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**JOINT FAO/WHO**  
**EXPERT COMMITTEE ON**  
**NUTRITION**

**Report on the First Session**

*Geneva, 24–28 October 1949*

|   | Page |
|---|------|
| 1. Terms of reference . . . . .   | 3    |
| 2. Preamble . . . . .   | 4    |
| 3. Nutrition activities 1948/49 . . . . .   | 5    |
| 4. Implementation of WHO nutrition programme for 1950 . . . . .                         | 5    |
| 5. FAO nutrition programme for 1950 . . . . .   | 8    |
| 6. Technical assistance for economic development — FAO<br>nutrition programme . . . . . | 8    |
| 7. WHO nutrition programme for 1951 . . . . .   | 9    |
| 8. Integration of FAO/WHO programmes . . . . .  | 10   |
| 9. Endemic goitre . . . . .   | 13   |
| 10. Pellagra . . . . .  | 14   |
| 11. "Kwashiorkor" . . . . .   | 15   |
| 12. Nutrition of children after weaning period . . . . .                                | 16   |
| 13. Analytical methods for determination of vitamins in food-<br>stuffs . . . . .       | 16   |
| 14. Manufacture of synthetic vitamins in underdeveloped coun-<br>tries . . . . .        | 18   |
| 15. Physiological requirements of calories and nutrients . . . . .                      | 20   |
| 16. Assessment of nutritional status . . . . .  | 20   |
| 17. Establishment of joint FAO/WHO national nutrition com-<br>mittees . . . . .         | 21   |
| 18. Place of non-governmental organizations in the work of<br>FAO and WHO . . . . .     | 22   |
| 19. Nutrition problems in Africa . . . . .  | 23   |
| 20. Collaboration with other international agencies . . . . .                           | 23   |
| 21. Food regulations . . . . .  | 24   |

**WORLD HEALTH ORGANIZATION**

PALAIS DES NATIONS

GENEVA

JUNE 1950

## JOINT FAO/WHO EXPERT COMMITTEE ON NUTRITION

### First Session

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The report on the first session of this committee was originally issued in mimeographed form as document WHO/NUT/2, 1 November 1949.

## JOINT FAO/WHO EXPERT COMMITTEE ON NUTRITION

### Report on the First Session<sup>1</sup>

A Joint FAO/WHO Expert Committee on Nutrition met in Geneva from 24 to 28 October 1949. The session was opened by Dr Brock Chisholm, Director-General of the World Health Organization. Lord Horder was unanimously elected Chairman. The agenda, submitted by the Directors-General of the Food and Agriculture Organization and the World Health Organization, was approved and adopted.

#### 1. Terms of Reference

The committee noted that its terms of reference were as follows :

(a) as adopted by the First World Health Assembly :

“ to act as an advisory body to the World Health Organization and FAO ” ;<sup>2</sup>

and

(b) as adopted by the Second Session of the Conference of FAO :

“ that FAO and WHO should work in close collaboration in those fields of nutrition with which they are mutually concerned, and endorses the recommendation of the Standing Advisory Committee on Nutrition that a joint nutrition committee be set up to secure such collaboration ” .<sup>3</sup>

<sup>1</sup> The Executive Board, at its fifth session, adopted the following resolution :

The Executive Board

(1) NOTES the report of the Joint FAO/WHO Expert Committee on Nutrition on its session held in Geneva from 24-28 October 1949 ;

(2) NOTES with satisfaction the establishment of full liaison between FAO and WHO in the field of nutrition, as demonstrated by the meeting of this committee ;

(3) AUTHORIZES the publication of the report ;

Taking into account the recommendations of the expert committee in considering relevant items on its agenda,

(4) TRANSMITS the report to the Third World Health Assembly ;

(5) POINTS OUT that recommendations of expert committees which concern WHO policy and operations remain recommendations unless and until they are implemented by the Executive Board or the World Health Assembly in adopting and putting into action the annual programme of WHO ; and

(6) REQUESTS the Director-General, in preparing WHO programmes in nutrition, to follow the committee's recommendations in so far as they apply.

<sup>2</sup> *Off. Rec. World Hlth Org.* 13, 308

<sup>3</sup> Food and Agriculture Organization (1946) *Report of the second session of the conference*, Washington, p. 20

## 2. Preamble

The First Session of the Conference of FAO, held in Quebec from 16 October to 1 November 1945, made the following declaration :

The primary objective of the nations united in the Food and Agriculture Organization is to raise levels of nutrition throughout the world, to ensure not only that all peoples are freed from the danger of starvation and famine but that they obtain the kind of diet essential for health. It is the responsibility of Member nations to take the steps necessary for attaining this objective, and the responsibility of FAO to assist them by all possible means.<sup>4</sup>

In 1946, a Nutrition Division was created in FAO to pursue, in association with the other divisions in the Organization, the aims referred to above. In the same year a Standing Advisory Committee on Nutrition was convened to advise the Director-General of FAO on the Organization's nutritional activities. At its first meeting the broad lines of FAO's nutrition programme were laid down.<sup>5</sup> The Standing Advisory Committee on Nutrition met also in 1947 and 1948, when it reviewed the progress achieved and recommended further projects and activities.

Among the important functions of the Nutrition Division is to ensure that full account is taken of nutrition in the work of FAO as a whole, and in particular to keep before member nations and the Organization itself the principle that programmes to increase food supplies should be based on nutritional requirements. The division provides advisory services both at headquarters and in the regions, prepares reports designed as working tools to help governments in attacking problems of nutrition, collaborates with other international organizations concerned with nutrition, organizes technical conferences at headquarters and in the regions, and, through workers in the various regions, provides direct advice and assistance to governments.

Nutrition is included in the programme of WHO because of its fundamental importance to health. 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.

In the work of the Nutrition Section of WHO special emphasis is laid, in accordance with the general policy of the Organization, on direct technical assistance to governments in the field. The section is particularly concerned with disease due to nutritional factors and with practical measures of prevention. It provides governments, on request, with help in studying and attacking problems of nutrition, aims at the development

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<sup>4</sup> Food and Agriculture Organization (1946) *Report of the first session of the conference*, Washington, p. 5

<sup>5</sup> Food and Agriculture Organization Standing Advisory Committee on Nutrition (1946) *First report to the Director-General* (Con 2/Nu 1)

of efficient nutrition services in health departments, and initiates investigations into nutrition problems of worldwide importance. It works in close association with other sections of WHO, in particular with sections, such as that on maternal and child health, whose activities impinge closely on the field of nutrition.

The Standing Advisory Committee on Nutrition of FAO, at its third meeting, held in Washington in 1948, pointed out that :

... Nutrition is a single whole which cannot be broken into a series of separate and discrete categories. Almost every practical program of nutrition has aspects which fall within the fields of interest of both FAO and WHO. Collaboration must therefore be flexible and no sharp dividing lines of responsibility can be drawn. Close working relationships between the nutrition workers in both secretariats are of essential importance.<sup>6</sup>

The Joint FAO/WHO Expert Committee on Nutrition, in approaching its task, accepted these principles and has designed its report and recommendations accordingly.

### 3. Nutrition Activities 1948/49

The committee noted reports on the nutrition activities of the two Organizations during 1948 and 1949, as given in verbal statements by the Director of the Nutrition Division of FAO and the Chief of the Nutrition Section of WHO.

### 4. Implementation of WHO Nutrition Programme for 1950<sup>7</sup>

This section deals with a number of items included in the WHO programme for 1950. In the implementation of some of these FAO and other specialized agencies will be directly concerned, so that the section is in general relevant to the work of FAO as well as to that of WHO. Methods of integrating the activities of WHO and FAO in this and other fields are considered in some detail in section 8.

#### 4.1 *Consultant services to member countries*

The committee noted that in 1950 WHO proposes to provide a number of consultants for work in member countries. The programme outlined is extensive, covering nutrition surveys, and the development and implementation of nutrition programmes, as well as technical services to laboratories. The committee doubts whether this programme can be fulfilled by the small number of consultants provided but, nevertheless, desires to draw attention to another service for which it considers WHO should provide consultants.

<sup>6</sup> Food and Agriculture Organization Standing Advisory Committee on Nutrition (1948) *Third report to the Director-General* (N/N3/10), p. 5

<sup>7</sup> *Off. Rec. World Hlth Org.* 18, 108

In many tropical areas deficiency diseases of unknown etiology are responsible for a high percentage of the deaths of infants and children. The committee believes that WHO should provide one or more consultants with experience in these diseases to visit the countries where they occur and to study conditions in consultation with the local authorities.

#### 4.2 *Feeding programmes*

The committee noted the promising results attained in infant and child feeding programmes from close collaboration between FAO and the United Nations International Children's Emergency Fund (UNICEF), in some instances in underdeveloped countries. Feeding programmes, to be most effective, should be integrated with a nutrition education programme extended to include administrators, public-health officials, medical practitioners, nurses, and schoolteachers.

The committee adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS that FAO and WHO should continue to collaborate with UNICEF in feeding programmes, providing whenever possible nutritionists to assist in education projects associated with the actual feeding operations.

#### 4.3 *Education*

The committee considered programmes designed to raise the level of nutrition education in member countries, particularly in underdeveloped countries, to be one of the most important aspects of the work of WHO. These programmes are of two principal types : training courses conducted in member countries, and fellowships providing training outside the Fellow's country.

4.3.1 *Training courses.* These can provide both elementary and advanced training in nutrition for workers of the country concerned, and for those from adjoining or more distant countries with similar problems of food production and distribution.

The committee adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS

(1) that WHO encourage member governments to arrange nutrition courses in institutions qualified to conduct them, and to extend invitations to adjoining countries to send students to attend these courses ; and

(2) that WHO give assistance to these institutions, to enable them to conduct courses of a desirable standard, by providing visiting lecturers, teaching materials, special literature, etc.

4.3.2 *Fellowships*. The committee considered fellowships to be an important part of general education work.

Fellowships fall into three categories :

(a) Those granted for extended study, up to a year or more, in a recognized institute, available to workers who will later participate in nutrition activities in their own countries. In this regard, fellowships are needed for training in nutrition, with emphasis on one or more of the following special features :

(i) the medical or public-health viewpoint, for general teaching and work with public-health officials and public-health nurses ;

(ii) the non-medical, biochemical or physiological viewpoint, for general teaching or public-health administration ;

(iii) the non-medical, biochemical, and economic viewpoint, for nutrition administration and food management associated with agricultural production, food distribution and consumption problems ;

(iv) the home economics viewpoint, with emphasis on the economic and social sciences as well as on the biological, for problems of food selection, care and use in households and institutions ;

(v) the anthropological viewpoint, for adaptation of modern principles of nutrition to problems in underdeveloped countries. Workers receiving this type of training should be recruited from amongst the local populations of underdeveloped areas.

(b) Those granted to officials and others whose work is principally policy making and supervision. These should enable the holder to proceed on an extended tour of one or more countries, studying the implementation of nutrition programmes. It would be an advantage if some part of the tours of inspection could be made in countries with a cultural development similar to that of the country of the Fellow.

(c) Those granted to senior workers in universities and research institutions. These should enable the holder to proceed on an extended tour of one or more countries, studying the latest methods of teaching and research in nutrition.

In awarding fellowships, FAO and WHO should bear in mind the need for workers with the training and experience required to enable countries to participate in some of the studies and programmes recommended in sections 9, 11, and 16 of this report. Where such workers are not available, fellowships could be granted to suitable candidates to enable them to obtain the requisite specialized training.

#### 4.4 *Collection and distribution of information*

The committee adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

Noting that amongst the functions of the Nutrition Section of WHO are the "collection, evaluation and distribution of information on recent advances in the science of nutrition",

RECOMMENDS that this service should be extended to include the collection and dissemination of information from various countries on the incidence of deficiency diseases and diseases which are associated with food or with dietary faults, such as pellagra, fluorosis, and lathyrism.

#### 5. FAO Nutrition Programme for 1950 <sup>8</sup>

This programme is in conformity with the recommendations made by the Standing Advisory Committee on Nutrition at its third meeting, held in Washington, November-December 1948. Essentially it is a further development of the nutrition programme which FAO has followed from the outset and which was first outlined by the Standing Advisory Committee at its first meeting in Copenhagen in August 1946. The 1950 programme has been closely adjusted to the funds available to the Nutrition Division in that year. The FAO 1950 budget and programme have still to receive the approval of the Fifth Session of the Conference of FAO, to be held in November 1949.

The committee expressed its general approval of the programme.

#### 6. Technical Assistance for Economic Development — FAO Nutrition Programme

The development of this additional programme depends on the availability of funds through the "Plan for an Expanded Co-operative Programme through the United Nations and the Specialized Agencies", familiarly known as the "Technical Assistance Programme".<sup>9</sup> It would represent a considerable extension of the 1949 programme and that at present planned for 1950 in the ordinary FAO budget. It includes provision for nutrition advisory services on a bigger scale than has hitherto been possible. The workers employed for this purpose will normally be

<sup>8</sup> Food and Agriculture Organization (1949) *Draft program of work for 1950* (C49/3), Washington

<sup>9</sup> United Nations (1949) *Technical assistance for economic development : plan for an expanded co-operative programme through the United Nations and the specialized agencies* (E/1327/Add. 1), Lake Success, N.Y.



nutritionists of the non-medical type. Projects are included for the training of nutrition workers, the organization of nutrition courses in various parts of the world, and the support of nutrition research (with emphasis on the provision of equipment) on a limited scale.

Special emphasis has been laid on food technology in the Technical Assistance Programme. The FAO Standing Advisory Committee on Nutrition has, at all its meetings, stressed the need for developing FAO activities in this field, but so far only a limited amount of work has been possible because of lack of funds and personnel. The project provides for the creation in FAO of a special section concerned with food technology in relation to nutrition. The new section will be part of the Nutrition Division.

The Committee adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS that the Technical Assistance Programme should be discussed at any regional nutrition conference or committee that may be convened by FAO. By this and other means the suggestions and advice of nutrition workers in the regions would be obtained regarding the ways in which FAO can render the most effective assistance under the Technical Assistance Programme.

#### 7. WHO Nutrition Programme for 1951 <sup>10</sup>

The committee considered the draft of the 1951 nutrition programme, as submitted by the Director-General of WHO, and endorsed it with the following comments.

Provision has been made in the 1951 budget for the continuation or expansion of studies, to be commenced in 1950, on a number of nutrition problems including the assessment of nutritional status and requirements for calories and nutrients. The committee emphasized the importance of research and of further investigation into these and related problems, drew attention particularly to "kwashiorkor" (see section 11), and pointed out that if this work is begun in 1950 provision should be made for its continuance into 1951.

The following additional subjects are examples of work for which funds should also be provided :

- (a) Nutritional disorders of the eye (in parts of Africa and Asia preventable blindness due to nutritional deficiency is common).
- (b) Relation of the state of nutrition to resistance to parasitic diseases.
- (c) Blood dyscrasias, believed to be due to malnutrition.

<sup>10</sup> *Off. Rec. World Hlth Org.* 23, 146

## 8. Integration of FAO/WHO Programmes

The FAO and WHO programmes contain projects of a similar nature, including: fellowships, training and education, nutrition advisory services including consultants to governments, surveys, the study of physiological requirements of calories and nutrients, and the study of methods for the assessment of nutritional status. The last two projects are considered in separate sections of this report (see sections 15 and 16). The integration of the work of the two Organizations in relation to other aspects of the programmes is discussed below.

### 8.1 *Fellowships*

WHO has made provision for fellowships in its regular programmes and a number have already been granted in the field of nutrition; FAO has made provision for fellowships in its Technical Assistance Programme.

In order that duplication may be avoided and integration achieved, there should be consultation in the awarding of fellowships, the aim being to arrange for the training of the different types of specialists needed to deal with the problems of nutrition in any given country or region, so that the recipients of fellowships upon their return will find adequate support from other specialists. In this way it should be possible to develop balanced nutrition programmes in the countries or regions in question.

### 8.2 *Training and education*

Both programmes include provision for training in the principles of nutrition and their application, to be given to people with a wide range of responsibility and experience. It is visualized that this service will extend from administrators, physicians, and other specialists, to nurses, social workers, and schoolteachers, etc. The types of training and education planned include: regional courses for medical and non-medical personnel, national courses for medical and non-medical personnel, national symposia or seminars for medical and non-medical personnel, and education of the general population.

(a) *Training courses.* The patterns for regional and national training courses as proposed by both organizations are similar. The courses would be sponsored and planned by national governments and would be held in suitable places, e.g., national institutions. Some lecturers would be obtained from among local staffs, and a number of specialists could be supplied by FAO and WHO from other regions when agreed upon. Full consultation in the planning of such courses will be essential.

(b) *Symposia or seminars.* The committee suggested that these be organized to meet specific local requests or local needs. Here again consultation and joint action will be the most effectual procedure.

(c) *Education of the general population.* Educational programmes of this type need to be planned and carried out in accordance with the cultural development of the people in the area, and must be in the hands of local authorities. Specialized agencies can give guidance on the ways and means of introducing the concepts of good nutrition to the housewife. The committee was given to understand that FAO is preparing a handbook on nutrition education which analyses the principles on which programmes of nutrition education should be based. Both agencies should be prepared to supply short-term experts in educational procedures and methods who could advise local authorities on the best methods of approach.

#### 8.3 *Nutrition advisory services — consultants to governments*

FAO and WHO have both made provision for consultants to be supplied on request to governments for general nutrition advisory services and to assist with specific problems. Each organization should keep the other informed of the requests received from governments for technical assistance and the steps which it proposes to take to meet these requests. When consultants supplied by both organizations visit a country or region simultaneously, their work should be co-ordinated, and as far as possible they should follow the same itinerary.

#### 8.4 *Surveys*

Properly planned and conducted household surveys provide information on many aspects of life which is invaluable in initiating programmes of development. The United Nations and some of the specialized agencies are concerned with the following specific aspects, each of which has a bearing on the problem as a whole: social welfare and economic background (United Nations); dietary patterns and food consumption levels (FAO); family living studies (International Labour Organization); and status of health and nutrition (WHO).

The value of information on any of these subjects collected under the auspices of one agency would be increased if information covering other aspects were available at the same time. For this reason, every endeavour should be made to make surveys as comprehensive as possible, and every opportunity taken to impress upon national authorities the importance of surveys in which a variety of data is collected. When the United Nations or one of the specialized agencies is invited to assist a government in the planning and conduct of a survey, it could suggest to the government that other agencies should be consulted. The agency to which the request is made in the first place could notify other agencies so that they would be ready to provide assistance if asked to do so.

### 8.5 *FAO and WHO nutrition programmes*

Member countries of both organizations must be kept fully informed of the activities and plans of both FAO and WHO in the nutritional field, so that they may make the best use of the services available.

The committee considers it desirable that, in drawing up the nutrition programmes of both organizations, the services which both organizations can offer in their respective spheres of interest should be made clear to member governments, thereby avoiding the possibility that governments may make requests simultaneously to both FAO and WHO for the same kind of assistance.

### 8.6 *FAO and WHO regional arrangements*

Both organizations have established regional offices in various regions, with which member countries are associated. In certain regions the countries associated with each regional office do not correspond, i.e., a somewhat different territory is covered by each.

Co-ordinated nutrition work on the part of FAO and WHO in the regions is essential. The committee realizes that the affiliation of countries to FAO and WHO regional offices is influenced by a number of different circumstances, but feels it desirable to point out that, as far as nutrition work is concerned, the present arrangement is an inconvenient one which may give rise to difficulties in respect of co-ordination.

### 8.7 *Co-ordinating machinery*

In the report on the first meeting of the Standing Advisory Committee on Nutrition of FAO, held in Copenhagen in August 1946, attention was drawn to the fact that the interests of FAO and WHO overlap in a number of fields, the most important of which is nutrition. The report stated: "The clinical and physiological aspects of nutrition will no doubt be of special interest to WHO, but nearly all practical nutrition problems include elements which concern both organizations."<sup>11</sup>

In the report on the second meeting of the Standing Advisory Committee on Nutrition of FAO, held in Geneva in September 1947, the committee noted the report of the Joint FAO/WHO Negotiating Committee,<sup>12</sup> accepted by WHO and FAO, and "observes with satisfaction that machinery to ensure effective collaboration has now been created".<sup>13</sup>

<sup>11</sup> Food and Agriculture Organization Standing Advisory Committee on Nutrition (1946) *First report to the Director-General* (Con 2/Nu 1), p. 10

<sup>12</sup> Food and Agriculture Organization (1947) *Report of the joint FAO/WHO negotiating committee* (C47/GC/5)

<sup>13</sup> Food and Agriculture Organization Standing Advisory Committee on Nutrition (1947) *Second report to the Director-General* (N/N2/ 18), p. 2

In the body of this second report of the FAO Standing Advisory Committee, there occur several references to the ways in which this collaboration might be effected.

The report on the third meeting of the Standing Advisory Committee on Nutrition reiterated the need for collaboration in an emphatic statement which is quoted at the close of the preamble to this report.<sup>14</sup>

The discussions of the present committee make it abundantly clear that these anticipations of the FAO Standing Advisory Committee are being fulfilled. However, the committee is strongly of the opinion that the attention of both FAO and WHO should continue to be riveted on the vital importance of collaboration.

The committee, therefore, adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS

(1) that co-ordination of effort in nutrition be maintained at different levels of activity :

(a) at the headquarters level, by continued close liaison including the interchange of all plans and activities ;

(b) at the regional level, by regular conferences of regional officers of the United Nations organizations, a form of co-operation already initiated as between FAO, WHO, and the United Nations Economic Commissions ; and

(2) that periodic meetings of a joint nutrition committee be convened in order to survey afresh the whole question of co-operation, to review work done, and to consider future plans.

## 9. Endemic Goitre

Endemic goitre occurs in many regions of the world ; in some the incidence is alarmingly high. Whilst there may be factors other than iodine deficiency associated with the etiology of endemic goitre, sufficient observations have been made to demonstrate that the administration of small doses of iodine will prevent the development of endemic goitre. The clinical manifestations of endemic goitre are well known but it is not generally recognized that an inadequate iodine intake by pregnant women may retard the mental and physical development of the infant.

A number of methods of incorporating additional iodine in the diet have been used. An effective measure in countries where free-flowing table salt is used is the iodization of this product. There are, however, many goitrous areas where free-flowing salt is not used and where the population

<sup>14</sup> See page 5.

depends upon locally produced salt, which is often in a crude form and is not easily capable of iodization. Other methods of supplying prophylactic doses of iodine to the population, especially in the under-developed parts of the world, must be devised. It is possible that effective measures are in use in some places, and information about them should be collected and disseminated by WHO.

The committee noted that WHO has already sent a circular letter to governments requesting information on :

- (1) the incidence of goitre in the country ;
- (2) measures taken to prevent the development of the condition ;
- (3) evidence as to the effectiveness of these measures.

The committee also noted that the subject of endemic goitre will be placed on the agenda of the second session of the FAO Nutrition Conference on Problems in Latin America, to be held in 1950, and that arrangements may be made for WHO to take an active part in the conference.

The committee adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS

- (1) that WHO urge governments to promote the use of iodized salt in those goitrous regions in which this method of supplying iodine is practicable ;
- (2) that, in association with governments, WHO further the study of the etiology of endemic goitre ;
- (3) that WHO collect information on methods of providing iodine in regions where the use of iodized salt is not practicable, and make this information available to governments ; and
- (4) that the replies from governments to the circular letter sent by WHO should be followed up, where necessary, by further inquiries to ascertain if governments can supply information on areas where endemic goitre is not prevented by the administration of small amounts of iodine to the population.

## 10. Pellagra

The First WHO Health Assembly suggested that the Joint FAO/WHO Expert Committee on Nutrition should consider the problem of pellagra.<sup>15</sup>

It was reported to the committee that in some areas classical pellagra has been brought under control by the administration of niacin, even without general dietary improvement. There was no evidence available to the committee to indicate that classical pellagra is of sufficient world-

<sup>15</sup> *Off. Rec. World Hlth Org.* 13, 308

wide importance to warrant a high priority in FAO/WHO programmes in the immediate future.

However, the committee wishes to emphasize that the formal reporting of cases of pellagra is known to be grossly inaccurate and may bear little relation to the true incidence of the disease.

The committee, therefore, adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS that WHO give special attention to securing the best information on the actual prevalence of pellagra with a view to future action if indicated.

#### 11. " Kwashiorkor "

One of the most widespread nutritional disorders in tropical and sub-tropical areas is a syndrome at present ill-defined known by various names such as " kwashiorkor ", malignant malnutrition, polydeficiency disease, " m'buaki ", syndrome dépigmentation-œdème, infantile pellagra, etc. The committee is satisfied that this condition is not identical with classical pellagra, and suggests that the name " infantile pellagra " should not be used for this syndrome. It appears that the highest incidence of the disease occurs in infants and young children and that the mortality-rates in some parts of Africa are disturbingly high.

There is considerable evidence to suggest that this syndrome is associated with the development of cirrhotic changes in the livers of many individuals who survive the acute forms of the disease. Cirrhosis of the liver in some form has been found in a significant number of adults in some parts of Africa and central America where kwashiorkor occurs in infants and children. The possible relationship of this cirrhosis to the development of primary carcinoma of the liver, a not uncommon condition in some of these areas, must also be recognized.

The committee adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS that WHO conduct an inquiry into the various features of kwashiorkor including a clinical investigation in the areas where the condition occurs. The object of such an investigation should be to define the clinical features and to study the food habits of the population, with particular reference to diet during pregnancy, lactation, infancy, and early childhood. The inquiry should be extended to areas in which the disease does not occur but in which the diet is apparently similar to that of areas in which the disease is found. This may help to establish a correlation between food habits and the occurrence of the disease—its incidence—and define the part played by other factors, such as tropical parasitism, in determining the variations in clinical manifestations.

## 12. Nutrition of Children After Weaning Period

The FAO Standing Advisory Committee on Nutrition, at its first meeting, laid special emphasis on the nutrition of the pre-school child. It remarked that "in some countries this group suffers more severely from malnutrition than any other age group".<sup>16</sup> In many parts of the world, children after weaning are usually fed on a diet consisting mainly of cereal preparations and obtain little or no milk. The wide prevalence of the syndromes referred to in the preceding section supports the views of the Standing Advisory Committee. The etiology of these syndromes is not at present clear, but there is evidence that they result from serious dietary deficiencies during the earliest years. The ill-effects of malnutrition in this period may be reflected in adult life.

The committee drew the attention of FAO to the great need for increasing supplies of foods, in particular milk, which can make good deficiencies in the diet of children in the period after weaning. In regions in which an immediate substantial increase in milk supplies is difficult, the production and use of foods and/or preparations which can act as a partial substitute for milk should be vigorously encouraged.

## 13. Analytical Methods for Determination of Vitamins in Foodstuffs

The attention of the committee was drawn to the following passage in the report of the Subcommittee on Fat-Soluble Vitamins of the Expert Committee on Biological Standardization, convened by WHO in London in April 1949 :

The sub-committee considers that the value and usefulness of the international standards for vitamins might be increased if suitable methods of estimating the different vitamins in foodstuffs were to be proposed by WHO and FAO and recommended for general use.<sup>17</sup>

Accurate knowledge of the vitamin content of foods is obviously necessary to determine the nutrient content of diets. Such knowledge can be obtained only by the application of satisfactory analytical methods. The committee noted that the question of analytical methods would be of importance to FAO in connexion with the preparation of international food composition tables covering vitamins and minerals.

The determination of vitamins in body-fluids is among the methods employed in the assessment of the state of nutrition, a subject which directly concerns WHO (see section 16).

In the analysis of foodstuffs, physical, chemical, and biological methods of testing are all used, but the final criterion is the physiological effect, and

<sup>16</sup> Food and Agriculture Organization Standing Advisory Committee on Nutrition (1946) *First report to the Director-General* (Con 2/Nu 1), p. 11

<sup>17</sup> *World Hlth Org. techn. Rep. Ser.* 1950, 3, 9



even, it may be said, the value of foods as sources of vitamins for human beings. The vitamin content of foods as consumed is strongly influenced by preparation and cooking, and in practice this is of great importance. Methods may have to be modified for application to different kinds of foods. These and many other facts serve to indicate the complexity of the problem.

*Preparation of an international codex of analytical methods*

Such a codex could be of assistance to scientific workers in the different countries, and would help to ensure the expression of data relating to the vitamin content of foods and diets on a uniform and comparable basis. It should in the first place include the most generally accepted methods for estimating the vitamins about which most is known, e.g., vitamin A and carotene, thiamine, riboflavin, niacin, ascorbic acid, vitamin D, and vitamin E. Methods for other vitamins could be considered at a later stage.

In a number of countries certain methods for the assay of some vitamins are officially recognized. Those recognized in the USA and the United Kingdom are set forth in the pharmacopoeias of these countries. The US Association of Agricultural Chemists publishes methods for the analysis of foods and other substances, which include methods for determining the vitamin content of foodstuffs. This publication, which is revised annually under the supervision of expert committees, not only describes methods, but also gives detailed techniques for the preparation of various classes of foods preliminary to the actual assay. It is widely used in the USA and other countries.

Some countries of Western Europe are initiating a project to prepare joint proposals for the classification, description, and methods of analysis of foods.

Thus much work which would facilitate the preparation of an international codex has already been done. The task would be a continuing one, revision being necessary as knowledge advances and improved methods become available.

The committee adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS that FAO initiate work on analytical methods for the determination of vitamins in foodstuffs by a general survey of the problem and by exploring possible methods of procedure. This can be done largely by correspondence with national organizations concerned with methods of food analysis. When the preliminary survey has been made, a small expert committee should be convened

to consider the scope of the problem and to outline the methods of attack to be followed by FAO. At a later stage, small groups of highly-qualified specialists may be appointed to consider in detail methods for application to individual vitamins in various types of food. The collaboration of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) should be sought, as well as that of any non-governmental international organizations (e.g., the International Union of Nutritional Sciences) which may be in a position to assist.

#### 14. Manufacture of Synthetic Vitamins in Underdeveloped Countries<sup>18</sup>

The committee was asked by the Director-General of WHO to consider the following resolution which was adopted by the Second Health Assembly:

The Second World Health Assembly

- (1) REQUESTS the Director-General to bring to the attention of the Joint Committee with FAO on Nutrition the question of the manufacture of synthetic vitamins in underdeveloped countries; and
- (2) AUTHORIZES the Executive Board to make appropriate recommendations on this subject to the Third World Health Assembly after consideration of the report of the above-mentioned committee.<sup>19</sup>

In examining this resolution, the committee felt it desirable to give some consideration to the broader question of the place of synthetic vitamins in programmes for improving nutrition. Its views may be summarized as follows:

The most satisfactory way of improving nutrition is by the provision of ordinary foods in such quantities and such proportions that the diet is well balanced and supplies in sufficient amounts all the nutrients needed for health. This should be the ultimate object of all nutrition programmes.

<sup>18</sup> The Executive Board, at its fifth session, adopted the following resolution:

The Executive Board

RECOMMENDS to the Third World Health Assembly the adoption of the following resolution:

The Third World Health Assembly

- (1) NOTES the report of the Joint FAO/WHO Expert Committee on Nutrition on the difficulties of the manufacture of synthetic vitamins in underdeveloped countries;
- (2) NOTES the Executive Board's comment that the most satisfactory way of improving nutrition is by the provision of natural foods in such quantities and proportions that the diet is well balanced and supplies in sufficient amounts all the nutrients needed for health;
- (3) RESOLVES that the World Health Organization should supply to any country manufacturing or contemplating the manufacture of synthetic vitamins any information or assistance which may be available.

<sup>19</sup> *Off. Rec. World Hlth Org.* 21, 21

It can be achieved through the development and adjustment of food production and trade, improvement in the economic situation of peoples, and their education in better habits of diet.

It must be recognized that there are various circumstances in which the addition of vitamins to foods may be of value. For example, in many parts of the world the foods needed to supplement diets based largely on cereals or starchy roots are not at present available in the quantities required for satisfactory nutrition, or are too expensive to be obtained by the bulk of the population. Some years must elapse before full requirements can be met by the provision of such supplementary foods. Meanwhile, synthetic vitamins can make good some of the existing dietary deficiencies. The committee endorsed the view of the FAO Nutrition Committee (Baguio, Philippines, February 1948) with reference to the enrichment of rice by thiamine and other nutrients:

... Rice enrichment can be of value as an immediate measure for attacking deficiency diseases. It should, however, be regarded as an expedient which does not remove the need for general improvement of rice diets in other ways. Enrichment is likely to prove particularly useful in areas in which beri-beri is an important public health problem.<sup>20</sup>

The committee noted the significant reduction in mortality from beri-beri, reported to it by one of its members, which has resulted from the distribution of enriched rice in an area in the Philippines in which the disease is highly prevalent.

Enrichment programmes should always be accompanied by other active measures to improve nutrition.

The value of synthetic vitamins and vitamin concentrates in the prevention and treatment of food deficiency diseases and subdeficiency states is fully recognized. The need for vitamins and concentrates for therapeutic purposes is greatest in regions in which typical diets are of low nutritive value and deficiency diseases are common.

The committee then considered the problem of the manufacture of synthetic vitamins in underdeveloped countries. From information available to the committee, it was apparent that this is practicable only in association with a large synthetic organic chemical industry which is able to provide the intermediate products required for the synthesis of vitamins.

The committee adopted the following resolution:

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS that, on request, WHO assist member governments in deciding whether to undertake the manufacture of synthetic vitamins and, if it is decided to do this, give all possible advice in establishing the industry.

<sup>20</sup> Food and Agriculture Organization (1948) *Report of the nutrition committee, Baguio, Philippines, 23-28 February 1948 — Nutrition problems of rice-eating countries in Asia*, Washington, p. 5

### 15. Physiological Requirements of Calories and Nutrients

The committee noted that work on calorie requirements had already been done by the Nutrition Division of FAO and that the report of the Committee on Calorie Requirements, which met in Washington in September 1949, would be available before the end of the year.

The committee endorsed the intention of FAO to continue and expand this work by undertaking the study of nutrient requirements. In pursuing this work, full use should be made of data available throughout the world and of experience gained in different countries. Members of regional nutrition committees and other nutrition workers in various regions should be asked to forward to FAO any relevant information at their disposal, including unpublished material.

### 16. Assessment of Nutritional Status

The nutrition policy and programmes of a country must be based upon knowledge of the nutritional status of the population, together with a consideration of the dietary patterns, the food supply, and the economic situation.

The clinical examination of properly selected samples of the population will give an indication of the nutritional status of the whole population of an area. Laboratory tests have also been devised to provide facts about the biochemical and physical state of certain tissues and these can be used to supplement the clinical findings.

A number of countries have established their own methods of examination and standards of assessment of nutritional status, but others have not been able to do so because of lack of qualified workers and proper equipment. A series of schedules for use in the assessment of nutritional status prepared by an international group of experts would increase the value of national nutrition surveys in that comparisons between conditions in various countries would be possible, and those countries that had not already made surveys would be encouraged to undertake this work.

It appears to the committee that there is a need for schedules for at least three types of survey :

- (i) rapid surveys for emergency purposes, using observation of gross clinical changes ;
- (ii) routine clinical surveys ;
- (iii) clinical surveys supported by laboratory investigations.

Information on food consumption and dietary patterns should be collected at the same time as the nutritional survey is made, and the results of the two types of survey correlated. The committee understands that

FAO has prepared a booklet on the methodology of dietary surveys, copies of which will be available shortly for distribution.<sup>21</sup>

The committee adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS

- (1) that, with the assistance of FAO, WHO undertake a study of the methods of the assessment of nutritional status ; in view of the different levels of nutrition in different parts of the world it would be an advantage if the preliminary stages of the inquiry were made at either the national or regional level ;
- (2) that WHO seek the co-operation of one or more governments in each region in applying methods of assessment, in order both to further investigations into nutritional status in these countries and to ascertain the most suitable methods of assessment for application in the region under consideration ; and
- (3) that WHO, as soon as possible, with the technical assistance of FAO, convene an international study-group to consider the reports from the various national groups and prepare a comprehensive report.

**17. Establishment of Joint FAO/WHO National Nutrition Committees <sup>22</sup>**

The attention of the committee was drawn to the following resolution, which was adopted by the Second Health Assembly : <sup>23</sup>

The Second World Health Assembly

Considering the importance of national nutrition committees,

- (1) REQUESTS the Director-General to bring to the attention of the Joint Committee with FAO on Nutrition the question of the establishment of joint FAO/WHO national nutrition committees ;
- and
- (2) AUTHORIZES the Executive Board to make appropriate recommendations on this subject to the Third World Health Assembly after consideration of the report of the joint committee.

<sup>21</sup> Food and Agriculture Organization (1949) *Dietary surveys — their technique and interpretation*, Washington

<sup>22</sup> The Executive Board, at its fifth session, adopted the following resolution :

The Executive Board

- (1) NOTES the comments of the Joint FAO/WHO Expert Committee on Nutrition on the formation of national FAO/WHO nutrition committees ;
- (2) DECIDES that the question of forming national joint FAO/WHO nutrition committees shall be considered in conjunction with the promotion of national WHO committees.

<sup>23</sup> *Off. Rec. World Hlth Org.* 21, 21

In considering this subject the committee noted that there are national nutrition committees in many countries, varying in name, status, structure, and functions in the different countries. They fall roughly into five categories :

- (1) committees that are identical with National FAO Committees ;
- (2) subcommittees of National FAO Committees ;
- (3) committees or councils or boards set up under one or more government departments ;
- (4) committees or boards set up by national research councils ;
- (5) nutrition institutes with advisory as well as research functions.

In most countries the department of health is represented on the national nutrition organization. The committee was given to understand that in some countries the national nutrition organization is an active body which plays an effective role in nutrition programmes ; in other countries the organization is less effective ; while in others, again, a national nutrition organization has not been created despite frequent recommendations to this effect by the annual conference of FAO.

National nutrition organizations are an important means of implementing the nutrition policies of FAO and WHO. The committee realizes that each national government must itself decide how this is to be done. It is essential that the various government departments through which FAO and WHO transmit information and requests relating to nutrition should be represented on national nutrition organizations. These organizations can be more effective instruments for the extension of both FAO and WHO nutrition programmes if problems are referred to them by the appropriate government departments.

The committee recommends that, since the Executive Board of WHO is considering the promotion of national WHO committees, the question of forming joint FAO/WHO national nutrition committees should be deferred until the Board has reached a decision.

#### **18. Place of Non-Governmental Organizations in the Work of FAO and WHO**

The committee briefly discussed the place of non-governmental organizations in the work of FAO and WHO and noted that both FAO and WHO have established procedures whereby international non-governmental organizations can be admitted into relationship with the respective Organizations.

The committee was of the opinion that any organization which is in a position to influence public opinion on the importance of food for health should be encouraged, so far as is possible, by both Organizations. It also

pointed out that international scientific organizations have much to contribute in the technical field.

The committee adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS that FAO and WHO

- (1) keep non-governmental organizations informed of their aims and objectives, and plans and programmes ;
- (2) encourage these organizations to direct attention to the need for, and the importance of, the work of FAO and WHO ;
- (3) encourage these organizations to bring to the attention of their affiliated national societies the part that the latter can play in furthering the work of FAO and WHO within their countries ; and
- (4) maintain close association with international scientific organizations, funds, and foundations so that there is a mutual exchange of technical information.

### 19. Nutrition Problems in Africa

In section 11 reference has been made to the wide prevalence in Africa of a syndrome due to dietary deficiency, and further investigation of this condition was recommended. The available evidence indicates that serious problems of nutrition exist in many parts of Africa, and that there is an urgent need both for further research on these problems and for the further development of practical programmes to raise levels of nutrition.

The committee is glad to note that the Director of the Nutrition Division of FAO and the Chief of the Nutrition Section of WHO were present as observers at the Nutrition Conference in Africa, held at Dschang in the French Cameroons in October 1949.

The committee adopted the following resolution :

The Joint FAO/WHO Expert Committee on Nutrition

RECOMMENDS that FAO and WHO should explore every possibility of extending contacts with authorities and experts concerned with nutrition in Africa.

### 20. Collaboration with Other International Agencies

#### 20.1 *Economic Commissions*

The committee noted :

- (a) the co-operation of FAO, in certain fields, with international bodies such as the Organization for European Economic Co-operation (OEEC)

and the Economic Commission for Asia and the Far East (ECAFE) concerned with the economic development or rehabilitation of countries, and

(b) that the main Committee on Food and Agriculture of the OEEC at Paris has set up a working party on levels of food consumption, charged with the responsibility of conducting studies, in participating countries, on food consumption in relation to income.

The committee recommends that FAO and WHO should promote the exchange of information in this field and participate in the nutritional activities of working parties of these bodies.

## 20.2 UNESCO

The co-ordination of scientific activities throughout the world is one of the primary responsibilities of UNESCO. The scientific co-operation officers of UNESCO, working in the regions, are in direct contact with scientific workers and institutes and governments. These officers also help and advise scientists and institutions, private or governmental, on any scientific and technological problem. Science, education, and scientific research studies basic to practical activities in the field of nutrition are within the scope of UNESCO's activities.

The committee recommends that the Nutrition Division of FAO and the Nutrition Section of WHO should maintain close liaison with the Department of Natural Sciences of UNESCO, both at headquarters and in the regions, so that the activities of the three Organizations may be co-ordinated and made complementary.

## 21. Food Regulations

Food regulations in different countries are often conflicting and contradictory. Legislation governing preservation, nomenclature, and acceptable food standards often varies widely from country to country. New legislation not based on scientific knowledge is often introduced, and little account may be taken of nutritional principles in formulating regulations. The conflicting nature of food regulations may be an obstacle to trade in foodstuffs between countries and hence may affect the distribution of nutritionally valuable foods.

The committee draws the attention of FAO and WHO to the importance of this subject to both Organizations, and suggests that its study be included in the programmes of both Organizations.

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