CMC (77) III

FOOD AND NUTRITION

Paper prepared by the Commonwealth Secretariat

A basic obligation for all countries is to ensure that people have adequate food of a nutritionally high standard. Population growth, unemployment, illiteracy and related factors, however, impede the discharge of this obligation in most countries. Malnutrition is pobably the major public health problem in the world today. Apart from the high morbidity and mortality rates directly attributable to it, its contributory role in increasing susceptibility to infections of various kinds, and in aggravating the course of such infections after they have been acquired, gives it even greater significance. In many developing countries deaths of children under five years account for nearly 50 per cent of total deaths (compared with 2–4 per cent in more affluent countries) and malnutrition has been identified as a major direct or associated cause. Adequate strategies for dealing with it both nationally and internationally are among the most urgent needs of our decade.

2. Nutritional problems also exist in the more affluent countries. Pockets of urban poverty and malnutrition persist in all of them, but their major nutritional problems are those related to the excessive consumption of such food items as sugar and saturated fats. The resultant health problems such as obesity and degenerative heart disease carry high and still rising levels of morbidity and mortality.

3. A clear definition of the nature and magnitude of local nutritional problems is essential for the formulation of rational nutrition policies. Such policies must also recognise that adequate nutrition depends on the interaction of a wide range of factors many of which lie outside the conventional confines of Health Ministries. These include, for example, agricultural policies, education, industrial development programmes, urbanisation and many others. There is need for assessment and co-ordination of these factors in nutrition and food planning.

Practices and policies in certain Commonwealth countries

4. Practices and policies vary with local conditions and requirements. Some characteristic examples are given. In *Australia* special attention is being given to disadvantaged groups such as Aboriginals and others of low socio-economic classification. There is a national policy on nutrition in *Cyprus,* and several Ministries are involved in its implementation. School feeding programmes are emphasised, particularly in the poorer rural communities throughout the school year. Home economics teachers play a special role in the operation of these programmes; the teaching of the principles of nutrition is an integral part of the country's home economics courses in both elementary and secondary schools. The Ministry of Agriculture also plays an important role in implementing the Government's nutritional policy.

5. There are also wide-ranging activities in this field in *Ghana.* In 1975, in recognition of the significance of nutrition in national development, the Government set up a multi-sectoral committee under the National Economic Planning Council to review the whole area of nutrition and its report is now being studied by the Government. The Ministry of Agriculture is vigorously pursuing measures aimed at the production of adequate quantities of food of high nutritional value at reasonable prices.

6. In order to reduce the trend towards the importation of weaning foods the Food Research Institute of the Ghana Council for Scientific and Industrial Research is currently conducting a

research project on the utilisation of local food materials for the preparation of weaning foods of adequate nutritional value. The socio-cultural factors underlying poor nutrition are being actively studied and information and education programmes to counter these are being pursued.

7. Special attention is being directed in *New Zealand,* through departments and research centres, to the maintenance and improvement of standards and efficiency of food production and processing. The need for raising the levels of education of nutritional health workers has also been recognised. In *Swaziland* also emphasis is being placed on nutritional education which is provided for all students from nursery school upwards.

Special objectives

8. Apart from the general need to improve national levels of nutrition, certain medical disorders may require to be specially catered for in national nutrition policies. Anaemia, goitre, vitamin deficiencies, nutritional blindness and rickets are examples.

9. Population groups with particularly high levels of risk may also require special programmes directed towards them. These include infants and pregnant women, school children, the elderly and the poor.

10. Adequate machinery for nutritional surveillance, monitoring and evaluation is also essential. It provides the essential and logical basis for appropriate changes and modifications in nutrition programmes.

11. An appropriate balance between food crop and cash crop production must also be a special target for agricultural development policies. Its importance for both health and general national development is self-evident. The choice of a suitable variety of food crops to ensure a balanced diet is also a crucial factor.

12. In nutrition, as in other areas of the health field, adequate arrangements for community education and participation are essential. Special groups, youth, women, private organisations, school teachers also play important roles. They can all supplement the efforts of trained manpower and make a real contribution to the success of national nutritional programmes.

Specific questions

13. In the light of these general and special requirements, the Conference might give special attention to such questions as:

(a) What are the basic requirements for adequate national nutrition and food planning?

(b) What is the role of the Ministry of Health in the plan and its relationship with the other national agencies and groups involved?

(c) What are the practical steps that must be taken to promote the maximal use of locally available food resources?

(d) Are there any socio-cultural conditions that require special attention in relation to the plan?

(e) What are the special groups and programmes for which provision needs to be made?

(f) What are the particular problems (e.g. communications, marketing) that may impede the production and distribution of foods of adequate nutritional value and how can these be overcome?

(g) What practical steps could be taken in affluent countries to reduce the dangers to health which arise from excessive consumption of fats and sugar?

(h) What role could be played by international agencies, and particularly by the Commonwealth Secretariat, in helping countries find answers to these questions?

14 October 1977

CMC (77) III/B1

FOOD AND NUTRITION

Background paper prepared by the Government of Australia

The Government of Australia has a general policy of promoting health through the establishment of an integrated and comprehensive health care system based on a mixed economy, the rights of the States and Territories and the belief in the individual's freedom of choice. There has been no specifically enunciated policy on nutrition; the general ease of availability of high quality food to the normal working man has undoubtedly been a factor. Special attention is now being given to disadvantaged groups such as Aboriginals and others of low socio-economic classification, and for the former, new broadly-based pilot programmes to lift the general social, cultural and economic levels are being formulated.

The Australian picture

2. Nutritional status of children and adults in Australia is not of great concern though poor food choice and overnutrition leading to obesity and allied medical disorders is becoming increasingly evident. Some children of the lower socio-economic groups, including Aboriginals, may be very poorly nourished in terms of both total food energy and individual nutrients.

3. Surveys have not been extensive but the few small studies undertaken indicate that the elderly and teenage girls, especially when pregnant, and pre-school children in the lower socio-economic strata of the community are most likely to be poorly nourished – a few cases of marasmus and kwashiorkor have been identified in Aboriginal populations.

4. There is a very active quarter-million-strong Nursing Mothers Association of Australia. Statistics indicate a trend back to breast feeding for at least the first three months, but nevertheless the majority (70–75%) of Australian infants are bottle-fed from the first week or two of life.

5. The majority of mothers use cans of infant foods, and processed cereals packaged especially for infants with added iron, calcium and vitamins of the B group. The Nursing Mothers Association recommends the use of the same foods as the rest of the family with minor modifications of texture. In Australia there are plenty of suitable everyday foods that could be used as weaning foods and therefore special foods are not really necessary.

6. Australia does not have a subsidised school meal service. However, most schools have school canteens from which children may purchase food. The responsibility for these school canteens is usually vested in local Parent and Citizen Associations and the quality of the foods offered for sale varies considerably. The Federal and some State Departments of Health have published guidelines to aid these voluntary organisations, but these are not always followed.

7. Generally speaking, there is adequate nutritious food for the entire population. Considerable choice is available in the market place, but some individuals may not always choose the most wholesome combination of daily food.

Special considerations

8. The need for a nutrition component in health education is gradually being accepted by the community and education authorities. There have been no surveys to assess the influence of such programmes.

9. Although Australian food production and nutrition programmes would not necessarily be confined to young people, there are numerous voluntary youth leadership organisations such as Junior Farmers, YMCA, YWCA, Rotaract, etc., which could be encouraged to be more active in nutrition education programmes.

10. It is generally considered that nutrition education is most effective when directed to young mothers who influence the food patterns of their children, and to school children whilst they are still young enough to modify habits if necessary.

11. Australia has the necessary expertise to plan any food production and nutrition programmes required. The main nutrition personnel available to administer nutrition programmes are dietitians and nutritionists who are trained at university level in Australia.

25 August 1977

CMC (77) III/B2

FOOD AND NUTRITION

Background paper prepared by the Government of Swaziland

NATIONAL POLICY

In Swaziland, while there is at present no well formulated government policy on nutrition, many people involved in both government and non-government organisations are aware that food and its nutritional value are important determinants of the health of the population. Some of the credit for fostering and developing this awareness can be given to the National Nutrition Council, an inter-ministerial body created by an Act in 1945.

2. This Council falls under the Minister for Health and therefore recognises the need for the Ministry of Health to take leadership on nutrition matters, but being multi-sectoral in nature it further recognises that fundamental actions to improve the situation lie outside the direct responsibilities of the health sector and co-ordinated government actions are required.

3. The Council is charged in the Act with the following function:

> "to investigate and report to the Minister upon all matters relating directly or indirectly to the prevention of malnutrition, and improvement of the diet of the inhabitants of Swaziland, which in its opinion should be investigated or which the Minister may refer to it for investigation".

4. Recently the need to strengthen the structure of the Council, in order to improve its effectiveness and enable it to meet the demands made on it, has become apparent. It is hoped that this objective will be met through the proposed revision of the Nutrition Council Act presently being undertaken.

5. It is intended that the revision should encompass the following:

(i) expand the membership of the Council. In the present Act permanent membership is drawn from the Ministries of Health, Education, Agriculture and Local Administration. Appropriate membership from two other Ministries – Finance and Economic Planning, and Industry Mines and Tourism – is to be included in proposed amended Act;

(ii) give the Council the following more specific functions:

(a) to monitor the food and nutritional situation of the population, identifying the factors responsible for the problems found,

(b) to analyse the nutrional implications of major governmental policies and programmes and of the development plans, making appropriate recommendations as required, and

(c) to recommend measures and programmes specifically orientated to improve the nutritional situation of the population;

(iii) provide funds for the Council to enable it to perform its functions satisfactorily. At present no funds are available to the Council; and

(iv) while the chairman would reside in the Ministry of Health, in the proposed Act the Council would report directly to Cabinet who would be able to take into consideration reports and recommendations of the Council in making decisions, in allocating resources and in the overall planning of governmental actions.

FOOD PRODUCTION

6. Swaziland, while a small country, contains a great diversity of altitude and vegetation. The chief physiographic features of Swaziland can be visualised as four regions running north to south across the country, descending from the highveld through the middleveld to the lowveld and

rising again steeply to the Lebombo plateau. The climate also varies from humid, near-temperate in the highveld to sub-humid, near-tropical in the lowveld. In all regions except the lowveld, Swaziland is a well watered country.

7. While what follows is presented in general terms for the country, in view of what has been said above it should be borne in mind that the situation varies from region to region and that there are areas of the country less suited than others to some of the agricultural pursuits discussed.

8. In Swaziland adequate food supplies are available for those with an adequate cash income. The majority of families do not, however, fall within this category as they reside in rural areas and depend on the foods they produce for the major part of their diet. The following programmes are currently being undertaken in an effort to improve and increase the foods available to these rural families.

Maize

9. White maize is the staple food of the Swazi diet. It provides more than 60 per cent of the energy as well as 65–70 per cent of the recommended allowances of total protein and iron. At the present time, apart from bad agricultural years, most rural families are self-sufficient in maize, but the country is still dependent on imported grain to supply the needs of the more urban families. In order that the country can become self-sufficient in maize the following steps are being taken: sowing of hybrid seeds, improving the availability of farm inputs and undertaking research into minimum inputs for maximum yields. National storage of grain to cover poor agricultural years has not yet been shown to be feasible, but a vigorous programme for the improvement of family maize storage is being carried out.

Fish

10. Traditionally Swazis are not fish eaters, but fish is now becoming more acceptable as evidenced by the popularity of fish and chip shops in urban areas and the availability of tinned fish throughout the country. The success of a recent programme to introduce family fish ponds is further evidence of its increasing acceptability. The motivation for this programme has been carried out by home economics agents with rural women and the response by rural women has been very enthusiastic.

Poultry

11. Poultry production is encouraged but, because of the high cost of inputs for improved poultry production and the need for returns to cover these inputs, marketing limitations have restricted the growth of poultry production in many areas.

Cattle

12. Cattle are prized for their wealth and status properties but the land is heavily overstocked. The main thrust of the Veterinary Department's programme is to improve the herds, reduce the number of cattle, prevent further erosion and improve pasture lands. While this will not affect family consumption directly, the preservation and improvement of land is an important aspect of the future production capacity of the country.

Fruit trees

13. Up until the last two years the planting of fruit trees was hindered by the difficulty and cost of importing trees. Now that a variety of trees are produced within the country and the planting of trees for family use is being actively encouraged and trees are being distributed by extension agents at a subsidised price, this project is starting to progress.

Vegetables

14. Vegetable production is being actively encouraged. On a homestead basis this programme meets with limited success due to irrigation difficulties during all but the rainy summer months as homesteads are often situated some distance from the water supply. The other major difficulty is the invasion of plots by goats, cattle and poultry.

15. Where special irrigation schemes have been developed this programme is more successful. In some areas of the country the available cultivars for vegetables were not suited to the climate, so recently special heat-resistant cultivars have been introduced.

16. During the wet summer months wild vegetables of the dark green leafy variety are available and widely consumed. In order to protect this valuable food habit which contributes important amounts of calcium, ribloflavin and vitamin A (nutrients difficult to obtain in adequate amounts by many families from other food sources), the research station is experimenting with the cultivation of wild greens and their cultivars, and families are being encouraged to cultivate them. As this is a recent project, its success cannot be evaluated at this time.

Milk

17. Much of the milk consumed, especially as powdered milk, is presently being imported. The Dairy Board programme in the country is gradually reducing this dependence through improvement of herds, dairy husbandry, milk collection and milk distribution.

LOCAL CONDITIONS

18. In 1961–62 a comprehensive nutrition survey, covering food habits, food intake and clinical examination, was carried out in Swaziland by Sonya Jones of the University of Natal. The limitations of the survey are that it was carried out during a poor agricultural year, that it was not supported by biochemical data and that it was undertaken 15 years ago. Despite these limitations, this survey contains much valuable information, and a comparison of some of the findings to more recently available but less statistically controlled data suggests that the situation today may be similar in many parts of the country. Until a new survery is undertaken or indications of more recent changes in the situation are recognised, the information contained in the Jones report must continue to be regarded as providing the most reliable picture of the nutritional situation in the country.

19. In the Jones survey, the Swazi diet on a per head basis was found to be deficient in calories, calcium, vitamin A, riboflavin and niacin. Evidence suggested that the most poorly nourished population members were children from weaning to five years old and pregnant and lactating women. The height and weight curves based on means of Swazi school children were equivalent to the twenty-fifth percentile of the Boston Standards.

20. Physical examination of children up to the age of 18 years revealed that, apart from a few cases of kwashiokor and pre-kwashirkor, there were no gross lesions attributable to defective nutrition, but there were many small signs that could be due to sub-optimal nutrition and the interaction of other factors. Dental caries was also seen to be a problem. Swaziland was noted as being in a goitre area.

21. The infant mortality rate was reported as 147 per thousand for the country as a whole but was said to be higher in rural than in urban areas.

22. The diseases most frequently said to be encountered in clinical work at that time were tuberculosis, pneumonia, malnutrition and gastro-enteritis.

23. A comparison between the areas surveyed showed that those having the most difficulty obtaining recommended allowances of nutrients came from the lowveld and the peri-urban areas.

24. Of the more recent information, that arising from the school health survey of Grade I and II children is perhaps the most reliable. The high height and weight curves compiled from data on 1,035 male and 1,051 female children aged 5–10 years show no detectable difference from the data contained in the Jones report.

25. Health statistics from 1972 to 1975 show that tuberculosis, pneumonia, malnutrition and gastro-enteritis are still among the most frequently encountered diseases seen in the hospitals, and among diseases classified as malnutrition early childhood malnutrition is predominant. Recent demographic surveys show that infant mortality remains high. Dental caries is now a considerable problem among school children even in many rural areas. A preliminary survey of food patterns in school children around 11 years of age as determined by a 24-hour recall suggests that in many rural areas food patterns are still similar to those found 15 years ago.

26. It should be stressed that while no changes have been so far detected there may nevertheless be changes. During the past 15 years there have been more clinics established, more people now avail themselves of health care, and there is likely to be better detection of diseases – all of which could be masking actual changes.

27. Breast feeding is still the predominant milk supply for young babies in rural areas. However, bottles are available and in situations where the mother does not remain with the baby or the mother becomes pregnant again a bottle is resorted to. In more urbanised areas bottles are frequently used. The Ministry of Health strongly encourages breast feeding, and where other forms of milk are used and for other food supplements the cup and spoon is recommended and the use of the bottle discouraged. In spite of this the use of bottles is till a major contributing factor to gastro-enteritis in young children.

28. In the case of women working for the Government, six weeks maternity leave is granted, and if annual leave is taken concurrently the woman can remain with her baby and breast feed it for two and a half months.

29. When bottle feeding is used the risks are probably increased if an opaque-necked bottle, which is considerably cheaper than more satisfactorily designed bottles, is used. Unfortunately these bottles are widely available throughout the country.

30. A weaning supplement in the form of skimmed milk powder to be added to porridge is currently supplied by the World Food Programme and distributed through MCH clinics. Commercially prepared and packaged weaning foods with a cereal base are found in many stores throughout the country.

31. An alternative weaning food is being sought in preparation for the phasing out of the milk provided by the World Food Programme. Such a food should be available at a price considerably less than the presently available commercial products. A pre-feasibility study into the local production of a blend based on maize was carried out earlier this year and an acceptability trial of such a blend is now being planned.

32. With assistance from the Save the Children Fund, a school feeding scheme has been established in the country and provides a cooked meal at lunchtime. Schools join the scheme on a voluntary basis as do children within a school. A charge is made for the meal but this does not at present cover the full cost of the meal. Over the next ten years the price is to be gradually raised until an economic cost is charged. In addition, in each school, when funds are available, 5–10 per cent of the children from the poorer homes are offered a free meal. At present this scheme involves about half of the primary school children within the country.

33. Looking at the nutrient deficiencies as shown in the Jones report and at the foods available to supply them, the following observations can be made.

Calories

34. As was stated earlier, the Jones survey was undertaken in a poor agricultural year when maize production was down, so it is thought that the situation with respect to calories is usually more equitable. However, this is doubtless still a problem for some families, especially towards the end of the winter season even in a good agricultural year. Programmes aimed at better maize production techniques and storage are assisting many families to overcome this problem. Fortunately foods of lesser nutritional value have not as yet replaced maize to any considerable extent and in most families the extraction rate of the maize consumed is high enough to preserve most of the nutrients.

35. Imported maize of lower extraction is available in towns although the most highly refined meal (Bakers Cones) is still not widely sold. Should this meal become more available, it could have serious nutritional implications, particularly for people in peri-urban areas.

36. Bread consumption has also risen in the country and, although this is more so in urban areas, bread is available throughout the countryside. At present brown bread is made from 90 per cent extraction flour and white from 80 per cent; thus both types of bread are nutritionally satisfactory. However, there is also available in stores 70 per cent extraction flour that is not enriched and while it does not form a significant part of the diet today, trends in its consumption will need to be monitored because increased consumption could affect nutrient intakes.

37. Swaziland is a sugar producing country where sugar is inexpensive and abundant. The problems caused by this can be seen in the carious teeth of school children. The effect of sugar consumption on nutrient intakes is probably still not important in most rural families but its affect on urban families could be more significant.

38. Alcohol consumption is a serious threat to the nutrient intake of a considerable number of people but more especially of men. The displacement of significant quantities of other food by alcohol beverages would appear to be a problem throughout the country. Certainly pellagra is seen to occur mainly in people who drink extensively.

Calcium, vitamin A, riboflavin and niacin

39. Increasing the production and availability of milk, which is a highly prized food item, will increase calcium and riboflavin intakes. The only other commonly eaten food which is an especially good source of these nutrients is the dark green leaves. At present these nutrients suffer some competition from cabbage, with its superior marketing qualities. Dark green leaves are also a good source of vitamin A so their continued use is a valuable asset. The increasing production and consumption of other fruits and vegetables such as pumpkin, carrots and pawpaw should also assist in increasing vitamin A consumption. With niacin being more widely distributed in foods than the other nutrients that have been discussed, an increased availability of a variety of foods alleviates the problem.

SPECIAL CONSIDERATIONS

40. It is very well appreciated that, even where the possibility exists for all people to be well fed, not everyone is. Eating well necessitates making wise choices, and for this education is a prerequisite. Nutrition education alone, however, is not enough. As under-nutrition is inter-woven with problems of infection and poor environmental sanitation, improvement of these and other health aspects have an essential and beneficial impact on the nutrition situation. At least some aspects of health education should be combined with nutrition education.

41. In some recent case studies of 28 malnourished children the following points were derived. There was a need to assist families in retaining sufficient for their needs instead of selling too much, in knowing more about purchasing foods and general consumer education, in understanding

the importance of feeding young children with sufficient frequency, and in understanding the special needs of young children.

42. All of these needs have a very large educational implication. In only slightly less than half these families was the major difficulty seen to be the ability of the family to produce or purchase sufficient food. This perhaps illustrates the importance of health education in combating early childhood malnutrition – the most serious nutrition problem in Swaziland today.

43. Nutrition education and health education has an important role to play in promoting better nutrition at all levels, from officials in programmes with nutrition implications to producers and general consumers of all ages.

44. In Swaziland the awareness of the need for nutrition education is beginning to be put into action. In the new primary curriculum under development, the education of school children in sound food and health practices is to be incorporated from Grade I. At the agricultural college, plans are being made towards the introduction of human nutrition to all students. Home economists, nurses and health motivators teach nutrition to women. Agriculture students in high schools and nursery school teachers study nutrition.

45. There is still, of course, much to be done. While many institutionalized programmes are now being reached, other ways have to be found to reach more rural families, and especially the man. Urban programmes for families are also insufficient. Government planners need more information on nutrition.

46. Another important health aspect that has a bearing on nutrition and should be incorporated into nutrition education is the effect of inadequate child spacing on the nutritional state of both mother and child. In Swaziland this is seen as one of the factors contributing to the high infant mortality rate. From a different perspective, there is also a need for population education for government planners in order to ensure an adequate food supply for a growing population.

47. One of the major problems encountered in the production of food is inadequate marketing facilities within the agriculture sector. The constraints placed upon this sector by the lack of adequate marketing facilities are well recognised and it is hoped to alleviate the problems by strengthening and establishing economically viable co-operatives. At present the two best organised markets are for cotton and tobacco through co-operative efforts. Some improvement will also be seen through improving the transport system. The country has embarked on a programme of upgrading and extending the road network.

48. In the area of nutrition there is now a need for developing systems for the continuous monitoring and evaluation of nutrition programmes and for building in a system of nutrition surveillance. As much data is available within the country, the first step must be to analyse this further and determine its validity before going on to develop simple methods adapted to the resources of Swaziland in areas where insufficient information is currently available.

49. A pre-feasibility study has recently been carried out on conducting a nutrition survey towards this end. Depending on the outcome of this study, additional assistance may be necessary.

25 August 1977

CMC (77) III/B3

FOOD AND NUTRITION

Background paper prepared by the Government of Cyprus

Cyprus does not face serious malnutrition problems as is the case in some other developing countries. This is mainly due to the remarkable improvement of nutritional standards and nutritional conditions in the last 15 years. However, cases of malnutrition still exist but they do not constitute a major health problem.

2. In some remote and poor villages there still is some undernourishment of the school population evidenced by retardation in physical development. Goitre of a moderate nature is common in some villages due to lack of iodine. Dental caries is also a common finding in some villages. There are also cases of overnutrition and obesity especially in women and persons in the middle age group.

3. Diets which are not properly balanced are partly responsible for such diseases as diabetes, hypertension, heart diseases and peptic ulcer, and these seem to be on the increase as has been the case with the developed countries.

4. The Cyprus Government, recognising the value of nutrition which is linked with the health and well-being of the community in general and our children and the future generation in particular, formulated a general policy on nutrition and several Ministries are involved in implementing this policy. The main activities undertaken in furthering this policy are as follows.

5. The Ministry of Education does everything in its power to contribute towards the dissemination of knowledge concerning nutrition, addressing itself to school children and parents alike. Local authorities, private associations and parents organisations have always co-operated with schools in nutritional education.

6. In 1969, following an agreement between the World Food Programme and the Government of Cyprus, the school feeding programmes were placed on a more sound basis and were expanded in such a way as to cater for the entire school population. This effort was concentrated particularly in the poorer rural communities throughout the school year. The parents associations and local authorities undertook to implement this programme by taking turns in the preparation and dishing out of the meals and cleaning the dining rooms, all on a voluntary basis.

7. Home economics teachers take an active part in the operation of the school feeding programmes, preparing the diet lists on the basis of caloric and palatable value. The teaching of the principles of nutrition is an integral part of the home economics courses which constitute part of the school curriculum in both the elementary and secondary schools.

8. The Ministry of Agriculture also plays an important role in implementing the nutritional policy of the Government. Available data on production and consumption show that before the Turkish invasion of the island in the summer of 1974 shortage of food as a whole had not been a problem and projection of production seemed very encouraging. The total production and the per capita consumption of most food items had increased considerably during the period 1960–1974 – that is, the period after Cyprus became an independent state in 1960 and until the Turkish invasion in 1974 – and compared favourably with other, advanced countries.

9. Cyprus had hoped to become almost self-sufficient in food production, but the Turkish invasion and the occupation of about 40 per cent of its most fertile territory frustrated this hope. Instead, Cyprus has since then been forced to increase its reliance on imported items of food, and the population, especially the 200,000 displaced persons, have had to contend with a lowering of their nutritional standards. The position has improved somewhat recently, due to improved

income from steady employment. A recent development which will help to improve nutrition further is the establishment of an Institute of Standards and Quality Control and of the Scientific Board of Foodstuffs whose main role is to see that all foodstuffs which are manufactured locally and which are intended for local consumption or for export are processed in accordance with standards of hygiene set by legislation.

10. The Ministry of Health is responsible for the implementation of improved food and nutrition programmes for the benefit of the people. Maternal and child health centres, which are spread all over the island, are engaged among other health activities in the prevention of malnutrition among the most vulnerable groups: infants, mothers and children. Information and advice are provided at the centres and in some cases milk and other foodstuffs for infants are given free of charge.

11. Health education for nutrition is the responsibility of government doctors, paediatricians, health visitors, midwives and health inspectors. The main objective in this field is to induce among the population good nutritional habits. Nutritional education is also undertaken by the home economics service of the Ministry of Agriculture which operates in close collaboration with the Ministry of Health in this respect.

12. As in all developed countries, mothers tend to abandon breast feeding particularly in the urban areas, while the opposite is true, but to a lesser degree, in the rural areas, where some mothers tend to keep the infant on the breast for two to three years under the false impression that this constitutes a contraceptive measure. Through the maternal and child health centres we strive to eradicate erroneous notions and to instil in the people a sound approach to infant feeding habits.

13. Food marketing has advanced considerably in recent years and no problem is faced in securing food items at local markets.

14. From a limited survey on nutrition carried out a few years ago and from data collected through other means, it can be said that nutrition is generally satisfactory and that apart from the lowering of standards of nutrition among the displaced persons no serious problems exist. Nevertheless, sustained efforts will continue to be made for increasing food production and for ensuring that nutritional standards are such as to help maintain the highest level of health.

5 September 1977

CMC (77) III/B4

FOOD AND NUTRITION

Background paper prepared by the Government of New Zealand

The availability of food and its nutritional value are clearly important determinants of a community's health. A wide range of factors relate to them.

National policy

2. Because New Zealand is largely a food producing nation with an adequate supply and variation of wholesome foodstuffs readily available, there is no well-formulated government policy on nutrition in its narrow sense. In its broader aspects, however, continued efforts are made through departments and research centres to maintain and improve the standard and efficiency of food production and food processing. Other organisations, many with government support, endeavour to ensure regularity of supply and range of distribution.

3. The role of the Department of Health is to advise on nutritional matters and to ensure that all food offered for sale conforms to minimum standards laid down by the Food and Drug Act (1969) and the Food and Drug Regulations (1973). Through its Food and Nutrition Branch and in conjunction with the Department of Scientific and Industrial Research, the Health Department is involved in a continuing programme of food monitoring and research to determine that the quality of food is maintained at this high level.

4. The department's advisory functions include the promotion of balanced food intake, the preparation and distribution of dietary requirements and planning for institutions, for public well-being generally and for specific purposes, e.g. infant feeding, weight control and other matters of health interest.

Local conditions

5. There is a good supply of nutritious food in New Zealand and the problems that do arise are common to all countries: coronary disease, obesity, diabetes, and hypertension. However, the extent to which these problems are activity rather than dietary related is debatable.

6. Two major surveys of children have been undertaken in the last ten years, one of school children in 1969 and one of pre-school children in 1975. The findings of these two surveys are contained in the Department of Health Special Report Series Nos. 38 and 44. In brief, the conclusions reached were:

(a) Most New Zealand children are well nourished and there is nothing to suggest that malnutrition, in the sense of under-nutrition, is a significant health problem.

(b) There are no appreciable differences noted between children of Polynesian and of European parentage.

(c) There is reason to believe that the continued weight increases noted are indicative of an emerging problem of overweight for height at all ages so that obesity may become the main nutritional problem in New Zealand.

7. Breast feeding declined from 1940 onwards but this trend was reversed in the early 1970s. Although no figures are available for the whole country, from information coming forward it seems that the change back to breast feeding continues to gain momentum. Because cows' milk is cheap and in plentiful supply, weaning presents few problems.

8. New Zealand has no national school meals programme.

Special considerations

9. In comparison with most other countries, New Zealand has adequate supplies of good quality food available from the main nutritional groups (animal, fruit and vegetables, bread and cereals). A criticism heard from the health viewpoint is that the country concentrates too much land and government assistance on the animal group and too little on the other two, particularly in relation to cereals.

10. Therefore, if New Zealand is to follow present overseas thinking on nutrition, it would be necessary to increase the emphasis given to cereals, vegetables and fruit and to lower the intake of animal products. No doubt this could be done but it would be difficult to sustain such an argument in a country where the standard of nutrition is already relatively high and where the economy and agriculture are based largely on animal production.

11. The constantly changing views on what constitutes good nutrition suggest that the education of health workers in nutrition is important.

28 September 1977

CMC (77) III/B5

FOOD AND NUTRITION

Background paper prepared by the Government of Ghana

There is in Ghana currently no national policy on food and nutrition as an integrated programme but there is a policy on local food production. In 1973 a conference was held in Accra on national food and nutrition policies and programmes. All the major disciplines and sectors of the economy whose activities are related to food and nutrition participated in the conference, at which the following needs were among those identified:

(a) that the intervention of food and nutrition programmes required a multi-sectoral and multi-disciplinary approach;

(b) that there was need for the formulation of national food and nutrition policies and programmes;

(c) that there was a need for the establishment of a national multi-disciplinary secretariat under the Ministry of Economic Planning for the co-ordination of food and nutrition policies and programmes.

2. In 1975, in recognition of the significance of nutrition in national development, the Government set up a multi-sectoral committee under the National Economic Planning Council to review the whole area of nutrition, define the problem areas and make recommendations for improvement in the national nutritional status. As part of its assignment, the committee was expected to suggest guidelines for the formulation of a national food and nutrition policy. The report of the committee is being studied by the Government and it is envisaged that appropriate steps will be taken soon towards the formulation of national food and nutrition policies and programmes. Meanwhile, the Ministry of Agriculture is vigorously pursuing its own policies and measures aimed at the production of adequate quantities of foods of high nutritional value at reasonable prices.

LOCAL CONDITIONS

3. Nutritional diseases especially among pre-school children constitute a major public health problem in the country. Pregnant and lactating women and the labour force are also known to suffer from the effects of malnutrition. The full picture is not clear because of the inadequacy of reliable information.

4. In a survey carried out in 1962, 58 per cent of boys and 49 per cent of girls of the 1–4 years age group living in the forest and farming villages in southern Ghana were found to be under-weight. For the coastal fishing communities, 30 per cent of boys and 29 per cent of girls were found to be under-weight. In northern Ghana, 30 per cent of adult males and 50 per cent of adult females were found to be under-weight at all times. However, during the "hungry season" (February–June) when food is scarce, the figures increase to 45 per cent and 60 per cent for males and females respectively. From the same survey, 50 per cent more of pregnant women showed signs of malnutrition than non-pregnant women.

5. So far not much information has been derived from hospital or clinic data. This is largely because much of the data indicates mainly the primary causes of illness or death even though these may be related directly or indirectly to nutrition. In addition, most of the records indicate malnutrition without categorising the type of malnutrition. It has therefore not been possible to utilise these data to obtain a clear picture of the nutritional status of the population. However, from available information it is estimated that mortality associated with protein calorie malnutrition (PCM) accounts for about 10 per cent of deaths from all causes. It is also estimated that although the 0–5 years age-group constitutes 25 per cent of the total population, it accounts

for about 50 per cent of the total deaths in the country. A significant proportion of these deaths are attributable to the direct or indirect consequences of malnutrition.

6. Although the data are incomplete, there is no doubt that nutritional disorders constitute a major health problem, especially in the pre-school age-group segment of the population. The major nutritional problems may be summarised under the following major broad categories:

(a) kwashiokor (PCM)

(b) marasmus

(c) nutritional anaemia

(d) endemic goitre in some parts of the country

(e) vitamin A deficiency in northern Ghana

The following nutritional surveys have been carried out since 1961:

National nutrition survey 1961–62
Physical growth of school children in Accra by Prof. A. Ofosu-Armah, 1975
Physical growth of Peki school children by Dr. R. O. Asante, 1971
The social environment and the heights and weights of Ghanaian children, Dr. D. K. Fiawoo et al, 1969
Baafi, a case study, Dr. Dako et al, 1972
Baafi, a second study, Dr. Oracca-Tetteh, 1976
Kotobabi District malnutrition survey, Commey, 1970
Magnitude of the incidence of kwashiokor in Ashanti Region, Baffour-Senkyire, 1963–68
Immunologic responses in malnourished children, Neumann et al, 1972–4
Endemic goitre survey in Krobo and Akrofuom villages (Techiman District), Commey et al, 1972

There are also a number of unpublished reports on various aspects of nutrition. Obviously, enough work has not been done in this field and this is fully recognised. A second national survey, which will embrace both food and nutrition, has been in the planning stage for some 4–5 years now and is expected to be implemented within the next 12 months or so. It is also proposed to implement a programme for the continuous surveillance and monitoring of food and nutritional status. It is planned to use the information not only for the formulation of policies but, more important still, for the organisation and evaluation of appropriate intervention programmes.

Infants

7. Breast-feeding is still by far the most popular method of infant feeding, but there is no doubt that artificial feeding is on the increase. There are two main reasons for this situation. The first is the effect of the motivating force of advertising; more and more mothers are feeding the infants with modified cow milk as a consequence of advertisements by the manufacturers and the status symbol created by bottle-feeding. There is also the influence of inflation and rising costs; with the rising cost of living, the number of working mothers is rising at an astronomical rate; since the duration of maternity leave of absence from work is limited, there has consequently been a rising trend in the artificial feeding of infants.

8. Weaning foods present a serious problem in the country and weaning is generally badly done. The lower socio-economic groups which include a large number of mothers tend to keep an infant on the breast for up to two years. The breast milk which is obviously inadequate for the infant is generally supplemented with predominantly carbohydrate foods as a result of a combination of ignorance about infant and child nutrition and feeding, high cost of high-protein foods and a variety of cultural factors. Improper weaning is thus a major contributory factor in the nutritional problems of infancy and early childhood. Although there are enough local foods available for the preparation of weaning foods at home, few people prepare proper weaning foods for their infants. The affluent and more enlightened segment of the population rely predominantly on imported weaning foods.

9. The problem has been recognised for some time now, and the Food Research Institute of the Ghana Council for Scientific and Industrial Research (CSIR) is currently conducting a research project on the utilisation of local food materials for the preparation of acceptable weaning foods of high nutritional value. The Ministry of Health is also interested in the problem and is sponsoring one nutrition officer for post-graduate studies in nutrition with emphasis on weaning foods. On the successful completion of his studies, the officer will be involved in studies on the development and evaluation of weaning foods.

Schoolchildren

10. Over 99 per cent of the primary (i.e. pre-secondary) schools in the country are day schools and meals are not provided. In many places, large numbers of children go home for lunch during the mid-day break. Those who do not go home for lunch are generally provided with money by the parents to buy food from food-vendors who generally sell their wares near the school compounds. The nutritional value of these foods is generally inadequate to satisfy the requirements of the children; they are predominantly carbohydrate. Food hygiene is also generally below standard and there are no price controls. In some places a lot has been done through the collaborative efforts of health workers, school teachers and community leaders to improve the quality of food and the standard of food hygiene. Several studies have been conducted in the past into the possibilities of developing suitable models and systems of school feeding programmes but these studies have as yet to lead to any positive policies and programmes on school feeding. The nutritional status of large numbers of school children leaves much to be desired and there is need to direct proper attention on the subject.

11. Today, a new type of school designated "International School" has appeared on the scene in the major urban centres. These are expensive primary schools and usually patronised by the élite and affluent segments of the population. They are all day schools and no meals are provided, but the children are required to take beverages and light snacks for their "elevenses". There is usually only one session and the children have their main meals at home.

12. Well over 99 per cent of the secondary schools are boarding schools and so the children are provided with all their meals during term time. Appropriate steps are taken to ensure that the meals provided are such as to satisfy the nutritional requirements of the children. The quality of the meals and the standard of food hygiene in a number of schools are satisfactory. In some schools problems arise from time to time as a result of a combination of factors including inadequacy of funds and improper management of the catering services.

Factors underlying poor nutrition

13. A wide variety of foods are produced locally and it is possible to prepare meals of high and adequate nutritional value from locally produced foods. However, the foods consumed by large sections of the population in both urban and rural areas tend to be of poor nutritional value in terms of what is required to satisfy the basic nutritional requirements. Hence the poor nutritional status of significant proportions of pre-school children, school children and pregnant and lactating women, as well as the labour force. The factors responsible for this situation are numerous and complex but may be summarised under the following broad categories:

(a) prolonged exclusive breast feeding of infants;

(b) weaning on on predominantly carbohydrate foods;

(c) failure of lactation;

(d) seasonal food shortages, especially in the north;

(e) traditional feeding practices in which the young toddler has to fend for himself at meals time in competition with older siblings;

(f) Certain food taboos related to children and pregnant women, e.g. the avoidance of certain protein foods such as fish, meat or eggs;

(g) poverty, as seen especially in the urban poor and to some extent in the rural poor – there is therefore a tendency to go in for large quantities of cheap carbohydrate foods because of the high cost of protein foods;

(h) ignorance of the basic principles of dietetics and human nutrition.

SPECIAL CONSIDERATIONS

14. There is no doubt whatsoever that it should be possible to promote the consumption of foods of adequate nutritional value to satisfy the basic nutritional requirements through information and education programmes. Such programmes could increase community and individual awareness of nutritional problems and the importance of nutrition to health, and thus stimulate the necessary changes in dietary attitudes, practices and habits that would lead to improvement in nutritional status. The educational programmes could also lead to improvement in sanitation and adequate utilisation of health services to minimise the impact of the parasitic and infective diseases.

15. From experience, however, although it all sounds so easy, it is not so easy to change habits. The major problems and barriers to effective communication may be summarised under the following broad categories:

(a) community acceptance of the need for change in dietary habits from the established traditional dietary habits;

(b) securing acceptance of the necessary measures by community leaders and other opinion leaders, who would in turn influence other members of the community;

(c) lack of effective geographical as well as population coverage due to inadequate resources for programme execution and evaluation;

(d) high cost of certain foods, which are thus beyond the means of those most in need.

16. Deficiencies in the system of marketing, storage, transportation, distribution and price controls are contributory factors to the country's food and nutrition problems. With non-perishable foods like grain and beans, the building of buffer stocks could help to minimise the seasonal shortages. With perishable foods like meat and fish, improvement in cold storage facilities could go a long way towards ensuring the availability of fresh meat and fish to a substantial proportion of the population. Research and development of appropriate technology for the processing of the perishable foods like yams, plantains and vegetables should also make it possible to overcome seasonal shortages of these foods. Thus, during the season of abundance the surplus could be processed and used during the off-season period.

17. Assistance and technical co-operation are considered useful for:

(a) training of selected professional and non-professional personnel in the fields of nutrition, agriculture and food and nutrition programmes;

(b) provision of supplies and equipment for food and nutrition surveys;

(c) provision of supplies and equipment for research projects such as the development of weaning foods and the development of appropriate technology for the preservation, storage and processing of certain foods, as well as crop improvement and agricultural methods;

(d) development of teaching and training methods on food and nutrition programmes and also appropriate materials for public information and education programmes.

28 September 1977

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FOOD AND NUTRITION

Background paper prepared by the Government of Uganda

Uganda has been one of the leading nations among developing countries in the field of nutrition science and research. The presence of the Medical Research Council's Nutrition Unit since the early fifties to the early seventies gave an added impetus to many nutrition activities in the country. Many papers by Uganda-based research workers have been published in international journals or presented at international conferences, some of which have taken place in this country. The interest taken by many international bodies such as the World Health Organisation, the Food and Agriculture Organisation, the United Nations Children's Fund, the World Food Programme, the Save the Children Fund, Oxfam and many others has also stimulated a lot of thinking about nutrition.

NATIONAL POLICY

2. The availability of adequate food of good nutritional value is obviously an important determinant of a nation's health. The absence of a clear-cut, well-formulated policy on food and nutrition, however, may hinder proper utilisation of foods and interfere with the nation's health, and consequently with its socio-economic well-being. Uganda's policy on food and nutrition has always been consistent with the slogan "good health for all". This policy is well-formulated in the different Five-Year Development Plans and now the Action Programme 1977/78 – 1980/81. The following activities constitute what may be considered a food and nutrition policy:

(a) increased food and cash crops production, the latter aimed at raising foreign exchange to buy what foods we cannot produce;

(b) the youth development schemes such as the Namutamba Project, the Youth Settlement Schemes and the Young Farmers of Uganda;

(c) the inter-provincial home and environmental competitions;

(d) various nutrition rehabilitation schemes such as the Mwanamugimu, originally sponsored by the Save the Children Fund and now fully run by the Ministry of Health, and the UNICEF-supported nutrition scouts pilot project at Kayunga, soon to become the basis of primary health care;

(e) the maternal and child health activities of the Ministry of Health;

(f) community development activities such as women's clubs and youth clubs; and

(g) Ministry of Education activities such as school meals and health education in schools, and the teaching of agriculture.

3. Besides various conferences such as Country Health Programmes (1975) sponsored by the Ministry of Health, Primary Health Seminars (December, 1976), the Workshop on Integrated Rural Development and Family Health (June, 1977) and many other smaller seminars sponsored by the Ministry of Health jointly with other related Ministries nearly always have some nutrition component and contribute to this policy. The common feature of these activities is that they help to ensure that the nutritional level of the community, and especially of children and mothers, who are the most vulnerable groups, is well cared for. The Ministries of Agriculture, Animal Resources, Health, Culture and Community Development, and Planning and Economic Development are intimately involved. At present the formation of a National Food and Nutrition Planning Unit is being contemplated. It will be the culmination of many efforts by the Government, as the history of this unit, which has consisted of starts and stops, reveals.

4. Just more than two decades ago the colonial Government tried to initiate a national policy on food and nutrition by appointing an Advisory Committee on Human Nutrition in 1952. This

Committee was succeeded by another, the Scientific Committee on Human Nutrition (General Notice 242, Uganda Gazette 1958). The latter was short-lived as it was reconstituted a year later and given new terms of reference (General Notice 1008 of 1959, Uganda Gazette 1959). These were:

(a) to direct the activities of the Government Nutrition Unit;

(b) to assess the extent of malnutrition in Uganda, and to investigate its causes;

(c) to correlate research and investigations on nutritional matters, and to facilitate exchange of information on this subject;

(d) to examine and assess the results of scientific research and investigations, and to advise the Minister on any executive action which they may suggest;

(e) to advise the Minister on nutritional problems in Uganda generally, and in particular to investigate and advise on specific problems of scientific or practical nature referred to the Committee by the Minister.

5. In the pre-independence years which followed, the Committee was very active. Not only was the Ministry of Health involved but also the Ministries of Agriculture, Animal Resources, Education, and Community Development. In addition, the World Health Organisation, the Food and Agriculture Organisation and United Nations Children's Fund were intimately involved in the nutrition activities of the country. But by the end of 1963 the Committee's activities had ceased. This was blamed on the lack of executive powers by the Committee (letter of the Chief Veterinary Research Officer, the Permanent Secretary, Ministry of Health 1963, Registry, Ministry of Health). Nutrition activities did not go into abeyance, however, although during the following six or seven years there was no committee to co-ordinate them. These activities were mainly based on the Medical Research Council Unit at Mulago (research, surveys), the Ministry of Health (surveys, health education), the University Departments of Paediatrics and Child Health and Preventive Medicine (research and surveys); University Departments of Agriculture and Rural Economy (surveys and research) and WHO, FAO, UNICEF, SCF and Oxfam for technical advice and occasionally financial support. These organisations contributed a lot to the nutrition information in the country.

6. A co-ordinating body in the form of the National Food and Nutrition Council appeared on the scene again around 1969/1970. The major aims were:

(a) the co-ordination of nutritional activities of the Ministries concerned (namely: Health, Agriculture, Forestry and Co-operatives; Animal Industry, Game and Fisheries; Culture and Community Development; and Education; but also the MRC/Mwanamugimu complex; WHO, FAO, UNICEF, SCF, WFP and Oxfam also came in with technical advice);

(b) stimulation of operational research into improved methodology for the complete eradication of malnutrition from the country;

(c) to inform the general public of ways of improving the nutritional health of their children, using mass media and other appropriate methods;

(d) to maintain surveillance on the food and nutrition situation in different parts of Uganda so that crises can be foreseen and averted.

A nutrition institute was proposed and even plans drawn, but once again because of lack of executive authority, the National Food and Nutrition Council collapsed after a few years. The proposed National Food and Nutrition Planning Unit in the Ministry of Planning and Economic Development is a revival of the work of the successive committees which have laid the ground work for this Unit. It is hoped that it will plan a proper nutrition policy for this country.

LOCAL CONDITIONS

State of nutrition

7. Although we live in a country of evergreen vegetation and fertile soil, Uganda is by no means a country of plenty, but there is a fairly wide variety of foods of good nutrition quality. The state

of nutrition is nevertheless dismally poor. This is particularly so among children of below four years. Malnutrition is also seen in other older age groups and indeed in adults, but to a lesser extent. It has been estimated, for example, that about two per cent of all children below four years have protein calorie malnutrition (World Food Programme Project UG 689 of 1970/71). This high incidence, however, is not uniform all over the country, but if the population of Uganda is now estimated at 12 million and over and the under-four population is about 25 per cent, then the magnitude of the problem can be understood. What is seen in hospitals and other medical units in the country is the top of the iceberg.

Surveys since the early 1950s

8. Surveys have been done since the early 1950s by successive workers in the Ministry of Health, the Medical Research Council Nutrition Unit, WHO, FAO and UNICEF. Individual workers, especially at Makerere Medical School, did many surveys also. Chief among these are those of Jelliffe, Professor and Head of Department of Paediatrics and Child Health, in the 1960s. Later the Medical Research Council continued the exercise in the early 1970s. Although none of these surveys was country-wide and many were based on selected populations such as sub-counties, hospitals and factory workers, there is complete agreement among all of them regarding the high prevalence of protein calorie malnutrition in Uganda, especially among the under-four-year-olds. It has also been found more common among non-grain-eating areas and around large concentrations of population such as over-populated areas and around towns. For instance, one survey in 1959 found overt protein calorie malnutrition in less than 0.3 per cent of rural populations of under four years living 300 miles away from Kampala, although earlier it had been found more common around Kampala, the capital and commercial centre.

9. Many of these surveys also revealed that the main reasons for the prevalence of malnutrition in the urban and peri-urban areas was the decline in breast feeding practice and the increased frequency of artificial feeding. On the other hand, surveys done in the rural areas revealed prolonged breast feeding up to the second year in over 80 per cent of the mothers and sometimes up to the third year of life, in addition to the supplementary feeds. One writer in one of his many writings compares urban and rural Acholi children and concludes that "urbanised Acholi children appear to have more evidence of protein calorie malnutrition as judged by a hypochromotrichia incidence of 22.8 per cent and a kwashiorkor rate of 9 per cent among 44 pre-school age children based in Kampala". There is therefore a definite correlation between urbanisation and increasing incidence of malnutrition. The reasons are not very far to see. Chief among these are the high level of advertising of artificial foods, poverty, overcrowding, separation from freely available foods, the high incidence of illegitimacy, and pseudo-westernisation resulting in improper methods of artificial feeding and weaning, and these in turn result in gastro-intestinal infections and malnutrition.

10. There are at the moment not many locally-made artificial weaning foods. This would be a substitute for the village level weaning foods (multi-mixtures) popularised in the early sixties by many paediatricians. This type of food would serve many urban children who do not have easy access to fresh weaning foods. The World Food Programme Project Ug 689 of 1970/71 recommended very strongly foods based on soya, maize and DSM. African Basic Foods Incorporated, a privately-owned company, is at present manufacturing soya flour and receives much encouragement from the Government.

School meals

11. With regard to school meals, the policy of the Government has all along been to provide all schools with school lunches since the early 1950s. This is easy in boarding schools, although the quality of the meals in some schools leaves much to be desired. It has become increasingly more difficult to do so for day schools, as records in the school meals section of the inspectorate of the Ministry of Education show. Earlier on, this was facilitated by the appointment of an officer to supervise this service in the Ministry. The organisation necessary for the success of this exercise, which includes adequate finance, transporting, cooking facilities and manpower to run the services, has been the main drawback to the success of this policy.

Nutritional value

12. The question as to whether the nutritional value of the foods being consumed, especially by the vulnerable groups, is adequate both in quantity and quality has been partly answered, in the negative. Although adequate foods are generally available in the country, proper use of them to get the maximum nutritional benefit is not always made. There are many factors that militate against this, such as various tribal customs and food taboos, lack of adequate knowledge about the value of various foods, lack of transport facilities to get the food where it should go, losses through badstorage facilities, and hence maldistribution of the available foods. This the Government is trying to tackle, as we shall see later.

SPECIAL CONSIDERATIONS

13. Consumption of foods of high nutritional value can be encouraged by health education. The Government has gone a long way to implement this. It is the policy of the Government to enlighten the community about nutrition, and different Ministries contribute their share of this education. The Ministry of Health, through its maternal and child health and its health education sections, encourages health education in general and nutrition education in particular at different medical units to individual groups of mothers or parents directly. Use of mass media such as radio and television, and to a lesser extent the press, plays a big role too. The Ministry of Education, through providing school meals, especially lunches, to day students, through giving instruction on nutrition in classes, and through practical courses in agriculture, plays its part in nutrition education. Many schools now have agriculture taught formally, both theoretically and practically. School farms have been established and many schools are self-sufficient in some food items, such as eggs and milk. The Ministry of Culture and Community Development, through its women's and youth clubs, encourages healthy habits including nutrition education, and through promoting improved farming methods contributes a great deal to nutrition education.

14. There are, however, many problems encountered in the production and distribution of foods of good nutritional value. The continuation of a subsistence economy with unsophisticated methods of farming does not stimulate production of foodstuffs adequate both in quantity and quality. The answer to this problem is the encouragement of more modern methods of farming, such as mechanisation and the use of fertilisers and insecticides to increase production. The Government, through the Ministries of Agriculture and Animal Resources, has been trying to encourage this trend, but more needs to be done.

15. Secondly, even the food produced by this subsistence farming cannot be got to the consumer easily. In this connection, transport, storage and marketing facilities need to be improved, so that not only losses due to poor methods of transport, storage and marketing are prevented but also maldistribution is avoided. Again the Government has recognised this and in its Action Programme 1977/78 –1979/80 has increased foreign exchange allocations for buying more vehicles for transporting produce. Farmers, through their co-operative societies, can sell their produce more easily both to the Produce Marketing Board, which has increased storage facilities for some important foods such as grains, and on the open market. To allow easy transportation of foods, communications have not been forgotten. Re-grading, re-surfacing and the opening-up of new roads has been given high priority in the Action Programme so that transportation of produce can be done easily.

16. All this assistance given by the Government to help improve nutrition can receive a further boost, both technical and financial, from international organisations, particularly the United Nations agencies (WHO, FAO, UNICEF, WFP, IMF), and also from many friendly countries who are willing to help the Government fulfil its commitments. It is up to us to seek this aid and use it wisely, but without forgetting that local efforts must be the basis on which our nutrition can be greatly improved.

7 October 1977

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FOOD AND NUTRITION

Background paper prepared by the Government of Tanzania

The Government recognises the urgent importance of nutrition. The national organisation which supervises all matters on food and nutrition is the Tanzania Food and Nutrition Centre, a para-statal body under the Ministry of Health whose Minister is the Chairman.

NATIONAL POLICY

2. The centre is currently working out a formal food and nutrition policy for Tanzania, in close co-operation with the regional authorities so as to evolve a policy workable under our decentralised system of government.

3. The centre advises the Government on all matters related to food and nutrition. It works in close co-operation with all Ministries. There are concrete programmes on nutrition planning (national and regional), agricultural production in relation to nutritional requirements, food storage, processing and industry including highly nutritious products, nutrition education, nutrition surveys and nutrition-related health problems.

4. Ministries such as Agriculture and Natural Resources and other public institutions have plans geared towards a national balanced diet. Emphasis has been put on the production of food crops, especially cereals and legumes, while better utilisation of animal products is being very much encouraged. Products such as meat, milk and fish are being promoted.

LOCAL CONDITIONS

State of nutrition among children

5. From surveys done in Coast, Dodoma, Kilimanjaro, Tabora and West Lake Regions, 20–30 per cent of the children suffer from varying degrees of protein energy deficiency, especially between 12 and 36 months of age. Of these 2–5 per cent are acute (severe) i.e. kwashiorkor and marasmus. Among cassava (Coast) and banana (West Lake and Kilimanjaro) zones, this may continue beyond the third year of life. On the whole it is estimated that 10,000 children die of malnutrition per year.

6. Breast feeding is not a problem, at least for the greater part of the country, since it is part of our tradition and its desirability is enhanced by socio-economic reasons. However in limited urban areas, especially Dar es Salaam, there is some erosion of our breast feeding custom by bottle feeding and baby weaning products, often imported and sold accompanied with high-pressure salesmanship, typical of multinational corporations. We are certainly trying to maintain breast feeding as a national policy.

Staples and their bearing on nutrition status

7. The average annual agricultural growth of 2.6 per cent is below that of population growth of 2.8 per cent; therefore there is an inadequate food supply which has to be made up through imports.

8. The majority of the staples are without adequate protein. These include cassava, bananas, milled rice, maize, sorghum and millet.

9. Seven of the 20 regions produce less than 2,000 Kcal/day/caput. The type of staple produced is closely related to the consumption pattern and eventually the nutritional status of the community, especially in the rural areas where there is limited food marketing.

SPECIAL CONSIDERATIONS

Educational policies and the consumption of foods of high nutritional value

10. One of the aims of the policy of education for self-reliance is to encourage school economic activities which will serve as a medium of instruction and as a means of producing food and income for offsetting part of schooling expenses. As a result of this policy, schools are engaged in agricultural production and the making of articles of crafts and arts. The food thus produced is partly used for school feeding and income from the other sources is also partly used for the same purpose.

11. It is very possible therefore to encourage sound eating habits through the feeding programmes, so that the theory of sound nutrition is integrated with the agricultural activities in the schools. In other words, the theory of nutrition can be taught through school gardening and the practice of nutrition through the feeding programmes.

12. The school curriculum, especially in primary schools, has a health and nutrition component in it. In this way students can learn the basics of good health and nutrition.

13. The policy of adult literacy for all, and especially functional literacy, serves as a medium for teaching sound dietary and health habits to farmers and workers.

Some pertinent problems

14. There are several problems after harvesting. About 30 per cent of all food produced is wasted during storage through biological spoilage, rodents and insects. Transportation is a big problem, especially during the rains, and this causes tremendous losses in perishable products such as animal foods, fruits and vegetables. This ties in with marketing: consumers cannot be reached readily, and there are resultant big fluctuations in prices, especially in urban centres. These problems are interwoven in the fabric of national development and they can be overcome by overall improvement in our development.

Assistance

15. Assistance is required in the field of intermediate post-harvest technology of food crops and related products, especially storage, handling and processing. Training fellowships are needed in agricultural statistics, food technology, nutrition education, medical nutrition food chemistry and laboratory techniques. Limited help is currently being provided by UN agencies and other aid organisations but we could do with more assistance.

7 October 1977

CMC (77) III/B8

FOOD AND NUTRITION

Background paper prepared by the British Government

For the sake of brevity this report from the United Kingdom will not attempt to deal with all the points raised on Agenda Item III. Since this is a medical conference we are putting the main emphasis on the health aspects of the problem, rather than on questions of food supply and distribution. Secondly, we are concentrating in this report on matters which we think may be of general interest to Commonwealth countries, rather than on the specific situation in the UK.

2. For these reasons it has not been possible to follow the format of the Agenda exactly. The report is in three parts:

- General ideas on food and nutrition policy
- The contributions to work on nutrition and the responsibilities of three government departments: the Department of Health and Social Security (DHSS); the Ministry of Agriculture, Fisheries and Food (MAFF); and the Ministry of Overseas Development (ODM).
- A short note on the nutritional situation in the UK.

GENERAL CONSIDERATIONS ON A NATIONAL FOOD AND NUTRITION POLICY

3. A distinction has to be made between a food policy and a nutrition policy. In the UK responsibility for food policy lies with MAFF. The objective is to ensure that there is available to the people an adequate supply of food which is healthy, safe and satisfies their choice. Such a policy has to operate within certain constraints. First, in a free society there must be freedom of choice; secondly, the availability of any food to the consumer depends in part on its cost, and this in turn depends on a range of agricultural, economic, social and political factors. Finally, government has the responsibility for setting and maintaining standards of quality and safety. It is perhaps in this field that the collaboration is closest between the departments concerned with food and with health.

4. The objectives of a nutrition policy are different. They are to ensure an optimum nutritional state of the population. The definition of the objectives is clearly the primary responsibility of Health departments, but implementation of the policy is likely to fall on Ministries of Agriculture and Food, as happened in the UK in World War II.

5. There is much debate going on at present in the UK, both inside and outside government circles, on the extent to which it is desirable and feasible to combine these two objectives in a national food and nutrition policy. Any discussion of this question must take account of several different sets of problems.

6. We have to ensure that even in an era of rising food prices the basic components of a healthy diet are available in adequate amounts even to the poorest and most vulnerable sections of the community, such as the elderly, single parent families and the unemployed. Here there undoubtedly is an *ad hoc* policy, even though it may not be a fully developed food and nutrition policy. On the one hand, government recognizes its responsibility for maintaining surveillance of the nutritional state of the population (see below); on the other, a variety of methods are available, and are used, for ensuring that people are adequately fed, such as price controls, subsidies, school meals, welfare milk, etc. We do not, however, have any system for comprehensive review of the effectiveness of these measures.

7. Quite a different problem is presented by the so-called diseases of affluence. It seems that when people can afford it, they persist in eating diets which many scientists think are not very

good for them. There is not, however, a consensus of scientific opinion. For instance, in the UK there is quite active controversy about the role of dietary factors in the causation of cardio-vascular disease. Even if there were a consensus, it is still doubtful how far it would be justified to use measures such as price control and taxation to limit the individual's freedom of choice in the interests of his health. At present the lines of action being pursued are to promote research on dietary causes of ill-health and the degree of risk, and to promote a balanced view on these matters by health education.

8. A third element is that our diet is certainly not as economical as it might be in terms of the use of resources. A diet, to be compatible with health, need not contain such large amounts of expensive animal protein and fats. However, any attempt to reduce the consumption of animal products would cause a major disruption of our agricultural industry. Moreover, the general feeling is that, except in time of war, it is not right to try to impose a different pattern of eating by government action. Any change must come about through the natural forces of supply, demand and price. As an example the food industry, rather than government, is taking the lead in trying to introduce new and cheaper protein products derived from vegetable sources. The DHSS has set up a special panel to monitor the quality of these products and to advise on the extent to which they should be used in feeding programmes supported by public funds, such as school lunches and hospital catering.

9. Although these remarks emphasize the constraints on planning, there is an increasing desire to co-ordinate policy of food and nutrition between departments of government and between government and industry.

THE ROLE AND RESPONSIBILITIES OF GOVERNMENT DEPARTMENTS

The Department of Health and Social Security

10. *Organisation.* The DHSS has a small nutrition section responsible for some direct survey work, for co-ordinating and promoting research commissioned by the Department, for advising the Minister and for servicing a number of committees and panels. The main advisory body is the Chief Medical Officer's Committee on Medical Aspects of Food Policy (COMA). This committee has established a number of sub-committees and panels concerned with subjects such as infant feeding, the nutrition of the elderly and nutritional surveillance. In addition, COMA has set up several *ad hoc* working groups and panels to advise and report on particular problems such as bread and flour, cardiovascular disease, obesity, novel proteins, the composition of infant foods, recommended dietary intakes and the possible fortification of foods with vitamin D (see paragraph 38, et seq., below). MAFF is represented on the majority of these committees.

11. A parallel committee to COMA is the Committee on Medical Aspects of Chemicals in Food and Environment. This committ also works through a number of working groups, for example, the Toxicity Sub-Committee.

12. These various committees contain a high proportion of the more senior people involved in nutrition in the UK, so that government can draw upon a wide range of specialist advice. This system also has advantages for the academic community: it brings them into contact with practical problems and encourages collaboration between disciplines.

13. *Activities.* Over the last decade or more the DHSS has been directly responsible for a number of surveys on particular groups of the population – school children, pre-school children, pregnant women and the elderly – involving weighed dietary intakes and medical assessments. These surveys have been cross-sectional, except for that on the elderly, which is being repeated every five years on the survivors of the original sample.

14. Information about the nutritional status of the population is also obtained from morbidity and mortality statistics provided by the Office of Population Censuses and Surveys, from the Hospital In-patient Enquiry and from blood transfusion statistics which show the number of potential donors rejected because of a low haemoglobin level.

15. In recent years, partly as a consequence of the Rothschild report on the organisation of government research, studies have been commissioned to be done by university departments and other institutions such as Medical Research Council (MRC) units. Examples of work commissioned in this way are longitudinal studies of the growth of school children and pre-school children, a study of the effect of supplementary milk in pregnancy on the birth weight and growth of infants, and biochemical measurements of vitamin status in the elderly.

16. The first three studies were set up as a direct consequence of a government decision in 1971 to reduce the subsidies on school meals and on the distribution of milk to infants, children and pregnant women. In making these changes the Minister undertook that the benefits would continue to be available free to poor and large families and that every effort would be made to monitor any adverse effects on other groups. An important development from this has been the realization that nutritional monitoring or surveillance, to have any meaning, must be a continuous process. Monitoring requires a baseline, and no baseline anthropometric information was available. Although the school medical service provides for medical examination of all pupils on entering and leaving school, heights and weights were less often measured over the years and have not been analysed centrally, except in Scotland.

17. The emphasis in the technical discussions of the 30th World Health Assembly on the need for nutritional surveillance in all countries has therefore found a ready response in the UK. However, although the principle is accepted, many practical problems, apart from the financial ones, remain to be overcome. Difficult decisions have to be made about sample sizes and methods of sampling. School children present no great problem, but it is difficult and expensive to obtain a sample of pre-school children, who form a key group in the UK, as in developing countries. Much thought is therefore being given on how to make better use of information obtained through existing services, such as child welfare clinics, and on how to improve the quality of that information.

18. The MRC works closely with the DHSS. The main interest of the MRC is naturally the support of nutritional research in the fields of physiology, biochemistry, clinical medicine and epidemiology. However, it was only after the publication in 1974 of a joint Agricultural Research Council/Medical Research Council Report on Food and Nutrition Research that the subject began, after a lapse of some 30 years, to have a relatively high priority in the UK. For more than 20 years the MRC has been very active in the support of nutritional research overseas, with units in Uganda and Jamaica, and more recently a group in The Gambia. More attention is now being given to training and career structure, since it is considered that one factor limiting progress is a shortage of good workers in nutrition.

The Ministry of Agriculture, Fisheries and Food

19. The nutrition section of MAFF provides advice to the Government on human nutrition as it relates to food. An important part of its work involves the nutritional interpretation of two sets of food supply statistics collected by MAFF, namely the total food available in the country (corresponding to the FAO Food Balance Sheets) and the unique National Food Survey, which continuously records the amounts of food bought by housewives. About 7,500 households participate each year, and the results are evaluated by season, region, degree of urbanisation, income and family composition. The findings are compared with the nutrient intakes recommended by DHSS, and one of the aims of the Survey is to provide an early warning of possible nutritional problems.

20. The section is also concerned with the nutritional value of basic foodstuffs and of the ever-increasing range of processed foods. It maintains its knowledge up to date in several ways, which include:

(a) frequent contact with industry and agricultural advisers

(b) a series of *ad hoc* analyses of nutrients in selected foods

(c) a long-term collaboration with the MRC Dunn Nutritional Laboratory for the complete revision of standard tables of food composition.

Much of this work is published in scientific journals.

21. This knowledge is often a prerequisite for understanding medical problems, such as the role of different forms of dietary fibre in the aetiology of certain diseases, and the relationship between newer foods and dietary patterns and possible imbalances of trace elements and other 'minor' nutrients.

22. The section collaborates closely with DHSS nutritionists, with legislators within MAFF (for example by advising the Food Standards Committee), with several other government departments which have interests in food, and with the Agricultural Research Council and Food Research Associations where research contracts are increasingly being placed. It also provides advice to the public on nutritional matters, especially through its 'Manual of Nutrition'.

The Ministry of Overseas Development

23. The ODM is increasing its interest in nutrition and has appointed an adviser in the subject. It is accepted that the nutritional problems of third world countries cannot be tackled in isolation; they must be viewed not only as a health problem but in the wider context of social and economic under-development.

24. *Nutrition in technical co-operation programmes.* There are many examples of how, in the past, projects aimed at increasing productive capacity have had adverse effects on health and nutrition. As a consequence of our policy of aid to the poorest we believe that a nutritional element should, wherever possible, be built into technical co-operation schemes, particularly rural development projects. There is very little experience to guide us on how to do this. Since the responsibility for initiating schemes rests with the government which is requesting technical co-operation, the first step is that governments should be aware of the nutritional problems in their countries and of the part which improvement in nutrition plays in the development process. We hope that the discussions on nutrition at this conference, following closely on those at the 30th World Health Assembly, will help to increase this awareness.

25. Our first experiment in this direction is about to begin in Kenya, where the Government has requested the inclusion of a nutrition worker in the small team being set up by the ODM and the World Bank to study the implications for health and nutrition of the Tana River irrigation scheme, and to establish a programme of surveillance.

26. *Collaboration with UN agencies.* We are increasing our contacts with the UN agencies concerned with nutrition – WHO, FAO and UNICEF – and with other donor countries interested in nutrition projects. One way of doing this is by active participation in bilateral meetings of donor countries, in technical meetings on special problems such as Vitamin A deficiency and iron deficiency anaemia, and in discussions on institutional arrangements for improving the effectiveness of the UN agencies in the field of nutrition. The objective of this increased participation is to open up other ways of taking useful action.

27. *Food Aid.* The ODM has responsibility for advising on the nutritional aspects of the UK food aid programme, which includes aid direct and through the WFP and the EEC. It is accepted that in most cases food aid has to be regarded as a contribution to the development process, relieving some of the burden of imports for the recipient country. Nevertheless a significant proportion of the programme has as its objective the direct distribution of food to those who need it most, for example young children and nursing mothers.

28. Whilst we remain convinced that the most cost-effective medium for improving nutrition is cereals, the provision of dried skimmed milk (DSM) plays an important part in programmes of the second type mentioned above. There has been concern in the UK that the distribution of DSM might have harmful effects, discouraging breast-feeding and promoting gastro-enteric disorders. We therefore proposed certain measures and guidelines for the safer distribution of DSM, which have now been adopted by the EEC. We have also supported an EEC initiative to reinforce DSM food aid with vitamin A in all cases considered to be appropriate. In deciding such cases the advice of the WHO is often sought. In principle, arrangements should be made to monitor the extent to which these ill effects occur, if at all. Such monitoring is not easy, and we are in the

process of planning a pilot study to find the best way of doing it. In concert with our EEC partners we are also considering the need for and the cost-effectiveness of supplying, in certain circumstances, DSM in processed form, doing away with the need for it to be mixed with water (which could be polluted) and making it impossible to use as a substitute baby food.

29. *Research.* The MRC's Dunn Nutrition Unit has an extensive programme of research on the ecology of malnutrition in a rural area in The Gambia aimed at elucidating the interactions of nutrition and infection in producing growth failure.

30. The ODM provides substantial support for the Tropical Metabolism Research Unit at the University of the West Indies. This unit, in addition to basic work on malnutrition, is responsible for organising and teaching a Master's course in nutrition. Work is also being done on the interaction of nutritional and social factors, on the mental and behavioural development of children and on the effectiveness of intervention in the home.

31. It may be said that we are particularly interested in research on the functional effects of malnutrition, which include questions such as the influence of energy and iron deficiencies on the output of work. This is part of a general shift from looking at malnutrition as a medical problem to looking at it as a social problem, in its causes and in its effects.

32. *Nutrition policy and planning and nutritional surveillance.* In the last few years WHO and FAO have emphasized strongly the need for all countries to develop systems for nutritional planning and surveillance. These are subjects in which there are very few people with relevant experience. The ODM is supporting the establishment of a unit for nutrition policy and planning at the London School of Hygiene and Tropical Medicine. The tasks of this unit will be research and evaluation, teaching (largely through special workshops) and the provision of consultant services when requested. An active collaboration has already been established with the Nutrition Planning Unit of the Government of Sri Lanka.

33. *Training and manpower resources.* The ODM and the British Council provide a number of fellowships for students from overseas countries to receive training in nutrition or food science at various British universities. Many take the Master's course in human nutrition at the London School of Hygiene and Tropical Medicine, because this is oriented particularly to the problems of developing countries.

34. An important new development is third country training. The ODM has recently agreed to provide five fellowships annually for students from the poorer Latin American countries to take courses at the Institute of Nutrition of Central America and Panama, thus providing the necessary training without removal from the region of origin and divorce from the area of the problem, and possibly contributing to the brain drain.

35. Last November WHO convened a meeting of heads of university departments and institutes giving so-called 'higher level' training in nutrition, to establish the nature of the need and the extent to which that need is being met by existing courses. There was general agreement that, for the time being at least, there is still a need for higher level courses in the UK and other European countries until more regional and local institutions have been built up.

36. We attach great importance to maintaining and indeed increasing our resources of people with experience in nutrition for work in technical co-operation schemes, in the various UN agencies, etc. The MRC provides a small number of scholarships for UK students to take higher degrees in nutrition, particularly those who aim to work overseas.

37. There is always much difficulty in matching supply and demand. We have to look ahead if trained people are to be available when they are needed. We should be very much interested to hear the views of other delegations on the likely needs for people trained in nutrition.

THE NUTRITIONAL SITUATION IN THE UK

Nutritional status

38. The surveys which have been done (see paragraph 10 et seq., above) and the surveillance system which is being set up have as their main objective the detection of undernutrition in our population. In the main this has not been found. There are small differences in height in children related to social class and family size, but we cannot be sure that they have anything to do with nutrition. As has been said above, we believe that with rising prices of food in relation to incomes it is very necessary to extend this monitoring.

39. Two particular groups have problems which cause some concern. A proportion of elderly people show biochemical evidence of deficiency of riboflavin and ascorbic acid, when results are interpreted according to conventional standards of normality. Clinical evidence of deficiency has not been found, and to make any judgement about these changes it is necessary to establish normal ranges in this age-group.

40. The other problem is the re-emergence of rickets and osteomalacia, particularly in some of the immigrants from Asia. The exact incidence is unknown because of the great difficulty of diagnosing early or marginal vitamin D deficiency. This is a public health problem which has not so far been solved. Reports from hospitals, together with the results of some limited surveys, suggest that the condition is fairly common in the industrial cities of the midlands and the north. Consideration is being given to the pros and cons, as a public health measure, of fortifying either chapatti flour or milk with vitamin D, but a definite decision has not been reached. In the meantime our main weapon for dealing with this problem is by educational campaigns directed at the groups at risk. Where these have been carried out with enthusiasm, they have in some measure been successful. The cause and cure of rickets is known. The difficulty is to get the message across to the poorer, migratory Asian immigrants who in any case have a language problem and many of whom have other diseases such as tuberculosis and anaemia.

41. On the other side of the picture, in the UK, as in other countries, there is increasing concern about obesity and its possible relation to coronary heart disease. There has been no systematic study of the prevalence of obesity, but such surveys as have been made suggest that men, more than women, are fatter than they were 30–40 years ago and get fat at an earlier age. A longitudinal study by Professor J. N. Morris of 18,000 middle-aged men has shown that it is only the extreme of overweight (the top 10–15 per cent of the distribution) which carries an increased risk of coronary heart disease. However, the other effects of obesity, such as diabetes, osteoarthritis, increased surgical risk, etc., are not negligible, nor is their cost to the health service.

Food consumption

42. The National Food Survey (see paragraph 19) is showing a trend towards a decreased energy intake, at least in the home. This is paralleled by a fall in total food supplies and in the intakes of individuals, as measured in recent surveys. If it is a true trend, and if, as suggested above, it is associated with an increase in average body weight, it must indicate a fall in physical activity in our industrialized society.

43. Dietary surveys in different age groups show that in general the average intake of all nutrients except iron and vitamin D is equal to or greater than the recommended intake. This must mean, however, that many people must be getting less than the recommended intake without any clinical evidence of deficiency. The meaning and use of figures for recommended intakes of nutrients need to be re-examined, and a working party of the DHSS is considering these questions.

44. In the UK, as in the USA, many nutritionists consider that the national diet contains to much sugar, saturated fat and alcohol and too little fibre. Until we know more precisely what constitutes too much, and the relationship of intake to risk, it is difficult to see what positive action can be taken. This question has already been discussed in paragraphs 3–9 above.

45. In general, it seems that, with the exception of the problem of rickets in some immigrants, the population of the UK is fortunate in having a diet which is quantitatively and qualitatively adequate. We are not, however, complacently assuming that this situation will continue indefinitely, nor do we assume that there are no deficiencies which remain undetected. For example in the UK, and in many other countries, there is a great deal of interest in the possibility of trace element deficiency – a subject to which workers in New Zealand have made notable contributions.

25 October 1976

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FOOD AND NUTRITION

Background paper prepared by the Government of Sri Lanka

National policy

The Government of Sri Lanka has recognised and accepted the need for a national food and nutrition policy, and in pursuance of this a high-level committee composed of the Secretaries of the following Ministries was set up in 1976:

Planning and Economic Affairs
Plan Implementation
Agriculture and Lands
Health
Food and Co-operatives
Fisheries
Trade
Education

The Secretary, Ministry of Planning and Economic Affairs, functions as the chairman of the committee, which comes directly under the purview of the Prime Minister.

2. An advisory unit to this committee, termed the Food and Nutrition Policy Planning Unit, has also been set up in the Planning Ministry. This unit is staffed with officers from the Ministries of Planning and Agriculture, who are on secondment from their substantive posts, and also has a call on consultants from the other key Ministries, including the Health Ministry. However, it awaits the appointment of a full-time, permanent Director and is not expected to be fully functional till then.

3. Two nutritionists of the Health Ministry have undergone specialised training in food and nutrition policy planning and act as consultants to the Food and Nutrition Policy Planning Unit.

4. The Ministry of Health has, with WHO and UNICEF assistance, committed itself to a National Nutritional Surveillance Programme where the nutritional status of pre-school children will be monitored once every six months on an island-wide basis. This will provide valuable information on changing trends for the nutrition policy planning process. The programme is due to commence in November 1977 and it is hoped, in due course, to have agricultural and meteorological data from the respective departments to supplement the health data.

5. In order to make the country self-sufficient in its staple cereal, rice, the Government has implemented a multi-million-dollar irrigation project with World Bank assistance. The largest river, the Mahaweli ganga, is being diverted towards the more arid north central regions of the country and the first stage of the project has already been completed. The entire project is scheduled to be completed during the next five years, and not 30 years as targeted earlier.

6. Some of the other measures to increase the cultivation of more food include the allocation of considerable sums of money for other irrigation projects, a 50 per cent subsidy on fertilisers, assurance of a guaranteed price for cereals and pulses, and liberal credit facilities.

7. Import of pulses into the country was stopped in 1973 to give an impetus to the local farmer. This has had a salutary effect in increasing the acreage of pulses from 1500 acres in 1973 to 50,000 acres in 1976. A special programme has been initiated to cultivate soya bean with the technical assistance of the University of Illinois. About 5,000 acres are under soya cultivation at present, though it is only a recently introduced food in the country.

Local conditions

8. The Nutrition Department of the Medical Research Institute has carried out regular diet and nutrition surveys in all parts of the island since 1930. All these surveys have repeatedly emphasised that a shortfall in energy (calories) is the main nutritional problem. The mean protein intakes appeared to be marginally adequate but this no doubt breaks down due to unequal distribution both within and between families. The vulnerable groups – women and children – suffer as a result. Intakes of iron, calcium, vitamin A and riboflavin were also generally inadequate, though adaptation seems to occur to the low calcium intake with resultant stunting or short stature.

9. An island-wide survey of the nutritional status of pre-school children was carried out by the Ministry of Health in association with the Centre for Disease Control, Atlanta, in 1975/76 – the nutritional status of pre-school children being a good index to the nutritional status of the population. It showed that 6.6 per cent of the rural children were acutely under-nourished or wasted (below 80 per cent of reference median weight for height) and 31.4 per cent were chronically under-nourished or stunted (below 90 per cent of reference median height for age). If concurrent acute and chronic (wasting and stunting) under-nutrition was considered, 3.4 per cent of Sri Lanka's approximately 2.1 million pre-school population were affected and therefore in urgent need of priority intervention.

10. The same Ministry of Health/CDC pre-school survey showed that vitamin A deficiency was not a major public health problem, and only in two of the fifteen health areas (Kegalle and Matara) did it exceed the 2 per cent prevalence levels above which the WHO considers it to be a public health problem. Even in these two areas it only marginally exceeded the 2 per cent prevalence level with prevalence rates of 2.3 per cent and 2.2 per cent respectively. The Ministry of Health has now launched a massive dosage vitamin A prophylatic programme in these two areas and a 200,000 IU capsule is given twice annually to all children since November 1976. The programme is to be evaluated shortly.

11. Anaemia is a problem of considerable magnitude and is mainly due to deficiency of iron, with deficiency of folates and vitamin B_{12} contributing only to a much less extent. The predominantly plant sources of iron, with their poor bio-availability, and concurrent worm infestations no doubt aggravate the problem. Between 65–90 per cent of pregnant women have been shown to be affected. Women of child-bearing age and pre-school children (58 per cent) are also affected. Over 40 per cent of the adult males have been shown to be anaemic and this could seriously impair the work performance of the most productive group in the community. The Government has undertaken the distribution of haematinic tablets to the vulnerable groups through a network of health centres and estate clinics as an immediate measure to control the problem.

12. Endemic goitre is not a serious problem in that the severe manifestations of cretinism, deafmutism and gross goitres are not common. However, it is a public health problem in the South Western and Central Regions of the country where the heavy rainfall leaches the soil of its iodine content and leads to a dietary deficiency. As 70 per cent of the population reside in these areas, a large proportion of the population is at risk of endemic goitre. Therefore an iodine fortification programme is an urgent need and has been engaging the attention of the Government.

13. Particular emphasis is being placed on breast feeding in all nutrition education programmes. Where breast feeding is a problem due to the poor nutritional status of the mother a supplementary food, "Thriposha", is given to the mother in order to improve her nutritional status and the mother is advised to continue breast feeding.

14. There are no acceptable traditional weaning practices and infants tend to be weaned on to starchy gruels, and that too late in life – usually nearer or after one year of age. Since 1971 the Ministry of Health with the assistance of the CARE orgainisation, has made available a processed supplementary food under the name Thriposha. This was originally an entirely imported product – Wheat Soya Blend – but is gradually being replaced with locally produced cereals and legumes. At present approximately 400,000 beneficiaries receive three pounds of Thriposha monthly on

a selective basis – i.e. only those children in grade two or grade three malnutrition – through the various health centres in the island. This ration would supply 9g of protein and 180 calories to each child daily.

15. Children in the primary classes in schools that have been identified as having over 80 per cent of children in grades two and three malnutrition are given eight biscuits and a mid-day snack. This is a joint Ministry of Health/Ministry of Education/CARE programme. The ingredients of the biscuits are instant corn soya milk (ICSM) skimmed milk, sugar and oil and the ration provides approximately 7g protein and 176 calories per child daily. This is by no means a mid-day meal programme and is only meant to supplement the child's diet. At present 950,000 beneficiaries in 7,500 schools partake in the programme.

16. Cereals, particularly rice and to a lesser extent wheat (which is imported), are the main sources of both energy (calories) and protein in the average Sri Lankan diet. Cereals provide approximately 75 per cent of the calories and 70 per cent of the protein intakes of rural populations. Average protein intakes are around 47g per person daily and are only marginally adequate with animal proteins contributing only as little as 6–8g to this figure.

Special considerations

17. Health education, including nutrition education, is extensively carried out through the various health centres. However, the impact of these measures is slow and at times unrewarding. Unless combined with other strategies, the impact of education programmes, by themselves, could be minimal.

18. One of the main constraints in the delivery of health and nutrition services has been a logistic one, with shortage of transport facilities for both personnel and supplies. The present Government is taking steps to ease this problem by making available transport for medical personnel and supplies, as well as heavy transport for the movement of food supplies.

19. Various agencies have assisted the Government in its food and nutrition programmes. The World Bank, FAO, WHO, UNICEF and CARE have assisted in several of the programmes and have already been mentioned. The Food and Nutrition Policy Planning Unit is being supported by FAO and UNICEF and once the unit is effectively operational further assistance would necessarily be required from the same or other funding agencies, as all food and nutrition programmes will be co-ordinated by this unit. Assistance will be required for national nutritional surveillance as this is an extensive and continuing project and also requires considerable expansion to take in other data, such as agricultural and metereological data, to be meaningfully interpreted. WHO and UNICEF are supporting a nation-wide immunisation project which has a indirect but real impact on the nutritional status and again this is a continuing programme requiring continued support. The World Food Programme continues to donate food commodities on a "Food for Work" basis to labour engaged in development projects.

20. Agencies such as USAID, SIDA and NORAD and others have also assisted with programmes of direct or indirect value in improving the nutritional status of vulnerable groups.

31 October 1977

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FOOD AND NUTRITION

Background paper prepared by the Government of Seychelles

The Republic of Seychelles comprises of 92 islands scattered over almost 150,000 sq. miles (400,000 sq. km) of the Western Indian Ocean between latitudes 4° and 11° South. The islands have a total land area of 171 sq. miles and have a population of about 60,000, 90 per cent of whom live on the principal island of Mahé. The latter accounts for 22 per cent of the total land surface. Two other islands, Praslin and La Digue, account for the remainder.

2. Much of the terrain of the granite islands (32 out of the 92) is mountainous, eroded and boulder-strewn. Something like half of the total area is either unsuitable for cultivation or consists of forest land. Of the remainder, more than 90 per cent is under tree crops and shrubs, leaving only about 2,000 acres of arable land. Generally the soil is of low fertility and porous, with a low capacity for holding water. These facts have important implications with regard to food production and consequently the nutrition of the population.

Nutritional status

3. The nutritional status of our population may be said to lie somewhere between some of our developing African and Asian neighbours and the developed countries, as indeed does our level of health generally. There is little of the gross malnutrition (or more correctly under-nutrition) experienced by the countries of the African mainland and the Asian sub-continent. However, although the absolute numbers are small, malnutrition ranging from mild protein calorie deficiency to florid kwashiorkor and marasmus does exist.

Surveys

4. A number of surveys have been made but perhaps the most significant one was that made in 1974 by Dr. Fox of the Department of Human Nutrition in the London School of Hygiene and Tropical Medicine. Based on evidence from mortality rates, morbidity and anthropometric data, he concluded that the most vulnerable group was children in the post-neonatal (4 weeks to 1 year) and the 1 to 4 years age groups, and postulated that this corresponds to the time during which the infant is being taken off the breast and begins to take solid food. This certainly not the whole answer and there is no doubt that poor sanitation, parasitic infestations and socio-economic factors are important.

5. In a recent analysis of 2,000 children attending the maternal and child welfare clinics, 26 per cent fell below the 3 percentile (Harvard Scale). It was observed that the majority of the children with clinical under-nutrition were from families with one or more of the following characteristics: one parent families, low income families, large families, and problem families with either one or both parents being heavy drinkers. Many of those children showed other signs of poor hygiene and care such as parasitic infestations (often multiple), scabies and gastro-enteritis.

6. Our nation is essentially a young one, 30 per cent being below the age of 11 and 42 per cent being below the age of 15. Young children are the potential manpower resource for the country's future development, so that utilisation of resources in improving the health of this section of the community to allow it to achieve its full potential is a priority in health planning. It is in recognition of this that our Government has singled out children, particularly the pre-school age group, for special attention in its overall health programme.

Improvement in child health care services

7. Recently (February 1976) a medical officer, through the assistance of the British Government, has been assigned full-time to the Public Health Department with the express purpose of overseeing and advising on improvement in our maternal and child care services. Prior to this, these services were run entirely by the public health nurses.

8. There is regular follow-up at the clinics. Growth charts are now in common use. Routine deworming of all children attending the clinics is now done with Levamisole (a broad spectrum antihelminthic agent). A family planning service is now being offered to the mothers attending the clinics. Family planning is undoubtedly of paramount importance if we are to improve the nutritional status of the community, indeed its health generally. The clinics serve as distribution points for USAID food supplied through Catholic Relief Services. Child welfare workers are now integrated into the child welfare service, which has made possible early and rapid assessment of problem families.

Other measures

9. Alcoholism is a factor of some importance for it affects not only the individual concerned but the whole family, the children in particular. The new Government is taking firm measures to reduce the size of the problem. Strict licensing laws have been introduced and a new sense of discipline and responsibility is being instilled into the nation.

10. The low income families are being assisted in the following ways:

(a) statutory measures to establish minimum wages for domestic workers, agricultural workers and labourers;

(b) statutory price control on food and other basic commodities;

(c) the Government's housing programme is being accorded top priority in the First National Year Plan, with preference being given to those whose needs are greatest – financial assistance in the form of soft loans is being received from the EEC countries;

(d) The Seychelles Children Society runs a scheme funded by Save the Children Fund in Britain, whereby a monthly allowance is made to poor families, and the same society engages voluntary workers to teach the mothers basic home economics so that the money allocated is used to maximum advantage for the welfare of the children.

Increase in food production

11. As we have pointed out in the introductory paragraph, good agricultural land is scarce and a conflict exists between the preservation of land for agricultural purposes, on the one hand, and an expanding building programme on the other; the Government is taking every measure to ensure that the latter does not reduce significantly the amount of good agricultural land. Intensive farming is being practised to ensure maximum productivity from each acre of farm land.

12. The staple diet is fish and rice, the latter being wholly imported. The aim of the Ministry of Agriculture and Land Use is to reduce our reliance on imported food. The growing of carbohydrate substitutes like sweet potatoes, yams, cassava, etc., is being encouraged and the production of fruits and vegetables has increased in recent years, stimulated in part by the growing tourist industry. Over the last few years a number of commercial farms have become established and production of poultry, eggs and pig products from them has increased to such an extent that we are now almost self-sufficient. A determined effort is presently being made to both increase the production and improve the quality of beef and milk, mainly as a result of the introduction of a new feeding system based on sugar cane.

13. Because of the relative scarcity of good agricultural land and because we are surrounded by seas teeming with fish, it is only natural that we should look to the sea as a source of food supply. The Government is taking steps to develop a viable fishing industry that will ensure sufficient fish for the nation as well as allow for export. The availability of fish is at present subject to seasonal

fluctuation. The French Government has recently donated a cold store of 100-ton capacity with a blast freezer capable of freezing five tons of fish per day. During the good season any excess fish will be stored in the freezer to be put on the market in times of scarcity. This will ensure a more even supply of fish throughout the year as well as more stable prices.

The impact of tourism

14. The opening of an international airport in 1970 and the advent of a tourist industry have brought about certain important socio-economic changes. One such change has been in the role of women in society. As a result of the increased demand for domestic and hotel workers, an increasing number of women with families are being drawn into full-time employment. It has previously been customary for women to breast feed their babies for up to six months or sometimes longer. The pattern has changed, with more and more infants being bottle-fed from an early age because their mothers are having to return to work, and a large number of them are being left with child minders for most of the day. The risks of bottle feeding in less than ideal conditions are well-known.

15. The Seychelles Children Society runs a number of crêches where the mothers can park their children during the day whilst they go to work. Advice on feeding is given to all mothers attending the maternal and child health clinics. By and large mothers are encouraged to breast feed for as long as is practicable.

16. Breast feeding was used as a natural form of birth control as it is known that the risk of pregnancy during lactation is reduced. With the change in trend towards bottle feeding at an early stage, it has become imperative to advise mothers on contraception before they leave the hospital. With very few exceptions, all deliveries take place in hospital.

17. The expanding tourist industry and development generally in the Seychelles is bringing a degree of affluence akin to that enjoyed by the richer countries of the Western world to an increasingly larger section of our community. In time to come this trend may become reflected in a change in the pattern of disease. Thus coronary heart disease, which is at present uncommon amongst Seychellois, may become more prevalent. Education in nutrition should be directed not only at preventing under-nutrition but the other form of "malnutrition" as well, namely obesity.

The special problem of the outlying islands

18. The Republic of Seychelles comprises two distinct group of islands:

(a) the granitic islands of which there are 32 and which form a compact group, with no island more than 35 miles from the main island of Mahé;

(b) the corraline group (60 in all) which sprawl over a much wider area of ocean, the furthest of them being 700 miles from Mahé.

Until recently the outer islands had been neglected by and large. However, the Government is now proposing to develop these remote islands so that they will contribute to the overall economic progress of the country. One is confronted with two main problems: the delivery of adequate health care to these remote areas, and the nutrition of the communities living on these islands.

19. Where nutrition is concerned, the long-term goal is to make the outlying islands self-sufficient in food production where possible, but until this can be attained, the islanders must be assured of an adequate supply of vegetables and fresh fruit. There is a good deal of variation amongst the islands as to what can be grown, and a limited amount of vegetables and fruit do grow on some of them, particularly in the wet season. The problem is to ensure an all-the-year-round supply.

20. Communication between these islands and the main island is poor and, except for two which have an airstrip, access to the outer islands is by boat. Transport of vegetables to the islands would require a special boat fitted with refrigeration facilities and similar facilities would have to

be available on the islands for storage. The existing Outlying Islands (Essential Foodstuffs) Regulations require that the island owners make available to their employees only nine basic food items (non-perishable) which can be shipped from the main island. There is nothing in the regulations regarding the provision of fresh vegetables, which leaves the islanders open to serious risk of nutritional deficiency disease, particularly anaemia, scurvy and vitamin A deficiency. Children on these islands are particularly at risk.

21. The Ministry of Labour, Health and Welfare, recognising the potential risks inherent in the existing regulations, is presently studying ways of how best to tackle this very important problem. As part of their aid programme to the Seychelles, the French Government has already sent a team of experts to evaluate the situation of the outlying islands and advise the Government of Seychelles on the best way to effect their development.

31 October 1977

CMC (77) III/B11

FOOD AND NUTRITION

Background paper prepared by the Government of Canada

An introduction to the background papers prepared by the Government of Canada is contained in document CMC(77) Gen/1.

NATIONAL POLICY

2. For many years various professional, commercial and voluntary agencies have pressed for the formulation of a comprehensive food and nutrition policy for Canada. Philosophical deliberation on this theme dates back to the 1936 resolution of the League of Nations which provided the initiative at that time for a Canadian Council on Nutrition as a unified body for interpretation of developing nutrition science into practical food and nutrition programmes. In more recent years, the recurrent urgings of the Food and Agriculture Organisation of the United Nations that all countries should develop a single and comprehensive national food and nutrition policy have served as a goal for further consideration of this proposal. However, in Canada the sharply delineated division of responsibilities between provincial governments and the Federal Government makes the establishment of a clearly formulated national policy difficult. Nonetheless, in the recent Speech from the Throne reference was made to calling a conference for the development of such a policy in consultation with the provinces.

The role of the Department of Health and other government agencies

3. Within the provincial jurisdictions, the Department of Health has responsibility for all aspects of provision of health care, for preventive programmes related to health, and for broad programmes of health education directed to the public. The Department of Education carries responsibility for school health, for operation of school cafeterias or other school lunch programmes, as well as the nutrition and health content in the curriculum. The Provincial Department of Agriculture carries the responsibility for factors influencing food production and food marketing, including local or regional programmes involving incentives or controls, and for nutrition education as a component of home economics extension standards.

4. The Federal Department of Health regulates standards for foodstuffs under Federal legislation (the Food and Drugs Act), including both product standards for staple foods and regulations covering, for instance, food additives, pesticides, contaminants and micro-biological hazards. Quality for certain agricultural products is set under the Canadian Agricultural Products Standards Act which meshes in with any provincial standards in the field. The Department of Consumer and Corporate Affairs regulates advertising claims which may be made for foods. The Department of Agriculture also regulates, by in-plant inspection, the production of meat under the best sanitary conditions and its quality where this commodity crosses provincial boundaries. Federal marketing boards and federal coordination of the activities of various provincial marketing boards (milk, eggs, meat, fruit and vegetables, etc.) also has a decided influence upon the economics of food choice, and thus indirectly on nutrition, through price stabilisation programmes, floor prices, subsidies, stock-piling, etc.

5. Finally, financial incentives and controls may be exerted through National Revenue and Trade and Commerce, in such fields as taxation, subsidies, tariffs for regulation of imports and through the impact of various international trade agreements but purely on an economic and not a health basis.

6. It has been estimated that at the Federal level alone a unified food and nutrition policy would involve cooperative action by not fewer than 20 departments or agencies. It is evident that in Canada a single, simple food policy may not be feasible.

7. In June 1977 a "green paper on Food Strategy for Canada" was released jointly by two government departments: Agriculture, and Consumer and Corporate Affairs. It represents a set of basic principles to guide the development of policies and programmes for the food sector but took little account of nutritional goals. For the consumers, the primary aim was to reassure them that not only is the food marketing system fair and efficient, but also that their interests are taken into account, along with those of producers, processors and others, in any government involvement in the food industry. At the same time it strives to maintain a strong and competitive agriculture in Canada. Interests of various components of the food industry do not always coincide. Compromises based on good relations and close cooperation among the agencies involved is suggested in the strategy. Nevertheless, this green paper is a beginning. It is hoped that it will stimulate debate and interest in a more comprehensive and more effective food and nutrition policy, which was adumbrated in the recent Speech from the Throne (see paragraph 2, above.)

LOCAL CONDITIONS

8. There exist in Canada adequate resources to fully meet the nutritional needs of the population. Our country enjoys an abundance of foods of high nutritional quality and imports many others not grown in this country through an efficient and effective food production, transportation and distribution system, so that this abundance should be readily available throughout most of the country, except inaccessible areas in the North, (see below). The only barriers to nutritional adequacy are personal (ignorance, indifference, cultural adaption) or economic.

9. As in so many other countries of the Western world, our economic problems of inflation and unemployment leave significant numbers of families at or below that financial margin where they may be effectively deprived of the benefits of our agricultural abundance. As the second largest country in the world in terms of land mass, the bulk of our population is concentrated within a belt 100 miles wide and 5,000 miles in length. For those resident outside this corridor, the costs of transportation of everyday foods may become prohibitive. Since many of those resident in these outlying areas are Indians and Eskimos, the economic conflict of low income and high cost is further compounded by the problems of aculturation.

10. A further nutritional hazard facing a country highly technologically developed must be highlighted. A highly sophisticated food processing industry favours fabrication of new foods or new forms of familiar foods, specifically engineered to stimulate appetites through taste, texture, seasonings and aroma. For the most part, contribution to daily nutrient balance is ignored. Massive saturation of commercial advertising over television and radio networks becomes, from a nutritional point of view, counter-educational. Too frequently the appeal is greatest for those who have the least basis for discernment and the least resources to waste on foods presenting high appeal and low nutritional value, such as children.

11. From this background, as expected, there is evidence that many Canadians are not properly nourished. The Nutrition Canada national survey carried out in 1970–72 showed that a large proportion of adults in Canada are overweight. This is attributed to two factors: excessive caloric intake and the sedentary life of Canadians. Inadequate dietary iron, low body iron reserves and anemia were indicated in large numbers of Canadians of all ages. Many women have an iron deficit during pregnancy and many children (0 to 4 years) have low iron stores. Many of the pregnant women do not consume the recommended amounts of protein and iron. Approximately one-sixth of the men and one-third of the women were found to have elevated serum cholesterols, which are commonly cited as a factor coinciding with high risk of cardiovascular disease. In this connection, the Health Protection Branch of the Department of National Health and Welfare in a Report on Diet and Cardiovascular Disease prepared by a national committee has indicated what nutrition policy should be from a health point of view on this matter. It corresponds to similar advice circulating in the United Kingdom, the Netherlands, Norway, Sweden and other countries faced with the same problem.

12. Shortage of calcium and vitamin D in the diets of many children, infants, adolescents and pregnant women is another nutrition problem. There is a moderate vitamin A deficit among pregnant Indians and Eskimos. Low serum levels of vitamin A were found in many infants and toddlers.

13. To reach a reasonable degree of health status requires not only an adequate food supply but also intelligent, nutritionally informed eating habits. The food must also be acceptable in terms of sufficient quality, variety, availability and affordability. Along with this, individuals must have the desire and skills to select appropriately and, more particularly, to eat moderately.

Breast-feeding and weaning foods

14. Despite the value of breast-feeding, the majority of mothers in Canada do not breast-feed their infants. Medical authorities are in favour of breast-feeding and efforts are made by nutritionists, nurses and special interest groups to encourage mothers to breast-feed, and educational materials stress this method; however, the way of life of Canadian families, with many women working outside the home, is not conducive to breast-feeding. There is not general acceptance of breast-feeding as parents tend to find bottle-feeding easier and prefer this method. This is so since the prepared foods and equipment are now easy to use in a sanitary fashion under most circumstances in Canada, bearing in mind the standard of living in this country.

15. There has been in Canada the tendency to start very young infants on solid foods, although this is now changing. Nutritionists, however, consider that most infants do not need solid foods until 4 to 6 months of age. Attention is given to their early need for iron and vitamins C and D. These nutrients can come from various sources, depending on the infant's type of milk feeding. Parents are urged to refrain from giving infants solid foods too early, since allergic problems often stem from such use. As well, giving foods in excess has been indicated as a possible factor in obesity in later life. Also formulas that are too sweet are not recommended. In the interest of good nutrition and formation of good eating habits, infant feeding should be adequate and moderate.

SPECIAL CONSIDERATIONS

16. There seems to be in Canada increased consumer awareness of nutrition, but this has been limited and has not resulted in any measureable change toward selection of appropriate diets, at least as measured by the Nutrition Canada in 1972–73. The population is confused by the contradictory advice regarding nutrition being given them by the media, in educational materials, in popular hearsay, and through commercial promotional efforts. However, the latter are controlled by federal regulations regarding advertising and labelling of foods. Often conflicting scientific evidence and statements made on inadequate information are used to proselytise one or another extreme point of view.

17. Canadian lifestyles, with excessive intake of food, imbalance in certain nutrient intakes, etc., are related to high incidence of ill-health (obesity, cardiovascular disease) and contribute to high health care costs. An urgent need is education in prevention.

18. Although nutrition education cannot cure or prevent all problems of poor nutrition, and indeed there are no good extensive evaluations of its effectiveness, nevertheless it is fair to say that a well-coordinated health education programme, based on a sound food and nutrition policy should be tried and could make a considerable impact on the health of Canadians. At all economic and educational levels, Canadians can be helped to understand the value of good nutrition, the essentials of a good diet, the ways to select wisely under their particular circumstances and to take more responsibility for their own health.

Promotion of foods of good nutritional value

19. At present there is inadequate communication among government, industrial, professional and social sectors although this may soon be remedied (see reference to Speech from Throne). The nutritional problem in Canada from a production viewpoint is not capacity to produce but the production of "junk" foods of superficial appeal but poor nutritional qualities. Attempts are being made to control this by the development of the advertising code for food packaging, labelling and merchandising insofar as nutrition claims and statement of nutritional content are concerned.

20. The major public thrust in nutrition policy, then, lies in public education, through the education systems, through public health services, through health care services, and through use of mass media of communication. The resources devoted to this in the past have been barely more than minimal. Evidence of the nutritional status of the population indicates that the increase in these resources must be reassessed. Possibly the most effective point of contact for nutrition education is at the person-to-person level within community services. Encouragement is being given to the training of the appropriate health care manpower to facilitate such development.

Encouragement of sound individual choice

21. We in Canada have not taken up the measures employed in other countries for food subsidisation at the consumer level, such as food stamp programmes or distribution of surplus foods to the economically needy. Neither have we placed an emphasis on subsidised school lunch programmes. While there is indeed encouragement of sound school cafeteria services and avoidance of poor food habits within the schools, the encouragement is more towards sound choice on individual responsibility. Administration of school cafeterias remains a key function of the local school board, usually with minimal interference from the provincial department, and no federal intervention beyond technical consultation and exchange of information. More favoured has been direct economic aid where needed, achieved through unemployment insurance, welfare programmes, guaranteed income supplements, family allowances, disability pension programmes, etc. These permit the individual to retain a greater degree of self-respect; recipients are not identifiable within the community. They permit freedom of choice in keeping with cultural background and personal tastes. Admittedly they permit freedom to make unwise choices as well as intelligent choice, placing even greater emphasis on the need for effective education.

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FOOD AND NUTRITION

Background paper prepared by the Government of Trinidad and Tobago

National policy

In Trinidad and Tobago there is a National Nutrition Council which is charged with the responsibility of drawing up a national food and nutrition policy for the country. This Council, which is an advisory body to the Ministry of Planning and Development, is comprised of representatives of various governmental ministries as well as non-governmental organisations concerned with food and nutrition. Work has been completed on the formation of a policy and a food and nutrition plan has been drawn up to cater for the needs of the country.

2. The implementation of this planned food and nutrition programme would require important shifts in policies and practices involving many sectors of the community, both economical and social. The Ministry of Planning and Development is at the present time considering all the implications with a view to the successful implementation of a viable food and nutrition policy.

3. The main targets of the food and nutrition policy for Trinidad and Tobago are as follows:

(a) to eliminate malnutrition, beginning with identified vulnerable groups;

(b) to ensure an adequate level of nutrition for every member of society;

(c) to ensure that local resources are developed to achieve near self-sufficiency in food;

(d) to set up on-going programmes for agricultural production and marketing, including the processing and storage of produce.

4. The effective implementation of this food and nutrition policy is largely dependent on the active involvement of the Ministries of Health, Agriculture and Education. The Ministry of Health can be expected to continue its emphasis on its integrated service in hospitals, health centres and clinics, providing among other things education in nutrition and child care, issuing food supplements and giving advice on family planning. The Ministry of Health, in pursuit of its emphasis on preventive medicine, has already intensified its community health programmes by focusing attention on a community nutrition programme.

5. The Ministry of Agriculture has been pursuing, and will continue to pursue, a policy of encouraging the production of food which will meet the nutritional needs of the population. Emphasis is placed on the production of milk, poultry and eggs, and the growing of vegetables and leguminous crops of a high protein content, particularly soya bean, is encouraged. Small stock production such as goats and sheep is also being encouraged. Very shortly it is intended to begin an experimental project in the growing of sesame, a protein-rich seed.

Local conditions

6. Data on the nutritional status of the people of Trinidad and Tobago is limited. However, sufficient information is available which indicates that the problem of malnutrition is quite serious. There are two major problem groups:

(a) children suffering from gastro-enteritis, protein-calorie malnutrition and related diseases; and

(b) adults with problems of diabetes, obesity, protein-energy deficiencies and vascular and coronary diseases.

7. A National Household Food Consumption Survey conducted in 1970 showed that of the households surveyed 30 per cent failed to meet adequate protein requirements, 34 per cent failed to meet adequate iron requirements, 32 per cent were deficient in calcium intake and 39 per cent suffered from calorie deficiency. Children were the main victims of protein intake deficit. The

survey also revealed that 38 per cent of all infant deaths in Trinidad and Tobago were due to malnutrition and that the incidence of malnutrition was greater among children in large households, whatever the income grouping, but particularly marked in the children of unskilled parents. Of the malnutrition cases, 70 per cent were under one year of age. It was further revealed that between 20 and 25 per cent of infants and toddlers had a moderate form of malnutrition.

8. A more recent study, an anthropometric study conducted in 1976, showed that there is a general probelm of nutrition in the under-five age group. Among the adults, the 1970 survey revealed that some 2 per cent of the population were affected by diabetes, while some 24 per cent – mainly women – were affected by obesity. A more recent statistical exercise has not been undertaken, but attendances at clinics indicate that the problem has intensified.

9. Within the last year the importance of breast feeding has been emphasised through the mass media and particularly at ante-national clinics, where mothers are instructed on breast care and encouraged to breast feed their babies. Indications are that there has been some increase in the population of breast fed babies.

10. Notwithstanding this, there is a large dependency on weaning foods. Recognising the need for a weaning food, a feasibility study on the local manufacture of a weaning food has been undertaken as a joint effort of the Caribbean Regional Research Institute and the Ministry of Health.

11. Two school feeding programmes are undertaken by the Government of Trinidad and Tobago through the Ministry of Education. One is a milk and food yeast biscuit distribution to children of the 5–9 age group and the other a free or subsidised school lunch available to children of all ages. Recipients of either of these two programmes are limited and are selected on the criteria of nutritional needs. Prior to 1971 there existed a third school programme, a milk feeding programme, administered by the Ministry of Health through aid from UNICEF. Assistance from UNICEF has since ceased, but the programme is being continued by the Government. Steps are being taken to expand the school feeding programmes towards upgrading the nutritional status of a greater number of children, as well as to include other vulnerable sectors such as adults with chronic diseases by establishing a Single Food Aid Agency, to be administered by the Ministry of Health. Proposals as to the role, structure and functioning of the Single Food Aid Agency are being studied.

12. Other projects relating to the nutritional status which are at present receiving attention are:

(a) the establishment of a day-care centre for needy pre-school children. This centre would provide for disadvantaged children while their parents were at work, would serve as a rehabilitation centre for children affected by malnutrition, as well as educate parents in mothercraft. A pilot project is expected to be in operation by 1978 to cater for 60 pre-school children;

(b) the manufacture of a local, nutritious soft drink. A plan of action for production is under consideration by the Caribbean Regional Research Institute.

13. An inherent cause of malnutrition is the low level of production and productivity of our agricultural sector. 70–75 per cent of the foods consumed are imported. The agricultural sector has been organised and oriented to produce for exports, to supply sugar, cocoa, coffee, citrus rather than to produce vegetables, pulses, meat, milk and fish for domestic use. Recognition of this failure was made in the 1964–1968 Agricultural Development Plan of the Ministry of Agriculture by the inclusion of a nutrition programme. The implementation of the Plan, however, did not successfully meet with its objective.

Special considerations

14. Education in nutrition is conducted by:

(a) the Ministry of Health where lecture/demonstration courses are given to the general public by the Nutrition Division. These courses provide simple nutrition information on the nutrients and proper preparation of foods with emphasis on local foods and low-cost meals;

(b) the Ministry of Education through an applied nutrition programme in which selected schools are equipped with a nutrition unit for practical work on food production and utilization including the establishing of a school garden. Nutrition education also forms part of the curriculum of schools;

(c) the Community Development Division where nutrition education is incorporated in its adult education classes.

All these programmes undoubtedly lead to a general consciousness about food and its nutrition value but efforts are thwarted by the seasonal unavailability of foods. Attention therefore needs to be focused on the development of local resources to meet as much as possible of the food needs.

15. Associated with the problem of food availability is the problem of food distribution. There is a need for an efficient marketing system to ensure that the food supply reaches the entire population. The existence of bottle-necks in our internal marketing system has acted as a disincentive to the increased production of domestic food items. The major factors which account for the inefficiency in the marking system include:

(a) difficulties in collection of products because of fragmented holdings in varying sizes;

(b) an inadequate communication network;

(c) a lack of uniformity in the quality of goods sold;

(d) a lack of standardisation in varieties planted;

(e) inadequate wholesale facilities for storage, warehousing, handling, transporting, grading and packing;

(f) inadequate retail facilities.

16. Action is being taken to overcome some of these problems by:

(a) the establishment of regional collection and distribution depots;

(b) the undertaking of market research to determine demand in both fresh and processed markets and subsequently to advise farmers on market trends;

(c) the establishment of scientific grading standards together with quality control to ensure that foods with acceptable nutritional contents are produced and distributed;

(d) the investigation of suitable multi-purpose technology for processing rice, corn and soya bean.

17. Greater local food production is a priority to meet the demands of an increasing population, and the production of food is being directed in accordance with an agricultural policy in which the nation's nutritional needs may be met.

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FOOD AND NUTRITION

Background paper prepared by the Government of Western Samoa

Western Samoans traditionally eat the abundant starchy roots and fruits of the Pacific region as staple foods in their diet. These have a lower protein content than the rice, potatoes and cereals eaten as staples in other regions. However, combined with fish, chicken, cooked meat and other local foods, they produce a diet of excellent quality.

2. Unfortunately, heavy reliance on the starchy roots and fruits in the diet, early weaning and the traditional eating patterns in which adults eat before children result in undernutrition and to a lesser extent protein calorie malnutrition amongst some infants and children. The problem is not an overwhelming one and a recent survey shows that approximately 9.8 per cent of children aged between 0 and 6 years were under 80 per cent of the Harvard weight standard and 2.1 per cent were under 70 per cent of the standard.

3. Obesity is valued traditionally as a sign of high social standing in Polynesian countries, including Western Samoa; thus it is a common health problem amongst adults. This may be partially responsible for the high incidence of diabetes and hypertension which we experience.

4. Fertile soils, abundant sunshine and rain help us to produce a varied diet with adequate vitamins and minerals, thus primary vitamin and mineral deficiencies are rare. Anaemia is found to some extent. Dental caries is increasing in the urban area because more Western-style foods are being consumed.

5. Responsibility for carrying out government policy on nutrition lies with the Agriculture Department, the Education Department and the Health Department. The responsibilities of the Health Department for improvement of the nutritional status of people in Western Samoa are outlined in the third five-year plan of the Government. These are largely undertaken by the maternal and child health services at present.

6. In 1976 the Health Department began distributing free foods supplied by the World Food Programme in an effort to improve maternal and child health. Skim milk powder is given to all pre-school children over the age of nine months, to all ante-natal mothers six months prior to parturition and to nursing mothers until six months after parturition. Health Department officials are aided in distribution by members of women's groups throughout the country. School children up to 12 years of age receive whole-milk biscuits which are given out by schoolteachers. The nutritional status of beneficiaries is monitored by Health Department nutritionists. The programme is to last for three years, after which the Government will continue to pursue the basic purpose of the project.

7. A nutrition rehabilitation centre is proposed as part of the World Food Programme plan of operations. Rice, corned beef, vegetable oil and skim milk powder have been made available for the rehabilitation of malnourished children.

8. A baby weaning food has been manufactured by the Agriculture Department from taro, rice, skim milk power, coconut cream, sugar and a vitamin and mineral additive. Although the project is still in its initial stages it has proved very successful in rehabilitating underweight and malnourished children and the possibility of commercial production is being discussed.

9. Extensive nutrition education is conducted by nutrition staff within the Health Department. Health personnel participate in education sessions and they in turn are responsible for educating the public. Nutrition staff also work directly with the public, using radio, newspapers, pamphlets, public discussions, lectures and demonstration.

10. Breastfeeding is still widespread in the rural villages of Western Samoa, but it is declining in the urban areas as in most other developing nations. Attempts are being made to reverse this trend. The Health Department realises the importance of breast-feeding and frequently holds lectures and discussions on the subject. Recently advertisements on the radio indicating that artificial feeding is a desirable and easy practice have been changed at the insistence of the Health Department. At present, a survey is being conducted to obtain concrete evidence on the incidence of breast-feeding and it is hoped that this will lead to legislation controlling artificial feeding.

11. Continued efforts to raise the nutritional status of the people of Western Samoa will be made by all Departments concerned with the Government's nutrition policy.

November 1977

Annex to CMC(77) III/B13

FOOD AND NUTRITION IN THE THIRD DEVELOPMENT PLAN OF WESTERN SAMOA

AGRICULTURAL DEVELOPMENT STRATEGY AND PROGRAMMES

A central goal of the Third Plan is to increase agricultural production by means which minimize any clashes with traditional Samoan values. Conventional approaches to economic development commonly focus more on resource constraints and means of overcoming them than on identifying ends, which are often taken to be nearly synonymous with money income. Yet Samoans have been rather successful for centuries in employing available means for attainment of chosen ends.

2. Under these circumstances, much care must be given to the selection of implementation measures that will be found tolerable in relation to existing values, yet capable of producing significant results. In this paper, the stage for an examination of the agricultural development projects to be incorporated in the Plan is set first by considering the relation of production goals to the cultural framework, they by reviewing the structure of Western Samoa's agricultural sector, and finally by proposing major elements of a plausible development strategy. Thereafter, project proposals are presented by programme areas, grouped in such a manner as to permit meaningful preliminary assessments.

Production goals in the cultural framework

3. Samoan villages conform in considerable degree to a situation of tropical affluence where the production of goods and services, although variable, is limited more by aggregate private and community demand than by resource constraints of land, labour, or capital. A strengthening of linkages between subsistence producers and the market sector does not necessarily provide incentives leading to intensified economic activity. In particular, there is often a lack of interest in earning money through village agriculture, even when other opportunities are scarce.

4. Such a situation has often seemed perplexing to Western-minded observers. Some see it as a mark of conservatism which resists change; some see it as an indication of low aspirations; others conclude that it must be a consequence of an unsatisfactory land tenure system which places control over 80 per cent of the country's land resources in the hands of the *matai* (chiefs). But none of these are necessary or unavoidable conclusions. This becomes evident if one considers the ends which have long ranked high in Samoan culture.

5. The *matai's* position is indeed one of power and authority, particularly over the lands of his *aiga* (extended family), and it is an elite position to which many young Samoans aspire. But the important benefits of the position are not primarily material; they have more to do with the prestige and respect accruing to the individual, to his *aiga*, and perhaps to his village. But any accumulation of money or material savings, particularly for those continuing to take a full part in village life, also tends to raise the level of requests and expectations for gifts – a form of exchange which has developed as a strong element in Samoan culture.

6. A marked contrast of Samoan culture with those of more commercial societies is that many goods and services are transferred merely on request, without immediate and direct compensation. Those with material goods have been able to enhance their prestige by responding to requests, or simply to expressions of admiration for a particular item; at the same time, by obligating the recipient, they have been able to provide insurance against future hardship. To be sure, such a free sharing of any accumulated wealth has provided scant encouragement for individual initiative and productivity; instead, it has produced an egalitarian sharing of economic benefits and security. But institutions which favour equality and security at the expense of fostering individual initiative and productivity may not be entirely compatible with the goals of a society experiencing rising aspirations for the motor vehicles and other products of commercial economies, even while the pressure of population against an "affluent" but fixed resource base is also rising.

7. The Samoan village, its families, and its individual workers have shown no lack of initiative and productivity in responding to felt needs for projects of importance to the village way of life. The response to a recognized need for a church, a pastor's home, or another community structure is well known. Timber, labour and handicraft products required in erecting such structures have repeatedly been mobilized from village resources, and intensified agricultural production has frequently provided the cash funds needed for purchasing additional materials and services.

8. Efforts to raise agricultural output by accelerating the flow of inputs, other than those essential for production to serve strongly-felt ends, tend to be as frustrating as "pushing a string". Fertilizers, pesticides, improved planting materials, breeding stock, farm implements, and credit to acquire them – all pumped into a cultural medium characterized by abundant land and labour – are unlikely to be transformed with even modest efficiency into larger agricultural output unless such output services clearly-felt needs of both the responsible producer and his village, and perhaps also of his relatives and friends throughout the country. Only when the purpose of increased agricultural production is clearly felt at all levels is there likely to be the desired response to additional inputs, from indigenous or external sources. In other words, the forward end of the string must be discovered and pulled, instead of continuing fruitless efforts to push the rear. Whatever may be found at the forward end of the string, it is unlikely to be either the personal acquisitiveness of the individual agricultural producer, or a pure devotion to work for its own merit.

9. If there is a handle at the front end of the string, it may be formed by the seemingly widespread and strong desire to enhance the prestige and security of the village and the family. Awards for outstanding performance are one tangible means for accentuating local prestige. As one illustration, a number of villages might well respond to an invitation to participate in a competition for the highest per-acre harvest of coconuts, for example, over some span of time. This is merely a simple illustration of one alternative to approaches which have repeatedly met with no more than scant success. Another alternative might be to establish more active communications between the *fono* and appropriate departments of Government with respect to the identification and pursuit of village goals.

10. Given the cultural framework, it is obvious that land tenure insecurity is no more than a secondary factor in the reluctance of Samoan villagers to intensify their agricultural efforts. Land tenure security, in the conventional sense, implies not only a right to control land use and reap the harvest on a long-term basis, but also a freedom from interference in the personal enjoyment of the benefits. But as any accumulation of wealth is subject to sharing, under Samoan tradition, direct personal enjoyment of the benefits of land tenure security is by no means certain. For those who make production decisions, it is not tenure over the wealth represented by the harvest, which is traditionally subject to sharing. Perhaps an even stronger factor for lack of efforts to increase the physical output of land is the fact that intensified agricultural productive effort is not necessarily an effective means of achieving the more ultimate goal of prestige and security for the *aiga* and village.

11. Special attention will be given in implementing the Plan to seeking approaches for pulling the string instead of pushing it. One of the most important approaches is the village development programme.

The structure of Samoan agriculture

12. The Samoan economy and culture have been built upon a village agriculture of such productivity that it has been possible to devote much of the society's attention and resources to matters largely outside the realm of economics. Such activities still dominate village life today, although rapid population growth has placed increasing pressure on the land available for crop production. By the standards of modern technology, village agriculture can no longer be considered efficient in using land, labour, and other resources for crop production, while its animal production includes negligible quantities of milk, eggs, and beef animals, plus such numbers of pigs and chickens as can be supported from scavenging and consumed at feasts. Nevertheless, Western

Samoa must continue to rely heavily upon village agriculture and the lands held for village use under customary tenure, not only for a major portion of the country's food supply but also for the bulk of all exports.

Village agriculture

13. Western Samoa's 300 or more villages are mostly situated around the perimeters of Upolu and Savaii, but village lands commonly run far toward the peak elevations near the centres of the respective islands. Most of the cropping takes place at the lower elevations, where each *aiga* exercises control over one or more parcels held in trust by its *matai.*

14. Inasmuch as *matai* titles can be divided, the number of *matai* has been growing more or less in proportion to population growth. In a study of 10 villages reported in 1956, it was found that the number of *matai* ranged from 7 to 38, with an average of 17 per village. The number of plots per *matai* averaged five, comprising 32 acres in the aggregate. For 1970, the number of *matai* in Western Samoa has been estimated at 9,000 or about 30 per village. The number of persons in an *aiga* ssems to average around 15 to 20, often including individuals of several nuclear families.

15. Occupied village lands include house lots with limited production of food crops; plantation lots which usually contain coconut palm, sometimes interplanted with cocoa, bananas, taro, ta'amu, breadfruit, and other crops; and family reserve lots, where taro and other crops are grown in a bush-fallow rotation. Villages often claim additional lands farther inland, where there is potential opportunity for any *aiga* of the village to clear and use additional lands, but usually only after approval by the village council.

16. Although there is no wholly satisfactory basis for determining the area of current use of occupied village lands, it appears that their total extent probably falls within the range between 125,000 and 150,000 acres, much of which is planted to coconuts, singly or with other crops. Some evidence suggests that much of the acreage of other crops would be found on land planted to coconuts; other evidence suggests that possibly as many as 35,000 or more additional acres are occupied by cocoa, bananas, taro, and other crops or crop mixtures not interplanted with coconuts. Other occupied village lands are in bush fallow, grass, and residential use. Mechanical cultivation is virtually non-existent, and would be difficult to introduce because of the rockiness of the soil and the small average size of plots.

17. There are varying degrees of complementarity and competition among the several crops commonly found in interplanted combinations. In general, the complementarity represented by the shade needs of crops like cocoa and the need for suppressing weed growth under coconuts seems to be at least as important as the competition among various species for plant nutrients. Hence, on parcels where the populations of individual species approaches full-stand levels (48 to 55 for coconuts; around 300 for cocoa and bananas; 7,000 to 10,000 for taro), yields can be calculated on a planted-acre basis, even if this involves some double-counting of land, rather than on a sole-crop equivalent basis.

18. Even for acreages containing a relatively full stand of plants, it does not appear that yields exceed an average of 1,800 coconuts, 15,000 lbs. for bananas, and 3 to 5 cwt. for cocoa. Plantings of taro and taamu commonly take the form of very small, irregularly shaped plots.

19. A major problem of Samoan agriculture is clearly the extremely low yield levels for coconuts and cocoa, and the only slightly more acceptable yields realized from other crops. Even if the supply of land is regarded as relatively plentiful, the low levels of yield per acre and per tree set sharp limits on the productivity of human labour.

Other agriculture

20. While acknowledging the substantial importance of village agriculture, it would be a mistake to neglect the significance of the Western Samoa Trust Estates Corporation (WSTEC) and its control over some 20,000 acres of prime land, or the existence of certain additional public and private

farm units which do not correspond to either village agriculture or the WSTEC plantation pattern. These include government livestock units at Togitogiga, Lemafa, Vaea, and Avele as well as private units on freehold or other land. The latter group includes eight or ten beef herds, a mission-operated dairy, two or three poultry units devoted mainly to egg production, at least one swine unit with upwards of 60 breeding females, and ten or more enterprises with from 10 to 80 acres of bananas each. Certain cocoa and coconut units also correspond to the commercial pattern. In the aggregate, then, a considerable start has been made toward the development of commercial agriculture in the private sector.

Long-range objectives

21. Western Samoan diets are not high in products of animal origin, and about half the total supply is imported. The opportunity for import substitution is considerable, as has already been noted with respect to long-term expansion of beef and milk output. For the near term, the poultry and swine enterprises represent alternative animal product sources capable of more rapid expansion than the cattle enterprise. Expanded local production of feed crops could reduce present outlays for imported feed as well as for imported animal products, and could conceivably reduce production costs for poultry and pigs sufficiently to encourage somewhat higher per capita consumption. Local supplies of by-product feedstuffs may also become available if a brewery and a coconut oil mill are installed. Accordingly, there have been proposals for rapid expansion of the poultry and swine enterprises, as well as of cattle, possibly supported by establishment of a 6,000-ton feedmill, a hatchery, and a poultry dressing plant.

22. Even with considerable progress in the production of local feedstuffs, it seems doubtful that the cost of mixed feed for poultry and swine can be reduced much below present relative levels, or that the consumer price of pork and poultry meat can be appreciably reduced by expansion of local production heavily dependent on high-cost feed. Accordingly, the potential market can be approximated by taking account of possibilities for import substitution, population growth, changes in demand reflecting such factors as more ready availability.

23. For the period of the Third Plan, the net gain in population is expected to be very modest (perhaps only two per cent in four years, unless the net migration rate changes substantially). The introduction of improved technology in village production of swine and poultry might encourage additional village consumption of pork, chicken and eggs, but the local commercial market could easily be over-supplied with these products, leading to sharp price declines such as have been experienced when imports of eggs, for example, have been abundant. At current price levels, moreover, any export possibilities are likely to be sharply limited. Hence the primary objective for the period of the Third Plan should be to increase production of pork, chicken and eggs to replace imports, and in the process to emphasize the adoption of technology which will minimize production costs. If costs can be reduced substantially, a base will have been laid for marketing larger quantities in future periods. Fortunately, the country remains free of Newcastle and other devastating poultry diseases; eliminating imports of poultry meat would reduce one possible source for the introduction of Newcastle. Meanwhile, the most recent available annual data on imports give some indication of the limited possibilities for import substitution.

24. In 1973, imports of fresh eggs, including any in frozen form, were reported at 56,000 dozen – more than double the 1971–72 average of 24,000 dozen. With production at the modest level of only 14 dozen per layer, an additional 4,000 layers could have produced the 56,000 dozen. Since 1973, the national flock may already have increased this much.

25. Imports of ham and bacon averaged only about 35,000 lbs annually from 1971 through 1973, and other imports of pork, although not reported separately in the import statistics, do not appear to have been much larger. A single breeding unit of 50 sows producing 700 or more market hogs could probably produce about as much pork as is presently imported. The situation for poultry meat is similar; imports are not separately reported, but they appear to be so small that they could be replaced by production of 100,000 or so commercial broilers.

26. Total meat imports in the years from 1971 through 1973 were 4.7, 5.3, and 3.7 million lbs respectively, or about 25 to 37 lbs per capita. Judging by evidence from the Household Survey and other sources, these imports consisted mainly of mutton flaps, canned corn beef, and fresh or frozen beef. Replacing even ten per cent of the beef and mutton by pork or poultry would provide a market for the output of an additional 100,000 or so commercial broilers or another 50-sow breeding unit.

27. If broilerfeed of high energy content and nutritive value could be blended in Western Samoa at 9 sene or less per lb and if suitable broiler chicks could be obtained at 25 sene each, the total cost of producing live broilers should not exceed $1.10 per head, for a bird of 3 to 3.5 lbs, live-weight, assuming an 8 lb per bird feed intake and a feed conversation ratio between 2.3 and 2.7 (although a ratio of 2.0 is attainable under highly favourable conditions, actual results locally are unlikely to reach this goal for some time to come). Adding the costs of dressing and marketing would obviously make it difficult to offer a 2 to 2.5 lb dressed broiler at much less than 60 to 75 sene per lb – a price range at which per capita consumption may not expand rapidly.

28. With annual egg production of 14 to 15 dozen per layer, it should be possible to produce a dozen eggs with about 6 lb of feed, excluding the amount used in growing replacements. If a dependable supply of high quality layer ration can be made available at 7.5 sene per lb, the feed cost of producing eggs would be 45 sene per dozen. Other egg production costs, including charges for buildings and equipment, net replacement expense, and miscellaneous charges, should be considerably less than the feed cost; these assumptions suggest that it should be possible to market local eggs at no more than about ten times the price of a pound of high quality layer ration. This should be a sufficient reduction from present relative levels to encourage some increase in local egg consumption and a market for additional production – perhaps at least a 50 per cent increase from present commercial output. It should also go far to obviate the problem of unacceptable competition from imported eggs, alleviating any need for import controls. If such are deemed necessary, however, they could take the form of excluding imports at any time when the local price of eggs was not more than ten times the local price of a high quality layer ration.

29. Reasonable targets for additional annual production by the end of the Third Plan period would include 100,000 to 150,000 commercial broilers, the pork output attainable from 50 to 75 brood sows, and the egg output of a few thousand layers. This would add 1,000 to 1,200 tons to annual feed consumption, of which at least a third would still need to be imported in the form of concentrate supplements. To support economical performance in poultry production, local carbohydrate feedstuffs to be incorporated must contribute to a balanced ration relatively high in energy and low in fibre. Somewhat more flexibility can be permitted in incorporating such fibrous by-products as spent brewers' grains and coconut oilmeal in swine rations, but maize, gain sorghum, and cassava meal are the kind of low-fibre ingredients which fit somewhat more readily into the formulation of effective rations for poultry and swine. The total milling and mixing task will be of a scale easily handled with a small hammermill and batch mixer for some time to come; it is unlikely that a full-scale commercial feedmill will be required until well after the period of the Third Plan.

30. Development of local sources of feedstuffs appears important if Western Samoa is to gear for relatively low-cost production of eggs, pork, and poultry meat in the long run. Hence, production possibilities for various feed crops need further testing, and tests will also be needed in the utilization of the feed crops in combination with such by-product feedstuffs as may become available locally.

31. The more promising alternatives may not be established until late in the planning period or thereafter, but by that time, the country should be substantially self-sufficient in poultry and swine production, if not in the supply of feedstuffs. Moreover, a good start should have been made in demonstrating possibilities for producing cassava, selected fruits, or other raw materials for an enlarged food processing industry, and in diversifying the production of fruits and vegetables for enriching local diets.

Health Department responsibilities

32. In the field of nutrition, two separate initiatives will be implemented. First, the current nutrition education programme will be expanded to include regular courses for women at the family welfare clinic, as well as regular training and support for district nurses in organizing nutrition courses in rural areas. To complement this effort, a new programme to treat malnourished children in the vulnerable four months to three years age group has also been formulated. This programme will depend upon the district nurses for initial identification of the target population, the Department of Agriculture's food processing laboratory for the production of a suitable weaning food, in the Division of Public Health for the food's distribution to the district hospital, and again upon the district nurses for final food distribution and follow-up. Foreign technical and financial assistance to the project, channelled through the food processing laboratory, are available from the University of Hawaii and from the World Food Programme. Second, a programme to establish full dietetic services for Apia General Hospital by the end of the plan period has been laid out, and will involve the addition of three Samoan dieticians to the hospital staff, on their return from overseas training.

33. It is expected that the maternal and child health and family planning programmes can be funded largely under the Health Department's current maintenance budget during the Third Plan, supplemented by minor development expenditure for new support staff, and by possible material and technical assistance (yet to be arranged) from UNFPA and other organizations. Development expenditure will be required for the nutrition programmes and, in fact, an appropriation of $5,155 (for the salary of a nutritionist and for kitchen and food storage equipment), and another of $1,055 (for the salary of a dietitician assistant and a clerk typist) were made in 1975's development estimates. In all, development costs for the three programmes are likely to total $25,000, representing largely salaries and wages of professional and support personnel to be hired during the Plan period and $10,800 in transportation costs to be incurred in the new programme to treat malnourished children. Thus, only a small portion of the total, about $3,600, will represent foreign exchange costs.

34. Over the long term, the Family Welfare Section's programmes in family planning and mother and child health will unquestionably contribute to a strong national standard of health in Western Samoa, and so warrant steady support during the Third Plan. Nutrition programmes also deserve the same long-run perspective, and – although the need to expand efforts in those fields at this moment will be reviewed against alternative resources uses – a certain minimum commitment to expansion has already been made by engaging a departmental nutritionist in 1975 and by enrolling candidates in overseas dietitian training in the Second Plan period.

FOOD AND NUTRITION

Background paper prepared by the Government of Kenya

Food and water resources

Kenya is a country of 582,647 sq. km. in area and has a population of 14.3 million which is increasing fast at the rate of 3.5 per cent. The land area is 569,252 sq. km., the rest being water stretches. One-third of the total land area is considered arable and can support food crops, cash crops and livestock. The rest of the county is marginal and arid land, and this is where nomadic pastoralists roam from place to place in search of pastures for their cattle and camels. Considerable effort and resources are being put into the conservation of available water resources so that through irrigation schemes in some of these dry areas, production of food and animal feed can be increased and made predictable. Further, considerable research is being carried out as an urgent matter on the development of agriculture in the marginal and semi-arid areas. Although these researches are the direct responsibility of the Ministry of Agriculture and the Ministry of Water Development, the Ministry of Health is also participating, not only because of the heath effects of the change of ecology but also because of our preoccupation with nutrition.

2. The one-third of the country which is arable is able to produce adequate supplies of food and animal products to feed the Kenya population, partly from well-organised large farm holdings but mainly from the small holdings of peasant farmers. These farmers are being assisted by the Ministry of Agriculture to adopt improved and productive methods of farming and to advance from the old traditional subsistence farming which produced little food and impoverished the soil. Gradual improvement in food production is being noted even among the peasant farmers and famine is only experienced in the drier areas of the country following drought. During these periods, food is brought from the productive areas and distributed to these communities by the Government as well as by voluntary agencies.

Nutrition health education

3. The Ministry of Health's preoccupation with matters concerning food production is justifiable, considering that good nutrition starts with the availability of adequate amounts of food of appropriate varieties. Malnutrition is still alarmingly evident, despite the fact that most families in both rural and urban areas have sufficient food, and there are many cases of marasmus and kwashiokor among children. The reasons for this in many cases must be due to lack of knowledge about the values of various foods available, and about the body requirements for various types of foods at various ages and in various conditions of sickness and health. The danger is greatest and most damaging among infants and young children and expectant and lactating mothers. The Ministry of Health has put great emphasis in its programme towards maternal and child health services and in the development of basic health services. Nutrition education of the masses, particularly in the rural areas, features prominently in these programmes.

4. There is a nutrition section, situated centrally at the Ministry, which supervises the training of field nutritionists and their posting and work in the provinces, districts and health centres. These nutritionists, most of whom have had nursing training and experience, are re-trained for six months on food and nutrition science and are then posted to the field to form part of the health team. Their work is to inform mothers on the basic values of available foods, basic food economics, and food requirements for various ages and conditions, and to coach them by demonstrations of proper food preparation so as to retain food values. The Ministry of Agriculture and the Ministry of Social Services are also active in similar programmes, while the extending coverage of the population with increased general education under the Ministry of Education has contributed immeasurably to the notable improvement of the nutrition state of pre-school and school children.

The school feeding programme

5. The school feeding programme, which has been going on for some years in some primary and secondary schools, has proved very successful and popular and the practice is being extended to more and more schools. In this programme, children, some of whom come from long distances to school, are given a balanced lunch during the mid-day break at low subsidised cost, or in some cases children get nutritious food supplements at school either free or at a small fee. A similar feeding programme has been extended to pre-school children, an exercise which is greatly facilitated by the increasing numbers of organized nursery schools even in the rural areas.

Food research

6. Food research is being expanded to chart the values of numerous local foods and, with the help of FAO and WHO, research is being intensified on food contaminants and on carcinogenic substances in food. The Public Health Act and the Food, Drugs and Chemical Substances Act are statutes which ensure wholesomeness of food for human consumption and control of the quality of manufactured food. Further, a National Bureau of Standards has been promulgated; and will have among its responsibilities the charting of the specifications of the standards of processed foods, and it will also have a monitoring role to ensure that these are maintained, for both locally-processed and imported foods.

8 November 1977.

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FOOD AND NUTRITION

Background paper prepared by the Government of India

The current food and nutrition scene in India, after more than twenty-five years since the country became independent is a complex one with multi-factorial facets. The situation is complicated by the ever-increasing population load, agricultural production limping with ups and downs, low purchasing power in large segments of population, distortions in income and food distribution systems, and finally an inadequate health care complex for large sections of population. It is needless to emphasise that the food and nutrition scene is inextricably related to overall national economic development. In the recent past, there have been indeed silver linings in every one of the above facets, raising hopes for a better future.

National policy

2. The improvement of the food and nutrition situation in the country has now been taken up on an integrated basis and a war footing by scientists, technologists, and administrators. Scientific research in the agriculture, nutrition and health sectors has made significant contributions in the last decade towards formulating practical approaches for combating many problems. Some of these approaches have already been applied on a national scale with encouraging results.

3. The Planning Commission at the national level has realised the need for a nutrition-oriented strategy to be incorporated into the various sectors such as agriculture, health and industry. The Commission has recommended greater allotments for agricultural production, nutritional improvement projects and allied programmes. The National Committee on Science and Technology has set up a Task Force on Nutrition, for exploring and exploiting all possible means of improvement in the food and nutrition situation at the national and regional levels. The National Commission on Agriculture has been assigned the task of drawing up a master plan for increased food production and better storage, marketing and distribution systems. The National Agricultural Prices Commission has been at work in formulating pricing policies for agricultural produce, to meet appropriate requirements of primary producers and consumers at large.

4. A comprehensive national policy on food and nutrition, understanding the specific role of improvement of the nutritional condition of the people as an objective of socio-economic planning for national development, is essential. Up to the Third Plan period, the emphasis was mainly on increased production of food, especially cereals. Though assuring adequacy of food availability is one of the responsibilities of a national policy, it does not necessarily solve the problem of malnutrition for the removal of deep-rooted causes of malnutrition is not attempted simultaneously.

5. In the pre-independence era, we produced annually hardly 50 million tons of food grains, with 160 million hectares under cultivation and 40 per cent of the total area of the country under the plough. The food grain production in 1951 was 55 million tons and in a decade it rose to 82 million tons in 1961. It touched an all-time high level of 108 million tons in 1970–71, and is estimated to have reached about 120 million tons in 1975–76. The net import of food during the last 25 years (1950–51 to 1973–74) has been of the order of 2 to 10 per cent of national production. The net per capita availability of food grains has been steadily improving from a low level of 134 kg a year in 1950–51 to 167 kg a year in 1973–74. This has been the trend despite the increase in population from 363 million in 1950–51 to 589 million in 1973–74. This situation, it must be recognised, is no mean achievement in the face of such odds as recurring floods and droughts and at least three wars, in 1962, 1965 and 1971. The other factors which have perhaps also contributed towards reducing the potential have been the recent power shortage, inflation and the fertilizer crisis. The trends in production of food grains are shown in Annex I.

6. The diet of the Indian population is cereal-based. The people are particularly unduly dependent on a single staple, with a meagre intake of protective foods. The intake of animal foods is low. Most of the requirements of calories and proteins are derived from staples. Annually about 180 kg of staples per capita are consumed directly for sustenance. In contrast, the annual per capita intake of cereals in developed countries is of the order of one ton (1000 kg) and only one-fifth of this is consumed directly, the rest being consumed indirectly by converting it into animal foods. The Indian Council of Medical Research drew up in 1968 the recommended allowance and on this basis the existing dietaries have been analysed. Computations of food requirements have shown that there is a qualitative food gap and a relatively less extent of quantitative gap. The dimension of the gap in terms of foods is of greater order in pulses, oilseeds, vegetables and animal foods.

Local conditions

7. Poor nutritional status is directly or indirectly responsible for the high rate of infant and pre-school morbidity and mortality (I.M.R. 1971 was 120 and child mortality 1–4 years was 20 per cent – N.S.S.). Mortality rates are very high in children with respiratory and gastro intestinal infections when they suffer from concomitant malnutrition.

8. Nutritional demands of pregnancy and nursing make women in these conditions also highly vulnerable. Nutritional anaemia in pregnant and lactating mothers is considerable. Maternal mortality due to anaemia is 69.8 per 100,000 live births. (V.S.I. 1971)

9. Thus it is apparent that health services, particularly for the most vulnerable mother and child, should plan for the inclusion of various nutritionally-oriented, protective, preventive, curative and rehabilitative services.

10. The State nutrition divisions and the regional units of the National Nutrition Monitoring Bureau established in various States under the Indian Council of Medical Research together conduct systematic surveys on food consumption and nutritional status of comparable population groups. These are compiled by the National Institute of Nutrition, Hyderabad, and the Directorate General of Health Services, New Delhi, which supply information on the nutritional status of the population, which is fairly adequate.

11. In India, 18 States and 2 Union Territories have already established State nutrition divisions under the State health directorates. The roles of these divisions are to monitor the nutritional status of the population and co-ordinate the health aspects of all nutrition programmes. The nutrition cell at the Directorate General of Health Services co-ordinates the activities of all State nutrition divisions. The State nutrition divisions have been conducting food consumption and nutrition surveys in selected groups of population from time to time. The reports of these surveys are being compiled by the nutrition cell of the Directorate General of Health Services.

12. The existing nutrition services under health services are the following:

(a) prevention of specific nutritional deficiencies like vitamin A deficiency, nutritional anaemia and goitre;

(b) nutrition education and monitoring services through the State nutrition divisions;

(c) the health component of various nutrition programmes undertaken by other departments, namely, integrated child development services, applied nutrition programme, special nutrition programme, etc.

13. Breast feeding has been a way of life and there has not been any significant change in the breast feeding practices, especially in the rural areas. There has been some trend of change in these feeding habits, especially in the urban population, but it has not yet made a significant impact to warrant any urgent measure. Breast feeding is encouraged at all levels by the health workers. Inadequacy of breast milk after six months and insufficient supplements and a high susceptibility to infection account for the fact that the highest number of deaths in which the nutritional status is a direct or associated cause occurs in children in their first two years of life.

14. Weaning foods as a routine are seldom observed, especially in the poorer socio-economic groups which tend to put the child to a share of the adult food round the age of one year in the majority of the cases.

Special Considerations

15. Various attempts are being made, particularly in nutrition education, to encourage the consumption of foods of high nutritional value. Nutrition education is attempted through the health infra-structure, mainly by the primary health centres and the auxiliary nurse midwives, and also as part of the various nutrition programmes in operation. The production and consumption of protective foods is the principal objective under the applied nutrition programme in which the rural folk, and especially the vulnerable groups of population, are encouraged in the consumption of protective foods. Nutrition education as a part of health education is in many situations inadequate because the peripheral workers are not adequately oriented and lack the minimum facilities to impart nutrition education as a component of health education. Recently there has been greater emphasis on nutrition education in the training curricula of medical and para-medical personnel in the country.

16. There have been various supplementary nutrition programmes for the pre-school child, implemented by various Departments (Annex II). Effective co-ordination, proper selection of most needy areas and beneficiaries, proper monitoring and evaluation, and good nutrition education are factors which require more consideration for better success of these supplementary nutrition programmes.

17. Mid-day meals for primary school children are attempted in most of the States. The Mid-day meal scheme is run with the assistance received from international agencies like CARE and WFP. The coverage under the mid-day meal scheme during 1976 has been around ten million children.

18. The main problems encountered in the improvement of nutritional status are:

(a) the population profile of India – namely, children under 14 years constituting about 42 per cent and those under 5 years about 15 per cent of the population;

(b) the cultural diversity of the population;

(c) the low literacy rate;

(d) the poor purchasing capacity of the Indian population, which is apparent as the per capita annual income is estimated to be only about US $100;

(e) the subsistence farming system that is widely prevalent in rural areas;

(f) production of foods of good nutritional value especially in the rural areas is often hampered by the limited holdings of the farmers.

19. In India, even with the available food, considerable wastage, maldistribution and wrong practices result in considerable loss of nutrients. This is further aggravated by poor environment and hygiene, with resultant infection and infestations, and large family size limiting the available food. Thus it is apparent that, besides availability of food, nutrition education, immunisation, environmental sanitation, improved personal hygiene and proper spacing of children and maternal and child health care are all closely linked with the improvement of nutritional status. Hence a multi-sectoral approach, through the promotion of the national food and nutrition policy, aimed more at removing the causes of malnutrition than treating their consequences, is felt necessary.

ANNEX I

TRENDS IN PRODUCTION OF FOODGRAINS

	1950–51	*1955–56*	*1960–61*	*1970–71*	*1971–22*	*1975–76 (Target)*
Total cereals (Million tons)	42.4	55.8	69.3	62.4	93.6	120
Pulses (Million tons)	8.4	11.0	12.7	9.9	11.1	16
Total foodgrains (Million tons)	50.8	66.8	82.0	72.3	104.7	136
Per caput net availability per day (g.)						
Total Cereals	334	360	398	355	449	529
Pulses	61	70	69	47	53	71

ANNEX II

NUMBER OF CHILDREN COVERED UNDER THE NUTRITION PROGRAMMES

Programme	*Department*	*1974–75*	*1975–76*
Mid-day meals programme	Department of Education	N.A.	10 million
Special nutrition programme	Department of Social Welfare	3.8 million	N.A.
Balwadi feeding programme	Department of Social Welfare	0.22 million	0.23 million
Vitamin A prophylaxis programme	Dept. of Family Welfare, Ministry of Health and Family Welfare	1.60 million	8.75 million
Anaemia prophylaxis programme	Dept. of Family Welfare, Ministry of Health and Family Welfare	2.46 million	20 million
Applied nutrition programme	Department of Rural Development	1275 blocks	1375 blocks
Integrated child development Services	Department of Family Welfare/Dept of Social Welfare	–	33 blocks