the necessary information.

MALAYSIA

87. Malaysia is a federation of 13 states and a Federal Territory, comprising the Malay Peninsula and States of Sabah and Sarawak in north-western Borneo Island. By comparison with Bangladesh, it is a comparatively large country, covering a total land area of about 330 square kilometres. The equatorial climate is characterized by extreme humidity, uniformly high temperatures and abundant rainfall. About four-fifths of Malaysia is covered by forest and swamps, amid a series of mountain ranges (Ministry of Health-Malaysia, MOH-M, 1985).

88. Malaysia has a wide diversity of ethnic groups and cultures, and although the state religion is Islam, many other religions are also practised. The estimated population in 1984 was just over 15 million, with an average population density of 46 persons per kilometre square, with a range of 11 to 4229 between the various administrative divisions. The annual growth rate was placed at 2.7% in 1982, with just over a third of the population under 15 years of age. The per capita GNP in 1984 was US$ 1994, with almost half of the population employed in agriculture, but nearly a quarter of the GNP derived from manufacturing. Other demographic and socio-economic characteristics were presented earlier in Table 3.

Health profile

89. Malaysia is experiencing a phase of rapid development which has led to the diversification of the range of health problems and needs. Thus whilst in certain more rural parts of the country and amongst certain population groups, the acute infectious and communicable diseases are still significant causes of mortality and morbidity, especially in children, in other situations - particularly in the urban areas - chronic diseases, such as heart and cardio-vascular diseases, cancer and other so-called 'diseases of affluence', are the major health concerns.

90. The basic health strategy adopted by the Malaysian Government tries to maintain a balance between these different needs consistent with the goal of HFA/2000. An important component of this strategy is the Rural Health System based on the PHC approach and made up of Rural Health Units. The main health centre forms the top tier in this system, serving populations of about 50,000, and providing the intermediate link between higher level services and the community. Beneath each of these centres are normally four health sub-centres, covering about 13,-15,000 people. Finally, under each of these sub-centres there are four or more midwives' clinics, each of which serves a population of 2,-3,000. The emphasis of the Rural Health System is on the provision of basic medical care, maternal and child health including family planning, the prevention and control of communicable diseases, health education, safe water and sanitation, and avoidance of nutritionally-related problems. The aim is for these activites to be presented as an 'integrated package' at the community level (UNFPA-M, 1979). Central to this integrated approach has been the National Family Planning Programme and the Malaysian Population Project which have played significant roles in strengthening maternal and child health services in the rural areas in conjunction with family planning.

91. The Rural Health System provides the lowest level in the health services heirarchy. At the next level are the district hospitals, which are generally found in the smaller urban centres of the Malaysian Peninsula and provide in-patient and out-patient care, as well as supervizing the activities of the rural health units under their

jurisdiction. Finally, at the top of the referral system are general hospitals and specialized units, generally located in the larger urban centres. It should however be pointed out that this description basically refers to the situation in the Malaysian Peninsula; the level of service provision tends to be lower in Sabat and Sarawak.

92. In addition to static units, mobile health teams provide services to the more remote areas and to those not currently provided with permanent facilities. In 1979-80, only about 7% of the rural population in Peninsular Malaysia were 'underserved', but the figures for Sabat and Sarawak are higher (MOH-M, 1985).

93. In Malaysia, virtually all medical and health services are provided by the Government and under the overall responsibility of the Federal Government's Ministry of Health, although a private sector is emerging. Whilst political, professional and administrative decisions are made at the central level, states are responsible for the delivery of health services. In 1984, 4% of total budgetary expenditure was devoted to the health sector.

Health information, indicators and evaluation

94. Information which may be used to construct indicators of the health status of the population is gathered primarily within the government sector. However, the universities, research institutes and bi-lateral or non-governmental agencies may also collect health information for specific purposes. Within the Ministry of Health, the production of health statistics relating to morbidity and to the provision and utilization of health services - in both rural and urban areas, is essentially the responsibility of the Information and Documentation Unit in the Division of Planning and Development (Noordin, 1979). In addition, the Health Information Unit in the Division of Health Services is entrusted with the task of collecting and disseminating epidemiological data. Indepth and ad hoc studies may also be carried out to supplement these sources, usually in connection with problem areas of specific programmes. This type of activity may be performed by the Operations Research Team which is also found in the Division of Planning and Development, or by units in other divisions of the Ministry of Health.

95. Information relevant to health is also generated by the Department of Statistics in the Prime Minister's office, which undertakes all major nationwide surveys and the national censuses - the most recent one being carried out in 1980. This department maintains eight regional centres for data collection in Peninsular Malaysia and two branches in Sabah and Sarawak. In terms, of the Federal Government, the department helps to support statistical units in several of the ministries, including those in the Ministry of Health. Several units outside the Ministry of Health also provide useful health-related data, often on an ad hoc basis, including for example, the Ministry of Education, of Welfare, of Labour, and the Public Works Department which participates in the Rural Water and Sanitation Programme.

96. The National Family Planning Board (NFPB) plays a key part in the health information network, primarily in conjunction with the Ministry of Health and through the National Family Planning Programme and Malaysian Population Project mentioned earlier (para. 90). The NFPB was set up in 1966 as an interministerial organization having statutory power, and is directly accountable to the Prime Minister (UNFPA-M, 1979). The Board acts as the main co-ordinating agency for family

planning and is responsible, together with the Ministry of Health, for policy and planning as well as for implementing major parts of the programme, now as an integral part of MCH services. In addition, the NFPB is responsible for aggregating and analysing relevant data from all clinics from which family planning services are delivered. The Evaluation Division of the NFPB has, until recently, concentrated on programmatic aspects - using operational indicators - but in the last few years more emphasis has been placed on assessing outcome. Thus, for example, a Knowledge, Attitudes and Practice survey was carried out in 1980-81 to investigate the impact of the National Family Planning Programme on fertility patterns and demographic trends. The overall target, established at the start of the programme in 1966, was to reduce the population growth rate to 2% per annum by 1985. Table 3 showed that in 1984 the rate was 2.4% and this is despite reliable evidence for a considerable decline in fertility.

97. Consistent with the Malaysian Government's support of the HFA/2000 strategy, the Ministry of Health participated in the first round of global monitoring of progress in 1982/3. In addition to providing information necessary for the construction of the 12 global indicators, the Ministry contributed to the indicators recommended by the WHO Western Pacific Region. Table D in Appendix III indicates the additional health status indicators proposed by the Regional Office. The sources of information for the construction of these indicators were primarily vital statistics on births and deaths, and mortality and morbidity statistics from the health services. As well as considering trends in these data, material from the decennial censuses and from ad hoc surveys have contributed to the picture.

98. Vital registration falls under the responsibility of the National Registration Department in the Ministry of Home Affairs (UNFPA-M, 1979). Although both birth and death notification is regarded as virtually complete in Peninsular Malaysia (Noordin, 1979), the basic problem with the mortality statistics is that only about two-thirds of all deaths are medically certified in the rural areas where the majority of events take place; the extent of birth and death registration in Sabah and Sarawak is unknown. Moreover, whilst vital registration data provide useful inputs to inter-censal population estimates at the national scale, for the state and district levels the situation is complicated by internal migration. The problem of developing demographic data bases at the sub-national level - providing essential information for the calculation of rates - as well as for trends in mortality, is a familiar problem to all developing countries.

99. Finally, and before moving on to consider the third country, mention should be given to the contribution made by the Malaysian Government to the South-East Asian Medical Information Centre 1979 Workshop which was discussed earlier in the report (para. 73). The paper on Malaysia presented at the Workshop provides examples of the use of health status indicators in the context of evaluating the effectiveness of MCH services and the Tuberculosis Control Programme (Noordin, 1979).

SIERRA LEONE

100. The Republic of Sierra Leone in West Africa covers an area of about 73,000 square kilometres. There are four distinct topographical regions: a mountainous peninsular jutting into the Atlantic ocean, coastal swamps, coastal plains, and an interior plateau and mountain range. Sierra Leone lies in a sub-tropical climatic belt with two markedly different seasons - a rainy season from May to October and a hot dry season from November to April.

101. The estimated population in mid-1984 was just over 3.7 million, with an annual growth rate between 1975-1980 of about 2.6% (UNFPA-SL, 1984); other demographic characteristics were summarized earlier in Table 3. The population is unevenly distributed, with densities varying from 13 people per kilometre square in Koinadugu District in the north-east of the country to 566 in the Western Area on the mountainous coastal peninsular. Over three-quarters of the population live in the rural areas. The communications infrastructure is very poor and many parts are largely inaccessible at certain times in the year.

102. Once a British Protectorate, Sierra Leone formally became independent in 1961, at which point a parliamentary form of government was adopted. For administrative purposes, the country is divided into three provinces and the Western Area which includes the capital Freetown. The provinces are further divided into 12 districts and these, in turn, are made up of chiefdoms - 147 in total.

103. The economy of Sierra Leone, like that of Bangladesh, is dominated by the agricultural sector, engaging more than three-quarters of the labour force, although the mining industry is the major source of export earnings. Economic growth has been depressed since the early 1970s and particularly from the beginning of this decade. The per capita GNP in 1984 was US$ 320 (Ministry of Health - Sierra Leone, MOH-SL, 1985). Among Sierra Leone's economic problems are: a high dependence on imports; low agricultural productivity; disparities between the Western Area and the rest of the country in levels of urbanization, sectoral distribution of the labour force, levels of per capita income and the supply of economic and social services - including health; inadequate roads and communication links between different parts of the country; the low rate of domestic savings; and the precarious employment situation (UNFPA-SL, 1984).

Health profile

104. The health profile of Sierra Leone is characterized by the high prevalence of infectious and communicable diseases, with malaria, tuberculosis, leprosy, measles, tetanus and diarrhoea-related diseases as the major causes of mortality and morbidity. Malnutrition is a further contributor to the poor health status of children, and although there has always been considerable dispute about the levels of child and infant mortality, there is a general consensus that they are both exceptionally high. The infant mortality rate is predicted to be one of the highest in the world, varying widely between districts from about 294 per 1000 live births in Pujehun District to about 168 in the Western Area, according to the 1971 Census (Okoye, 1980). Maternal mortality, though again difficult to quantify accurately, is also reported to be a significant problem, with around a quarter of all deaths to females in the age group 15-44 years due to complications associated with childbirth (UNFPA-SL, 1984).

105. The health and medical services in Sierra Leone are mainly provided by the Government, but with additional facilities available in some localities from missions, mining companies and charitable organizations (Hill and Graham, 1986). The organizational structure of the government-provided services is headed by hospitals at provincial and district levels, with the main referral centres in Freetown. Within the chiefdoms, there are three principal levels - health centres, dispensaries and treatment centres - the latter representing the lowest tier in terms of static health facilities. In addition, there are mobile teams which provide MCH/EPI services to the more remote parts of the country without permanent units. Overall the health services are unevenly distributed through out the country, with a heavy concentration in the Western Area, and an estimated 80% of the population without reasonable access to any health care (UNFPA-SL, 1984). In the fiscal year 1977/78, the Government allocated 7.7% of total public expenditure to the health sector.

106. The National Health Policy adopted by the Government of Sierra Leone places an emphasis on preventive health services whilst also strengthening the present health care delivery system including PHC. Although PHC projects have been in operation since the end of the 1970s, these have been confined to five districts of the country. One of these projects, in the Bo and Pujehun districts, is supported primarily by the Federal Republic of Germany and here the PHC programme forms one component of a wider integrated rural development project (Republic of Sierra Leone and the Federal Republic of Germany, 1985). In Bombali District a pilot PHC project was launched in 1979 in collaboration with WHO and non-governmental agencies, and other smaller village-based health schemes are in operation in two other districts. From the findings of these pilot projects, and following the progress assessment carried out in 1983 as part of the global monitoring of HFA/2000, the National Health System was reviewed and a National Action Plan was adopted to guide the expansion of PHC in the period 1984-2000. The Plan stresses the need for co-operation with programmes which were formerly vertical, such as EPI, MCH-FP, and CDD, and the use of these as practical 'entry points' for the expansion nationwide (MOH-SL, 1984). The implementation of the Plan is heavily dependent on the continuing support of many bi-lateral and multi-lateral donar agencies (Davies, 1985).

107. In the National Action Plan, it is proposed that there will be three levels in the provision of PHC:

a). the village level - here peripheral health units will serve populations of about 500 people, based on village health workers and TBAs. Use will be made of existing fixed facilities where possible - such as treatment centres and dispensaries;

b). chiefdom level - this middle tier in the provision of PHC will be the first referral point for the village health services, and will cover populations of 10,-20,000 with health centres staffed by a team of health workers and MCH-aides;

c). district level - representing the second referral point, with District Health Teams appointed to take overall responsibilty for PHC within their jurisdiction.

The activities carried out within the three tier system are consistent with the eight principal components of the PHC approach as set out in the Alma Ata Declaration and modified to the needs of Sierra Leone.

108. The major obstacles to the progress of the National Action Plan have been described as follows (MOH-SL, 1985):

a). the inadequacy and maldistribution of health infrastructure and manpower resources;

b). inadequacy of the essential drug supply system;

c). small and depressed national economy;

d). inadequate external financial assistance to support the national HFA/2000 strategy.

Health information, indicators and evaluation

109. The sources of information which may be used to construct health status indicators in Sierra Leone, as in Bangladesh and Malaysia, are many and varied. These sources have recently been reviewed by Hill and Graham (1986).

110. The Ministry of Health is responsible for the maintenance of the two principal sources providing continuous mortality and morbidity information - vital registration and routine health facility reporting. The former source is only regarded as reasonably complete in one part of the country, the Western Area, where an estimated 90% of births and deaths were registered in 1980 (MOH-SL, 1981), although it is unclear how such an estimate was made. Through out the remainder of Sierra Leone, coverage is placed at around just 15%, and this is despite the law passed in 1983 making registration legally compulsory. The aggregation of death statistics to produce age and cause-specific mortality rates is undertaken by the Medical Statistics Unit in the Ministry of Health and published by the Central Statistics Office. The most recent figures available are for the Western Area in 1983. Since the early 1970s, various attempts have been made to improve the vital registration system and a UNFPA-supported project has been in operation for the last five years (UNFPA-SL, 1984).

111. The information gathered at the various levels in the health system is also the responsibility of the Medical Statistics Unit as regards aggregation and analysis. In practice, it is estimated that at least a quarter of all health facilities, including hospitals, health centres and lower units, do not submit the expected monthly returns and those which are received are often long overdue and clearly incomplete. In terms of published statistics, those most readily accessible are again for units in the Western Area, and especially Freetown.

112. Additional sources of information on mortality and morbidity are provided by the decennial censuses and by various ad hoc surveys. The most recent census was carried out in December 1985 and the results are currently being analysed by the Central Statistics Office. Prior to this was the 1974 Census, the results of which were the subject of some controversy in terms of both the amount of under-counting and the figures for infant and child mortality. This delayed the publication of the findings till 1980. Similarly, a number of household sample surveys conducted in Sierra Leone in the last 10-12 years have produced conflicting evidence on mortality levels and differentials. Other ad hoc surveys have been carried out in conjunction with specific health problems, such as the malariometric surveys between 1976 and 1979 (WHO-SL, 1982), and the National Nutrition Survey in 1978 (Sierra Leone and USAID, 1978).

113. The inadequacies of the current health information system and the poor co-ordination with sources outside the Ministry of Health and the government, are well-recognized as a major hindrance to the planning, implementation, monitoring and evaluation of the national health programme. Although the sources of mortality and morbidity data are most developed in the Western Area, the disease pattern which emerges is felt to be unrepresentative of other districts and therefore is little use both for national and regional planning. This stems from the relatively priviledged position of the Western Area socially, economically and in terms of health services. Although there may be some consensus on the overall morbidity patterns and levels of mortality in this area, the situation in the remainder of the country is largely unknown.

114. Considerable efforts have been made to increase co-ordination between the various governmental and non-governmental providers and users of information on the health status of the population, including the setting up of the National Population Commission (UNFPA-SL, 1984). Indeed there have been numerous, and sometimes conflicting, sets of recommendations prepared by potential donor agencies on the means to achieve this.

115. One of the major initiatives being taken to improve the quality and availability of health information in Sierra Leone, is being carried out as part of the National Action Plan for PHC. The collection of data in the community by the village health workers is seen as one of their key functions, with the aim of providing a continuous source of health and health-related information for use at this and higher levels of the system. At the district level, it is intended that the health team will undertake the specific responsibility of monitoring the health status of the district's population as a means of evaluating impact (MOH-SL, 1984).

116. The development of information networks based on village workers and peripheral health units has infact been taking place within the PHC projects established prior to the National Action Plan. In the Bo-Pujehun PHC project, for example, a monthly reporting system was established in 1983, after a baseline health survey had been carried out. These activities are the responsibility of the Evaluation and Monitoring Unit of the project. The procedures for routinely aggregating the monthly returns from peripheral units on morbidity, on contacts with the preventive services, and on births and deaths reported by VHWs and TBAs, are still being developed. The intention is for this information to be fed back into the project to improve operational performance, but also to be used for evaluating impact.

117 Infact most of the project evaluations which have been carried out in Sierra Leone have tended to concentrate on operational aspects, especially in the case of disease-specific interventions. The comparative neglect of impact evaluation, despite the fact that some of these programmes have been carried out for sufficient periods to expect to detect some effects, can be explained partly by the problems still being encoutered with the functioning and utilization of these interventions, as for example in the case of EPI (UNICEF-SL, 1985).

118. In 1985, the Ministry of Health published a report describing the national evaluation strategies for HFA/2000, which stresses the importance of health status indicators and includes values for the WHO global indicators (MOH-SL, 1985). At the central government level, implementation of these strategies primarily involves the Health Planning Unit, Health Statistics Unit and the Office of the PHC Co-

ordinator, all in the Ministry of Health, and supported by the Central Planning Authority of the Ministry of Development and Economic Planning. Additional collaboration is expected from several other ministries and non-governmental agencies. However, in the case of disease-specific programmes, the intention is for them to build-in their own mechanisms for collecting and analysing the necessary data to evaluate effectiveness. This approach has been seen as a contradiction to the PHC objective of integration and, at the operational level, may overburden the community-based workers who form an essential part of the proposed health information system.

THE SOLOMON ISLANDS

119. The Solomon Islands provide the fourth and final case-study. This country comprises an archipelago scattered over about 600,000 square kilometres of the Pacific Ocean to the east of Papua New Guinea, with six main islands, and a total land area of over 27,000 square kilometres. The main islands are mostly mountainous with deep ravines and are covered with tropical rain forest, providing a sharp contrast to the numerous coral reefs and lagoons (Carter, 1981). The climate of the Solomon Islands is equatorial with heavy rainfall and no clearly defined seasons, though between November and April cyclones may occur. In 1985 and 1986, severe storms hit the islands, causing considerable devastation and necessitating changes in certain of the health planning priorities.

120. The Solomon Islands, once a British Protectorate, formally gained independence in 1978. For administrative purposes the islands are divided into eight provinces, each with its own local government and uniform powers and responsibilities, whilst central government operates from the capital Honiara. The economy of the Solomon Islands is becoming increasingly diversified, moving away from the former dependence on the export of copra to generate revenue but still reliant on primary export products including fish, timber and palm oil (World Bank, 1980). Foreign aid continues to provide a major input to public-sector spending. The Government itself is the single biggest wage-employer, though the majority of people are only involved in the cash economy to a small extent, being largely dependent on their own food production. The per capita GNP in 1983 was US$ 615, although large differentials in income levels are known to exist.

121. The estimated total population in 1983 was just over a quarter of a million, with an annual growth rate of 3.4%, representing one of the highest in the world and attributed to continuing high fertilty and a falling death rate (World Bank, 1980). Other demographic characteristics were summarized in Table 3. There are two distinct ethnic groups, the Melanesians and the Polynesians, with the former by far the largest group, occupying the six major islands, whilst the latter tend to live on the small outlying islands and atolls (Ministry of Health and Medical Services-Solomon Islands, MHMS-SI, 1985). More than 95% of the inhabitants are Christian, and the adult literacy rate in 1983 was placed between 25-30%. The population density varies widely with the average of just 7.1 persons per kilometre square according to the 1976 Census, but this disguises the extremely scattered distribution with 80% of the people living in communities of less than 200 (World Bank, 1980). Only a tenth of the population resides in the urban areas, the remainder in the 4000 or so small and often remote villages. These features of the Solomon Islands are familiar to the many island communities of the Commonwealth and raise particular problems for the delivery of preventive and curative health services (Commonwealth Secretariat, 1980).

Health profile

122. The health profile of the Solomon Islands is similar to that described for Bangladesh and for Sierra Leone, being characterized by the high prevalence of acute infectious and communicable diseases. Whilst malaria has always been regarded as one of the major health problems, being the leading cause of morbidity in all age groups in 1983, respiratory diseases are recorded as the major cause of mortality, though this may be a reflection of selectivity within the clearly

incomplete recording of deaths. Acute respiratory infections, especially among young children, has been on the increase since 1978, and the reported incidence doubled between 1980 and 1981 (MHMS-SI, 1982). Tuberculosis and diarrhoeal diseases are also significant problems, whilst outbreaks of measles, rubella, pertussis and denugue fever occur periodically.

123. The national health strategy is an integral part of the National Development Plan, and places particular emphasis on integrated rural development and population control. The rural health system is founded on the PHC approach, aiming to provide preventive and curative services to all people through a network of village health aid posts, aid posts, health clinics, area health centres, and hospitals (MHMS-SI, 1985). These five types of facilities comprise the health heirarchy, with the first three providing the key units in the rural areas. Existing disease-specific programmes, such as malaria control - launched in 1980, EPI, and CDD, are now being incorporated into a single general health service. In addition, there are a number of other areas receiving new emphasis such as water and sanitation, health education, and strengthening the links with the non-governmental agencies providing services in the rural areas. The rural health system, set-up in 1980, is promoting community self-reliance together with a health insurance scheme to help fund services. Government expenditure on health represented 8.8% of its total expenditure in 1981. As regards population policies, the stress is on child-spacing. Family planning activities have been subsumed under the integrated rural health system, forming part of the myriad services grouped under the name of 'family health' (MHMS-SI, 1985).

124. The Ministry of Health and Medical Services has its headquarters in the capital Honiara. It is at this level that major policy and planning decisions are made, based on a number of divisions and committees. The implementation of these at the provincial level, is largely in the hands of the local councils, especially in terms of the rural health system.

Health information, indicators and evaluation

125. The poor demographic data base and the underdeveloped health information system found in the Solomon Islands is characteristic of small scattered island states (Commonwealth Secretariat, 1980). The most recent census for which results are readily available was conducted in 1976, though one is scheduled for late 1986 (Statistics Office-SI, 1982). The vital registration system is undeveloped,although there have been several recommendations on routes to improvement (UNFPA-SI, 1981). Partly in response to the lack of vital statistics, a 'Birth Notification Scheme' was launched in 1966, in which all women, regardless of marital status, were interviewed either at the time of birth by the attending nurse or soon after the baby was born. The information, solicited in the form of a maternity history, could be used to produce estimates of childhood mortality (Macrae, 1979; Brass and Macrae, 1984). However the scheme stopped operating effectively in the mid-1970s. The health services therefore now provide the principal continuous source of mortality statistics in addition to morbidity, with figures produced from specific disease programmes and from the various health facilities. Both the Planning and Administrative Divisions of the Ministry of Health and Medical Services are primarily involved in the presentation of statistics, in conjunction with the Statistics Office in the Ministry of Finance.

126. The need to improve the information system in the Solomon Islands is well-recognized by the Government and several assessments have been made on how best to achieve this (UNFPA-SI, 1981). The general problems of scattered small communities and lack of trained staff are two of the major obstacles. Data collection by village health workers, once again is seen as one possible solution. However, the mechanisms for routinely aggregating and using the information gathered by these workers have not yet been established.

127. As in the three other countries, evaluation activities in the Solomon Islands have obviously been hampered by the poor information system. However, as part of the first round of HFA/2000, the Solomon Islands did produce an evaluation report which included figures for the 12 global indicators, together with information on some of the health status indicators recommended by the WHO Western Pacific Regional Office (see Table D in Appendix III). Other national indicators have not yet been selected (MHMS-SI, 1985)

LESSONS LEARNED

128. What are the main lessons learned from the four illustrative case-studies as regards the selection and use of health status indicators?

129. First, there are clearly certain similarities in the major health problems facing these countries, with the acute infectious and communicable diseases providing the major causes of death and illness. It is under these circumstances that, as noted earlier in the report (para. 46), mortality and morbidity statistics can be used to construct outcome indicators both to assess the health status of the general population as an indication of the impact of the overall health strategy and to evaluate the effectiveness of disease-specific programmes. The developing countries can therefore obviously benefit from sharing their experiences, not so much in terms of selecting the same set of indicators, but more in the approaches and practical procedures for collecting the necessary information.

130. Second, the case-studies highlight the importance of adapting the choice of indicators, the methods for gathering information and the uses of indicators to allow for changing circumstances. Thus, for example in the case of Malaysia, the disease profile of the nation is undergoing a period of diversification with some population groups still affected predominantly by communicable conditions, whilst in other groups chronic diseases are more significant. To a certain extent, this difference is found in many developing countries in terms of their rural and urban populations. These changes in the disease profile may of course be related to 'natural' declines in the virulence of particular pathogens and, as noted previously, this greatly complicates the efforts to assess the impact of health programmes (Breslow, 1985). The need for flexibility in the selection and use of indicators is also important in situations where changes occur owing to natural disasters such as floods and cyclones, as the cases of Bangladesh and the Solomon Islands demonstrate.

131. Third, the four country studies reveal the tremendous internal variations which are known to exist as regards the provision of health care but can only be suggested to exist as regards the levels and patterns of mortality and morbidity. The latter point is especially relevant since in all four cases there were significant proportions of the population for whom there was little or no health information. In these instances, so-called 'national indicators' are often based on information from only a fraction of the total and, perhaps most importantly, from the more priviledged sections of the population - socially, economically and with regard to health services. This provides two important lessons: firstly, it would be useful if published 'national' indicators were accompanied by simple figures to reveal the proportion of the population represented; secondly, the huge internal variations in health status found in many developing countries make the current emphasis on producing 'national' indicators somewhat irrelevant to the evaluation of one of the major goals of these countries - namely to reduce internal differentials, indeed to provide 'health for all'.

132. Fourth, and related to the previous point, the weak information systems found in many developing countries represent a major constraint to the construction of relevant indicators for the evaluation of health impact. Furthermore, the lack of existing data makes it difficult for countries to identify the indicators most appropriate to their requirements. The need to utilize the wide variety of - often unintegrated - sources of information, or to launch specific data

collection exercises, such as sample surveys, emerged from all four studies. The problems may be compounded in situations where certain groups in the population are highly mobile, as in Malaysia and the Solomon Islands for instance, and therefore infrequent sources of information, such as the decennial censuses, soon become obsolete. However, in many countries, high quality and continuous sources of information may be provided outside of the government sector. Thus in Bangladesh, for instance, the demographic surveillance system which has long been in operation in MATLAB Thana, provides invaluable data, especially for studying the processes linking inputs and outputs and the mechanisms for intervention (D'Souza, 1984). However these so-called 'population laboratories' are obviously expensive undertakings and generally cover a comparatively small proportion of the total population, and consequently their relevance at the national level is open to question

133. Fifth, the four-case studies introduce the common set of programmes which are now being integrated into rural health systems according to the PHC approach. The focus of these programmes on common target groups, more specifically mothers and children under five years, stresses the need for co-ordination in the selection and use of indicators for evaluating impact, and on the need for reasonably reliable demographic estimates of the proportion of the total population these target groups represent at the national and sub-national levels. The country studies have also indicated the potential problems with regard to information collection when partly integrated and partly horizontal programmes co-exist, with the consequent duplication of responsibilities and effort.

134. Sixth, a great deal of emphasis is clearly being given to the development of information networks based on community-level health workers. Although this is consistent with the process of decentralizing decision-making and with greater community participation, there is still evidence that the information requirements are being developed from the 'top down' without consideration for the uses and needs of the community for this information. The development of reliable and efficient information systems relies heavily on the perceived need for the data by those responsible for its collection. The information-gathering role of the PHC worker must be appropriate to the overall integrated nature of their responsibilities and activities, rather than expecting them to satisfy the needs of individual programmes (WHO/AFRO, 1985). Moreover, co-ordination is not just required at the local level but also centrally. The four country examples all demonstrated the wide variety of governmental and non-governmental units with some involvement and concern for the collection and use of health and health-related information. The importance of amalgamating some of these functions under a co-ordinating 'authority' has been a recurrent theme in the discussions above. The need for extensive revisions of the statistical system seems to be a current recommendation in many developing countries. However the numerous and often conflicting suggestions on how 'best' this may be achieved according to different outside agencies, seem likely to jeopardize the plans for greater co-ordination.

135. Finally, there are a number of lessons emerging from the country studies as regards impact evaluation. Thus it appears that an equally wide variety of government and non-government agencies are involved in evaluation as there are concerned with information systems, with an equal lack of collaboration. However, given the comparatively short length of time in which PHC activities have been in operation in some areas, it is perhaps not surprising to find the focus on operational rather than outcome evaluation. Although the initiatives taken as part

of the first round of monitoring of progress towards HFA/2000 have led to greater emphasis on information support, the focus on the 12 global indicators does not seem to have been matched by the development of relevant national indicators. Moreover, the presentation of health status indicators in one 'round' is not by itself adequate for identifying impact. Further information and effort is needed to look at trends over time in these indicators or to make valid comparisons between sub-groups of the population. The following section of the report raises some of the key questions involved in meeting these requirements.