

is at the United Nations Headquarters in New York. Sixty-one governments contributed in 1954 to the Fund and its budget for the past 2 years has been about £5½ million a year.

The Executive Boards of UNICEF and WHO established in 1948 a joint policy committee to direct their joint programmes—an arrangement which has proved very effective.

Other speakers report on the technical progress and practical results achieved in our nutrition work. These programmes give evidence also of something less tangible: new ways of working together. A programme that an international agency and a government develop together provides a searching test for the knowledge that the agency brings from other countries. Everyone learns from these tests. This exchange of knowledge is not only wider than ever before, it is also striking deeper. It is remarkable how, in the past few years, governments have come to accept and seek impartial advice on matters that go to the roots of the social life of the country, such as what people eat, or how much land a man may own, or whether a 12-year-old child should be at school or earning his living. This is what makes us believe that our work is really leading to more understanding among nations.

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FAO and nutrition

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The Nutrition Division

The broad aims of FAO are stated in the preamble to its Constitution, and the first of these is 'to raise levels of nutrition'. Nutritional concepts, as I have shown elsewhere (Aykroyd, 1953), played an important part in its creation. It is therefore appropriate that FAO should have a Nutrition Division as one of its five technical divisions, the others being Agriculture, Fisheries, Forestry and Economics.

The Nutrition Division is the smallest of the divisions, employing some nineteen professional staff members, some thirteen of whom are stationed in headquarters in Rome and the remainder in regional offices in Washington, Santiago, Cairo and Bangkok. The staff of nineteen includes fourteen different nationalities. Two sections forming part of the Division may be mentioned, namely the Food Consumption and Management Section and the Home Economics Section. The Division has responsibility for home economics and certain aspects of food technology as well as for nutrition itself. Apart from the regular staff, specialists are employed in field assign-

ments under the Expanded Technical Assistance Program (ETAP) and in the middle of 1955 we shall have some twenty-five ETAP specialists working in some seventeen countries, of whom nine, ten and six will be concerned with nutrition, home economics and food technology respectively. These workers form only a small proportion of the total number employed by FAO under ETAP; between 60 and 70% of our expenditure under ETAP very properly falls under the general head of agriculture.

When FAO was established 10 years ago, no one really knew how an international food and agriculture organization should function. There were no precedents to follow, except that provided by the old International Institute of Agriculture in Rome, which was largely occupied in collecting, analysing and publishing agricultural statistics. The Health and Economics Sections of the League of Nations were concerned in some degree with nutrition in relation to health, agriculture and economic policy, and the League's work in this field supplied some useful guiding lines, at least as far as the Nutrition Division was concerned. But by and large the nature and scope of FAO's activities were undefined and there was some uncertainty of purpose during the earlier years. The initiation of ETAP in 1950, which has meant in effect the doubling of the funds at FAO's disposal, greatly influenced our operating methods and introduced a new series of problems.

The Nutrition Division was helped, in working out its programme, by the Standing Advisory Committee on Nutrition which met three times between 1946 and 1950 under the chairmanship of Lord Horder; the other FAO Divisions were advised by similar committees. In 1951 this Standing Advisory Committee was replaced by the Joint FAO/WHO Expert Committee on Nutrition, which has held four sessions, the last in November 1954. The Joint Committee consists of ten members, all well-known nutrition workers, five invited by each Organization; membership differs to some extent from session to session, but continuity has been assured by the presence of some members who have attended earlier meetings. The Committee's terms of reference, agreed to by the governing bodies of WHO and FAO, are as follows:

- (1) To advise the Directors-General of FAO and WHO on the problems of nutrition which might receive the attention of the two Organizations and to assist in co-ordinating their respective programmes in this field, and
- (2) to advise either or both Directors-General of any technical problems concerned with nutrition which they may submit to it.

Spheres of responsibility were defined thus by the Joint Committee at its second session (FAO/WHO: Joint Expert Committee on Nutrition, 1951):

'In FAO the emphasis is on nutrition in relation to the production, distribution, and consumption of food; in WHO it is on nutrition in relation to the maintenance of health and the prevention of disease'.

The Report of the Fourth Session of the Joint Committee (FAO/WHO: Joint Expert Committee on Nutrition, 1955) gives a fairly full account of the work of both FAO and WHO in the field of nutrition and outlines future developments. Anyone wishing to have more detailed information than the papers presented at this symposium provide will find it a useful document.

Aims and methods of the Nutrition Division

After this preamble, I shall turn to the Nutrition Division's work. One of its major responsibilities is to try and ensure that nutritional principles underlie the other activities of FAO, all of which have, or should have, one primary objective, namely, that people get enough of the right sort of food to eat. We in the Nutrition Division try to keep both our professional colleagues in FAO itself and our member governments aware of this concept and its implications.

In attempting to improve nutrition, one must know something about existing consumption levels, because that is the starting point. The establishment of what are called national 'Food Balance Sheets' has been one of FAO's activities. These show the supplies of the different foods and food groups available *per caput* at the retail level and their calorie value and nutrient content. With the Economics Division, the Nutrition Division has worked out suitable methods of calculating the latter. Here the preparation of *Food Composition Tables for International Use* has helped. Two sets of Tables have been issued; the first (Chatfield, 1949) showed the calorie values and the protein, fat and carbohydrate content of most common foods, and the second (Chatfield, 1954) covered in addition important vitamins and minerals.

Food-balance sheets have in general a high margin of error. In many countries food-production statistics and population estimates are incomplete and untrustworthy. Nevertheless FAO was able, in the *Second World Food Survey* (FAO, 1952), to present *per caput* food-supply figures, no doubt varying widely in their accuracy, for sixty-four countries. These show, of course, only average *per caput* consumption and may conceal wide variations in consumption in different economic, regional and other groups within a country. Surveys are needed to collect information on the consumption of such groups and so obtain a clearer picture of the food and nutritional situations. The encouragement of dietary surveys by satisfactory methods has been one of the Division's aims. A publication on methodology has been issued (Norris, 1949) and direct help in making surveys has been supplied to a number of countries through the Regular Program and ETAP. For example, a member of the Division's staff organized a series of dietary surveys in Central America in association with local colleagues, and the information so obtained is being used by the Institute of Nutrition for Central America and Panama (INCAP) located in Guatemala City (Reh, Castellanos & Bravo de Rueda, 1954; Reh & Fajardo, 1955; Reh, Fernández & Méndez, 1955). But on the whole our efforts to persuade governments to make dietary surveys have not been too successful. In few countries has there been anything like such admirable and comprehensive food-consumption studies as those made in the United Kingdom by the Ministry of Food: National Food Survey Committee (1952, 1953).

Here I would emphasize the need for studying the various social and psychological, as well as the economic and agricultural factors, which underlie dietary habits. If education in nutrition, to which I shall refer later, is to be effective, it must take into account the various reasons why people eat what they do in the way they do.

I used the phrase 'enough of the right sort of food to eat'. How far can it be given

a concrete meaning? Quantitative or qualitative calorie requirements have been studied since Lavoisier's time and there are numerous schedules in existence indicating average calorie requirements according to age and sex, degree of activity, and so on. Requirements for protein and other nutrients have also been extensively investigated. Bodies such as the National Research Council in the USA have defined what are described as 'recommended allowances' for a number of vitamins and minerals as well as for calories and protein. Nutrition workers are familiar with the difficulties of assessing either quantitative or qualitative food requirements and with the defects of existing schedules. The problem is one, however, which FAO cannot avoid, and in 1949 we convened an expert committee to consider calorie requirements. Its recommendations (FAO: Committee on Calorie Requirements, 1950) have been widely used not only by FAO itself but also by our member countries. Our Joint FAO/WHO Expert Committee on Nutrition, in November 1954, reviewed the Report of the Calories Committee and commented that 'the practical experience gained by FAO has indicated that on the whole the principles on which the report is based are sound and workable' (FAO/WHO: Joint Expert Committee on Nutrition, 1955). It drew attention, however, to certain shortcomings in the report and recommended that 'as soon as is feasible a further committee on calorie requirements should be convened to review accumulated facts and experience and to prepare a revised report'. This committee meeting will be held early in 1956 and preparations for it are now being made.

The more difficult problem of protein requirements is also being studied. A conference sponsored jointly by FAO, WHO and the Josiah Macy Jr. Foundation in Princeton in June 1955 had as its theme 'protein requirements and their fulfilment in practice', and this conference will be followed by a meeting of a small expert group later this year which will have the task of preparing a considered statement on protein requirements. Clearer knowledge of protein requirements is needed in FAO's work on food production, a point which may be illustrated as follows. Young children during and after the period of weaning are the age group that suffers most severely from protein malnutrition. Can their protein needs be supplied as effectively by suitable mixtures of plant proteins as by the proteins of milk? This question is often put in simpler form: 'Is milk a necessary food for children?' A clear answer, in the negative or otherwise, would have far-reaching repercussions on agriculture and animal husbandry. It would also have a bearing on another practical problem with which FAO, for its sins, has been increasingly concerned, namely, the satisfactory disposal of the enormous stocks of skim-milk powder which are an embarrassment to certain of our member governments.

My WHO colleague, Dr Burgess (1956), outlines joint FAO/WHO work on protein malnutrition. Surveys of the manifestations and incidence of protein malnutrition have been made in various regions, and a number of joint technical conferences and committees have studied the problem in its various aspects (Brock & Autret, 1952; FAO/WHO: Joint Expert Committee on Nutrition, 1953; Autret & Behar, 1954; FAO/WHO/Josiah Macy Jr. Foundation, 1955). This most serious and widespread of all deficiency diseases can be prevented only by making more foods

rich in protein available, and by teaching mothers to make use of suitable foods in proper combinations in feeding their children. FAO is specially concerned with the first of these measures; much of its programme has 'more milk, more fish and more meat' as its aim. Reference may also be made to the development of certain processed foods, such as fish flour and soya-bean and groundnut preparations, which can be valuable sources of protein, particularly when milk supplies are insufficient. Projects for producing and testing foods of this nature figure in our Regular and ETAP programmes, and in this field we work in co-operation with UNICEF.

Something can be done to meet the protein requirements of young children through the greater use of processed foods, including skim-milk powder in this category. But such foods could not conceivably reach the majority of the children in need, and the solution of the problem lies deeper. Poverty, it is often said, is the main cause of under- and mal-nutrition, and anyone who has worked in countries such as India will recognize the truth of this statement. We can agree that a rise in living standards is the first necessity in many parts of the world. But at the same time much could be accomplished without long delay by the better utilization of existing food resources. Much protein malnutrition, for example, could be prevented if mothers gave their children suitable combinations of common foods which are already part of the family diet or could be obtained without difficulty. Dr Cicely Williams and others have insisted on this point, and Dr Williams (Williams, 1954) has stressed the part played in some African territories by superstition and taboo in restricting the diet of mothers and children and limiting their consumption of valuable foods which are cheap and available. Quite small changes in feeding practices will often carry the child through the dangerous postweaning period in reasonably good health. Mothers can be taught to make these changes, and here much can be done through maternity- and child-welfare services, which are in WHO's sphere rather than ours. But FAO is deeply interested in education in nutrition generally, and I shall now refer to this aspect of our work.

Training nutrition workers and teaching people in their homes

The proverb says: 'You can take a horse to the water but you can't make him drink'. Those who deal with food-production policy, or who seek to increase supplies of this or that food commodity, are sometimes insufficiently aware of the human equivalent of the horse's attitude. Foods will not be consumed unless there is a demand and liking for them, and the education and persuasion of the consumer are an essential part of the whole effort to increase food supplies and improve national diets. Food customs are often deeply ingrained. The most desirable changes in consumption may run counter to rigid habits and prejudices.

An FAO publication *Teaching Better Nutrition—A Study of Approaches and Techniques* (Ritchie, 1950) has been widely circulated and used. Our regional officers have helped governments to develop educational programmes, and a number of ETAP projects have been concerned with this subject. It has become clear that methods which may produce results in one country are often ineffective in others;

educational techniques must in fact be adapted to the local environment. The realization of this need has been one of the reasons for organizing a seminar on health education and nutrition education to take place in the Philippines in October 1955. At this seminar, sponsored jointly by WHO and FAO, attention will be given to ways and means of getting the ideas which the educator wishes to disseminate understood, accepted and used. It will be attended by a group of workers from countries in south and east Asia, including public-health workers, nutritionists, social welfare workers, and agricultural-extension workers.

In many countries there is a lack of people with training in nutrition, who are needed for a variety of purposes: to make dietary surveys, to study the incidence of deficiency diseases, to bring problems of nutrition to the attention of the government, to help in organizing supplementary feeding, and to develop education in nutrition. FAO and WHO have both done something to supply the necessary training. Through ETAP, specialists are made available to a country for a given period, but equally important are the associated training fellowships which enable selected local workers to spend up to a year or more in some suitable centre, usually, but by no means always, in western Europe or northern America. It is intended that fellowship holders, after completing their training, should continue the work initiated by the ETAP expert, a sensible aim not always achieved in practice. The expert has also the responsibility of training people on the spot. The benefiting government is expected to provide local 'counterparts' who work with the expert throughout the mission and learn by day-to-day contact. Here again, this does not always happen according to the book of rules.

Among joint FAO/WHO activities has been the organization of regional training courses in nutrition. One such course was given in Marseilles in 1952 for workers in French-speaking territories in Africa, being attended by students from French, Belgian, Italian and Portuguese territories, who included medical doctors, biochemists, agronomists and veterinarians. Most of these have subsequently done useful work in the field of nutrition; in particular, they have helped in creating what may be called 'nutrition services' in territories where nothing of the sort previously existed. At the request of the French Government, a second similar course is being organized in Marseilles during the last 3 months of 1955.

Home economics and education in nutrition are inter-linked, though the former covers a wider field, since it aims at improving conditions in the home generally. The home economist can encourage domestic food conservation and teach housewives to prepare and cook better family meals. Most of our home-economics work has been concerned with developing teaching institutions and organising training courses dealing with the aspects of home and family life of concern to the home economist. I should have liked, if space had permitted, to outline the work done in one part of the world badly in need of home economics, namely the Caribbean area. We have at the moment a full-time home economist in this area, and we are assisting in a home-economics course in Jamaica attended by students from British West Indian territories. Miss Ross gives an account of her work in Egypt which will illustrate our home-economics programme in general and also show how a home-

economics project not linked with a teaching institution can be developed (Ross, 1956).

Child-nutrition and school-feeding programmes

The supplementary feeding of schoolchildren is one of the main themes of UNICEF's contribution to this symposium (Secretariat of the United Nations Children's Fund (UNICEF), 1956). During recent years the world has been blessed (some harassed officials in Washington D.C. would say cursed) with large surplus supplies of that cheap and valuable food, skim-milk powder. On the other hand, there are many malnourished children in the underdeveloped countries who would benefit from a daily ration of skim milk. To some people this seems a simple situation. 'Here we have', they say, 'stocks of skim-milk powder for which there is no immediate use, and there we have children in need of milk. Let us, therefore, transfer the stocks to countries which are short of milk and distribute them to these children'. Unfortunately it is not as simple as that. In many countries there are no well-organized supplementary feeding programmes, in schools and elsewhere, that can be used as distribution channels. Such programmes require complicated administrative arrangements, equipment and trained staff. Again, the arrival in a country of stocks of imported powdered milk may have a bad effect on the country's own dairy industry, because in practice some of the stocks are likely to reach the open market, lower the prices of milk considerably, and so weaken the farmer's incentive towards increased milk production. During a recent visit to Spain I had the opportunity of studying the arrangements made in that country for handling surplus milk products and was impressed by what had been done to evolve satisfactory methods of distribution, particularly through schools. But there, as in other countries, it is necessary to think of what will happen in the future, when the surplus foods are no longer available, and lay plans accordingly. Otherwise the use of the surplus foods may have no permanent good results.

FAO is continually wrestling with the perplexing question of how to use surpluses sensibly, through such bodies as our Committee on Commodity Problems and its Subcommittee on Surplus Disposal which meets in Washington D.C. and has another subgroup concerned with surplus milk products. With UNICEF and WHO, we have made surveys of the 'milk' situation in various countries, which take into account the development of local supplies, milk conservation, supplementary feeding and the rational use of imported processed milk. The Nutrition Division takes part in these surveys and in the FAO work on food surpluses generally, our concern being to ensure that proper attention is given to the consumption and nutritional aspects of the problem.

Through UNICEF much of the surplus skim milk produced during recent years has benefited malnourished children throughout the world. FAO has from the start collaborated with UNICEF in this praiseworthy undertaking, with responsibility for its nutritional aspects. But our interest in school feeding has extended beyond the utilization of surplus skim milk. We have, in fact, insisted that the provision of skim milk is a temporary expedient and that the long-term aim should be

to replace it by locally produced foods, including fresh milk where the creation of a dairy industry is feasible. We have also emphasized the need for associating education in nutrition with supplementary feeding. The subject in its various aspects was reviewed in a FAO publication. *School Feeding—Its Contribution to Child Nutrition* (Scott, 1953) which has recently been translated verbatim into Japanese. Two examples illustrating our activities in this field may be given. In 1953 FAO organized, with UNICEF and WHO, a School Feeding Seminar for countries in Central America (with Panama included). It took place in Costa Rica and was attended by workers in charge of school-feeding schemes in the different countries. Practical problems were discussed and attention was given to the use of local foods and to education in nutrition, the object of the seminar being the expansion of school feeding on a satisfactory basis (FAO, 1954a). In 1954 the Government of Libya asked UNICEF to support school feeding in that country, for good reasons. The Government is investing heavily in primary and secondary education, and many of the children for whom the educational services are being improved and expanded are so badly fed that they cannot learn. A FAO nutrition officer and a WHO child-health specialist studied the situation and drew up a plan of action. UNICEF agreed to provide skim milk and other foods, with some necessary equipment. FAO has appointed a nutrition worker to help the Government to organize the programme; I wish I could give here some extracts from his reports, because these would show vividly how complicated such an operation can be in practice. We are also providing the services of a food technologist who will advise about the processing of local foods, giving special attention to foods, such as dates, which could be introduced into school meals.

Some examples of FAO nutrition work

Space may allow reference to a few other activities. In association with WHO, we convene periodic regional nutrition conferences or committees, attended by nutrition workers from the region in question. Three sessions of a regional nutrition committee in south and east Asia have been held (FAO: Nutrition Committee, 1948; FAO/WHO: Nutrition Committee for South and East Asia, 1950, 1953). The fourth meeting in this series will take place in Japan next year. Similarly, three regional Latin American nutrition conferences have been held (FAO, 1950a, 1950b; FAO/WHO, 1954), the last in Caracas, Venezuela, in 1953. These meetings bring together workers from different countries or territories who can discuss problems of importance and pool their experience. They do something to develop nutrition work along sound lines and to encourage governments to give more support to institutions and workers concerned with nutrition. Regional home-economics meetings, which would have similar effects in that field, have figured less prominently in our programme, but we hope to fill this gap within the next few years.

FAO is naturally interested in rice, the main food of more than half the world's population. It is all-important to increase rice production, and at the same time the use of rice as a staple raises a number of nutritional problems which cannot be

overlooked. These have been analysed in a publication entitled *Rice and Rice Diets. A Nutritional Survey* (FAO, 1948, 1954b), which has as companion a parallel work on *Maize and Maize Diets* (FAO, 1953). The Nutrition Committee for South and East Asia has given much attention to measures for improving the nutritive value of the rice-eater's diet, one of which may be rice enrichment. At its second session in 1950 it was informed of the rice-enrichment experiments then proceeding in the Philippines and recommended that 'the results of the experiments in Bataan should be surveyed by an international team of experts which would report on enrichment in all its aspects, including its administrative and economic aspects'. This survey was made in 1952 with the collaboration of the Government of the Philippines, and the results have been published in a report entitled *Rice Enrichment in the Philippines* (Aalsmeer, Mitra, Simpson & Obando, 1954) sponsored by both FAO and WHO. The survey team consisted of four workers from Columbia, India, Indonesia and Malaya respectively, with a member of the Nutrition Division acting as technical secretary. Rice enrichment is a controversial subject and some of the team's findings have been sharply criticized. Their honest and realistic efforts to appraise the value of rice enrichment as a practical measure will, however, be useful to governments of rice-eating countries, which naturally want to know something of the advantages and disadvantages of rice enrichment before deciding whether or not to introduce it. To make an assessment of this nature is, in my view, an appropriate task for an international organization.

There are other FAO activities and interests in the field of nutrition, past, present and future, which cannot be covered in this paper. A catalogue of projects would be intolerably tedious; such things have to be prepared, all too frequently, for budgetary and administrative purposes, and are available to anyone who wants them. I have tried to indicate our aims and to illustrate our work with examples. Taken together, the papers presented at this symposium should give some picture of what is being done, by various United Nations organizations, to apply the science of nutrition to human welfare.

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WHO and nutrition

By R. C. BURGESS, *Chief, Nutrition Section, World Health Organization, Palais des Nations, Geneva, Switzerland*

The Nutrition Section of WHO is a small unit—part of the Division of Organization of Public Health Services. Until recently it consisted of a Section Chief only, but has now been strengthened by the appointment of a second health officer with experience in nutritional problems. It has, however, the co-operation of the other sections in the Division—particularly those dealing with maternal and child health and health education of the public.

WHO is concerned with all aspects of health, and malnutrition is probably one of the most important causes of ill health throughout the world to-day. In many countries a combination of disease and malnutrition exists and is responsible for high mortality and morbidity rates in the younger age groups. More effective control of the intercurrent infections and infestations has now made it possible to see the full significance of malnutrition as a public-health problem.

No attempt is made in this paper to describe all our activities in the field of nutrition, but a brief account of our approach to some of the more important problems will perhaps show the contribution an international agency can make towards reducing nutritional disease. First I will describe our work on endemic goitre in which, as we all know, our Chairman to-day did such important original research.