CF-RAD-USAA-DB01-2000-08988

Ill Document Register Number [auto] **CF-RAD-USAA-DB01-2000-08988**

ExRef: Document Series / Year / Number **E/ICEF/1961/413 (PDF-Eng)**

Doc Item Record Title

Survey on the Needs of Children - Report on Nutrition of Children and Mothers Prepared Jointly by FAO and WHO

Date Created / On Doc	*Date Registered*	*Date Closed / Superseeded*
1961-Mar-21	**1997-Jan-01**	

Primary Contact
Owner Location **Office of the Secretary, Executive Bo = 3024**
Home Location **Office of the Secretary, Executive Bo = 3024**
Current Location **Record & Archive Manage Related Functions=80669443**

1: In Out Internal, Rec or Conv Copy?
Fd2: Language, Orig Pub Dist **English , L.Avail: E,F,S ; L.Orig: E-?**
Fd3: Doc Type or Format

Container File Folder Record
Container Record (Title)

Nu1: Number of pages	*Nu2: Doc Year*	*Nu3: Doc Number*
0	**1961**	**413**

Full GCG File Plan Code

Da1: Date Published	*Da2: Date Received*	*Da3: Date Distributed*	*Priority*
1961-Mar-21			

If Doc Series?: **CF/RA/DS/USAA/DB01/2001-0024**

Record Type **A04 Doc Item: E/ICEF 1946 to 1997 Ex Bd**

DOS File Name

Electronic Details **No Document**

Alt Bar code = RAMP-TRIM Record Numb : **CF-RAD-USAA-DB01-2000-08988**

Notes

Document Format Series/Year/SubSeries/Number/Rev: E/ICEF/1961/413; Doc Series/SubSeries/Year/Number/Rev: E/ICEF/1961/413
Doc Series: E/ICEF; Series Valid date on import: 01-Jan-1946; Doc Year: 1961 ; Doc Number: 0413 ; Doc

Print Name of Person Submit Images	*Signature of Person Submit*	*Number of images without cover*
R. Tooker	R. Tooker	37 2-sided

Cover Sheet Back

Blank

UNITED NATIONS

ECONOMIC AND SOCIAL COUNCIL

DISTR.
GENERAL
E/ICEF/413
21 March 1961
ORIGINAL: ENGLISH

UNITED NATIONS CHILDREN'S FUND
Executive Board

SURVEY ON THE NEEDS OF CHILDREN

REPORT ON NUTRITION OF CHILDREN AND MOTHERS PREPARED JOINTLY BY THE FOOD AND AGRICULTURE ORGANIZATION AND THE WORLD HEALTH ORGANIZATION

Contents

61-06349

(36p.)

INTRODUCTION

1. Children need many things if they are to become healthy adults and useful citizens. This report is concerned with one of the most important of these needs, namely the need for a good diet. Health is, of course, influenced by diet at all stages of life, but during the period of growth the relation betweeen diet and health is particularly close. Growth and physical development impose exacting nutritional demands, so that growing children require, in proportion to their body weight, more protein and other nutrients than adults. Diets so composed that they are reasonably satisfactory for adults may be unsatisfactory for children.

2. Growth does not begin at birth; it begins at the moment of conception. Hence the nourishment of the child in utero is of essential importance. Further, th e infant after birth usually depends for some time on its mother's milk. It therefore follows that the nutrition of children and that of pregnant and lactating wcmen are inseparable in the physiological sense, and that in considering the needs of children simultaneous attention must be given to the needs of mothers. Pregnancy and lactation, like growth, impose special nutritional demands, expressed in the old saying that the expectant and nursing woman must "eat for two". The health of the mother and that of her child, which are inter-dependent, must both be safe-guarded.

3. The main theme of this report is the nutrition of children from birth up to the age of 16 years. In part I the problem is analysed. Evidence of various kinds is presented to show that in many parts of the world children do not obtain a diet adequate in quantity and quality, and some of the effects on health of this deprivation are described. Part II deals wiuh the fulfilment of needs and the contribution of the United Nations Agencies. In part III conclusicns and recommendations are presented, with special reference to the contribution of FAO, WHO and UNICEF to the solution of the problem.

/...

I. NUTRITIONAL NEEDS OF CHILDREN AND MOTHERS

Estimate of requirements

4. A healthy well-fed infant more than doubles its birth weight during the first six months of life, but at 12 months its weight is only three times its birth weight, i.e. the rate of increase during the second six months falls from 100 to 50 per cent. In the ensuing years the rate of increase continues to fall, though less abruptly, until puberty is reached. These facts are reflected in recommended requirements or allowances for calories and nutrients. For example, the FAO Committee on Calorie Requirements[1], following the National Research Council, United States of America, recommended the following allowances for infants:

Age	Calories per kilogram of body weight
1 to 3 months	120
4 to 9 months	110
10 to 12 months	100

5. The FAO Committee on Protein Requirements[2] concluded that "after the first month 2 grams of protein per kilogram may be taken as a satisfactory figure for the requirement of the young infant up to 6 months when the protein is from breast milk or cows' milk supplied in a form well digested by the infant." At one year the requirement suggested was about 1.5 grams per kilogram and at 3 years a little over 1.0 gram - all figures considerably in excess of adult requirements on a similar basis. The Committee commented that "protein requirements in terms of grams per kilogram decrease from infancy to the onset of puberty", which means that

---

1/ FAO Nutritional Studies No.15, 1957
2/ " " " No.16, 1957

/...

the younger the child the greater the care needed to ensure that its requirements shall be covered. But while this fact is of great importance, the need for a fully satisfactory diet throughout the whole of the growing period must equally be emphasized.

6. Both these Committees also laid emphasis on the additional needs imposed by pregnancy and lactation. With respect to calories, it was recommended that in calculating the calorie requirements of countries, an allowance of 40,000 calories per pregnancy should be made, while during lactatior a woman should receive 800 calories per day in excess of the usual level. The Committee on Protein Requirements expressed the following views:

> "During pregnancy, additional protein is required for the formation of new maternal tissues and for foetal growth and maintenance. The available data suggest that an additional 10 grams of protein per day....beyond the requirements for the unemcumbered adult will be sufficient, even in the last few months of pregnancy when protein needs are greatest. However, women who normally consume liberal quantities of protein need not consume additional protein during pregnancy."

7. With regard to lactation, the Committee suggested that an additional allowance of 30 grams of "reference" (i.e. high quality) protein will be sufficient for the requirements of almost all nursing women.

8. These figures per se will mean little to the non-specialized reader. However, they indicate that a scientific basis exists for determining the nutritional needs of mothers and children and for assigning high importance to the fulfilment of these needs. Similar considerations hold for certain nutrients other than protein. The value of practical measures to improve the nutrition of children and mothers is firmly supported by scientific knowledge.

Food consumption levels

9. Food consumption data, provided by national food balance sheets and dietary surveys, throw light on the nature and extent of needs. They show that there are wide differences in the food supplies of developed and underdeveloped countries and that in many of the latter supplies are likely to be insufficient for requirements. The following are figures for supplies of calories, total protein and animal protein for two developed and three under-developed countries. They are on a daily per caput basis and represent the years between 1957 and 1959:

Country	Total calories	Total protein (g.)	Animal protein (g.)
United Kingdom	3260	85	50
Switzerland	3180	93	52
Brazil	2540	65	20
India	1800	47	6
Philippines	1940	46	11

Source: FAO Food Balance Sheet.

10. Average figures of this kind have a wide margin of error, greatest in countries lacking adequate statistical services. They should never be regarded as final or absolute. The above examples do, however, bring out the fact that in the two prosperous countries in Europe the supplies of calories, total protein and animal protein are much greater than in the other three countries. Given existing knowledge of requirements for calories and protein, such figures strongly suggest that in many of the under-developed countries food supplies are unsatisfactory in quantity and quality and that as a result under-nutrition and malnutrition will be found. They also suggest that the special needs of children

/...

will not be adequately met. With regard to protein, it is significant that the most common and serious form of malnutrition in children is due to protein deficiency.

11. Food balance sheets also show striking differences in the supplies of certain foods and food groups from country to country. The average daily per caput supplies (grams) of three important food groups in the same five countries in the same years were as follows:

Country	Cereals and starchy roots	Meat, fish and eggs	Milk and milk products */
	grams		
United Kingdom	485	255	559
Switzerland	460	186	789
Brazil	600	104	157
India	370	8	123
Philippines	489	25	47

*/ estimated as fluid milk

Source: FAO Food Balance Sheet

12. These figures show that in the under-developed countries there is a low consumption of foods rish in protein and other nutrients and of special value for growth. This means that the greater part of the diet is composed of cereals and starchy roots, betweeen which there is an important distinction. Cereals contain considerable quantities of protein, ranging from 6 per cent in price to 10 per cent or more in wheat, while starchy roots have a very low protein content, often 1.5 per cent or less. Cassava, a common crop in many tropical countries, is exceptionally poor in protein. It supplies .8 gram of protein per 100 Calories, while wheat flour supplies 3.3 grams per 100 Calories. Where starchy roots are important staple foods, the needs of children for protein are often unsatisfied and protein malnutrition prevalent.

/...

13. Proteins in different foods vary in nutritive value, so that the kinds of proteins as well as the total protein available is of nutritional significance. While suitable mixtures of vegetable proteins can support growth in children and maintain them in good health, in general proteins from foods of animal origin are superior in value to protein from foods of vegetable origin. Here again, the under-developed countries are at a disadvantage, because of the relative lack of animal foods and the preponderance of cereals or starchy roots in the diet. In particular, animal milk is so scarce in these countries that the majority of the world's children obtain little milk beyond what they receive at the breast.

14. Dietary surveys provide more accurate and detailed information on food consumption levels than food balance sheets, and can indicate differences in the consumption of groups within countries which average figures conceal. They often bring out the wide difference in the food consumption of poor and prosperous families. For a given sum of money, certain kinds of foods provide more calories than others; in the first group are cereals, starchy roots, and sugar, and in the second milk and milk products, meat and eggs. Less land and agricultural effort are needed to produce a given number of cereal calories than the same number from foods of animal origin, which are richer in protein and other essential nutrients. When people are poor they must, to obtain sufficient calories, or, more simply, enough food, rely mainly on the cheaper foods. Investigations in many countries have shown that in general family diets become more varied and nutritious with increasing income, there is often, for example, a correlation between income level and the supplies of milk and meat, on a per caput basis, which families obtain. This means in effect that, as far as diet is concerned, poverty presses harder on children than on adults, since it limits the purchase of foods of special value to children. Within recent years the gap between the food consumption of the well-do-do and the poor has narrowed or has even disappeared in certain highly-developed and prosperous countries, but elsewhere in the world it remains wide.

15. The family is the food consuming unit and in most dietary surveys the food consumption of whole families is studied. In investigating the causes of malnutrition it is often important to learn something about the distribution of foods within the family unit. When such information is gathered, by careful and patient inquiries, it may reveal that children are not obtaining, from the food resources available to the family, a share commensurate with their special needs.

16. More dietary surveys are needed, particularly in the under-developed countries, since the data they provide are invaluable in planning and executing measures to improve nutrition. In general the surveys which have been made support food balance sheet figures in indicating that nutritional needs, especially those of children, are not met in a large part of the world. What is known about food supplies and food consumption is fully in line with evidence about the geographical incidence of malnutrition and deficiency disease.

Prevalence and results of under-nutrition and malnutrition

Evidence from vital statistics

17. Vital statistics are the foundation of modern systems of public health. In technically advanced countries they include complete figures for births and deaths, with a diagnosis of the causes of death. There are also morbidity statistics of various kinds showing the prevalence of certain diseases apart from the deaths they cause. Unfortunately in most under-developed countries complete and accurate vital statistics of this kind do not exist and the statistics which are available throw only indirect light on problems of nutrition and their extent and seriousness. In general the registration of deaths from specific deficiency diseases does not provide information of value. For one reason, these diseases are seldom seen by doctors and when they are they are often not recognized as such, and deaths from them are likely to be ascribed to other causes.

18. Enormous differences in infant mortality rates are found in different parts of the world. They range from 500 per thousand live births in primitive and poverty-stricken peoples to below 30, the lowest rates being, of course, found in developed countries with efficient health and social services. Under-nutrition and malnutrition are among the causes of infant mortality, but probably take second place to dirt, using this term to denote unsanitary conditions generally. The infant has usually available to it a supply of nutritious food in the form

of mother's milk, and the dramatic fall in mortality rates which follows the introduction of simple sanitary measures indicates the importance of the sanitary factor. For these reasons the infant mortality rate is not a direct index of the nutritional status of a population.

19. More suggestive is the death rate in children aged 1 to 4, the period of life at which malnutrition is most common and severe. The following table shows the wide differences in mortality in this age group in certain developed and under-developed countries.

Mortality in infants and children aged 1 to 4 in various countries

(per 1,000 live births)

Country	0 to 1	1 to 4
USA	26.9	4.1
England and Wales	22.5	3.2
Sweden	15.8	3.8
Mexico	80.8	57.7
Ceylon	67.5	47.8
India	96.1	92.5
Ghana	90.4	76.8

Source: United Nations Demographic Yearbook 1959.

20. These figures, which relate to various recent years and are in some cases provisional, are quoted only to bring out the broad fact that in the developed countries the period 1 to 4 is one of the "safest" periods of life, while in many other countries there is a high death rate in children of this age group, to which malnutrition unquestionably contributes.

21. The reasons for the high prevalence of malnutrition in young children past infancy are simple. As long as an infant is fed on breast milk and there is plenty of breast milk, its state of nutrition will be satisfactory. In many communities children are given the breast up to the age of 2 years or more. But as the child grows larger the supply of breast milk becomes insufficient to fulfil its needs for calories and for protein and other nutrients. If a child's diet when breast milk begins to fail, is supplemented with suitable foods, for example cows' milk, it will continue to grow and thrive. This is what happens in the prosperous countries. But if appropriate supplements are not given and the child, after the amount of breast milk which it receives diminishes or total weaning occurs, is given insufficient food or the wrong sort of food, it enters a period of retarded growth and ill-health. The prevalence of protein malnutrition at this stage of life will be considered later.

22. It is not implied that infants escape nutritional disorders during the first six months of life. They may be deprived of the breast for various reasons, or suffer from infections which affect their state of nutrition. Unquestionably, however, in most of the under-developed countries they are on the whole better nourished at this stage of life than later in infancy and during the "toddler" period.

23. In many parts of the tropics and sub-tropics striking success has been achieved during recent years in reducing infant mortality. But no such dramatic fall in the mortality rate of children aged 1 to 4 has occurred. This is due both to the difficulty which public health services experience in reaching this age group and to a larger extent to the widespread existence, in children past infancy, of malnutrition which cannot yet be prevented. Many known facts about

malnutrition and deficiency disease in children support the idea that the death rate in the age group 1 to 4 throws light on the state of nutrition of a population. But such an index must be used with caution, since there are numerous other causes of disease and death in this age group. Severe diarrhoea and respiratory infections, for example, are particularly common at this time of life in most underdeveloped countries. Lowered resistance, due to malnutrition, may, of course, pave the way for infection and parasitic disease and their seriousness is always accentuated by the presence of under-nutrition and malnutrition.

Weight and growth

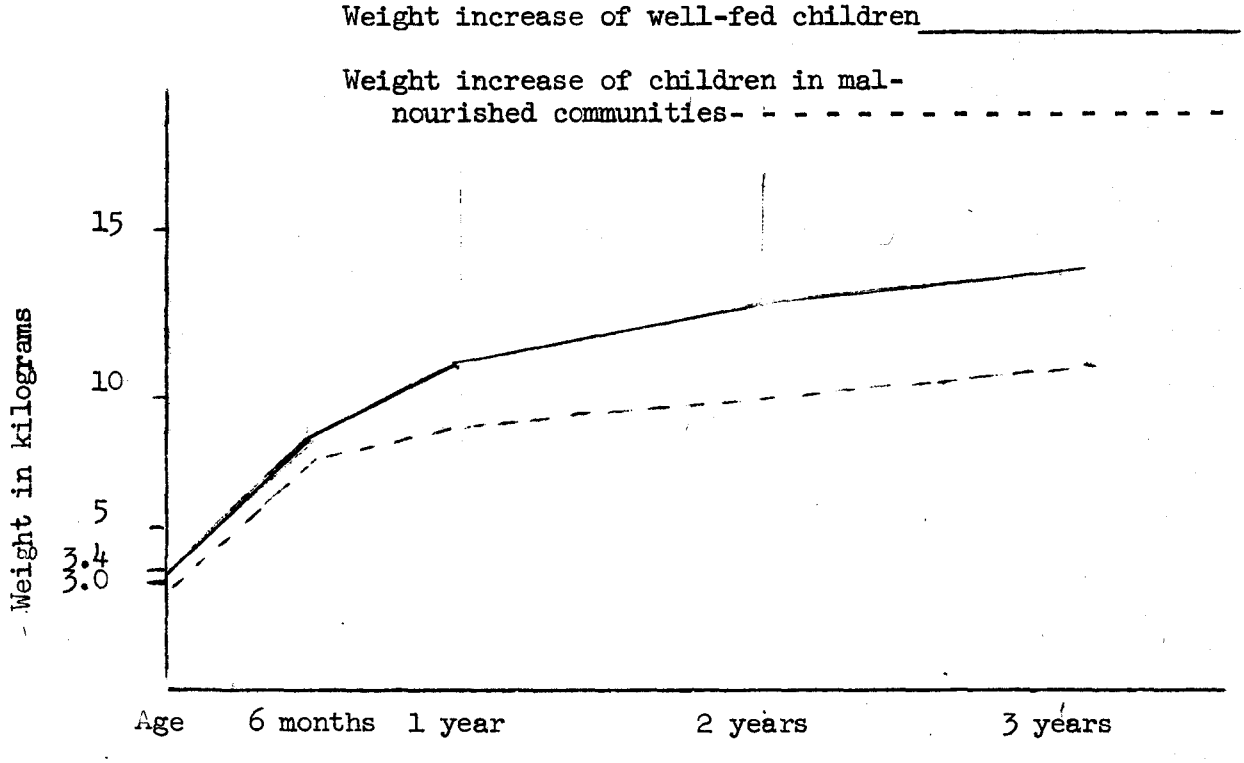
24. Data on weight and growth throw light on nutritional status. The Joint FAO/WHO Expert Committee on Nutrition discussed the question at its second session in 1951. It commented that birth weights may give some information on the nutritional status of women during pregnancy, adding that premature birth rates and still-birth rates also provide some evidence on this point. The gain in weight of infants and children is the most commonly used index of nutritional status, though failure to gain may, of course, be due to causes other than under-nutrition and malnutrition. The weight may be compared at a given moment with a standard of weight for age taken to represent the normal in healthy well-nourished children, or weight records may be taken periodically to follow the course of development. The second method is the more informative.

25. The relation between gain in weight, state of nutrition and diet is vividly illustrated by an example in a report on UNICEF-assisted skim milk distribution programmes.[3/] At some maternal and child health centres, mothers are given skim milk powder in packets to take home, each packet containing a weekly supply for

3/ "Report on UNICEF-assisted programme of dry skim milk distribution" made by FAO, WHO and UNICEF with the help of Dr. G.Herlitz, Dr.A.Vergara and Prof. A.Wallgren (E/ICEF/385 and Corr.1, May 1959).

the infant. The mother can usually be trusted to give the milk to her infant, but she may use it for other purposes. This undesirable practice can be checked by weighing the infant when the mother returns to the centre for a further supply of milk. If the infant has not gained in weight, and is not suffering from any complaint to account for this, the inference is that it has not been given the milk, and the mother is rebuked.

26. These points are generalized in the following Figure which compares in diagrammatic form weight increases in the first three years of life in children in well-fed and poorly fed countries or communities.



The weight curve of the "well-fed" children is based on Northern European figures. That of the children in malnourished communities reflects data from a variety of sources.

/...

27. The birth weight of infants in a poorly fed community may be a little lower than that of infants born to healthy and well-nourished mothers. The Figure shows, however, that during the first six months of life the weight curve of the two groups may run almost parallel. After this the curve characteristic of under-nutrition and malnutrition "flattens out". The growth curve of the majority of children in the world follows this pattern.

Disease resulting from insufficient and faulty diet

28. The most striking evidence of the non-fulfilment of dietary needs is provided by the widespread existence of disease associated with under-nutrition and malnutrition. Lack of protein, often combined with insufficiency of calories and of nutrients other than protein, is a major cause of the retardation of growth in young children described in the previous section. If the lack is not great, this may be the only result. But much more serious manifestations of dietary deficiency are found in many parts of the world. The most urgent and extensive problem is the complex of disease in young children due mainly to deficiency of protein and calories.

29. The importance of under-nutrition, a polite term for semi-starvation, must be strongly emphasized. Many children in many countries do not get enough food to eat; that is, their calorie needs are not met. The term marasmus is applied to the condition in infants and young children resulting from gross insufficiency of food, and physicians in the tropics and sub-tropics are all too familiar with the marasmic child. While marasmus is primarily a manifestation of calorie deficiency, various other factors, including infectious disease and lack of essential nutrients, often contribute to its causation.

30. Experienced pediatricians working in the less-developed countries find that it is important to ensure that children shall get enough food to fulfil their calorie needs, as well as adequate supplies of proteins and other nutrients. Poorly fed children often benefit, within a short period of time, from being given nutritious foods as a dietary supplement. This is often due to the additional calories as well as to the extra nutrients which such supplements provide.

/

31. During the last ten years a great deal of research has been done on what has been called protein malnutrition in children. FAO, WHO and UNICEF have been associated with this world-wide undertaking. The WHO/FAO report on "Kwashiorkor in Africa" by Brock and Autret (1952)[4/] was among the landmarks in the advance of research, and numerous expert conferences and committees, meeting under United Nations sponsorship, have discussed and analysed the problem in its various aspects. The Committee on Protein Malnutrition of the National Research Council, United States of America, working in collaboration with the United Nations agencies, has supported many research projects with the help of generous grants from the Rockefeller Foundation. As a result of these and other activities, combined of course with research done by institutions and individuals not directly associated with the United Nations programme, remarkable additions to knowledge have been made and the whole intricate problem is now beginning to be clearly understood.

32. The manifestations of insufficient and faulty diet in young children range from retardation in growth to death from marasmus or kwashiorkor, which is in effect an extreme form of protein deficiency. In some areas the emphasis is on marasmus; in others, particularly those in which a starchy root or fruit is the staple food and the diet received by children is more seriously deficient in protein than in calories, kwashiorkor is more commonly found. Many people will have seen photographs of children suffering from kwashiorkor, swollen with oedema and showing the expression of misery characteristic of the disease, as well as other signs which experienced doctors have now learnt to recognize. There are variations in the clinical manifestations, depending on the dietary history of the child and relationships between dietary deficiency and infections and parasitic disease. But even more striking is the general uniformity of the picture from country to country. As investigations are made and reports accumulate, it has become clear that the problem in its essentials is similar throughout the under-developed regions. Studies in Asia and Africa reduplicate to a remarkable extent findings in the Caribbean and Central and South America, and vice versa.

4/ WHO Monograph Series No.8, 1952; FAO Nutritional Studies No.8, 1952.

33. Among the points of importance brought to light by recent investigations is that under-nutrition and malnutrition in young children must be considered in their ecological setting: that is, as a result of numerous factors - food supplies, dietary and weaning patterns, social customs etc. - inherent in the life of the community to which the child belongs. Of social interest is the discovery that the African word "kwashiorkor" and other African words used to describe the same condition mean "the child that is deprived or discarded". The victim of kwashiorkor is deprived of its mother's milk and given nothing suitable to replace it; it is discarded from the breast because its mother has become pregnant again.

34. Accurate data on the extent and geographical distribution of this complex of disease would obviously be of great value in assessing the nutritional needs of children on a global basis. But such data are not yet available. Doctors in hospitals in under-developed countries often report that a high percentage of the children admitted are suffering from serious malnutrition, but this does not indicate prevalence in the country or area as a whole. Field surveys have been made in a few areas, but many more are needed. Those familiar with the problem are impressed by the volume of articles and reports on the subject, coming from all the less-developed regions. Unquestionably the health of many millions of young children is adversely and often very seriously affected by protein malnutrition and associated conditions. With respect to geographical incidence, there is evidence that the problem exists wherever supplies of animal milk or other foods of high protein value are scanty, that is, in Africa, the Near East, south and east Asia, Central and South America and the Caribbean. In Africa south of the Sahara "classical" kwashiorkor is particularly common; it is also found in other under-developed regions, but somewhat less frequently than disease of a more predominantly "marasmic" type. The wide prevalence of this disease-complex fully justifies the prominence assigned to it in the inter-linked nutrition programme of FAO, WHO and UNICEF. The problem is indeed one which calls for co-ordinated international attack.

35. In some parts of the world, for example in East Africa, Indonesia and south India, vitamin A deficiency is common. Signs of protein malnutriton and avitaminosis A are often seen in the same child. The most important manifestations of avitaminosis A are found in the eyes. They range from dryness and other changes in the cornea to the catastrophic condition called keratomalacia, in which the whole cornea of the eye is destroyed, leaving the victim permanently blind if both eyes are affected, as they usually are. It occurs most commonly in children aged 6 months to 3 years, resembling protein malnutrition in its age incidence; older children also suffer from eye lesions due to vitamin A deficiency, but these are usually less serious in nature. Keratomalacia has been one of the major causes of blindness in certain areas, for example in south India. Possibly it has become a less prominent cause within recent years, because it can be effectively treated by giving vitamin A in concentrated form if children suffering from it are seen early enough by the doctor.

36. Needs for vitamin A can be met by giving children fish liver oil capsules and other vitamin A concentrates. The distribution of capsules containing vitamins A and D, through maternity and child health centres and schools, has figured prominently in the UNICEF programme. Skim milk itself, of great value in making up for protein deficiency, is devoid of vitamin A. As a result of much careful work, the technical difficulties involved in enriching skim milk with concentrated vitamin A have been solved, and skim milk containing added vitamin A will shortly be available for use in areas where avitaminosis A is common. But while such measures are of immediate value, there is no real shortage of vitamin A from natural sources in the tropics, or indeed in the greater part of the world. Vitamin A itself is found only in certain fats of animal origin, usually scarce and expensive, but pro-vitamin A or carotene, which the body can convert into vitamin A, is present in green leaves and in many kinds of vegetables and fruits. Another rich source is red palm oil, the common cooking oil of West Africa, and it has been found that vitamin A deficiency is uncommon in areas where this oil is used. Needs for vitamin A could in fact be satisfied without recourse to vitamin A concentrates, if people learned to make proper use of the sources of carotene available to them.

37. Deficiency of vitamin B_1 or thiamine is found in infants in a number of rice-eating countries in Asia, for example, Burma, the Philippines and Viet-Nam. In some areas it is an important cause of infant mortality. Unlike protein malnutrition, thiamine deficiency in infants or "infantile beriberi" occurs in breast-fed infants under 6 months, most commonly between the third and fifth months of life. It can be ascribed to lack of thiamine in the milk of the mothers who themselves often show signs of thiamine deficiency such as weakness and sensory changes in the lower limbs. Death from infantile beriberi often occur suddenly and their cause may not be recognized. A high mortality rate in the third to the fifth month of life suggests its existence as an important public health problem, but in most rice-eating countries vital statistics which would demonstrate this characteristic and unusual trend in mortality are not available.

38. To fulfil the needs of infants for thiamine in areas where infantile beriberi occurs would require in the first place a careful survey to indicate the prevalence of the disease and the dietary and environmental conditions associated with it, followed by measures of various kinds to correct the deficiency. Little experience is at present available as to what measures for providing more thiamine to expectant and nursing mothers are likely to be most feasible and effective.

39. Rickets, a deficiency disease of infants and young children, has almost entirely disappeared from North America and most countries in Europe as a result of better infant feeding and care, and the characteristic bone deformities it causes are rarely or never seen today. Its prevalence in other parts of the world is difficult to assess. It is common in infants, though usually in a mild form, in various countries in the Near East, North Africa and other regions, but no accurate data on the numbers of children affected are available. Rickets is due to deficiency of vitamin D and is also associated with lack of sunshine, since the action of the sun's rays on the skin leads to the formation of the vitamin. Children in the tropics and sub-tropics who are exposed to sunshine do not contract the disease, but it is found even on the equator in infants who are kept too much indoors and are over-clothed when taken out of doors, so that the sun's rays cannot reach them.

40. A parallel disease in women, osteomalacia, has similar causes; it occurs mainly in badly fed women who spend most of their life indoors, and are heavily clothed when they go outside the home. Here again there are few data on incidence, though the disease is known to be common in certain areas in North India and Pakistan. Osteomalacia has a close association with pregnancy and lactation; women crippled by it often give a history of recurrent attacks with successive pregnancies, each attack worse than the last.

41. Rachitic disease is prevented by fulfilling needs for vitamin D. Cod-liver oil and vitamin D concentrates have proved effective weapons, and the disappearance of rickets from many countries is one of the major triumphs of science and medicine. It should now be eliminated throughout the world, the provision of vitamin D in various forms and the improvement of child care and feeding generally being the control measures required. Synthetic vitamin D is available in abundance at low cost. In many UNICEF-assisted feeding programmes, vitamin D has been supplied through fish liver oil capsules containing both vitamins A and D.

42. There are various other deficiency diseases which affect children as well as other age groups. They include pellagra, a disease of maize-eaters due to lack of niacin and the amino-acid tryptophan; ariboflavinosis, a term applied to conditions caused by lack of riboflavin, which are common among children but usually do not impair health very seriously; and endemic goitre which leads to swelling of the thyroid gland in adults and various developmental abnormalities in children.

43. Of special importance is anaemia, one of the commonest of all human diseases. In many tropical countries the vitality of the people is greatly reduced by anaemia. While it occurs in all age groups, pregnant and nursing women and growing children are particularly prone to suffer from it. Certain blood-destroying diseases, such as malaria and hookworm, of themselves produce anaemia, but in many areas in which these diseases are rare, anaemia is nevertheless common. The prevention of anaemia calls for measures to eradicate blood-destroying diseases and to improve the diet so that intake of iron, protein and other nutrients is increased. The provision of iron in various forms to people with the commonest form of anaemia - microcytic anaemia - has a rapid beneficial effect. The "enrichment" of certain staple foods

with iron may prove an effective preventive measure, but more research is needed before it can be confidently recommended.

44. The problem of anaemia in the tropics does not seem to be receiving, at the present time, the attention it deserves. A co-ordinated world-wide attack on anaemia, similar to the world-wide attack on protein malnutrition, might well be justifiable. If successful, it could have far-reaching effects on child health and welfare.

Nutrition and infectious and parasitic disease

45. Under-nourished and malnourished communities are usually heavily infested with infectious and parasitic diseases. In practice, it is usually difficult to disentangle the ill effects of these hazards. Seasonal epidemics of dysentery and diarrhoea are often followed by outbreaks of deficiency disease. Many investigators of protein malnutrition have stressed the precipitating role played by intestinal and other infections. The following extracts from a recent review 5/ of protein malnutrition illustrates this point:

> "Feeding is restricted.....in the presence of any sickness and especially when the child has diarrhoea. The mothers believe that in order to correct the diarrhoea the child should be placed on a diet restricted largely to starchy gruel, rice water or sugar water. Such diets are usually prolonged for several weeks, since the child fails to improve, and the result is clinical kwashiorkor and death. Unfortunately some physicians still recommend this type of diet in cases of diarrhoea in small children and this helps to perpetuate the belief and practice.
>
> "It is no coincidence that most kwashiorkor cases in Guatemala give a history of an episode of diarrhoea of apparently infectious origin shortly before the onset of the oedema, skin lesions and other signs of kwashiorkor.

5/ Behar, Bressani and Scrimshaw, "Treatment and Prevention of Kwashiorkor". World Review of Nutrition and Dietetics, 1959. pp.73-101.

> In addition to worsening of the diet as a result of misguided therapeutic efforts, there is a direct contribution of the diarrhoea to protein malnutrition. Even with mild and transient diarrhoea and a relatively high protein intake of good quality, it has been shown experimentally that nitrogen-retention in young children may actually become negative with this type of gastro-intestinal disturbance, and remain markedly reduced for a period of days thereafter. But the infectious diarrhoea affecting malnourished children in most technically under-developed areas is neither mild nor transient. It is sufficiently severe and frequent to be a major primary cause of death in children under five years of age."

With regard to intestinal parasites, the same report comments:

> "In most children from areas where kwashiorkor is endemic, there is also a very high prevalence of intestinal parasites of several species. While they do not seem to be factors of primary importance, intestinal parasites can have an adverse effect on protein absorption."

46. Many statements of a similar kind can be found in the literature on malnutrition in children. Clearly public health action to control infection and parasitism must accompany other measures to prevent deficiency disease and raise levels of nutrition.

Children of school age

47. When the age of 4 or 5 years is passed, children become less prone to malnutrition. The growth rate declines and they become more adapted to "adult" foods and diets. However, a good deal of under-nutrition and malnutrition is often found in children of school-going age, particularly in the younger children in this age group. Later the period of rapid growth and development associated with adolescence imposes special nutritional demands of which account is taken in tables of calorie and nutrient requirements.

48. The supplementary feeding of children in schools, with milk and other foods, is a widespread practice, reviewed in detail in one of FAO's Nutritional Studies.[6/] The UNICEF-assisted dry skim milk distribution programme has also been described and evaluated.[7/] These and other publications provide evidence that well organized school feeding contributes to the fulfilment of the needs of children and improves their health. An acceleration of the rate of increase in weight and stature is often among the results. It is obvious, of course, that the most striking benefits will be obtained in cases where the children who receive supplementary foods or meals are seriously under-nourished and malnourished.

49. Children have sometimes to walk a long way to get to school, particularly in rural areas. They may eat an inadequate breakfast, or no breakfast at all, before leaving home. If they do not get a meal until they return home after school in the late afternoon, they will be hungry for the greater part of the day. In such circumstances a school meal or snack given in the middle of the morning is particularly valuable.

50. The FAO publication notes that "certain intangible results, such as increased vigour and alertness may frequently be observed. These do not lend themselves to measurement, but subjective impressions, if consistently recorded, may be good supporting evidence of nutritional improvement". In simple language, teachers often find that school feeding makes children better pupils, more attentive and ready to learn. This is a point of great importance. The better the mental and physical development of children during this period of life, the better the men and women they will make when they grow up.

51. In summary, children of school age in many parts of the world have an unfulfilled need for a better diet. The problem may be less urgent than that of preventing malnutrition in younger children, but is nevertheless of great importance.

6/ Marjorie L. Scott, School Feeding - Its Contribution to Child Nutrition (FAO Nutritional Studies, No.10), 1953

7/ "Report on UNICEF-assisted programme of dry skim milk distribution" made by FAO, WHO and UNICEF with the help of Dr. G. Herlitz, Dr. A Vergara and Prof. A. Wallgren (E/ICEF/385 and Corr.1, May 1959).

Causes of malnutrition

52. Action to prevent malnutrition requires an understanding of its causes, which are complex and inter-related. Poverty comes high on the list; many problems of nutrition, though by no means all, automatically solve themselves when standards of living rise. In most communities, poor families obtain a less nutritious and varied diet than well-to-do families. Restriction in food supplies is another obvious factor, the lack of animal milk in many countries being a familiar example. The primary measures for improving the nutrition of children and other sections of the population are economic development and increasing the supply and availability of the necessary foods. The whole programme of FAO, founded to "marry health and agriculture", is concerned with the second of these measures. The joint efforts of FAO, WHO and UNICEF to promote the supply and use of certain protein-rich foods come under this head.

53. Cultural and social factors are of almost equal importance in causation. There is no instinct to inform mothers about the nutritional needs of their children. Sometimes there are local ideas and traditions which favour the provision of a good diet to children, but these seem less common than their opposite. Custom may prevent pregnant and nursing women and young children from eating certain valuable foods such as eggs, meat and fish. The staple food of the area may enjoy excessively high prestige and be thought of as the best food for children; if it happens to be plantains or cassava, and is given to children as the main article of diet, the results tend to be disastrous. The cultural and social complexes underlying the meaning of the word kwashiorkor - the "deposed child" - are again of great significance. In some African communities "deposing" may mean sending a child off to live with its maternal grandparents after the next child is born. This helps to strengthen family ties and is a common practice when the parents are living in an urban area and their relations are still in the village.

But it is usually bad for the child which is psychologically upset and may lose its appetite, as well as being deprived of breast milk. The food it gets from its grandmother is unlikely to be suitable. Experienced doctors have recorded that a large percentage of children "deposed" in this way develop kwashiorkor.

54. The influence of urbanization on nutrition needs more attention than it has as yet received. The following passage from the report on dry skim milk distribution, previously mentioned, is worth quoting:

> "In the large urban areas now extending rapidly in most of the under-developed countries, living conditions are extremely bad. Housing often consists of overcrowded shacks. The new suburban conglomerations are becoming every day more congested by rural emigrants who find it hard to make a living. As poor people in such suburbs receive practically no education, it is difficult for them to find work, and when they come from rural areas they know little about town jobs. Malnutrition in such groups is often more extensive and severe than in the villages from which they originally came. Protein malnutrition is common and many cases are found among mothers and young children. Bad sanitary conditions accentuate the ill-effects of malnutrition. If women find employment, this may adversely affect the care and feeding of children. Efficient social services to meet the needs of these vast new urban populations have yet to be created."

55. The employment of mothers, to which reference is made in the above passage, in itself raises special problems. In some countries there are crèches in which young children are looked after and fed while their mothers are at work, but in most rapidly-growing urban conglomerations in the under-developed countries such institutions have not yet been established, and there is an urgent need for special measures to safeguard the health and nutrition of the young children of working mothers.

56. One important result of urbanization is the earlier stopping of breast feeding. In the developed countries today, the breast-feeding of infants beyond a month or so is exceptional; infants are successfully reared on cow's milk and other foods. But when sanitary standards are low and the satisfactory replacement of breast milk difficult for many reasons, the early discontinuance of breast-feeding involves serious dangers. Mothers in newly-urbanized communities do not know how to manage "artificial" feeding. For example, evaporated and powered whole milk, as well as a variety of proprietary preparations containing milk and other ingredients, are now widely sold in the tropics and sub-tropics. Some of these are extensively advertised with attractive pictures of bonny babies reared on them. Unsophisticated people sometimes think they have almost magical properties and buy them for their infants and children even when they cannot really afford them. The infant is often given the processed milk or the proprietary preparations in very small amounts, probably in a feeding bottle and heavily diluted with water. Two bad results may follow. The mother thinks that the child is receiving a highly nutritious diet, so that she need not bother to feed it any longer at the breast, or provide a sufficiency of other foods. Secondly, when home conditions are unsanitary, as they nearly always are in the circumstances under discussion, giving an infant any food from a bottle carries serious hazards of infection which will lead to diarrhoea and malnutrition. Some public health workers in tropical countries consider that the sale of processed milk and proprietary infant foods generally should be discouraged, on the ground that they do more harm than good and especially because they promote early weaning. This is rather an extreme view, because of course such foods have a high nutritive value and produce excellent results in infant feeding when they are given in the right amounts and with proper sanitary precautions. The dangers arising out of their use should, however, be noted.

57. The experienced workers in INCAP (Institute of Nutrition for Central America and Panama) have described the etiological background of protein malnutrition well in the following passage: 6/

> "Kwashiorkor arises out of ignorance of proper feeding practices for the young child, a high prevalence of enteric infections due to poor sanitary practices, prejudices against the use of milk and other protein-containing foods of animal origin for young children, limitations in food production due to poor agricultural practices, and low purchasing power of the family as part of general poverty. All of these, with the possible exception of the last, are subject to direct attack by health workers, teachers and agriculturists."

General Conclusions

58. Attempts have been made to estimate the numbers of people in the world who suffer from under-nutrition and malnutrition. The limited data available can indeed be manipulated to give a variety of answers. Such exercises may have their uses, but the results do not stand up to careful and critical scrutiny. We must therefore be content with stating the extent of the problem in more general terms. There is no possible doubt that the health and development of a large proportion of the world's children are impaired by insufficient and faulty diet. An impressive amount of evidence in support of this statement is available, coming from all the under-developed regions. Some of it has been presented in this report. It can safely be concluded that one of the paramount needs of children, largely unfulfilled on a world scale, is that for more and better food. The fact should always receive full recognition in planning and taking action to promote child welfare.

/...

6/ Behar, Brassani and Scrimshaw, "Treatment and Prevention of Kwashiorkor". World Review of Nutrition and Dietetics, 1959.

II. FULFILMENT OF NEEDS

OPPORTUNITIES FOR ACTION AND THE CONTRIBUTION OF THE INTERNATIONAL AGENCIES

Analysis and Planning

59. In part I of this report, problems of nutrition in children and mothers have been outlined on a world basis. These problems have many aspects which are common to nearly all the under-developed countries. There are, however, also important differences from country to country - differences in food supply and consumption, the manifestations of diet deficiency, economic status and the social and cultural background. In order to plan and execute remedial action in a given country, study and assessment of the situation in that country are needed. The information required to fill in the picture is of various kinds, relating to food supplies, food consumption, food technology, the state of nutrition of children and other age groups and the prevalence of deficiency diseases. With respect to food supplies, special attention should be given to potentialities for increasing the production of nutritious foods and the wider application of food technology in maintaining and enhancing the nutritive value of foods and diets. Data on existing food consumption are needed, because that is the starting point for improvement, and an understanding of the factors which incluence consumption is equally necessary - indeed such understanding is of primary importance.

60. In many countries there is usually some scattered information to be had about the state of nutrition and deficiency diseases, but there are great advantages in extending this by surveys which provide a base line against which the results of future action can be assessed. A recent survey of child nutrition in the Federation of Malaya, concerned with both the prevalence of malnutrition and the agronomic, economic and social factors which contribute to its causation, may be cited as an example.[7/] Other necessary information relates to existing

/...

7/ Florence Thomson, Child Nutrition - a Survey in the Parit District of Perak, Federation of Malaya (Bulletin of the Institute of Medical Research, No. 10, Federation of Malaya, 1960).

measures to improve nutrition - such as supplementary feeding - and their extent and efficacy, and to the personnel and services available to contribute to practical nutrition programmes.

61. In most countries the filling in of this background picture will take time and may itself call for the training of personnel to undertake surveys as well as for co-ordinated efforts on the part of the different services concerned. Action should not await its completion; a start can be made in the country concerned by preparing a report summarizing what is already known on the various aspects of the problem referred to above, to form a basis for preliminary planning. The assistance of outside experts may be invaluable for this purpose. Analysis, planning and action should in fact all proceed simultaneously.

Food supplies

62. In most parts of the world, the primary measure for fulfilling the nutritional needs of children is a greater supply of nutritious foods, particularly foods rich in protein. Food imports, e.g. imports of dry skim milk, may contribute substantially to needs, but locally produced foods are nearly always more important. This means the development, where possible, of local dairy and livestock industries, leading to greater supplies of milk and milk products, meat and eggs. It also means - again where possible - the increased exploitation of marine fisheries and fresh-water fisheries in rivers, lakes and ponds, combined with improved methods of fish preservation and transport to provide supplies of fish to populations living at some distance from the source. Other foods of great importance are the pulses or legumes, which have a high protein content and are a familiar article of diet in most parts of the world. An increased production and consumption of pulses would do much to present protein malnutrition. Protein requirements can be largely fulfilled by suitable combinations of vegetable foods, e.g. by a mixture of cereals and pulses.

63. A valuable source of protein may be found in preparations made from soya bean, groundnuts, sesame, cotton seed and other oil seeds. Fish flour also falls into this category. The joint nutrition programme of FAO, WHO and UNICEF,

undertaken in collaboration with nutrition workers in many countries, has produced a large volume of information on foods of this kind, both on the technological and processing side and with respect to their acceptability and value in child feeding. Mixtures based on one or more of them have already been used successfully to prevent and treat protein malnutrition. Their manufacture and use are among the measures to be considered in any country in which there is an urgent need to improve the diets of children and mothers.

64. Action may include discouraging, at least partially, the production of crops such as cassava, which are highly deficient in protein. It may also include the continuing use of imported skim milk powder for supplementary feeding, while national food production is being developed along satisfactory lines. A further point of importance is that education in nutrition is needed to guide consumption in accordance with changes and improvements in food supplies. Such education is indeed essential in implementing satisfactory national food supply programmes.

Growth of population

65. All over the world mortality rates are falling and the expectation of life at birth rising, as a result of the "death control" made possible by modern public health techniques. If the world's population continues to expand at the present momentum, it will be twice as large by the year 2000 as it is today. Demographers justifiably point out that an "explosion" of population unprecedented in history is taking place.

66. Obviously growth in numbers must be taken into account when considering the needs of children and how to fulfil them, whether the needs be for food, health services, education or anything else. As far as food is concerned, it is generally recognized that existing production must be greatly expanded if it is to outstrip, or even keep pace with, the increase in the number of mouths to be fed. The FAO Freedom-from-Hunger Campaign is essentially a response to an urgent situation. In such circumstances, an enormous increase in the production of certain foods is required to improve the nutrition of children on a world-wide scale.

67. Throughout this report, emphasis has been placed on the special "vulnerability" of children in the toddler stage. A sharp decline in infant mortality, due to public health action, such as is in fact taking place at present in many under-developed countries, will clearly increase the numbers of children at risk, and in need of proper feeding, during the next two or three years of life.

68. It is evident that demographic factors must be given full weight in national planning and action to improve child nutrition.

Supplementary feeding

69. Supplementary feeding is a valuable immediate measure for fulfilling the nutritional needs of children. It will be considered briefly here because a comprehensive review is available in the recent report on dry skim milk distribution. While that report was primarily concerned with the use of dry and skim milk in supplementary feeding, it also dealt with the subject in general.

70. Supplementary feeding in the present context means the organized provision, to children and mothers, of foods, meals and vitamin preparations which are additional to ordinary family diets. It is an accepted principle that the supplements provided should make up for deficiencies in family diets.

71. The distribution of supplements is usually direct - that is, mothers and children attending maternal and child welfare centres, or children in schools, are given supplementary foods or meals to be consumed on the spot or, in certain instances, to be taken home for consumption within a few days. Supplements can, however, be provided through systems such as the "Welfare Food Allowances" in the United Kingdom, through which parents can obtain, for infants and young children, milk, orange juice and vitamin A and D preparations free or at a reduced cost, on application to distribution centres. Under this system certain food allowances are also available for women during pregnancy and for seven months after delivery.

72. In the world as a whole, the supplementary feeding of infants and young children is at present practised on only a small scale. Obviously supplying foods rich in protein to young children in areas in which protein malnutrition

is prevalent is a useful preventive measure. In MCH centres in the under-developed regions young children are sometimes given skim milk, which may be consumed in reconstituted form at the centre itself, or given to the mother in powder form to take home, in packets representing a week's supply for a child. Here and there protein-rich foods other than skim milk, such as ground-nut preparations, have been used for the supplementary feeding of young children. It is most desirable to extend the supplementary feeding of this age group, which should have priority over other age groups when supplies of appropriate supplementary foods, such as skim milk, are restricted - a principle accepted by UNICEF.

73. The number of young children and mothers who benefit from supplementary feeding is, however, small, and not likely to increase very substantially in the near future. Maternal and child health centres are the most convenient and indeed almost the only available channel of distribution. In many under-developed countries there are at present only a few of these centres, serving a small fraction of the population, and those that do exist are often preoccupied with other health activities. While some contribution to the prevention of malnutrition can be made by this measure, it does not offer a general solution of the problem.

74. The supplementary feeding of children attending school is practicable on a much wider scale. Experience has shown that nation-wide school feeding programmes - or at least programmes reaching the majority of school children in a given country - can be organized without serious difficulty. There has been a remarkable and rapid extension during recent years of school feeding programmes based on surplus skim milk. The nutritional benefits of school feeding have been described in an earlier section; children of this age group have often unfilled needs for calories and nutrients which a glass of reconstituted skim milk and other kinds of meals and snacks can help to make good. It should be added that the distribution of dried skim milk through schools has proved an excellent way of disposing usefully of a surplus product without interfering with normal trade or damaging local dairy industries.

75. School meals can have considerable educational value. They provide a practical demonstration of the importance of nutrition which influences the children and through them their parents. They can be associated with simple teaching about foods and diet, and help in popularizing foods and dishes unfamiliar to the community. Combined with such educational activities, school feeding can make a useful contribution to national nutrition programmes. It should, of course, be borne in mind that in many countries schools are not yet available for more than a fraction of children of school-going age, and that the children who do not go to school may be in greater need than those who do.

Training and education in nutrition

76. Practical action to fulfil nutritional needs calls for trained personnel. This applies to all forms of action, but rather specially to popular education in nutrition, the importance of which has been stressed in preceding sections. For education in this as in any other field, educators are needed. Some comments on training will therefore be relevant before further discussion of educational measures and techniques.

77. Training in nutrition has rightly preoccupied the attention of FAO, WHO and UNICEF during recent years and a comprehensive report on the subject is now being prepared. There are two main aspects: the training of specialists and the training or instruction of workers in various disciplines so that they can contribute to co-ordinated programmes to raise nutritional levels. Much experience indicates the need for specialists to guide and lead the attack on malnutrition; it also indicates that such leaders, and posts for them to fill, are still lacking in many countries. With respect to the training of leaders, there are various difficulties to be solved. Suitable training institutions are few in number. Those located in the developed countries suffer from the disadvantage that they cannot offer satisfactory field training and demonstrations. The ideal would undoubtedly be a period of training in the scientific aspects of nutrition, including some experience of research or at least of research methods, in a well-equipped institution usually located in a metropolitan

centre. The training in such institutions should, of course, be concerned with the practice of nutrition as well as its scientific bases. This should then be followed by a period in a field station in an area in which malnutrition and deficiency disease are common. As things are, there are various financial, administrative and technical difficulties to be solved in making such arrangements. For example, training fellowships do not normally cover the cost of a period of field training and, more important, adequately staffed and equipped field stations have yet to be established. Only one or two at present exist.

78. The training in nutrition of workers in other disciplines has often been discussed by United Nations expert groups. The categories include medical and public health workers, home economists, agriculture and animal husbandry workers, school teachers, labour and welfare officers, community development workers and administrators. The contribution which can be made through schools and agricultural and home economics extension services is particularly important. Knowledge of nutrition can be imparted both by including the subject to an adequate extent in professional training curricula, and by the arrangement of refresher or in-service training courses. Subordinate officials in various services where work brings them into contact with the people and provides opportunities for influencing dietary practices, should also receive some elementary instruction in the subject.

79. The development of training in nutrition along such lines will be a long and difficult task. But without it, efforts to fulfil nutritional requirements will be delayed and handicapped.

80. Teaching better nutrition to the public is also a subject which has often been discussed by international expert groups and on which much has been written. A recent conference on Malnutrition and Food Habits in Mexico [8/] considered it again in some detail, with rather special reference to the problem of protein malnutrition. The following passages from a summary report of the meeting are worthy of note:

/...

8/ Held in September 1960, and sponsored by the World Federation for Mental Health, the Josiah Macy Jr. Foundation, FAO, WHO and UNICEF.

"There is already enough scientific knowledge to bring about considerable improvement in the nutritional health of children in many parts of the world if it could be widely applied. This knowledge cannot, however, be used where it is most needed unless the people themselves want to use it, know how to do so, and are prepared to accept the particular and related changes necessary to the establishment of a better nutritional pattern. Unfortunately, there appear to be psychological, sociological and cultural factors which create barriers against rapid changes in food habits, and which are less well understood than the impersonal aspects of nutrition and malnutrition.

.....

"The relief of protein deficiency in children depends ultimately on the voluntary co-operation of the individual family. Government policy, agricultural practices, the economics of the family, the way food is distributed within the family, the beliefs about what the father or the mother or the child should eat and many other factors, have to be taken into account before any nutritional improvement can be planned. The education required to make any plan effective must be equally comprehensive in its approach, and include also a detailed knowledge of the social and human elements which decide the actions of the individual parent in a given community."

81. That is to say, educational campaigns and methods must be fully adapted to the needs and circumstances of the communities to be educated. The whole background of the community, including in particular its attitudes towards foods and diet, must be studied and understood, so that the educator can obtain a clear idea of what changes are most feasible or necessary and how teaching can circumvent or eliminate "cultural blocks" and exercise a real influence. This means that the educational material used and the educational methods followed in one country may be quite unsuitable in others. Educational campaigns often fail because such facts are not fully realized.

82. Popular education in nutrition is closely associated with health education and doctors and public health workers have a special responsibility for teaching people better habits of diet. The contribution of maternal and child health services is highly important. But in this particular activity, as has already been pointed out, the participation of other professional groups is essential. Campaigns of education in nutrition call for the co-operation of a number of government services. Voluntary agencies of various kinds can play a useful role because of their close contacts with the community and because they usually include influential and leading personalities. In a number of countries voluntary agencies have already done valuable pioneer work in nutrition and associated fields and their interest should always be aroused and their help sought.

83. Much can be done through education to prevent malnutrition, particularly malnutrition in children; in many circumstances progress in fulfilling nutritional needs is impossible without it. It is a necessary aspect of all national and international programmes to raise nutritional levels. But a very careful and intelligent approach, based on knowledge and sympathetic understanding of community circumstances and attitudes, is essential if a real influence on dietary practices is to be exerted by this means.

Future contribution of the United Nations

84. Nutrition has a fully established place in the programmes of FAO, WHO and UNICEF. In this report special attention has been drawn to certain international activities in this field, but there are many others with a direct or indirect bearing on the fulfilment of the nutritional needs of children which are described in numerous reports issued by the organizations in question. It may be assumed that the assistance provided to Governments in the broad sphere of nutrition, with its multifarious aspects, will continue to increase, within the limits of the resources available. Action to date has touched only the fringe of the problem and nearly all present activities can with advantage be extended in scope and in range of application.

/...

85. A few comments on certain aspects of the international programme will be useful in conclusion. The need for more personnel trained in nutrition is fully recognized, and the FAO/WHO/UNICEF survey of training facilities which is now being undertaken should point the way for further action, indicating areas suitable for co-operation between the United Nations organizations and their member Governments and between the organizations themselves. More surveys of diet and state of nutrition are needed, and here greater use could be made of the facilities available under the UNICEF "expanded aid" programme. But while such surveys provide a sound basis for planning and action, it must be re-emphasized that practical action should not be postponed pending the collection of additional data, however valuable such data may be.

86. Many field projects carried out during recent years have demonstrated feasible methods of preventing malnutrition in children. Some have shown, for example, that certain local foods or combinations of foods can be used to satisfy protein needs; in others, the importance in causation of various social factors has been clearly indicated. But such findings have not yet been more widely applied, and in future more attention should be given by the international organizations and governments to ways and means of doing this. The assistance of the international organizations in nation-wide programmes based on results obtained in demonstration projects or areas will be particularly valuable.

87. It cannot be too often insisted that the improvement of nutrition depends on co-operation between various disciplines and services, particularly agriculture, health and education. In practice, as much experience shows, such co-operation is difficult to ensure. Its promotion is among the valuable contributions which the international organizations can make. Projects which receive international support should be so designed that the various departments and services concerned directly or indirectly with nutrition each play their part.

/...

88. While real progress is being achieved and the rate of progress can be accelerated, spectacular results in a short space of time should not be expected. The problem, as was shown in part I of this report, has deep roots and admits of no facile and immediate solutions. As far as the United Nations organizations are concerned, a useful start has no doubt been made, but their programmes and joint activities in this field should be subject to periodic assessment and reoriented and strengthened in the light of accumulating experience.

- - - - - - - -

UNICEF **MICROFICHE INPUT CONTROL AND INSTRUCTIONS RECORD** No. 314 (1)

(15*) STRIPE COLOUR: White Blue Grey - Yellow - Green - Brown - (Pink) - Red

Date 24 June 77. (2)

(4) (5)

(3) 77.CF.0208 E/ICEF/413 Through E/ICEF/413/Corr.2 (16*)

SURVEY ON NEEDS OF CHILDREN

A (17*) ENGLISH FAO AND WHO UNICEF

(6)(7)(8) "NR" MARCH-MAY/1961 Corr. 1 (E.A) Corr. 2 (E.S) 38p. (9)

Blank 0 (10)

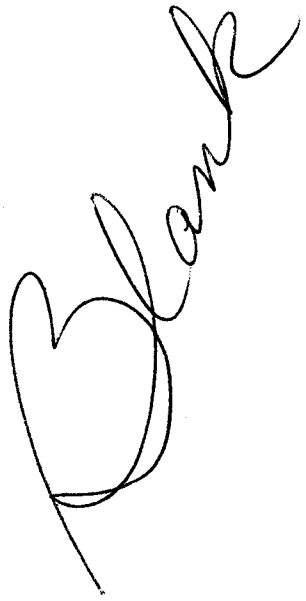
(11)

	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
B (12) (18*)	CLEAR	1/1 77.CF .0208	CLEAR	1	2	3	4	5	6	7	8	9
C	C-1 10	C-2 11	C-3 12	C-4 13	C-5 14	C-6 15	C-7 16	C-8 17	C-9 18	C-10 19	C-11 20	C-12 21
D	D-1 22	D-2 23	D-3 24	D-4 25	D-5 26	D-6 27	D-7 28	D-8 29	D-9 30	D-10 31	D-11 32	D-12 33
E	E-1 34	E-2 35	E-3 36	E-4 Corr. 1 37	E-5 Corr 2 38	E-6 △ 39	E-7 40	E-8 41	E-9 42	E-10 43	E-11 44	E-12 45
F	F-1 46	F-2 47	F-3 48	F-4 49	F-5 50	F-6 51	F-7 52	F-8 53	F-9 54	F-10 55	F-11 56	F-12 57
	1	2	3	4	5	6	7	8	9	10	11	12

(13) Code "NR", appearing in any location of Row A MUST NOT be reproduced on microfiche

(19*) ENVELOPE COLOUR: (White) - Blue - Yellow - Pink - Green - Grey

TRAILERS YES( ) (NO) (14)


Blank