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FOOD AND NUTRITION THE WORLD AROUND

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International Concern for Food

October 24 is the 17th anniversary of the United Nations Organization. Well over 100 nations around the globe are concerned that united action shall accelerate the fulfillment of aspirations of the people of the world in an age of "rising expectations"--expectations of the hungry to have adequate food, of the illiterate to have education, of the homeless to have shelter, of the underprivileged to have dignity. The new world outlook has come as a result of three revolutions during the first half of the 20th century, as an editorial in the July-August 1962 issue of the UNESCO Courier has aptly expressed it:

"The political revolution has brought self-government to nearly a third of the world's population and has brought their aspirations for a better life to the forefront of world attention. The revolution in communications has broken down the barriers of distance and language, and the dynamisms of ideas can no longer be contained within the limits dictated by social privilege or political considerations. The demographic revolution has imparted to the challenge of poverty and want a new dimension."

This editorial was part of the introduction to the public support given in their official magazine The Courier by the United Nations Economic, Social, and Cultural Organization (UNESCO) to the Freedom-from-Hunger Campaign being conducted over the 5-year period, 1960-1965, by the Food and Agriculture Organization of the United Nations, commonly known as FAO.

It is generally accepted that a secure and sufficient food supply for all is essential if we are to have peace in this world. As early as 1943 it was recognized that the gap between the "haves" and the "have-nots," with respect to food would become an increasingly urgent world problem. Representatives of a number of nations met together in Hot Springs, Virginia, in the midst of World War II to consider how to cope with the situation. By October 1945, 44 nations were ready to unite to establish the FOOD AND AGRICULTURE ORGANIZATION, with the objective of "raising levels of nutrition and standards of living of people; securing improvements in the efficiency of the production and distribution of all food and agricultural products, and bettering the conditions of rural populations." There are now 108 nations joined together in this common purpose.

In addition, much technical as well as material aid has been and is being given on a country-to-country basis by governments and by voluntary agencies. There are, for example, our USAID programs, the Colombo plan, the work of foundations, agricultural missions of churches, and many other groups. The need for better nutrition is still very great, however. Food production is

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Dr. Hazel K. Stiebeling, Deputy Administrator, Agricultural Research Service, U.S. Department of Agriculture, before the North Central Regional Conference of Teachers of Food and Nutrition of the North Central Region, LaSalle Hotel, Chicago, Illinois, October 20, 1962.

scarcely keeping pace with population growth, especially in the less well-fed parts of the world. It is for this reason that FAO has designated 1960-65 as a period to center world attention on the urgency of the food problem and is enlisting organized efforts to help solve it through the Freedom-from-Hunger Campaign.

#### How Big are World Food Shortages?

Malnutrition is said to be the usual condition of life for the majority of people on earth, but it is not at all easy to measure this world food deficit quantitatively. We do not know enough about customary food production and consumption in every country, nor yet about nutritional needs and nutritional state. But such measurements must be attempted if international programs of aid and trade in food are to be rational.

Last year, the U.S. Department of Agriculture developed what it called a world food budget, making the best estimate it could of food needs and production, and the size and location of food deficits. In estimating food needs, starting figures used for calories for different regions were those developed and published by the Food and Agriculture Organization in 1952 in their Second World Food Survey. To these base figures was added 15 percent to cover waste or discard in the home. For protein the figure was set at 60 grams per head per day, with at least 7 grams of protein coming from food of animal sources and enough of animal and pulse protein combined to provide not less than 17 grams per head per day. Fat enough was allowed to furnish 15 percent of the calories.

To help people understand how big the estimated shortages are the Department expressed them in terms of a few well-known foods rather than in terms of the wide variety of foods that people eat or would like to eat. The 1962 gap in calories and protein, i.e., the difference between the actual amounts that people in food-deficit countries have and the amounts that are desirable to maintain normal physical activity and health, is estimated as equivalent to:

1.4 million metric tons of milk solids--for animal protein;  
150 thousand tons of dry beans and peas--for pulse proteins;  
3 million tons of vegetable oil--for fat; and  
29 million tons of wheat--for other protein and for additional calories.

This does not mean that the world would eliminate its food deficit by producing the additional amounts of the few foods just mentioned. As countries improve their diets, actual increases in production and imports will provide a wide range of foods, and traditional food preferences will be a dominant guide to the kind. Nor do the data on the world food deficit carry with them any measure of the actual ability of countries to overcome their food shortages. By and large, the deficits are greatest in countries that have the least means of obtaining adequate supplies of food.

Toward Better Understanding of the World Food and Nutrition Situation

I mentioned earlier that it is hard to quantify the world's dietary and nutrition situation because we do not have the needed detail of information. Two recent international developments point the way to remedying this.

The first development is action being taken by FAO toward encouraging countries to provide better information on household food consumption. The FAO staff, assisted by consultants, have developed guiding principles for surveys to provide such information and plans are being developed for coordinated programs of national surveys based on these principles.

The purpose is to help countries undertake surveys of food consumption covering representative samples by uniform methods, so that the data obtained may be adequate in coverage and comparable in content. The results would make possible dietary appraisals which could guide countries in their programs of food production, marketing, and consumption, as well as their consumer education for dietary improvement.

A second development that is helping define the nutritional situation in a goodly number of countries is a special kind of technical help being given upon request of governments through a USA Interdepartmental Committee on Nutrition for National Defense (ICNND). This Committee, established in 1955, now includes the U.S. Departments of Defense; State; Agriculture; Health, Education, and Welfare; the Atomic Energy Commission; and the Agency for International Development.

To date, this Committee has completed or has underway nutrition surveys in 12 countries in the Middle and Far East, 2 in North Africa, 7 in South America and the Caribbean area, and one in Spain. These surveys include clinical and biochemical estimates of nutritional status; appraisals of the adequacy of food intake of individuals and groups; and critiques of the quality and availability of food and of food handling procedures with special reference to conservation of nutritive quality and wholesomeness.

All of these overseas surveys have dealt with military populations, but a number of them have also included civilians. Vitamin shortages appear to be more general than calorie or protein shortages among the populations studied. Inadequacy of riboflavin was prevalent in half of the countries and was a special area or group problem in some others. Shortage of vitamin A was general in at least six countries and found in special areas of seven others. Shortage of thiamine was general in a number of countries and in special areas of even more. Vitamin C shortage was not found to be general in many places but did exist in special areas in many.

Problems of mineral nutrition most often noted were related to goiter and the anemias. Endemic goiter was found in many of the countries but was usually confined to specific areas. Anemia, noted in special groups of about half of the countries studied was particularly prevalent in mothers and young children and often was associated with parasitic infestation. Rickets was found where customs of clothing or housing reduced exposure to sun.

In general, underdeveloped countries tend to have diets that provide too little of foods containing proteins of good quality and needed minerals and vitamins. Consequently, nutritional deficiencies, of which protein malnutrition in young children is perhaps the most serious, are widely prevalent. The expectation of life in the Western world is about 70 years whereas in some countries of Asia, Africa, and Latin America the average expectation of life is between 25 and 35. There is no doubt that one of the major causes of this difference in life expectancy is undernutrition as well as malnutrition. Chronic undernutrition, especially during the period of growth, probably also accounts in part for the slight build of the people as well as short stature in many parts of the world. Research with domestic animals has shown that on calorie-deficient diets, gain in height is reduced, but height gain is made at the expense of gain in width of skeleton and the normal development of soft tissue.

#### Nutrition of Vulnerable Population Groups

Whenever civilians were included in the ICNND surveys, the groups most seriously afflicted by malnutrition were infants, preschool children, and pregnant and lactating women. The protein needs of young children have received much attention since 1949 when the joint FAO/WHO Expert Committee on Nutrition drew attention to the need for study of a malnutrition syndrome described in the scientific literature under various names, and called Kwashiorkor in Africa. This condition is most prevalent in tropical countries where milk is scarce or expensive, and where for a number of reasons livestock industries do not flourish and fish are not available or are little used. Dry skim milk has been shown to be almost a specific for the treatment of hospitalized cases of Kwashiorkor in Africa.

Wherever milk is scarce, there is immediate need in children's diets for relatively inexpensive protein foods that can be available locally either fresh or processed. FAO, WHO, and UNICEF have recently been supporting the formulation of products from oilseed presscakes, fish, and possibly in the future, leaf proteins, because the proteins of these foods can supplement the biological quality of the proteins of staple grains, roots, or other plant foods that supply most of the calories in diets of underdeveloped countries. To develop new foods from products which heretofore have not been fully utilized as food has required research, and this has been stimulated not only by the international agencies but also by help given by a Committee on Protein Malnutrition of USA's National Academy of Sciences--National Research Council, and support from the Rockefeller Foundation. Six sources of protein have been studied extensively under the FAO/WHO/UNICEF program. These are: fish flour, soya-bean products,

peanut flour, sesame flour, cottonseed flour, and coconut. A number of mixtures or formulations using soya, peanuts, or cottonseed as a base, have proven successful in biological, clinical, and acceptability trials in several countries.

The expression "high-protein food," used in connection with these special products, is not altogether satisfactory, since the basic aim is to produce foods or combinations of foods which will effectively supplement local diets. Generally it is the quality of the protein provided by the supplement, rather than its total protein content that is important. Some foods which are not very high in protein may be good dietary supplements if they are consumed in sufficient amounts. And foods which have an intermediate biological value are useful if they are cheap and abundant, especially when combined with other foods that complement them.

#### FAO's Freedom-from-Hunger Campaign

As I mentioned earlier, FAO's Freedom-from-Hunger Campaign is an effort to arouse the world to a new sense of urgency regarding the problems of food, and to promote a climate of opinion in which solutions can be organized on a national and international basis. For practical purposes there are three sectors of operations: (a) information and education, (b) research, and (c) action.

The information and education programs are to help bring to persons everywhere a vital awareness of the facts and issues, thus providing improved bases for policies and action programs. A World Food Congress, now being planned for the 20th anniversary of the Hot Springs Conference, will be held in Washington, D.C., next June, and will be the high point of this educational phase of the work.

One aspect of the research program is the preparation of a Third World Food Survey by FAO.

Action programs are the special efforts of governments or private groups to contribute to the improvement of the world's food situation beyond what is already being done through FAO's regular program and its implementation of other UN programs of technical assistance and economic development. A few examples may be of interest.

First, some examples of work by private groups:

As a contribution to Freedom-from-Hunger the Evangelical Churches of Western Germany are financing a "grain-legumes" project in Nigeria. The Nigerian government had called on FAO for help in this situation: In Northern Nigeria the diet of rural people is made up largely of tubers and roots and is relatively poor in high-quality protein. From previous experience FAO officials knew that the leguminous plants offer one practical answer to such diet imbalances. Legumes, such as groundnuts (peanuts), cowpeas, pigeon peas, beans, and lentils, are a source of proteins that can complement staple diets of cereals

or roots and tubers. These foods were, in fact, already grown in Northern Nigeria but mainly as commercial crops that were sold rather than eaten locally. A possible solution of the diet problem in this region was to extend and diversify the growing of legumes and to help the rural people appreciate their value and make greater use of them in their meals.

After study of the problem the German churches agreed to help finance the project with a sum of approximately \$95,000. The Nigerian government, in what FAO terms "counterpart" action, contributes by paying the salaries of Nigerian personnel involved and by providing such facilities as living accomodation, office and storage space, and funds for local expenses of the FAO experts who would come to put the project into action.

Money found, the next thing sought was personnel for leadership. It is often far from easy for FAO to find just the right technical expert for the particular job in a particular country. For the operation of the Nigerian grain-legumes project an agronomist and a home economist/nutritionist were needed, and they were recruited from Holland and from Ireland.

The assignment of Mr. Kartenhorst from Holland is to work with the farmers of Northern Nigeria in experiments to grow, breed, and properly store legumes, and to experiment in the use of insecticides and pest controls. The assignment of Miss Crowley of Ireland, is to help village women understand the value of the legumes and learn ways to make them a regular part of the diets of their families.

Mr. Kartenhorst's Nigerian counterpart is a science graduate of Belfast University; Miss Crowley's, a teacher of domestic science. The project is planned to run six years. After the first two years, it is expected, however, that the local experts will take over so that FAO personnel can move on to other problems in other lands or return to their own work in their own countries.

Instead of completely supporting a project, a contributor to Freedom-from-Hunger may wish to support a specific project in part. Or a donor may have no project in mind but may contribute, say, to the development of dairy farming in Latin America. In these cases the donor may pay his contribution into the Freedom-from-Hunger Trust Fund which FAO has set up with the request that it be used in connection with his chosen purpose. FAO, within the limits of feasibility and the adequacy of the funds, will undertake to spend the money as stipulated.

An example of how small donations are combined may be found in a Quito, Ecuador, project. Until less than two years ago a large number of the people of Quito bought their milk from street peddlers. This milk was often contaminated and adulterated, with the result that many of Quito's young children suffered from gastro-enteritis. Some even died. In April 1961 a milk processing plant was set up by the Municipality of Quito with the help of FAO and the United Nations Children's Fund (UNICEF). Results were immediate and dramatic: Within a few days 70 percent of all milk drunk by the 400,000 people of Quito was pasteurized and bottled. Doctors reported a rapid falling off in gastro-enteritis in children. Success of the milk processing plant created a demand

for more skilled laboratory workers in Ecuador. To help fill this need FAO, under the Freedom-from-Hunger Campaign, has given \$2,150 for equipment and chemicals for a training course for laboratory technicians. This sum was taken from the Campaign's Trust Fund and is composed of small donations from such diverse sources as a school in Switzerland, a league of women voters in the United States, a church parish in France, and a magazine published in Hong Kong. Numerous other small donations have been paid into the Trust Fund, such as the annual salary increment of an FAO staff member, and the proceeds of a diet competition among members of a United States "Optimists' Club." These and other such contributions are combined from time to time to support developing Freedom-from-Hunger Campaign action projects.

A government contribution to Freedom-from-Hunger has come from Sweden in the form of a 9-month training course to be held in Stockholm for 10 senior veterinarians from Latin America, Asia, and the Near East. The course will equip them better to control animal diseases and thus improve the production of food from animals in their own countries. The Swedish government will finance the project, at a cost of some 265,000 kroner (\$51,200). FAO's role will be to assist in the selection of the trainees from among nominees put forward by the countries concerned.

Another example of the participation of a government is that of Australia, through an offer to establish a Permanent Training Center in the South Pacific to prepare leaders for village work in Nutrition Education and Home Economics. These are just a few examples of the diverse special projects being supported by other countries under the Freedom-from-Hunger Campaign.

#### USA Contributes to Freedom-from-Hunger

On July 1, 1960, when the President of the United States announced the opening of FAO's intensified effort for better nutrition he pledged our earnest support of the objective. One way our government is contributing is through our Food-for-Peace Program, made possible by Public Law 480. This permits us to give surplus food away to needy countries and sell surplus foods under special terms. In payment we accept foreign currencies from countries that are short on dollars. These foreign currencies must be used abroad. We lend some back to the country to use for economic development. We use some for meeting obligations to USA personnel working in the country--at the Embassy and in military and other operations. For example, we use a sizeable portion of these foreign currencies for local expenses in our program of technical assistance to the country; we use these currencies for market development, and we use them for basic research that is of benefit to the USA as well as to the world at large.

Since the passage of P.L. 480 in the summer of 1954, food and fiber valued at \$15 billion have moved to more than 100 countries and territories under these special payment arrangements. Under other sections of the Law, food has been given to meet famine conditions, to feed needy families or refugees, to encourage economic development projects, and to assist school lunch programs.

USA Food-for-Peace-assisted school lunch programs are now reaching 34 million children in 80 countries. In some cases the programs are conducted by our government directly with the receiving government. In other cases we use the services of special groups, such as UNICEF, UNRRA, CARE, and church relief agencies. USA exports of farm products under these several special government programs amounted to \$1.5 billion in fiscal year 1961, and to more than this in 1962.

There is a double thrust behind our Food-for-Peace Program. It is, of course, in our self-interest to reduce costly storage, to protect our farm economy from price-depressing surpluses, to stimulate our shipping industry by massive food shipments, and to develop long-range commercial markets. But the other thrust behind Food-for-Peace stems from the philosophy that to feed the hungry is a right thing to do. No one can doubt the genuine, humanitarian desire of Americans to see our food reserves shared with hungry people the world around.

We are using food as an indispensable ingredient in our foreign assistance-- in some countries food is the major component of American aid. Of the \$4 billion worth of USA technical, financial, and food aid that has gone to India in the last decade, 65 percent has been in food. In Egypt, Food-for-Peace has comprised 75 percent of our aid in recent years, and is currently 80 percent of our assistance to that country.

We also are using food to encourage economic development. Aid-in-food permits a greater degree of industrialization than would be possible if the country were required to use the manpower to produce all of its food; it makes possible "in-kind" payment of wages of workers engaged in building schools, roads, clinics, and rural improvements. Today in 10 countries, American cereals and other foods are financing part of the wages of workers employed on valuable public works projects.

In April 1961 the USA proposed to the United Nations that a World Food Program be undertaken over a 3-year period to put on a multilateral basis essentially what we have been doing bilaterally under our Food-for-Peace Program, i.e., organized care for emergency food needs of nations, provisions for improved feeding of preschool and school children, and promotion of economic development of emerging nations. The USA proposal was accepted by both UN and FAO. A 20-member UN/FAO intergovernmental committee has been established which met first in February 1962 to develop the plans and procedures. FAO has organized a staff to assist in this planning and to implement the recommendations. A pledging conference to support the program was held at the United Nations in New York in September 1962. At this time the Secretary of Agriculture pledged that USA would give \$40 million in commodities and \$10 million in cash and shipping charges. The goal of the UN is \$100 million for the 3-year experimental period. More than \$85 million have been pledged, and additional countries will announce pledges later.

To many, nothing would seem simpler than giving good, wholesome food to people who have too little to eat. But experience shows that it is not easy to give food away. It is not cheap for the giver or absolutely free to the recipient.

The recipient government must provide acceptable conditions for warehouse storage and for distribution of the food. Some recipient countries fear to accept too much food lest it handicap the development of their own agriculture. Some countries that export food fear that their economies might be disturbed if too much food were to be distributed free or if food were to be subsidized overseas on too broad a basis.

Some people are concerned that our distribution of cereal products under P.S. 480 may further distort rather than help balance diets of low-income groups in developing countries. Wheat can be effectively used to provide more food, but both grain products and customary diets need supplementation by locally produced vegetables and fruit, carefully chosen leguminous seeds, and where possible, by additional livestock products, especially milk and/or cheese. In general, our surplus foods are not available in the proportions best suited to supplement diets of poorly fed countries. More milk relative to grains and fat would be needed to supplement diets that already tend to be short in protein of high biological value, in calcium, riboflavin, and vitamin A. USA surplus foods alone cannot feed the world, but they can help nations while they increasingly become able to help themselves.

#### The Long-Term Solution

Food aid and programs for special population groups are valuable. At best they are temporary measures, however. The ultimate solution to the problem of achieving improved diets lies in making good use of food resources, raising the agriculture of the less developed countries to a more productive level, and applying modern science and technology to effective conservation and use of food. Technical assistance on a broad front in Agriculture, nutrition, and home economics conducted both by international agencies and on a country-to-country basis is leading the world many steps along this road.

In developing countries livestock or dairy industry is important if the quality of the diets of all population groups is to be improved markedly. In these places, the proportion of the total diet coming from milk, meat, and eggs is much below the world average. Since the demand for these products tends to increase sharply when incomes rise, any speeding up of economic development in these countries should be accompanied by expansion of the output of these foods.

Over the past decade, world agricultural production has increased at an average annual rate of about 2.9 percent, and population by 1.8 percent. This places per capita agricultural production at about 10 percent higher than before the Second World War. Most of the improvement was in the more-developed regions, however, largely because of the more rapid population growth in less-developed regions.

Continuing programs, both short- and long-term, for reducing the disparities in food supplies and nutritional state between the more- and the less-developed regions of the world are the objective of FAO's 1960-1965 Freedom-from-Hunger

Campaign and other efforts to promote economic development. To this, we in USA are lending our wholehearted support. Through the sharing of our material abundance and even more through the sharing of our knowledge and experience in nutritional, food and agricultural sciences and technologies, we can help others help themselves to achieve both physical well-being and self respect. As we succeed in this we shall make swifter progress toward the lasting peace and friendship we all so earnestly desire.

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