United Nations Interim Commission
on Food and Agriculture

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A General Report to the First Session of the Conference of the Food and Agriculture Organization of the United Nations, Prepared by the Reviewing Panel and Circulated to Members of the Interim Commission by the Executive Committee

United Nations Interim Commission on
Food and Agriculture
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PREFACE

THIS report has been prepared to assist the delegates at the First Session of the Conference of the Food and Agriculture Organization in the general discussion of the work of the organization and to inform the public regarding its purposes and policies.

Five documents may be regarded as marking the principal stages in the development of FAO up to the time of the first conference: (1) The *Final Act and Section Reports* of the United Nations Conference on Food and Agriculture, held at Hot Springs, Virginia, U. S. A., in 1943, contained the recommendations of the delegates and the reports of the principal committees. (2) *The First Report to the Governments of the United Nations by the Interim Commission on Food and Agriculture* contained the draft Constitution of the proposed Food and Agriculture Organization of the United Nations, together with an explanatory discussion. (3) The Second Report to Governments recommended that the International Institute of Agriculture be merged with FAO. (4) Forestry and forest products were not considered at the Hot Springs Conference; hence a Third Report to Governments has been prepared which deals with this subject. (5) The present general report, *The Work of FAO,* presented by the Interim Commission to the First Session of the Conference, is the outcome of the preparations made for the Conference.

These preparations included studies and recommendations made by five Technical Committees—on Nutrition, Agriculture, Forestry, Fisheries, and Statistics—whose work was coordinated by a Reviewing Panel. Each committee prepared a report of its own, and these reports have been combined in a single volume and will also be available to the Conference as separate publications. Drawing on the reports of the Technical Committees as well as other documents prepared for the Interim Commission, the Reviewing Panel in turn prepared this general report on the work of FAO.

As will be noted from the list following this preface, the Reviewing Panel and the Technical Committees included in their membership persons from various countries who generously contributed their time and labor to the work, as did others who, while not members, were asked to prepare special reports. To them, and to the governmental and other organizations who generously loaned their services in spite of the pressure of wartime demands on personnel, the Interim Commission acknowledges a profound debt of gratitude. The Commission feels, indeed, that the interest and support given to this work, and the cooperative spirit in which it has been conducted, are the best augury for the success of FAO, which will need the same kind of cooperation on a far greater scale.

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Washington, D. C.
August 1, 1945

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PART I. PROBLEMS

1. Freedom from Want

THE FOOD and Agriculture Organization is born out of the idea of freedom from want. This is not one man's fortunate phrase; it expresses an aspiration as old as mankind. Whenever primitive men tried to imagine paradise in concrete terms, they pictured it as a place where food was plentiful and want no longer existed. Every utopia man has conceived has been such a place. But in this generation freedom from want has come to have a different meaning. It has been taken out of the realm of utopian ideas. The conviction has spread that it can be achieved; indeed, this is one of the convictions most characteristic of the thinking and the mood of this generation, and it is held by hard-headed businessmen and skeptical scientists no less than by the dreamers and idealists.

2. What is the genesis of this belief? It has come gradually out of the progress of modern science and technology. There is no need to review this many-sided progress here. Everyone is familiar with the spectacular forward surge typified by the radio, the airplane, the automobile. They are only one aspect of the profound revolution wrought by modern production machinery and mass production techniques, the transformation of raw materials by chemistry, the new management of life processes in agriculture, and, in a different field, the advances in medicine and physiology, including nutrition, which give human beings a new control over their lives. Whatever may be said about man's moral or spiritual progress, science has given him a new understanding of material things and a power to develop the resources of the earth which open up possibilities for immense advances in the well-being, health, and productive ability of human beings the world over. Nor is the knowledge on which these possibilities are based by any means complete. There is every reason to believe that it is only at its beginning, and progress far beyond anything now known is a reasonable expectation.

3. There may be differences of opinion about details, but this is the broad picture, amply proved by what has been accomplished in various parts of the world.

4. Freedom from want, it should be noted here, means the conquest of hunger and the attainment of the ordinary needs of a decent, self-respecting life. It is not to be expected that human beings who have reached this goal will be free from

desire for the other good things of life. Indeed, the dynamic force that makes an expanding economy possible is the desire for continued betterment—including leisure to enrich the mind and renew the spirit—which grows as elementary needs are satisfied.

5. This generation goes beyond the conviction that freedom from want can be achieved and believes that the effort to achieve it has become imperative. The profound depression in which much of the world sank during the inter-war period; the spectacle of millions of unemployed, of ruined farmers, and of hungry people contrasted with the known potentials of modern production; and finally the rise of ugly theories of world conquest and the use of armed aggression as a way out of hard problems, ending in the cataclysm of a second world war—these events have convinced men that the world's resources must be better used for human welfare and that nations must work together rather than at cross purposes, or our civilization may go down to destruction. The high levels of production and the coordinated international planning attained for the purposes of war have strengthened the conviction that as much and more can be done for peace.

6. Thus the Food and Agricultural Organization is born out of the need for peace as well as the need for freedom from want. The two are interdependent. Peace is essential if there is to be progress toward freedom from want, for the insatiable demands of modern war on a world scale will in the end take all men can produce. Progress toward freedom from want is essential to lasting peace; for it is a condition of freedom from the tensions, arising out of economic maladjustment, profound discontent, and a sense of injustice, which are so dangerous in the close community of modern nations.

7. By itself the Food and Agriculture Organization could make only a limited contribution to progress toward peace and freedom from want. But it begins its work in an atmosphere of much wider international effort, and it must be viewed in this setting. It will be associated with the Economic and Social Council, which in turn is part of the general international organization, to be known as the United Nations; and as working partners it will have coordinate bodies concerned with the international problems of labor, credit, monetary stabilization, commerce and trade, health, education, and other matters vital to the welfare of nations. In everything that follows in this report, it is taken for granted that the work of FAO in furthering increased agricultural production, better distribution, improved nutrition, and the welfare of rural populations depends for its success on such concomitant efforts as those looking toward international security, on expanding world economy, full employment, adequate buying power, and international trade free of hampering restrictions.

8. Within this complex of efforts, calling for an immense amount of coordinated work, a great deal of which will be new exploration, FAO is concerned with that large sector represented by the world's farms, forests, and fisheries, and by the needs of human beings for their products. Its work is thus associated in a singularly true sense with the fundamental well-being of nations, and of people as both producers and consumers. For the crops that grow in the soil and come out of the sea are

man's food, and they make his clothing and other textiles, and his houses, and furnish no small amount of his fuel, besides supplying the raw materials for an increasing range of manufactured articles. If everyone had enough of these products of the soil and the sea to meet his needs, nations would indeed have gone a long way toward freedom from want. Not only hunger but many of the other hardships and handicaps of poverty would have disappeared.

9. If there is any one fundamental principle on which FAO is based, it is that the welfare of producers and the welfare of consumers are in the final analysis identical. For a vast majority of the world's people, this is self-evident; they are the farmers, hundreds of millions of them, outnumbering all the other people on earth, who produce the food they themselves consume and little or nothing besides. But in the case of the two other great groups—the consumers who live in towns and work in industry and trade, and the farmers who sell a sizable proportion of their produce to this group—the identity of producer welfare and consumer welfare is by no means always self-evident. On the contrary, the interests of the two often apparently conflict. But the conflict is only apparent. The exploitation of producers as a group will not in the long run benefit consumers, nor, in the long run, will it benefit producers if consumers as a group are put at a disadvantage. Wherever the contrary seems to be true, it is because all of the factors have not been taken into account, including the risk of social upheavals and wars. There is always a larger framework in which producer and consumer interests are seen to be the same. It will be the business of FAO to seek and to emphasize this larger framework, this whole view, as a basis for the reconciliation of differences and for progress toward freedom from want and higher levels of living for all.

10. For in world councils and international affairs, FAO speaks both for those who produce—the farmers, the forest producers, the fishermen—and for those who consume. In this, as well as in the fact that it includes so wide a range of production, it is different from any other international organization in its field. FAO is predicated in the whole view as against the partial or fragmented view. On one side are the great, unsatisfied needs of people as consumers; on the other, the great, untapped possibilities of improving and increasing production. FAO is founded on the belief that the needs and the production capacity must be brought together as directly as possible, one being integrated constantly with the other, and that if this can be done within and among nations by their separate and collective action, some of the world's worst economic ills, including the hunger and extreme poverty that attend great masses of mankind, will be on the way to extinction.

11. These generalities give no conception of the nature and difficulties of the task. It is not possible to wave a scientific wand and make production efficient and people healthy and well-nourished. Knowledge about better production methods, better processing and distribution, and better use of foods is available and can be spread fairly readily. How to get it put into practice on the necessary scale is the problem. Even in the most highly developed countries, where the best farming is a model of efficiency and the general level of nutrition is relatively high, great numbers of farmers are far behind the times in their practices, and as many as a third of the

population fails to reach the level of health that good nutrition would make possible; and at the same time there is room for great improvements in housing and in the general standards of living of rural people. In some of the less developed countries, the conditions of life in vast areas are appalling. The barriers that stand in the way of the needed improvements are many and difficult: deep-rooted customs and traditions, lack of education, rigid economic and social institutions, vested interests, lack of money, lack of international collaboration. To surmount these difficulties will call for all the wisdom and will that nations, acting by themselves as well as through FAO and other international organizations, can muster. It is not a short or simple task.

12. Fortunately, there is no need to think in terms of the millennium—that is, in terms of achieving freedom from want everywhere equally and quickly. In the opinion of experts in nutrition, for example, it is possible even in poor areas and at existing economic levels to bring about a fairly rapid improvement in the health of immense numbers of people by using present food supplies to better advantage. This is also true of production; even half a dozen more eggs each week from a flock of a dozen hens amounts to some 300 eggs in a year, which can mean a great deal to a small farmer. The arithmetic of progress is like the arithmetic of mass merchandising: a small profit per customer multiplied by a sufficient number of customers gives a large total. If every man in need of a shirt could get one, growers of cotton would be considerably better off; likewise growers of timber if hovels could be exchanged for houses worthy to be called homes.

13. If FAO views its work in such terms, it need never be discouraged. Each advance can be counted a real gain as well as being a steppingstone to the next advance.

14. It is a large order nevertheless. But so is the carrying out of any great conception of the human mind and spirit. In spite of the magnitude of the undertaking, the nations associated together in FAO may approach it with confidence. They have shown their determination to get together around common council tables to work out their problems, and the best wisdom and experience of many countries will be mobilized for the task. Under these conditions, the outlook is propitious.

2. International Coordination

THE PROBLEM

FARMERS in the more highly developed countries are inclined to view proposals for expansion of production after the war with some skepticism. Not that they do not want to expand; on the contrary, it is inherent in farming to want to produce as much as possible. Farmers are craftsmen, and a good harvest is evidence of good craftsmanship. But they have had too recent and too bitter an experience of what happens when production runs ahead of effective demand to accept proposals for expansion on faith. To understand this realistic and justifiable caution, it is necessary to look briefly at past history.

16. Surpluses were the nightmare of most of the highly developed countries during the inter-war depression. The word *surplus* bit deep into the consciousness of farmers in particular. They still have a wholesome dread of it, knowing that if the same forces are again allowed to operate, agricultural producers may again come uncomfortably near to fulfilling Shakespeare's prediction about the farmer who hanged himself in the expectation of plenty. In other words, an ill-considered expansion, particularly in the case of such products as sugar, wheat, and cotton, could result in the same kind of situation that brought so many farmers so near the verge of ruin in the depression period.

17. It is now a truism, however, that the surpluses were surplus only in relation to purchasing power—effective demand—and not in relation to the needs of human beings. For while prices were depressed so that farmers could not make ends meet and farm products were rotting for lack of markets, great numbers of families even in the surplus-producing countries lacked the food they needed for health, the clothes for warmth and self-respect, and the other necessities and comforts that go with decent living. Yet these people were luxuriously supplied compared with the far greater numbers of the ill-fed in the less developed countries.

18. This is not the place to attempt to unravel the complex adjustments by which governments tried to solve the problem of surpluses. Each did what was thought to be best for the interests of its own people, but with the exception of a few international commodity arrangements each generally acted alone, so that what was done in one country often made effective action more difficult in some other country. Many devices were tried, one leading to another. When prices were supported to enable farmers to stay in business, it became necessary to restrict production; if it was not restricted, the higher prices brought greater production, which resulted

in larger surpluses, which then had to be destroyed or distributed free or at a lower price, the government taking the loss. Tariff barriers were raised to keep foreign products out of the home market while export subsidies were granted to dump products in someone else's home market. Financial inducements were offered for producing less of certain commodities in countries that could produce them economically, and for producing more of the same commodities in countries where production was essentially uneconomic; in either case consumers had to pay more or buy less. There were export and import quotas, two-way barter agreements, preference systems for favored countries, and so on.

19. In other words, infinite ingenuity was spent on devising indirect or roundabout ways to overcome the agricultural depression. Then suddenly war swept it away by the direct method, namely, providing markets, full employment, purchasing power, and international collaboration. The same countries that shortly before had been burdened with surpluses now found themselves hard put to produce enough, though they strained every sinew and used all their inventive ability.

20. How will FAO be able to encourage expanding production without at the same time running the risk of creating disastrous surpluses? The question goes to the heart of the FAO program, and in the long run the success of the organization is likely to depend to a considerable extent on the success with which it meets this challenge.

21. In the inter-war depression, effective demand was relatively static or in some countries even receded while potential production steadily increased through scientific advances. Except for some food distribution for relief and in other special ways, attention was centered largely on restricting production to fit the effective demand. If the same course is followed in the future, the restrictions will have to be progressively more drastic, since potential production will unquestionably continue to increase. But the world is sick of this negative approach to the problem, which so signally failed, and FAO has been created in part because of the revulsion against it. The only possible basis for a program of expanding production is to enlarge effective demand so that it will equal and even outstrip production, and organizations concerned with international economic problems, including FAO, will be expected to work toward this end. The possibilities for enlarging effective demand by building up and maintaining full employment and high purchasing power are enormous, for it could be made coextensive with human needs, which themselves enlarge as the more elementary ones are satisfied.

22. From the standpoint of agriculture at least three principles may be discerned as basic to an expanding world economy.

23. *International collaboration.* An expanding world economy will depend most on what nations do themselves, but it is vitally important that they act together. No government in isolation could provide remedies for such a situation as that in which so many countries found themselves during the inter-war period; indeed, isolated action worsens the difficulties. FAO, together with its counterparts in other economic fields, is being set up so that nations can act effectively together.

24. *A favorable agricultural-industrial balance.* As agricultural efficiency increases, the same number of farmers are able to turn out a larger volume of products. Since beyond a certain point the market for foods is more rigid than that for industrial products, enough of these farmers must have opportunities to shift to other occupations to maintain a proper balance between agriculture and industry, or agriculture will be forced to accept lower standards of living. Only under conditions of full employment can these opportunities be provided and the most favorable agricultural-industrial balance maintained. It should be noted, however, that the balance is somewhat flexible. Even in the highly developed countries, for example, there is room for a considerable expansion in the production of protective foods to raise the general level of health; thus some farmers could shift from overcrowded types of production to more advantageous types. Moreover, the market for some farm products can be expanded to an unpredictable extent if industry can use increasing quantities of agricultural raw materials at prices that will give adequate returns to the growers. Finally, expanding export markets can of course materially change the agricultural-industrial balance. But this is only to say that there is a world balance which affects the balance within each country and which FAO and other international organizations must take into account.

25. *The development of less advanced countries.* In some ways the development of the less advanced countries may be regarded as the major need of the decades following the war. In an age of increasing agricultural efficiency and industrial mass production, it is little less than suicidal to leave two thirds of the world's people in a state of chronic poverty and undernourishment. Here lies the greatest opportunity not only for improving human welfare but for expanding the demand for agricultural and industrial products. Unless the opportunity is vigorously developed, through FAO and other international organizations, industry and agriculture will have to continue throttling production down to a restricted demand, which is like hobbling a finely bred race horse and expecting it to win the race.

26. There is a great deal to be done in putting these principles into practice.

27. For one thing, nations need a comprehensive reporting system which will give in accurate detail the figures on present and prospective supplies of agricultural products country by country. The figures available before the war were fragmentary, incomplete, and not always reliable or comparable. It is one of the functions of FAO to build up such a reporting system, through reports from governments and by all other feasible means. At the same time, figures on market needs and on prices will be collected and analyzed to complement the figures on supplies. This regular information, gathered from and going to all countries, will in itself be of immense value. In recording the present status of agriculture in Member countries and as a basis for annual progress reports, periodic censuses of agriculture will be especially useful. The attention of governments should be directed to the need for a world census of agriculture to be taken in 1950 or as soon thereafter as practicable.

28. But FAO has not been created as a statistical agency. Gathering statistics is only part of its work. From the statistics, and from many other studies, it will be expected to develop an accurate quantitative picture of production in each country

and of the factors determining it: the physical environment—climate, soil, water supply—and social and economic conditions, including available markets and the state of technological development.

29. But it will not be enough to know present production; study must be given to potential production as well—what might be done if certain improvements were made in the physical environment, such as the soil, the water supply, the size of farms, and what would be needed in the way of social and economic adjustment—for example, better agricultural credit and land-tenure systems—to make these improvements possible. This kind of analysis, again, would be complemented by an equally dynamic picture of potential demands for the products of farms, forests, and fisheries. For FAO is not created to accept existing demands as static but to stimulate new demands by getting progressively higher goals set all over the world for nutritional well-being, health, and standards of living in general. This means progressively higher goals for consumption—in sum, an expanding economy and progress toward freedom from want.

30. The process briefly discussed here is not essentially different from that followed by any large industrial concern preparing to expand production and markets; or by a group of engineers and other experts surveying the possibilities of, let us say, a great irrigation project or a river valley development; or by a government engaged in gearing national production to the needs of modern war. The techniques of gathering and analyzing such information, in other words, are available, though they would need to be applied on a more extensive scale than has hitherto been attempted. Perfection would doubtless never be attained, but neither is it necessary for practical purposes.

31. Much of this information nations will be able to put to good use themselves. But again, FAO is not being created only to give out information, however useful. It is expected to help individual countries to solve their problems and to bring nations together so that common problems can be met by coordinated action. If, for example, a country has determined, perhaps partly as a result of studies made in cooperation with FAO, that modifying or reorienting some part of its production pattern would be to the advantage of producers and consumers, it might ask FAO for assistance, say in getting expert personnel to make the necessary technical studies or obtaining a loan from the international bank. Much of this kind of action would be based solely on the internal needs of countries, especially those that are underdeveloped and most in need of such assistance. Increasingly, however, it should become common as a part of the process of international adjustment. For as patterns of production in all countries come to be better understood in relation to world needs, nations should be able to get together more and more through FAO to work out mutually advantageous arrangements for coordinated programs.

32. This implies that FAO will be involved in questions of world trade. It will not be the international organization to which primary responsibility in this field is assigned, but it will be vitally concerned to see that such an organization is created, and to cooperate fully with it. As the inter-war period showed, trade barriers can be a large factor, both as cause and effect, in agricultural maladjustments adverse

to the interests alike of producers and of consumers, and FAO can be useful to governments in helping to correct that situation.

33. In the United States there is an expressive term for a man who is assigned the job of discovering the most troublesome spots in an industry or business and correcting them. He is known as a "trouble-shooter." FAO should serve as a trouble-shooter for its Member nations in international adjustments involving agriculture, forestry, and fisheries, and their products. Among the most troublesome problems are those centering around a few major commodities that persistently piled up surpluses during the inter-war depression. The approach to these problems has been in the main to make international arrangements to restrict production on a quota basis in order to maintain prices.

34. Where final responsibility in the field of commodity arrangements will rest is a matter which cannot be settled until the United Nations have reached decisions on the work and functions of the Economic and Social Council and of the specialized organizations that are to be set up. But again FAO should have an influence on the arrangements. To the extent that the work of FAO helps to increase demand through better living standards and a better agricultural-industrial balance, it will help to make restrictions less necessary. To the extent that it helps nations to reorient production toward more economically advantageous patterns, it will lessen the danger of supplies overpassing effective demand.

35. Finally, when temporary surpluses develop, FAO can take the lead in urging that they be used to alleviate the needs of hungry and poverty-stricken people in certain regions. FAO can help to work out the necessary arrangements, especially during the early years before the techniques of international cooperation are fully developed. Such arrangements, agreed upon by all the parties concerned and adequately safeguarded, would be an orderly process bearing no relation to the dumping of products at distress prices upon already glutted markets. And it would have more than humanitarian value. For if a country far down in the scale of industrial development starts an extensive program of industrialization, it may for a time have to devote most of its resources to building up capital equipment, postponing the satisfaction of consumer needs. Assistance in the form of sizable supplies of a staple necessity at a special price might help to reduce the hardship and facilitate the industrialization process.

36. In the light of what is now known about output and demand, international trade can be made consonant with stability and prosperity. The price fluctuations can be smoothed out, the artificial distortions in production patterns gradually reduced, and the accumulation of unsalable stocks avoided. For this, international coordination is essential, and FAO can help to provide it.

3. Nutrition and Food Management

WHAT NUTRITION MEANS FOR HUMAN BEINGS

FROM the moment when two microscopic cells unite in conception, the human body builds all its substance from the food it gets. If the food be inadequate, the body will be correspondingly inadequate. People who are not well nourished often lack the energy and the ability—even the imagination and the will—to better their lot. They number perhaps three fourths of the world's population. By so simple a means as enabling them to get more and better food, great human potentials can be unlocked. This is the significance of the modern knowledge of nutrition.

38. "In the past," wrote Dr. James S. McLester, formerly president of the American Medical Association, "science has conferred on those peoples who availed themselves of the newer knowledge of infectious diseases better health and a greater average length of life. In the future, it promises to those races who will take advantage of the newer knowledge of nutrition, a larger stature, greater vigor, increased longevity, and a higher level of cultural attainment. To a measurable degree, man is now master of his own destiny where once he was subject only to the grim hand of Fate."

39. In organizing FAO, nations are making a concerted effort to link the newer knowledge of nutrition with the newer knowledge of production—both constantly growing in scope and exactness—and use this combined force to broaden and accelerate progress in health and well-being. To be sure, better nutrition is not the only requirement, just as food is not the only need of man; there are such needs as adequate clothing, housing, sanitation, medical services, education, and the opportunity for worth-while work, to name only a few. But progress in achieving adequate world supplies of food and better nutrition implies and is intimately linked with progress in these other directions.

40. Of the nutritional state of most of the world's people there is as yet only a fragmentary knowledge in anything like accurate terms. It will be one of the undertakings of FAO to build up this knowledge in greater detail. What is known, however, indicates that on the whole the picture is a dark one. In Asia and the tropics, three fourths of the people live on diets far below what is needed for good health. Many get only enough food to meet the normal minimum energy needs of the human body at rest, with no allowance for muscular activity. Pellagra, beriberi, rickets and other bone troubles, nutritional blindness, goiter, anemia, and endemic dropsy are prevalent in many places. Life expectancy at birth is low—26.9 years for males

in India (1931) compared with 65.5 in New Zealand (1934-1938). Infant mortality is high—170 for every 1,000 live births (1931-1935) in British India compared with 32 in the European population of New Zealand. In large parts of Asia it would seem that the hazards of existence have not been materially reduced since the Stone Age. On the other side of the world, in many parts of Central and South America, conditions are probably no better; in Chile, for example, there were 233 deaths from pulmonary tuberculosis in every 100,000 of the population compared with 36 in the Netherlands before the war. In central and eastern Europe also there is extensive malnutrition, contributing to high mortality and disease rates.

41. In the highly developed countries the situation is very different, and there has been much progress in recent decades. In the Netherlands, for instance, the expectation of life at birth for males was 29.5 years in 1840-1851 and 65.7 in 1931-1940, and about half of this advance was made after 1900. But such figures are averages and do not show the deviations. When these are considered, the developed countries have little reason for complacency. In western Europe 20 to 30 percent of the population were malnourished according to the best available prewar evidence, and in the United States a third of the people was reported to have diets below modern standards for good health. Among these underprivileged groups, life expectancy is correspondingly low and the incidence of disease correspondingly high.

42. For the most part, malnutrition coincides with poverty, yet there are enough exceptions to prove that an adequate income by no means assures an adequate diet and that wise food selection is a powerful aid to a slim purse. Moreover, just as the standard of living rises with material progress, so has the conception of what constitutes good nutrition risen with progress in scientific knowledge. The more recent clinical and laboratory evidence proves that obtaining a diet sufficiently good to protect the body against the gross deficiency diseases is only the beginning of nutritional wisdom. Further improvements can be made that will pay rich physiological dividends in greater vitality and greater freedom from many common ills, an extension of the prime of life, and a further reduction in infant mortality and the hazards of childbearing. Some physical and psychological disabilities formerly considered inherited or inevitable are now found to derive from inadequate nutrition, and immense numbers of people can accordingly set their sights for achievement higher than when it was thought they were born to frustration. The newer knowledge of nutrition suggests that millions have yet to discover their true possibilities, and few have a sufficiently high level of nutrition to develop them fully.

43. The research findings are complex, as indeed they must be in view of the great subtlety and complexity of life processes, especially in the human body. Yet for most practical purposes, they can be summarized in three relatively simple generalizations. Every human being must get the right amount of fuel—obtained mainly from carbohydrates and fats, but to some extent from proteins—to supply the energy his body needs. He must get enough of some eight or ten amino acids—obtained from animal and vegetable proteins—to build and repair his body tissues and perform some other functions only now being explored. And he must get enough of a number of minerals and vitamins—obtained from a great variety of foods, some being

far richer or more economical sources than others—to act as bone builders, oxygen carriers, expediters, inhibitors, protectors, regulators, and what not in the complicated electrochemical activities of the body.

44. These three great imperatives of nutrition can be met by eating a varied diet that can conveniently be considered as a combination of a few main food groups: grain products—vegetables and fruits—milk—meat, fish, eggs—fats—sugars. Within most of the groups there is such a multiplicity of possible choices among the world's many foods that diets can be immensely varied yet all nutritionally adequate if the choices and proportions are right. Certain substitutions can be made even among the main groups, though not with the same ease or safety; when necessity dictates, for example, a combination of legumes and grains can do duty for much of the high-quality protein furnished by animal products.

45. Finally, the food should be so handled, stored, processed, and prepared that its original nutritive values will not be unduly damaged. Grain products, for instance, lose most of their minerals and vitamins when they are highly milled.

46. Except in abnormal or pathological cases, all nutritional ills are due to failure, for whatever reason, to follow these few basic principles. All the great gains from good nutrition can be obtained by putting these few principles into practice. They are the key to FAO's work in nutrition.

WHAT FOOD MANAGEMENT MEANS FOR NATIONS

47. The implications of these facts are far-reaching. They point to the need for a new concern on the part of national and international statesmanship with what might conveniently be called food management. This term has not been precisely defined but it does draw attention to the fact that food can be managed for the welfare of people and nations. It is also a unifying concept; for everyone concerned with food has a part to play and a contribution to make in food management, from the individual housewife who plans and prepares the meals for her family to the international organization with responsibilities in this field—including, in between, the farmers who produce food, the food industries, numerous scientific and professional groups, and various branches of governments.

48. From the food management standpoint, the outstanding fact about production, clearly emphasized at Hot Springs, is that not nearly enough food is produced in the world to meet all the nutritional needs of its people—probably not enough even for their energy needs, and far from enough for the other needs that are as vital as energy. The foods most generally needed in greatly increased quantities, by modern dietary standards, are milk, vegetables, and fruits; in some places meat, eggs, and fish are in much too short supply. In the United States in 1936 it was estimated that for everyone to have a diet that would furnish the allowances of nutrients recommended by the National Research Council, the consumption of leafy, green, and yellow vegetables would have to be increased by 90 to 130 percent; citrus fruits and tomatoes, up to 50 percent; milk, 40 to 70 percent; eggs, up to 15 percent; meat, up to 5 percent. In most of the developed countries, the increases

would have to be of similar magnitudes, and in the underdeveloped countries, much greater—plus, in the latter countries, more energy-yielding foods.

49. Thus, to meet nutritional needs adequately would require a large expansion in world production, especially of the foods just named. In many areas, this would involve some reorientation of agriculture away from too great concentration on staple energy foods and toward a more liberal output of livestock products, vegetables, and fruits. Fortunately, such a reorientation and selective expansion, with its emphasis on diversified farming, is generally favorable to good soil management. Market conditions, credit facilities, and consumer purchasing power need to be such that it is favorable also to the welfare of farmers. By the use of suitable economic adjustments and incentives, governments can do much to facilitate desirable reorientations of production.

50. The handling, processing, and storing of agricultural products is sometimes almost a part of production; sometimes it is more closely linked with marketing. From the food management standpoint, the aim here should be to foster the development of more and better means for getting foods of the best possible nutritive value to consumers, whether they be on the farms or in the towns. The range of possibilities is enormous. In the less developed countries, and likewise in many areas in other countries, the most elementary needs have yet to be met: home storage of vegetables and fruits, simple methods of storing eggs on the farm, home and community canning, and sanitary handling, cooling, and pasteurizing of milk—everything, indeed, that will help to make a more varied supply of good food available to more people throughout the year. Some native methods of preparing foods offer valuable suggestions for practices that might advantageously be extended to other areas—for example, the use of bean sprouts and the many ways of processing soybeans in parts of China; the use of boiled whole grain or cracked grain as a vegetable dish, and of fermented milk, in the Middle East; the use of a great variety of cheeses in some countries. Widespread use of methods of processing grain that keep intact as much of the original nutritive value as possible is extremely important because grain products constitute so large a part—up to 90 percent on a calorie basis, in some far eastern areas—of the diet of many people; to rob them of the nutrients in grain is to undermine their vitality at its source. Where highly milled grain products are extensively used, fortifying them with minerals and vitamins has proved to be a practicable way to increase their nutritive value in certain respects. Among the more advanced developments in the handling of foods are home or community or commercial quick-freezing and cold storage of perishable products, refrigerated transportation, air transport of certain foods, and improved methods of dehydration. The last offers possibilities for bringing certain perishable products—milk in the form of dry powder being one of the most important—to areas not able or ready to produce enough of these foods and perhaps hundreds or thousands of miles away from the places where they are produced.

51. Although food handling, storage, and processing have been developed to a high state in some countries, there is room for substantial improvements, particularly in maintaining nutritive values, and improvements are constantly being sought.

There is also the possibility of growing foods of especially high nutritive value. Recent research indicates that substantial progress can be made in this direction. Mineral deficiencies in certain soils can be discovered and corrected so that the plants grown on such soils will have a higher mineral content; some plants can be bred for an increased content of certain vitamins; environments can be chosen that will yield plants especially rich in certain vitamins—an abundance of light, for example, favors the elaboration of increased amounts of ascorbic acid in plants.

52. A third large factor in a food management synthesis is marketing and distribution, including increased and better coordinated international commerce in foods to keep pace with expanding production; for few nations are able or wish to produce enough of everything for themselves, though they may be forced to attempt it under conditions such as those which prevailed in the inter-war period. Marketing is discussed elsewhere in this report. It may be pointed out here, however, that in large areas in the underdeveloped countries there is need for the most elementary facilities, while those in the developed countries need in many cases to be expanded, modernized, and rationalized from the standpoint particularly of giving more economical service and narrowing the wide margins between farm and retail prices.

53. One aspect of distribution has an especially close relationship to improved nutrition. Experience proves that one of the quickest and most certain ways to ensure a better nourished, healthier, stronger population is to begin with the children, and even before that, with the mothers nursing and the women about to bear children. Acting on this principle, several countries even before the war experimented with such methods as school meals, morning or afternoon milk or other special foods for children in school, and special distribution of milk at low prices to certain population groups. In Great Britain during the war, mothers and children have been given a prior claim on the supply of milk and citrus juices in the rationing scheme, with notably beneficial results. Other food distribution methods go beyond the mothers-and-children group. The food-stamp plan in the United States made "surplus" foods available free but through regular trade channels to low-income families; Great Britain has developed a system of national restaurants where workers can obtain nutritious meals at low cost, and various countries have instituted systems of restaurants and canteens in industrial plants to help ensure better nutrition for workers.

54. There can be no doubt about the effectiveness of these methods. The fundamental question is whether the national health is a public responsibility to the extent of justifying such special food distribution schemes at public expense, or partly at public expense. Each nation must decide this question for itself. If the answer is in the affirmative—as it has been in many countries during the war—obviously such methods offer many varied opportunities for raising the level of well-being of large population groups, and eventually of the whole population through the children, and at the same time for making good use of farm products outside the usual markets. Perhaps in the general balance sheet of society the cost would be small. Poor nutrition means among other things inefficient work, lost

time, and unnecessary illnesses, for all of which society pays in one way or another; in many cases they are a direct public expense. Farm "surpluses" result in another kind of public expense. Both might be to a large extent cancelled through carefully worked out schemes, integrated in the marketing mechanism, for special food distribution.

55. Public education is a fourth aspect of food management. In themselves, increased purchasing power, better production, and better handling, processing, and distribution of foods will do much to raise levels of nutrition and health. But they will not ensure the desired results automatically. Individual responsibility and intelligence must play a large part. Individuals choose their own foods, and they are apparently not equipped, like lower animals, to make the right choices instinctively—or the human environment is such that they are unable to exercise the instinct. They prepare their own foods—and there is no instinct for preventing drastic losses of vital nutrients in food preparation. These things must be learned, and the earlier in life the better; later on, the individual may be set in habits and prejudices very hard to modify. Consumer education by every effective means—in school classrooms, through talks and demonstrations for neighborhood and community groups, and through the radio, motion pictures, and the printed word—has a large part to play in furthering the aims of food management. The work is not easy even under the most favorable conditions, and in many areas it is a herculean undertaking; but the enlarged understanding and the creative participation that result are highly rewarding.

56. In production, handling and processing, marketing and distribution, and education, the purpose will necessarily be the production, distribution, and use of specific quantities of specific foods. How are these quantities to be determined?

57. In the less advanced countries, there is little in the way of statistical foundations on which to base quantitative goals for production and consumption, and the best that could be done, in the beginning at least, might be to foster greater production and use of the foods most urgently needed for better health. For more highly developed countries a fairly clear-cut technique is available which has been worked out bit by bit during the past few years. In brief, it involves these steps:

Recommended allowances (dietary standards), such as those of the National Research Council in the United States, are formulated, showing the amounts of the different nutrients, including a margin of safety, which individuals should have to maintain good health. An early undertaking of FAO should be to arrange for international agreement on such standards.

Information is compiled on the composition and nutritive value of the foods commonly used.

Figures are worked out for individuals in various age, sex, and activity groups showing the quantities of different types of familiar or acceptable foods that will provide the nutrients recommended.

These quantities are multiplied by the number of persons in the population in each group, and the totals are summed for each food.

These consumption needs are translated into production goals, some additions being made for wastage between production and consumption.

58. It will be observed that this is a direct nutritional approach to production. Obviously, it is not ideally workable. Other important factors, including prices, effective demand, and production potentials, must also be considered in determining goals. Probably nutritional goals, as measured by recommended allowances, will never be met precisely. Foods are complex substances, and getting enough of one nutrient frequently involves getting more of another than is needed. Moreover, recommended allowances cannot be tailored exactly to the requirements of each individual, and the allowances are themselves subject to revision as nutritional knowledge becomes more exact. Nevertheless, with due latitude for all of these uncertainties, the technique here briefly outlined can be regarded as a basic part of any effort to bring about an effective linking of nutrition and production.

59. The calculations described yield data only in terms of averages, covering the population as a whole. To supply more detailed information, sample surveys are made of the foods actually used by selected representative families in various population groupings and geographical areas. When such consumption data are translated into nutrients and these are compared with the recommended allowances, the result gives some measure of the adequacy of diets among different economic or other groups, and hence of the improvements needed. Additional information of great value can be obtained by sample clinical surveys of the nutritional condition of population groups—for example, school children.

60. As a basis for family food selection, the foods commonly used can be arranged in groups as indicated earlier in this chapter, on the basis of their principal nutritive contributions to the diet. Consumers can use such listings of foods as a guide in making up an almost infinite variety of nutritionally sound meals, the choices depending on personal preferences and habits, the availability of various foods, and the amount of money to be spent for food.

61. Although the advances indicated by the development of these techniques have been great, much remains to be discovered about the nutritional needs of human beings, the nutritive content of all of the world's many foodstuffs, the most economical combinations of foods, the psychological and other bases of food habits, the most effective means of consumer education, and better ways of producing, processing, and distributing foods. There is need not only for a great deal of research, but for a far more active and widespread exchange of information so that knowledge can advance and be put to use more quickly in all countries.

62. Enough is now known nevertheless to make clear the main outlines of a sound food management approach. Nutritional goals can be set in terms of nutrients; these can be translated into the foods used in any country; the nutritional status of a population and the margin of unsatisfied need can be estimated; production potentials can be determined; and, in the light of these and other factors, production and distribution needs can be worked out. None of these techniques is entirely new or untried. Indeed, their use, however imperfect, in some countries

in recent years has been largely responsible for the fact that for the first time in history during a great war the nutrition and health of the people as a whole not only did not retrogress but actually improved. What has been done during the war suggests lines of future development in which FAO can help nations desiring assistance.

63. Though peace will bring its own difficulties and there will not be the imperatives of war demanding action, it should be possible to accomplish far more in the years ahead than under the manifold handicaps and distortions of war. The wartime achievements of a few countries, in fact, are only a foreshadowing of what can be done much more widely if nations act together in peace.

4. Agricultural Production

THE PROBLEM

IT WILL be useful to look first at conditions in the highly developed countries, where perhaps a quarter of the world's population lives. The most significant fact is the rapid decrease in the proportion of people engaged in agricultural production. A century and a half ago in the United States, for example, nine out of every ten people were farmers, producing only enough for themselves and the tenth person; today, only two out of every ten are farmers, and they produce enough for the other eight persons besides themselves. During the present war, there were four million fewer people on farms than there were during the last war, yet those who were left broke all previous records, producing almost 50 percent more than during the last war.

65. To some extent this striking reduction in the percentage of people engaged in farming in the industrialized countries is due to a division of labor. Things formerly made by the farm family for its own use—dressed lumber, tools, equipment, furniture, fabrics, clothing, shoes, soap, flour, syrup, and so on—are now made by workers in factories, and farmers devote correspondingly more of their time and attention to crop and livestock production. But for the most part, the change has been brought about by scientific and technological advances which have progressively increased production per man-hour or per acre or both. Thus fewer and fewer people were needed to produce the same total amount of food and other agricultural products, and more and more were able to go into industry, commerce, and the professions. This release of people from primary production on the land was partly the result of the development of modern industry, but conversely it also made modern industry possible by supplying it with the necessary manpower.

66. It would be hard to assess accurately the part played by governments in the technical improvements that have revolutionized agriculture, but it has been very great. Probably most of the mechanical equipment used by farmers since the first steel plow has been developed by private industry. Most of the older breeds of livestock were developed by private breeders. But great advances have been made in modern times in the understanding of climatic effects, weather forecasting, soil management practices, the breeding of improved varieties of plants, the breeding and management of livestock, the newer as contrasted with the older methods of livestock improvement by breeding, the control of diseases and parasites of crops and livestock, and the control of predatory insects. These advances are due for the

most part to research stimulated by government and carried on largely at government expense, though many of them were derived, of course, from more general discoveries contributed by scientists working in universities for the advancement of knowledge. Farming is not, like industry, well organized and concentrated in a relatively few centers; it is widely scattered, mostly in comparatively small units operated by people with small incomes who cannot command the knowledge, facilities, or personnel for scientific research. Governments have quite generally assumed this responsibility in the interest of agriculture and the people as a whole.

67. Since the middle of the nineteenth century government-supported agricultural colleges and research stations have been established throughout the industrialized nations. Associated with their work, which covers a wide range of research, have been other government services related to agriculture. Typical examples include strict control of certain diseases and pests by quarantines and other measures; educational or "extension" services organized to bring information and advice directly to farmers; assistance in putting soil-conservation measures into effect; a considerable range of economic and marketing services, including grading and standardization for certain products; government banks for farm mortgages and other loans; and, in recent years, national agricultural planning, accompanied by such measures as subsidies and price control for implementing the plans.

68. Much has been accomplished in a relatively short time. Yet even in the technically advanced countries it can hardly be said that all is well with agriculture; nor is it necessary to look very far to see how much still needs to be done. Great numbers of farmers are poor, and the patterns of agricultural production in certain areas tend to keep them poor. Tenancy arrangements need to be improved in many cases. Educational and health facilities in rural areas are for the most part far below those in urban areas. Housing is frequently bad. Known scientific facts are applied most unevenly; for example, the number of dairy cows on farms could be greatly reduced with no loss in total milk production if high-producing cows developed by modern breeding methods were generally used.

69. The most significant fact in the less advanced countries is that in this the twentieth century, out of every ten people seldom less than seven are farmers; in some areas, where the proportion has changed little in a thousand years, the number is as high as eight or nine out of every ten. The industrial revolution and its accompanying agricultural changes have not yet reached these people. Production per man is low—so low that many families barely glean enough calories from their meager crops to keep the fire of life going in their bodies. Yet human muscle, which demands large and steady supplies of fuel, must do almost all the work, since draft animals are scarce and tools few and primitive. Methods of production are for the most part ages old, though they may be well adapted to the conditions imposed by circumstance and carried out with skill as a result of centuries of experience. Illiteracy is widespread. In the densely populated areas of the Far East, the land is greatly overcrowded—a family including four adult men may be working a farm of ten acres; in other places, as in some of the South American countries, there is more land, but much of it is undeveloped.

70. The people in all of these countries are poor, often desperately poor. There are so many of them that their poverty is a great weight upon modern civilization. They need not be so poor. If they could be free to make greater use of their inherent abilities, modern civilization would be free to stride forward much farther and faster. These people, who are perhaps three fourths of the world's population, could enrich it immeasurably.

THE WORK OF FAO

71. Obviously there is much for FAO to do in helping to bring about world-wide improvement in agricultural production.

72. Since the less advanced countries are primarily agricultural, one major line of attack must be through agriculture. The problem might seem hopeless if it were not for the fact that there is now a new awakening in so many of these countries. They are eager to learn, to be on the march toward a new freedom, to take their rightful place in modern civilization, to make better use of their natural and human resources, to contribute their share toward an expanding world economy. This is true of the young people in particular. They will work hard and sacrifice much to accomplish these things. With this will, nothing is impossible.

73. These countries are Members of FAO. It is expected that they will use the facilities of the organization in every possible way. Their agricultural scientists are well aware of how much needs to be done. Beginnings have been made. There are a few agricultural research and educational centers. Every year students from various countries are sent abroad for training. Technical assistance from some of the highly developed countries is eagerly sought.

74. Through FAO these efforts can be enlarged, systematized, and made more continuous and effective. FAO exists to bring about a free exchange of knowledge throughout the world. In the technically advanced countries a vast amount is known that can be adapted and applied to revolutionize production in the less developed regions. There is no reason why a country should not be able, through FAO, to have its whole agricultural system, or any segment of it, surveyed by some of the world's outstanding experts with a view to working out comprehensive plans for improvements and new developments. There is no reason why it should not be able, through FAO, to obtain the services of experts for temporary periods to get new developments started; arrange to send many more students abroad for study; start new research, coordinated with that in other countries; get in touch with sources of breeding material for improved crops and livestock; obtain help in coordinating its commercial production with world market needs; and do many other things that would be much more difficult to do without the aid of an international organization.

75. This is not to say that the task will be easy. A country with a relatively primitive agriculture, poor, and perhaps with far too many people on the land faces years of struggle to bring about extensive improvements. Yet if imagination and boldness and the active good will and cooperation of many nations are brought to bear upon the problem, the difficulties can be greatly reduced.

76. The simplest beginnings should not be despised; indeed, they should some-

times be especially sought. A steel hoe can make a great difference to a man who has never had one. The use of a little insecticide dust may double or triple the quantity of food obtained from a patch of land. A village incubator can furnish better bred poultry that will make it possible for small farmers to increase their meager cash income by many dollars a year besides getting more eggs to eat. Just such improvements as these, elementary yet vastly important to people who have almost nothing to work with, should be developed on a wide scale. They can be the basis for local industries which would use materials largely of local origin to make needed equipment, quickly paying their own way and taking up some of the slack of underemployment on the land. Through FAO, the possibilities for such developments can be systematically surveyed, and agricultural engineers, agronomists, and others can be made available to get them started and to instruct local leaders.

77. This work is analogous to that of the Extension Service in the United States and similar services in other countries. By whatever name they are called and however varied they may be in type of organization, such services, competent, practical, extending to every farm community, and using local leadership as fully as possible, will be a prime need in underdeveloped countries seriously undertaking to improve their agriculture. Such a service is the intermediary between the scientist and the farmer, translating the findings of science into terms the producer can understand and showing him how they can be applied under his conditions. FAO will need to pay a great deal of attention to this kind of work, and it should be prepared to bring together for the benefit of Member countries the best available information on how these services can be organized and improved.

78. If the improvement of agriculture in the less advanced countries were confined to this, it could go a considerable way, but it would sooner or later come to a dead end, stopped by major economic and social obstacles. There is a vast amount to be done of a larger sort. In some countries farmers stagger under a perennial burden of debt at usurious rates. The load must be taken off their backs and an adequate credit system set up if agriculture is to progress very far. Tenure systems that force a continual reduction in the size of holdings as farms are divided among the heirs from generation to generation may make it impossible ultimately for anyone to get a decent living from the land. Feudal types of landholding, or the exploitation of producers by absentee landlords controlling large areas, are sometimes the major obstacles that stand in the way of improving rural welfare and the economic status of farmers. Governments must of course decide for themselves what they will do about correcting such conditions, but they may want to turn to FAO for disinterested analysis of the problems and information about the experience of other countries; or after a decision is made, they may seek advice on how best to carry out needed changes.

79. Of a different kind are large-scale development projects. Many million more acres of land could be irrigated in China, India, South America, Africa, the Middle East. Though the initial installation is costly, the public investment can pay large dividends in the form of increased agricultural production and opportunities for many people to make a better livelihood not only within the irrigated areas but in others

adjacent to or dependent upon them. Similarly, considerable areas of land can be made productive by clearing and drainage. On a still larger scale are regional or river valley developments that may involve extensive flood-prevention and erosion-control measures, afforestation, the development of hydroelectric power which can be used for new industries, and a well-planned program of agricultural production. Or a country may wish to improve and build up its livestock or dairy production where suitable areas of land are available; it is reported, for example, that almost unutilized parts of southern China are well-adapted to a considerable livestock development. In all such cases difficult technical problems are involved and mistakes are costly. FAO will be equipped to mobilize up-to-date scientific information, the services of survey parties, and expert assistance in getting projects started. Perhaps also it can be useful in helping to arrange for international loans if they are needed.

80. No purely agricultural development, however, will entirely meet the need, particularly in countries in which there is a heavy and increasing pressure of population on the land. Industries must be established which can siphon off the excess rural population and furnish opportunities for work at adequate pay in shops, factories, and offices. The industrialization must eventually be on a large scale if the pressure on the land is to be materially relieved, though the development of small village industries may be the first step and help considerably. Rapid population growth without adequate means of subsistence is the critical problem in large parts of the Orient, and if nothing is done it will become more and more acute. Modern studies of population trends indicate that industrial development is an essential step in solving the problem. These studies show that during the early stages of industrialization, with its accompanying rise in the standard of living and decrease in preventable diseases, the death rate is lowered but the birth rate remains high; hence for a time population increases rather rapidly and steadily. As industrial development advances and standards of living rise, however, the birth rate falls, and after a time population increase declines; in some cases the decline is great enough to result in a relatively stationary population. This has occurred in all of the highly developed countries throughout Western civilization, and there is reason to believe that it will occur in other countries, including those of the Orient, as they follow the path of industrialization with its accompanying changes in standards of living and individual psychology. The conclusion is inescapable that the sooner industrial development can begin and the more rapidly it can take place, the sooner an important step will have been taken toward solving one of the most dangerous and potentially explosive problems of modern times.

81. FAO can have only an indirect connection with the problems of industrialization, which will be in the province of other international organizations; but it can and should constantly emphasize the need as a matter vital to the welfare of the United Nations as a whole. It would be a mistake, moreover, to regard industry as something entirely separate from agriculture, or to think that no worth-while improvements can be made in agricultural production and rural welfare in the less advanced countries until industrialization has progressed to such or such a point. Agricultural improvement is necessary for industrialization; the purchasing power of the

great masses of farmers in the densely populated countries must be raised if new industries are to prosper, and agriculture must be enabled to produce more than the food needed for a bare subsistence for farmers if new industries that depend on it for food for their workers, for raw materials, and for labor are to be adequately supplied. Contrariwise, industrialization is necessary if agriculture is to go forward very far; and along with industrialization, means must be found to introduce into the fabric of rural life that high regard for the health, education, and welfare of the individual out of which the trend toward a lower birth rate characteristically develops.

82. The discussion in this chapter perhaps gives the impression that the services FAO will render for the less developed countries will be entirely different from those for the countries that are technically advanced. Actually, no sharp dividing line can be drawn. For example, FAO's market analyses and the services connected with bringing about a better international coordination of production will doubtless be useful primarily to developed countries, yet they will also be useful to all others that produce for foreign markets or need products from abroad. Assistance in the planning or carrying out of desirable reorientations of production, discussed elsewhere in this report, will be useful to both groups of countries, though the two groups will need different kinds of services, since the developed countries have resources for putting such programs into effect. Aid in working out problems of rural welfare will be useful to all countries; there is probably none that does not have such problems. So will the widespread exchange of information on current research and its results, the stimulation of further research, and the encouragement of adequate technical education and training, with all of which FAO will be intimately concerned. Modern scientific methods achieve results with such certainty, organized research stimulates inventive minds to so high a level of productiveness, and further progress depends to so large an extent on maintaining and increasing the supply of well-trained young scientists that nations can make no more profitable investment than the money they spend to make adequate research and education possible.

83. Finally, aid given by FAO to the less advanced countries will benefit the others almost as much. It can play a large part in curing certain long-standing social ills and creating an economically healthy world, without which all nations face an insecure future.

84. There is a still more fundamental aspect of FAO's work. Over those parts of the earth not covered by water lies a thin crust of soil, perhaps equal by comparison to the thickness of a sheet of tissue paper wrapped around a globe six feet through. Much of this soil is inaccessible for cultivation, or it is unusable for other reasons. From the rest, the world's growing population, now more than two thousand million, must draw all their sustenance except what they get from the sea; and even the fishes, like all other living things, are fed in the final analysis out of the fertility of the land. Whether this thin layer of soil is to be a wasting asset or one maintained in perpetuity and made more fruitful for mankind will depend on how it is used and managed. Nothing more deeply concerns the well-being of men and nations. FAO is dedicated to furthering good use and good management, in all ways and by all peoples, of this most basic of man's resources.

5. Fisheries

BESIDES high-quality protein, fish contain nutritionally valuable mineral elements including iron, copper, iodine, manganese, and, in many species, considerable quantities of calcium. Fish livers provide oils rich in vitamin A and vitamin D. A few people, such as the Norwegians, Icelanders, and Japanese, eat large quantities of fish, but consumption is negligible throughout most of India, Africa, and South America. The introduction of fish, fresh, dried, or salted, into the diet of many of these peoples might be a rapid and effective way of improving nutrition, especially where other foods of animal origin are lacking and the diet consists mainly of cereals.

86. Apparently the world's fish are concentrated in the temperate and subpolar waters; 90 percent of the total catch is obtained in the Northern Hemisphere. The productive capacity of the Southern Hemisphere waters remains almost unknown. Before the war eight countries—Japan, China, the Union of Soviet Socialist Republics, the United States of America, Canada, Norway, the United Kingdom, and Germany—produced three quarters of the world's fish. Most other countries relied for their small supplies mainly on imported fish, salted, dried, or smoked. Likewise the whaling industry was carried on by a small group of nations.

87. Though fresh-water fish constitute only a small fraction of the total world supply, they are important in many localities, as in the region of the Great Lakes in the United States. Much more could be done by way of developing and stocking fish ponds in inland areas to furnish a year-round supply of protein foods at relatively little cost.

THE PROBLEM

88. As in agriculture, there are two main problems in fisheries—to increase the total output by better exploitation of grounds or by opening new grounds, and to make better use of the supply obtained. A review of the present world situation shows that on the one hand many waters have been overfished; like forests they have been treated as a mine rather than as a cropping ground and the fish have been indiscriminately taken without regard to continuity of production, though some international conventions govern the fishing practices in certain waters. On the other hand, some waters with rich supplies of fish have as yet been barely touched.

89. Scientific and statistical information regarding fisheries is deficient. Though

a few bodies such as the Council for the Exploration of the Sea have sponsored research regarding the life cycle of fish in certain waters, and their migrations and the factors affecting their breeding habits, most of the world's fishing grounds have yet to be systematically investigated. The total catch of some of the largest fishing countries, for example, China, is a matter of conjecture, not even of estimate. Improvements in techniques for processing fish have been made in recent years, notably in the development of quick-freezing processes, yet much remains to be learned of the ways of best conserving the nutritive elements. Fish marketing is one of the least satisfactorily resolved of all marketing problems. Costs are high, wastage is enormous, gluts and scarcities alternate.

STEPS FORWARD

90. The long-term objectives are to obtain larger supplies of fish for the world's consumers and to advance the welfare of those who depend on fishing for a livelihood. An important early task will be the development of new grounds and the more intensive fishing of those hitherto little used. During the war some nations have built up fishing fleets and quite a significant industry; no doubt others in the next few years will wish to do the same. In some waters the most prevalent fish are of types not usually eaten, but with further research in processing and culinary preparation they could probably be made into valuable and palatable foodstuffs. Similarly, research is required in the development of fresh-water fisheries, of special interest to the densely populated regions of the world where an increase in fish consumption might substantially improve diets. Many countries will wish through FAO to obtain advice on the building up of fishing fleets, and on the hatchery culture and management of fresh-water species.

91. It will be equally necessary to see that exploitation of certain fishing grounds is not resumed so ruthlessly immediately after the war as to prejudice supplies in later years. To safeguard future supplies it is possible that special international agreements may be concluded even before the First Session of FAO's Conference. The nations will have a continuing interest in maintaining the productivity of fishing grounds and in developing conservation policies and agreements. They will need an international agency such as FAO to encourage and help to correlate research work by private, national, or regional bodies. FAO may endeavor to have new laboratories established for the study of special conservation problems. It may from time to time suggest new international conventions to preserve the maximum long-term productivity of fisheries.

92. In order to improve the technical knowledge of fishermen and to spread the adoption of modern fishing practices, government fishing schools might be established in various countries; at present only a few have any means of instructing fishermen in the science and technology of their business. In this and in the organization of international conferences to obtain joint action on methods of common interest, the nations might enlist the aid of FAO.

93. The scope for research and technical progress is especially great in fish-processing and preserving. In developed countries the older methods of salting,

drying, smoking, and canning are being improved, but special attention should be given to adapting these processes so that fish may be made available cheaply in warm climates. The new methods—quick freezing and dehydration as distinct from ordinary drying—may ultimately bring fish to a great many more consumers. Meantime, research is showing new values for numerous fish products and by-products: the fish oils rich in vitamins and those valued by industry; the glues; the leathers; the fish meals as fertilizers and as feed for livestock. The wastage in the catch could be reduced considerably by creating a demand for these other products which mainly utilize fish not salable in the fresh market. Such developments will benefit fishermen no less than consumers.

94. FAO can help Member nations in all these matters. It will act as a clearinghouse for scientific information on fisheries and fish processing and it will promote research to help fill the gaps in present knowledge. It will where necessary sponsor conservation conventions and help nations to work out problems of international trade in fish and fish products. It will disseminate information regarding fishing, processing, and marketing techniques and will see that an adequate international service of scientific abstracts is provided. It will publish summaries of fisheries legislation. It will endeavor to improve statistics by seeking more reliable world coverage on production data, on disposition of catch, on processing, and on output of fish products and by-products, and by developing an increasing degree of comparability in units of measurement, in nomenclature, and in methods of valuing the catch. It will work in close collaboration with existing regional bodies such as the Council for the Exploration of the Sea, the North Atlantic Commission on Fisheries Investigation, and the Council for the Exploration of the Mediterranean.

95. Hitherto, fisheries have been much less the subject of scientific observation and improvement than agriculture. Increasing competition on the most accessible fishing grounds has compelled some application of science and a measure of international cooperation. This trend will become much stronger after the present war and there will be an increasingly important role for an international agency interested in the problems of fishermen and consumers alike.

6. Marketing

PAST DEVELOPMENT

IN THE developed countries the last two hundred years have witnessed a revolution in marketing practices and in the preservation, processing, transportation, and storage of agricultural products, which may be considered as part of marketing. First came improved highways, then the railway, then steamships, automobiles, and aircraft. Today the labor involved in transporting a bushel of wheat from Montreal to Liverpool is less than in 1750 over the 20 kilometers from Versailles to Paris. Modern transportation changed the aspect of farming and made it possible to develop immense areas to supply distant markets. Developments just as momentous have occurred in storage and preservation—for example, the modern grain elevator, and cold storage, canning, quick freezing, and dehydration. These changes have brought staple products such as grain across thousands of miles of ocean and enabled perishables to be marketed evenly the year round. Further, an increasing proportion of farm produce goes through manufacturing or other processes before reaching the consumer: whereas formerly the great food industries were flour-milling and butter and cheese-making, today they produce in addition breakfast cereals; margarine; chocolate; evaporated, condensed, and dried milk; canned soups; and a host of other processed foods. The same kind of development has occurred in the case of the fibers and other nonfood agricultural products. Again, there has been an immense elaboration of distributive services, especially at retail: an infinite variety of packaging, a multiplication of shops, an increase in the range and frequency of delivery services, and in the quantity and versatility of advertising.

97. It follows inescapably that when all these things have been done to agricultural produce, the consumer has to pay far more than the farmer receives; the product has in fact become a different article. In general, it is true, the consumer gets better quality food, a far wider range of choice, and greater convenience, and the farmer in turn gets wider markets. Often, however, the consumer's servants overreach themselves and pile up complexities of service that add costs out of proportion to the benefits.

98. Very different is the situation in many less advanced countries. As far as more than half the world's population are concerned, these modern facilities of marketing simply do not exist. Frequently the farmer cannot sell much produce in the towns, since roads either do not exist or are so bad that in the wet season each village or farm is cut off from its neighbor. Lacking adequate storage facilities,

the farmer has to use up his produce quickly. After harvest there is abundance; before it, dearth. Among other evils, this brings price fluctuations through which men with better information and resources can take advantage of him. Lacking packaging and shop facilities, he makes his sales in the road, on barrows or in booths; consequently the consumer gets a product frequently dirty, sometimes contaminated.

99. The foremost problem in such areas is not to reduce costs of distribution, though, considering the services provided, these are often high. It is rather to build up step by step the most essential apparatus for marketing. In the advanced countries, on the other hand, progress will consist in effecting economies whilst improving and extending marketing facilities. For all countries the general objectives are essentially the same—to enable farmers to sell a larger range and volume of products in wider markets at fair and stable prices; to bring to consumers a greater variety of foods of better quality and nutritive value; and to reduce the costs of marketing wherever any form of waste can be eliminated. By what steps these objectives can best be attained will differ from country to country. Some of the desirable changes can be envisaged; others will emerge only as the needs of producers and consumers are more closely studied.

FUTURE NEEDS

100. Good roads, to break down isolation and enable farm products to be got out of the villages, are the first need in many underdeveloped countries, as for example, India. Elsewhere, in other parts of Asia, in Africa and South America, railways as well as roads are needed. Both are costly. The best chance of providing them is in connection with joint agricultural-industrial developments though, where material is available, roads can be constructed cheaply by local labor. Better storage facilities for grain and certain vegetables and fruits on the farms, in the villages, and at market assembly points are another need. In other words, communications and storage are the first requirements in countries with minimum resources. Community canning centers and commercial canneries should follow as rapidly as they can be developed. Then come refrigerated storage and transportation—including railway cars and trucks—for such perishable products as meat, fish, eggs, milk, and the more perishable fruits and vegetables; and community freezer and cold-storage lockers. For extensive refrigeration facilities electricity is necessary, but beginnings can be made without it if fuel is available for operating pumps and condensers. In all such developments cooperatives can often play a large part; indeed, one of their most effective functions is in connection with the marketing of farm products. FAO will be prepared to assist with surveys of marketing problems and to provide technical advice on the building up of facilities. In this connection, a good deal may need to be done in war-torn countries where transportation and marketing facilities have been destroyed or badly damaged. In rebuilding them, there will be an opportunity to choose locations carefully and to provide adequate, up-to-date equipment.

101. International marketing and the related problems of trade barriers and commodity arrangements are discussed elsewhere in this report, and no more need

be said here except to emphasize that active international trade is an essential part of an expanding world economy, with all this means to the well-being of both producers and consumers. "Not only to live and let live but to live and help live"—this is the point of view implicit in the creation of FAO by the United Nations.

102. Also discussed elsewhere are means for special distribution of foods, such as school meals, low-cost milk, and workers' canteens—methods that should be looked on not in any sense as poor relief but as paying investments in national health. It should be one of FAO's undertakings to collect and analyze all the available data on past and present experience with these devices—costs, methods, results—as an essential step in being prepared to meet the inquiries and requests of governments. Although they should not be thought of primarily as means for disposing of surpluses, such devices can be effective safety valves for relieving undue temporary pressure of farm production on conventional markets. Many governments are committed to supporting farm prices and these commitments may in some cases result in government buying of surpluses. In disposing of such surpluses, the first effort should be to stimulate consumption. Should there be surpluses of milk, vegetables, and other products needed in larger quantities in average diets, these would be of particular nutritional value. At the same time, efforts should be made nationally and internationally to ensure that enough of these products go to children, low-income families, and other vulnerable groups. Second, long-term policies should be developed for storing enough, but not too much, of the foods that can be stored; this would include the canning or freezing of perishables. Third, it would be wise in some cases to promote, and perhaps even to subsidize, new uses. All of these measures contemplate the utilization of surpluses to meet human needs. Only as a last resort should they be destroyed, allowed to rot, or left unharvested.

103. Besides improvements in marketing facilities, most countries need better and more comprehensive marketing legislation. Establishing uniform grades and standards for certain products makes it possible to sell them by description rather than by inspection, protects the interests of producers and consumers, and eliminates costly confusion. Standardization of containers accomplishes similar purposes. Quarantines to prevent the spread of diseases and pests, adequate pure food laws, and sanitary inspection of products especially subject to contamination, such as milk and meats, are recognized as essential to the public welfare. So also is government control of trade practices that can become inimical to the public interest. On all of these matters FAO should act as a clearinghouse of information and be prepared to give technical advice and to take steps toward bringing about international agreement where it would be useful.

104. Expanding markets and a world-wide emphasis on increased production and better distribution will in themselves encourage research, which FAO can do much to further and facilitate. Not only are improvements needed in the processing, preservation, storage, and transportation of foods, feeds, and many other products and by-products of farms, forests, and fisheries; there is also need everywhere for systematic study of the economics of distribution with a view to streamlining marketing practices and reducing costs in every way possible. The war has shown some

of the things that can be done when manpower is acutely short, and though some wartime economies have necessarily caused inconvenience to consumers, some have furnished valuable experience that can be adapted to the more favorable conditions of peace. Perhaps the greatest driving force behind expanding goals for the production and distribution of food is the clear demonstration, in recent times, of the food requirements of human beings, and the growing popular conviction that they must be met. In the case of agricultural products other than food there is no such clear demonstration or conviction. Yet there is a notable exception to this statement: the needs of soldiers in war. How much clothing, how many blankets and other necessities a soldier should have to live and work effectively—these figures are known in great detail. What the civilian should have is scarcely even a matter of conjecture, though he is the same human being with the same basic physical requirements. There is room for much more investigation in this field, with a view to defining desirable standards of living more exactly as one means of setting expanding goals for production and trade.

7. Forestry and Primary Forest Products

FORESTS

FORESTS are a soil crop, growing even on land often unsuited for cultivation. Intermingling with farm lands, they are an important element in rural economy and support local industries. Deforestation often causes soil erosion and floods; afforestation often contributes to soil and water conservation. In conjunction with range grasslands, forests help sustain large numbers of livestock. Forests, including farm wood lots, provide useful winter work for farm populations, fuel and construction lumber for rural families, and cash income from the sale of lumber.

106. The present usefulness of forests is only a fraction of what it might be: nearly 80 percent of accessible forests lack management and protection, potential forest land is misused, and much of the forest output is wasted. Men assumed that wood supplies would never give out, so they have misused forests ruthlessly. Techniques of wood utilization have remained primitive. Today in advanced countries consumption of forest products is increasing; it will increase in less developed countries too as soon as they embark upon economic expansion; yet through natural and human destruction the world's forests are diminishing. The time has come to treat forests everywhere not as a mine but as a crop.

107. The war has aggravated forest mismanagement and misuse. In Europe shifting battles have destroyed considerable areas of forests. Cutting for war needs has been excessive on that continent and even in North America. Forest conservation has been neglected because of lack of manpower.

108. But wood shortages have made people aware of the need for regulation of forest practices. They are becoming interested in what may be called an integrated approach to wood utilization, the possibilities of which have been opened up by the scientific discoveries of recent years. Buoyant markets in the reconstruction period should facilitate the adoption of new methods and processes in forest and factory. If sound scientific knowledge is applied, the world's forests can produce cheaply, continuously, and in abundance.

109. At present the world contains comparatively few well-managed forests, these being mainly in Europe; large areas of forest badly managed; and large areas, especially in Central Africa and South America, virtually unexplored and unused. The problem, therefore, is a multiple one, involving the application of efficient management and conservation to all forests in use; afforestation on denuded lands, particularly in the less developed countries; the development of unexploited forests

as economic conditions permit; the maintenance and in some cases the extension of "protection forests," so called because they protect watersheds and other areas; the promotion of integrated modern forest industries; and balanced expansion of processing facilities for various primary forest products, in accordance with trends in world demand and the permanent productive capacity of forests.

110. Improvement in forestry practices requires more research in the basic forestry sciences, especially in relation to the problems of tropical forests, in silviculture and forest protection, and in forest management techniques. A review of present practices would show many shortcomings and would suggest what should be done. It would also show the large increase in per acre yields which scientific forest management is capable of achieving. Economic and social factors are involved—for instance, the costs of forest conservation and management measured against the increase in productive value, the different kinds of labor used in forests, much of it part-time work by farmers, and the opportunities for mechanization. More widespread and energetic application of the best-known forest practices requires knowledge and skill and hence will necessitate more education—not merely the training of a large number of foresters and forest workers, but the education of farmers and other private owners in the management of woodlands. The resulting demand for better management may in turn create a need for forest credit and forest cooperatives. A basic requirement is the adoption by governments of broad forest policies aimed at achieving certain well-defined standards of forest management. In forestry, short-term profits conflict with those of the long term measured in generations. Experience has shown that legislation can safeguard the proper husbanding of forest resources.

111. One essentially international activity would be to arrange with universities and other institutions in advanced countries to provide training courses for forestry students from abroad. There are important facilities in some of the countries where forests are especially important, but more are needed. Other FAO activities should include assistance in the correlation of research programs, advisory services to governments on forest management techniques and policies with a view to helping nations to work out a world forest policy, and formulation of agreements on sanitary regulations to prevent the spread of diseases and pests through international trade in trees and tree seeds. FAO's advisory and information services are likely to be of particular value to governments planning to open up unexploited forests or to plant new forests on denuded land. Another important function will be to study the interrelationship between forest policy and agricultural policy in such matters as water and soil conservation and the management of range grasslands. If, for example, FAO were asked to send a mission to a country to examine soil conservation problems, forestry would almost certainly be a significant aspect of the survey.

112. More accurate information is needed than is now available regarding forest resources, annual growth and drain, and prospective supplies of forest products. The nations should be encouraged to set up the services needed to record developments in this field. Included would be a world forest census in conjunction with the agricultural census. Preliminary consultations with governments concerning

census plans should not be delayed. Special survey techniques will have to be developed for uncharted regions.

PRIMARY FOREST PRODUCTS

113. There is as much room for improvement in the world's forest industries as in forestry. Each wood-using industry requires certain special kinds of wood and the sum of their requirements largely determines how the forest is utilized. In the old days when wood was wanted for construction and for fuel—and these are still practically the only uses in many countries—construction lumber had to consist of beams and planks, the few best parts of the tree, while the trimmings from the sawmill and from forest thinning far exceeded fuel requirements. The waste was enormous. Less than 20 percent of the tree substance ever reached the final consumer.

114. Then came the pulp industry, first for paper, later for textile fibers and a host of other products, using small logs and forest thinnings unsuitable for the lumber trade and making for a more balanced utilization of the forest's output. Next came the plywood and modern veneer industry, requiring high-grade logs. Inasmuch as it uses largely tropical woods it fits in well by not competing with the demand for soft-woods from temperate zones, but it is a wasteful user of the tropical forest unless combined with some other wood-using industry. Still later came wood sugar and a range of chemical products. Most of these make use of all the trimmings and, indeed, even on a large scale, of sawdust. Quite certainly the world has by no means seen the end of the technical progress in wood utilization, but fortunately the recent discoveries find uses for those parts of the tree formerly wasted. To encourage such trends is important from every standpoint. It is most desirable to create and maintain a proper balance in the demand for the various types of wood by wood-using industries. At present a range of diversified forest industries exists in only a few countries; in others it is desirable to explore the possibilities of establishing them.

115. Just as agricultural production problems include the study of demand trends for food, so also do forest problems necessarily involve a study of the changing demand for the output of forests. That demand is a composite made up of the separate demands of all the various forest product industries. Its study involves watching the technical developments in these industries and, of course, the fluctuations in consumer demand for the end products. It becomes an international problem because wood research is international and because forest products are internationally traded. FAO has a double interest in forest industries. One interest is to promote research and assist governments in devising policies which will result in a more complete and economical utilization of the forest crop, thereby creating opportunities for work, especially in rural areas and in less developed countries. The other is its concern for improving the living standards of consumers. Increase in the supply of goods made of wood and wood derivatives—houses, furniture, paper, and so on—naturally forms part of programs for expanding supplies of all consumption goods. The ultimate scope is large. In India, for example, the average consumption of wood

per person is less than one cubic foot, or about 40 pounds, a year, compared with 4,500 pounds in the United States.

116. In sum, the nations will use FAO to promote and correlate basic research on the properties of wood as well as applied research—that is, the development of new wood uses and improvements in existing ones. To this end it should establish relationships throughout the world with research workers in these fields. It should make surveys of technological and other developments in the principal forest industries and assist governments in developing such industries, in introducing improved patterns of industrial wood utilization, and in adjusting supplies and requirements on a world scale. It should become the international center for assessment of trends in consumer demand and encourage an expanding use of forest products and the establishment of adequate consumption standards. It should collaborate with governments in improving statistics of output, sales, stocks, foreign trade, and prices—work initiated by the International Institute of Agriculture, the Comité International du Bois, the Centre International de Sylviculture, and the International Union of Forest Research Organizations. In all of these activities FAO will have in mind the three basic objectives of a world policy, namely, the conservation of all forests performing important social or protective functions, the managed use of the world's forest soils for the permanent production of raw materials, and adequate consumption of forest products to raise standards of living.

PART II. OPERATIONS

1. Character of Work

IN HOLDING the Hot Springs Conference and in establishing FAO, the nations have given recognition to an achievement of modern science, namely, that startling improvements in the health of the human race can be attained through better nutrition, and that better agriculture is fundamental to better nutrition. They recognize that malnutrition and its resulting ill-health are no longer, as they once were, inevitable. Within measurable time these evils can be banished if sufficient energy is devoted to applying the findings of science to the production, distribution, and use of food. And not only food but other agricultural products as well; for standards of well-being of many millions of people as typified, for example, by their clothing and housing are appallingly low. Knowledge of how to improve the health, prolong the life, and increase the productive ability and usefulness of human beings has far outrun our social arrangements for putting the knowledge into practice; but nations are increasingly anxious to revise outworn policies so as to enable their peoples to make full use of what is known.

118. No single nation can alone command all the information and resources necessary for this. Science itself is essentially a pooling of knowledge, each advance becoming part of the common pool on which scientists can draw in order to make further advances. The time has come when international organization is urgently needed to accelerate throughout the world the advance of scientific knowledge and its application to human affairs. FAO would fulfill such a function in the great and important area represented by food and agriculture. Thus all nations have a vital interest in the successful establishment of FAO and can expect to obtain important services from it.

119. FAO will not only encourage research to solve the problems of food and agriculture; it will help nations to translate the findings of scientists and economists progressively into practicable administrative programs. The aim will be to get action taken, in every country throughout the world, toward the common goal. All the studies of FAO, all its information services, all its advices will have meaning and usefulness to the extent that they promote better use of the world's resources.

Though FAO has itself no legislative or executive powers and comparatively few administrative ones, though it cannot coerce anyone, it can have great influence by working with and through governments. It can and should call attention continually to those ameliorations in the human lot which have been made possible through scientific discoveries, and it should consult regularly with governments on ways of formulating food and agricultural policies which take full advantage of the constant developments in modern knowledge. As FAO acquires a reputation for wise counsel and reliable judgment, governments will realize that they can do more for their people by using its services than by acting alone.

120. What the nations will want primarily from FAO is advice and information which helps them to develop their agricultural, nutrition, forestry, and fisheries policies more effectively. These advisory services, described in paragraphs 41 to 50 of the Interim Commission's First Report to Governments, cover a wide range, from information on minor points to aid, on request, in the preparation of comprehensive research and action programs; from a service for a single nation to a proposal for joint action by several or all nations; from an informal communication to the drawing up of formal international conventions.

121. In some of the advanced countries much is already being done to keep research workers and administrators informed of technical developments elsewhere. FAO can strengthen and facilitate this work and serve as a central source of information that all countries may use. The less technically advanced countries especially will expect from it advice and aid in building up new administrative services or in commencing research projects and applying the results of research to their own conditions. They will look to FAO for advice in obtaining outside assistance, for instance, in regard to the technical soundness of projects for loans for large-scale developments. By cooperating freely with FAO, both developed and underdeveloped countries can obtain from it information about specific problems, commodities, or regions as well as regular series of statistics and such comprehensive reports as those of agricultural and forest censuses.

122. There are a number of questions in which some measure of international agreement would be of great advantage to individual countries, and it would help them for FAO, as an international agency, to initiate proposals for action. Such, for example, are international agreements on the food needs of human beings expressed in terms of nutrients; on standards for certain biological materials of interest to agriculture such as vaccines and antitoxins for use in combating animal diseases; on certain standard gradings and descriptions of commodities traded internationally; and on the definitions if not the standardization of weights and measures. The list would also include such matters as the adoption of sanitary conventions governing the international movement of animals and plants, or conservation conventions to maintain the productivity of fishing grounds, or forestry conventions to formulate standards of forest management. Another group of activities in which FAO might usefully play a part is exemplified by the control of insect pests such as locusts, which respect no national boundaries and can be dealt with effectively only if contiguous countries cooperate in a common program.

123. There will be other services in which FAO will act as an intermediary in obtaining aid from many sources. Thus, when a country requires the loan of an expert or team of experts who cannot be provided from FAO's own staff, the organization will be able to make arrangements to obtain them from other countries. Similarly, when countries seek training abroad for students and research workers, FAO will make the necessary arrangements. Again, in the provision of abstracts in various scientific fields, FAO will endeavor to arrange as far as possible for complete and adequate coverage by organizations equipped to do this work. Many of the technical queries which FAO will receive can best be dealt with by putting the questioner in direct contact with an appropriate expert; it will be the responsibility of FAO to know who are the best persons or agencies to consult. Individually, some of these activities may not seem to be of special significance, but taken together they can play a significant part in speeding up the spread of knowledge and its application.

124. Since knowledge does not stand still, FAO will constantly encourage research. Even in applying what is known at any given time, a certain amount of new research is needed, more often than not, to adapt an advantageous practice to local or changed conditions. Research and investigation are primarily tasks for individual nations, but many of them will look to FAO for guidance as to the most suitable lines of investigation, and all can use its services to avoid overlapping with research programs elsewhere. FAO can arrange collaboration between institutions widely separated by distance and language in order that their investigations may complement one another, and it can help to ensure sufficient unity of method so that results can be comparable. The collection of certain plants for breeding material, for example, might often be advantageously done by one expedition working for several nations rather than by a number of expeditions, each representing a single nation, all going over the same ground and collecting the same plants. The single international expedition might also act for countries that could not afford to send expeditions of their own but would be able to contribute to the support of a collective undertaking.

125. FAO should become a focal point for the exchange of information and for discussions and meetings between scientists and technologists from different countries. It should convene conferences on a wide range of questions and promote personal contacts between nationals of different countries working in similar fields. By developing FAO services of this kind the nations should be able to use the sums they devote to research more efficiently, and indeed obtain much richer results.

126. It is difficult, here and elsewhere, not to give the impression that scientific research is something standing by itself and different from other activities relating to food and agriculture, so firmly is this way of thinking fixed in habits and institutions. Actually, there can be no such separation in the work of FAO. The impasse in which agriculture found itself before the war, with vast possibilities opened by science but only partly utilized because of inadequate social and economic arrangements, must be broken. The natural and the social sciences, including economics, must work together in an intimate partnership. Some of the most

difficult and important problems which nations will attempt to solve in part through FAO will be those concerning world trade in agricultural products, extreme price fluctuations, the reorientation of production, and the balance between agriculture and industry. For example, there will be problems centering about such commodities as sugar, wheat, and cotton to the solution of which science and economics must both contribute. Indeed, it is safe to predict that every major problem with which FAO will deal will have both scientific and economic aspects. From the beginning, a clear realization of this fact should permeate all of the organization's work.

THE FAO STAFF

127. If these are the functions which the nations expect of FAO, the new organization will have far-reaching responsibilities which it can discharge effectively only with the aid of a director-general and staff of the highest devotion and competence. The quality of the services will depend most of all on the quality of the staff. It cannot be overemphasized that a staff must be assembled which has or comes to have the widest possible range of knowledge and experience and the highest professional competence. The work of the organization will be subject to the critical examination of scientists and administrators in all countries, and it must stand up to that scrutiny. It must be accurate and reliable, sober and impartial. Members of the staff must be persons who enjoy the respect of their professional colleagues in all countries. Not many of them will start with a knowledge and understanding world-wide in scope, for such persons are hardly to be found as yet, but they must acquire a world view. That is one reason why the staff should largely be recruited from the younger generation. Many of the tasks are new and few precedents exist, but the staff will inevitably grow in experience as it studies international problems and establishes close working relationships with those who are concerned with similar problems in different countries.

128. The individual members of the staff will not be preoccupied with the problems of their own countries but will have, or soon develop, an international point of view. The nations expect from FAO advice and information free from any national bias.

129. The years immediately after the war will be ones in which the new international agency can have especial usefulness, since national policies will in many cases be in a state of flux and the needs of reconstruction will present unusual opportunities for reorientation. Hence governments were urged, in the First Report, to consider lending senior administrators and scientists to FAO, on request and for short periods, particularly while it is being organized. This suggestion deserves serious attention. In this period the giving of advice by a new international agency is likely on occasion to be peculiarly delicate and difficult, yet never will sound advice be more needed. It is essential that the nations release for this important work men whose wisdom, experience, and judgment will inspire confidence in the services the FAO develops.

2. Reports from Member Nations

IN ACCEPTING the FAO Constitution, Member governments undertake to keep FAO fully informed on the food and agricultural situation in their countries by submitting reports periodically on the progress made toward achieving the organization's purposes. Besides their annual reports, communication of periodical statistics and other material is also envisaged.

131. The annual reports will provide a body of information that will enable each government to be aware of developments in other countries. They will furnish much of the material for the analysis by FAO of world production and markets and of the international repercussions of national agricultural policies, which in turn will be the basis for formulating proposals for joint action to secure a better balance between production and consumption. Thus it is essential that nations provide full, up-to-date, and reliable information in their annual reports to FAO.

132. The reports will also be important, as the Hot Springs resolutions pointed out, in focusing public attention, national and international, on the state of nutrition and of agriculture, forestry, and fisheries in each country, and on the steps being taken toward improvement. They should provide a measure of the extent to which governments are fulfilling their pledge "to collaborate in raising the nutritional levels of their peoples." The publicity given to these documents should stimulate government action, since they will provide a means by which each nation can compare its progress with that of others. The reports can have great value in developing an informed public opinion, which will support governments in adopting forward-looking nutritional and agricultural policies.

133. The annual reports of governments should include all relevant information on production in agriculture, forestry, and fisheries; on the dietary patterns and the nutritional condition of different groups of the population; on extension and education services relating to agriculture and food management. They should be qualitative as well as quantitative and not only a review of past developments but an outline of the plans for the coming year. Certain minimum information on levels of employment and purchasing power, health, mortality, and population changes might be included until it becomes available from other international agencies. In particular, an effort should be made in these reports to show what progress has been made toward bringing production and trade in line with the needs of consumers for foods and other products.

134. It is important that the reports should be so prepared as to give a clear picture of actual conditions, the unfavorable as well as the favorable, in order that FAO may be in a position to assist in meeting the needs of the Member nations. The reports of countries that set the highest standards will in due course become models for others. Many countries will in the beginning lack adequate statistical services for complete reporting. FAO can perform a useful function by helping them to organize such services.

135. At the First Session of FAO's Conference the necessary steps should be taken to determine the content, form, and delivery date of the reports, and arrangements should be made to get them under way promptly. It should be kept in mind that the first report is likely to differ radically from subsequent ones. It should be made as early as possible in the first year of the existence of FAO and take the form of a comprehensive review and discussion of the situation, the problems, and the plans of each country, designed particularly to bring out those problems, whatever their nature, on which international action would be most useful. Subsequent reports may be more specific and detailed than the first report, and progress should be made as rapidly as possible toward getting comparable reports from all countries.

136. The Director-General is required by the Constitution to submit analyses of these reports to the annual Conference. They will constitute the raw material for an annual survey of national policies and of world progress toward the achievement of the Hot Springs objectives.

137. In addition to these annual reports, governments will also be providing FAO, at such intervals as may be mutually agreed, with all relevant statistical information on nutrition, agriculture, forestry, and fisheries. Two-way cooperation will be involved, for while FAO will ask for statistics to be presented in certain definite form for purposes of international comparison, government statisticians can aid FAO by suggesting ways of simplifying, expediting, and otherwise improving the reporting procedures. Occasional reports from governments will also be needed, such as material furnished for an international agricultural census or a dietary survey of some special population group undertaken to illuminate some nutritional problem.

3. Technical Missions

ONE OF the services which the less developed countries will have the right to expect from FAO is the procuring of special advisers to help them in solving difficult technical problems. There is a wide range of problems on which Member nations might ask FAO for advisory missions—for example, the establishment of a dairying industry under difficult climatic conditions; the planning of an extensive development project, including river control, farm production, and forestry in an integrated program; the setting up of a comprehensive statistical service; the preparation for and carrying out of nutritional surveys. Such a mission would study the problem on the spot in company with responsible local officials. Sometimes it would have only two or three members; frequently, however, because of the complexity of the problem, involving economic and social questions as well as those in various branches of applied science, a larger team would be needed. Through FAO a government should be able to obtain the services of outstanding experts from different countries who would contribute a wider range of knowledge and experience than is likely to be found in a single country.

139. The first step, when a request for a technical mission made by a government—or a group of governments in a region—has been approved, would be for FAO and those making the request to estimate the magnitude of the proposed investigation, the size and composition of the mission needed, and the probable duration of the work. They should then consider the necessary administrative and financial arrangements and jointly draw up terms of reference. Competent persons from the country concerned would work with the mission, and usually it would be accompanied by at least one member of FAO's staff.

140. In order to be prepared to furnish such missions, FAO should compile lists of experts in different fields who could be loaned for specified periods from research, educational, governmental, and other institutions throughout the world. It is to be hoped that governments and other agencies will adopt a liberal attitude in consenting to the temporary loan of individuals, as indeed many of them have in the past in responding to the requests of friendly countries. Through its wide contacts, FAO should be able to reduce the burden on any one country. Just as in the prosecution of the war the interchange of experts between the Allied Powers has done much to coordinate effort and accelerate victory, so also in the peace it can contribute greatly to human progress. Indeed, it may be one of the major contributions which the

more highly developed countries can make in the essential task of furthering the progress of less developed territories.

141. The report on its work made by a mission to the government concerned and to the Director-General of FAO will normally embody recommendations to the government suggesting action—for instance, the establishment of a new service or the undertaking of a new enterprise. This in turn might involve arrangements through FAO for the loan of further personnel; again, international financing might be required. The best personnel will be willing to serve on such missions only if their recommendations are in general accepted and acted on by governments. A government which has had the advantage of such a mission will no doubt feel under an obligation to furnish FAO with reports on the steps taken to carry out the mission's recommendations.

142. The work of the missions will gradually build up a body of information that will be useful far beyond the original purpose in any given case, and this work will in itself contribute to international understanding and the technique of international cooperation. Not the least useful result will be a broadening of the experience of those who participate in such missions, and hence an increase in their usefulness in their own countries.

4. Committees and Conferences

THERE are numerous other ways in which the counsel of leaders in nutrition, agriculture, forestry, and fisheries can be made available to governments through FAO. Many technical problems requiring international understanding, agreement, or action can most conveniently be analyzed and solutions suggested when groups of specialists from different countries are brought together. For some purposes, standing committees are needed; in other cases, *ad hoc* committees will study an assigned problem, report, and then disband.

STANDING ADVISORY COMMITTEES

144. The First Report of the Interim Commission to Governments (paragraph 96) envisaged the setting up of standing advisory committees "to keep the Organization in close touch with current scientific and economic thought and practice." The functions of these committees will be to advise on subjects and problems referred to them by FAO, to initiate proposals for study or action, and to be consulted by the Director-General or his staff on technical questions. They will immensely increase the store of knowledge and experience at the disposal of FAO and will help to assure the backing of authoritative opinion for its work and policy and create confidence in the soundness of its proposals and activities. The Interim Commission's First Report (paragraph 98) suggested that standing advisory committees be set up on nutrition, agricultural production, economic and social questions, and statistics. To these should be added a committee on fisheries and one on forestry and primary forest products. Should FAO develop regional activities it may become desirable to organize regional standing advisory committees for particular problems, but their functions should be such that their work will contribute to the development of a world point of view.

145. The members of standing advisory committees must be persons of the highest attainments in their various fields. They should collectively represent a wide range of knowledge and be acquainted with conditions in many continents. It goes without saying that they must in no sense represent the interests of their respective countries. Since they will be actively engaged in other duties, they should not be asked to give unreservedly of their time.

146. To foster close coordination in the work of FAO, arrangements should be made for consultation among committees and for joint meetings when they are

dealing with related problems; in some cases members may be qualified to serve on more than one committee. It is important to set up a procedure for changing the membership on standing advisory committees to assure an inflow of fresh ideas.

147. Since the services and guidance of standing advisory committees will be urgently needed in the early days when the FAO staff is being recruited and its work is in the formative stage, the Director-General should submit a list of proposed members to an early meeting of the Executive Committee. Because of the difficulty of setting up standing committees quickly, especially under war conditions, it may be desirable to appoint *ad hoc* committees in the beginning.

OTHER COMMITTEES

148. Besides having groups of experts associated with the general work of FAO for missions and standing committees, it is necessary to enlist the services of others to study specific international problems. Past experience has shown that a large number of technical questions on which international agreement is desirable can best be initially considered by *ad hoc* committees of experts and officials, individuals appointed in their personal capacities and solely on the basis of their competence in each field. FAO will have many such questions. For example, there will be matters of statistical method such as weights and measures and commodity classifications on which agreement must be reached before the figures of trade and production become comparable, this being in some cases a resumption of work that was interrupted by the war, in others a breaking of entirely new ground. *Ad hoc* committees may also be appointed to bring expert knowledge to bear on detailed questions with which the appropriate standing advisory committee might not be familiar. Committees of this character can, as experience has shown, accomplish a large amount of detailed work expeditiously and efficiently. Again, *ad hoc* committees can save a great deal of time at general international conferences by doing much of the preparatory work.

CONFERENCES

149. It will be advantageous for FAO to utilize the conference method for a variety of purposes. The most formal type of conference will be one of government delegates convened to consider the adoption of an international convention embodying recommendations put forward by FAO, perhaps as a result of the work of one of the committees of experts. These conventions will usually be on technical subjects, such as sanitary controls to prevent the spread of diseases and pests, or standardization of pure food laws or of certain trade practices.

150. FAO will periodically convene conferences of the national nutrition organizations recommended at Hot Springs. Special conferences of professional workers and scientists in various fields may also be convened on occasion when some important problem warrants bringing together an international group. FAO will no doubt collaborate in some measure with such conference organizations as the International Congress of Soil Science, the International Veterinary Congress, and the World's Poultry Congress, to name only a few. These conferences have value in

enabling scientific workers to meet with their colleagues from other countries and continents; they stimulate the development and exchange of ideas and often lead to better coordination of research work. FAO should encourage the growth of similar organizations in major scientific fields where they do not already exist.

151. Not all nor perhaps even the majority of scientific conferences should be sponsored internationally by FAO. Many may be more conveniently convened, as they have been in the past, by scientific institutions or associations in individual countries or by regional organizations. As a clearinghouse of information, however, FAO should arrange to be kept informed of their work, assist where it can, and be prepared to accept invitations to be represented at meetings when this seems desirable.

152. A type of conference different from any of those discussed will be the conferences of organizations which, while neither governmental nor scientific, are vitally concerned with the work of FAO—for example, organizations of farmers, cooperatives, food distributors, and the like. The fundamental purpose of governments in creating FAO is to serve the interests of their people, the rank and file of consumers and producers. Though those services will be made available through governments, FAO will have a better understanding of its task if it devises means of direct contact with the groups for whose benefit it is being created. Again in this field there needs to be a two-way contribution. Organizations can be helped to see their problems in an international perspective by being given an opportunity for discussions with FAO representatives on long-term objectives—what policies will best contribute to improved nutrition and agriculture throughout the world. FAO, on the other hand, can be helped in keeping its work realistic and of practical value by ascertaining through these bodies the views of important segments of the public. How far FAO could itself take the initiative in convening international conferences of this kind and being responsible for conference preparation and agenda are matters which the annual Conference will have to decide.

153. Underlying all conferences, whether official or unofficial, runs a common purpose—the dissemination of ideas and the translation of ideas into action. Wisely planned conferences can do much to help spread ideas more rapidly round the world, foster wide discussion, explain to the public, as producers and consumers, the international significance of their national and local activities, and prepare opinion to accept forward-looking policies.

5. Relations with Other Organizations

THE UNITED NATIONS are establishing FAO as the instrument of a new purpose, and its functions are more far-reaching than those of any previous international agency in its field. But other agencies have covered sections of the field, and the question of FAO's relation to them naturally arises. The general principle to be followed is that world-wide official organizations should be merged into FAO, since in any case they have covered only part of its work, while FAO should support and cooperate with regional organizations, helping them to adapt themselves as far as possible to its programs.

155. The only world agricultural organization of long standing is the International Institute of Agriculture in Rome, which for nearly forty years has undertaken work in the collection of agricultural statistics and in furthering international collaboration in numerous technical agricultural subjects. In many directions FAO will reap the benefit of this early work and will carry on from the point which the Institute reached. Clearly, however, there is not room for two international bodies in the same field, and the Interim Commission has already submitted to governments recommendations for the amalgamation of the I.I.A. with FAO. Similar considerations affect the relationship of FAO with the three international bodies dealing with forestry and forest products—the Centre International de Sylviculture (C.I.S.), the Comité International du Bois (C.I.B.), and the International Union of Forest Research Organizations.

156. In regard to fisheries there are the three organizations discussed in Part I, Chapter 5, each regional, each representing a comparatively small number of countries. Obviously much of the work which these bodies have done for a few countries should, as soon as possible, be done for all. The natural course, therefore, would seem to be for FAO to cooperate with these organizations, in so far as they are willing and able to operate as regional agencies for certain defined tasks of regional character, while itself building up services for other parts of the world either from headquarters or through additional regional agencies. If these regional fisheries organizations continue to function, at least for a time, it follows that at an early date the Director-General should discuss a suitable division of work between them and FAO, and should establish suitable relations with them so that there may be a continuous exchange of information on developments and projects.

157. Rather different is the question of FAO's relations to international agencies with primary interests in distinct but related fields. Many of the tasks which the

nations have assigned to FAO are simultaneously to a greater or less extent concerns of other international agencies too; many also involve problems which FAO cannot resolve alone but in the solution of which it must cooperate with agencies concerned with labor, finance, and so on. Indeed, in FAO's Constitution (Article XII) express provision is made for such cooperation.

158. FAO will also be concerned with the successful discharge by other projected United Nations agencies of the special functions to be assigned to them. While, for instance, FAO will have no direct responsibility in regard to the supply and administration of international credit, it will be vitally concerned to see that in reconstruction and development projects for which international loans are granted, a due balance is maintained or established between industry and agriculture. FAO is the proper organization to advise the projected international bank regarding the suitability for financial assistance of particular projects that have a bearing, direct or indirect, on food and agriculture, forestry, or fisheries. Recommendations to this effect were made in the Interim Commission's First Report to Governments, and corresponding provisions were included in the draft charter of the projected International Bank for Reconstruction and Development.

159. Again, in regard to commodity arrangements the Hot Springs Resolutions and the First Report of the Interim Commission stress the urgent need for international action. In Part I, Chapter 2 of the present report questions of commercial policy and trade barriers are also raised, and the need for setting up an international agency with responsibility for commodity arrangements and for commercial policy is emphasized. It is no exaggeration to say that a substantial number of the problems of world agriculture cannot be satisfactorily dealt with unless such an agency is established. There will be so many subjects of mutual concern that a standing joint committee may be needed. Until such time it will be necessary for FAO to do all it can by itself in this field and to undertake certain functions—for example, the collection of trade statistics—which might conveniently be performed by the projected international trade organization.

160. Yet another body with which FAO would collaborate would be the projected world health authority, which when it comes into existence might take over and extend the functions performed by the League of Nations Health Organisation. In the borderline provinces between nutrition and medicine both the organizations would have an interest and there would be an interchange of information necessary to the work of each. They could also profitably collaborate in certain activities—for example, the organization of technical missions and the convening of international conferences concerned with rural betterment.

161. Finally, FAO like other functional agencies, would have a relationship to the Economic and Social Council envisaged at Dumbarton Oaks and brought closer to realization at San Francisco. It seems likely that the Council will be given authority to suggest methods of coordination among the functional agencies, but it is too early to forecast details. In certain matters the Council could usefully relieve FAO of specific tasks. Thus, it might set up a statistical office to collect and

publish material, such as national income and population statistics, of general concern to several of the functional agencies.

UNIVERSITIES AND RESEARCH INSTITUTIONS

162. Far more than any previous intergovernmental agency FAO will need to have the closest contacts with institutions of higher learning and research in its particular fields. Many of its functions involve the encouragement and application of the sciences concerned with agriculture and nutrition. It will be expected to disseminate scientific information widely and to enlist the aid of specialists in solving many problems of the less developed countries. It has the duty of helping to correlate research programs and of stimulating new investigations.

163. In order that these tasks may be satisfactorily performed, the Director-General will be in frequent communication with universities and research institutions. Technical members of FAO's staff should develop personal relationships as widely as possible with other scientific workers in their fields. They should know as much as possible about current and contemplated research work and where training facilities for students from various countries are available.

164. Contacts between FAO and the universities and research institutes should be mutually advantageous—to FAO because it will need some of their personnel on standing advisory committees and on missions, enlist their support for its conferences, and doubtless in many instances recruit its staff from among their members; to the universities because the developments within countries brought about by the work of FAO will help to advance knowledge and to bring an increased demand for research services and for the training of workers in agricultural and food sciences, in nutrition, in fisheries, and in forestry. Indeed, the shortage of trained workers is one of the chief obstacles in the way of wider application of science to practice. No doubt the biggest need is for qualified nationals of the countries in which facilities for higher education are most lacking. Some of these workers can be trained abroad—for example, large numbers of foresters can be trained by practical service in countries with intensive forest management. But there will also be urgent demands for young graduates from the developed countries, provided they are prepared to travel and to adapt themselves to new environments.

165. There are important ways in which FAO can be of service to these institutions. It could assist in arranging for new research to be undertaken on certain pressing problems. This would involve helping countries to obtain facilities and equipment, and sometimes even funds from outside sources. It might assist in arranging for scholarships and fellowships for qualified students to go abroad and for the exchange of lecturers and research workers between institutions in various countries. In some of these activities FAO would be specially useful to remote institutions with few outside contacts.

6. Information, Library, and Other Services

ALL OF FAO's activities will involve disseminating information in one form or another. To better their condition, people must first know what can be done, and they learn from the printed and the spoken word and from example and demonstration. In scientific work, the recording of research is basic to progress, and the interpretation of its results in terms that not only the public but scientists in other fields can understand is widely recognized as a major need today. Each of the sciences has in the course of its evolution developed a technical language of its own to such an extent that mutual understanding and collaboration in scientific work is often made unnecessarily difficult. Cutting across the boundaries of many specialties as it will, FAO should be in a position to help remedy the situation created by the gradual building up of a scientific Tower of Babel.

167. No modern means of communication will be wholly foreign to FAO's interest. It can profitably use books, pamphlets, journals, newspapers, motion pictures, talks, the radio, and in due course television as ways to spread knowledge. Necessarily, however, it will concentrate especially on publishing its material in the form of books, pamphlets, and journals. Though these reach only the literate directly, their indirect usefulness can be widespread, since they are source material for reinterpretation by leaders of thought everywhere.

168. FAO can do much to stimulate and help various governments to disseminate information effectively among their own people. Indeed, its greatest usefulness may be as a source of material for others to adapt and interpret. It should, for instance, be familiar with the best work being done in all countries by way of disseminating information on food and agriculture, and be prepared to furnish inquirers with examples and to discuss their problems with them, perhaps on occasion bringing those most directly concerned into international conference.

PUBLICATIONS

169. The publications of FAO will grow out of its work, and each should be designed to meet an important need; any tendency to regard a printed report as the final end and justification of effort should be discouraged. The program of regular and occasional publications cannot well be determined until after FAO is organized and operating. In formulating such a program the Director-General will undoubtedly seek the advice of the technical staff and the standing advisory commit-

tees. The carrying out of the program of publication can in itself be a valuable means of integrating the various aspects of the organization's work.

170. One of the most valuable documents for the Member nations will be an annual survey of the food supply situation in each country, the nutritional status of consumers, and the welfare status of producers. Using the reports of Member governments on nutrition, agriculture, fisheries, and forestry, it should be a review of events and trends from a world viewpoint and describe what progress each country is making toward the common objectives. It would take special note of anticipated international repercussions from the various national and regional production and consumption trends and of national policies prejudicial to other nations; and if certain difficulties were worsening rather than being resolved it would analyze the reasons. Such a report will win respect to the extent that it fearlessly and objectively interprets world events.

171. Also of great value will be FAO's statistical publications, especially to nations planning modifications in their nutritional or agricultural policies and most especially to those nations which, because of export or import relationships, have a keen interest in conditions in other countries. It is not entirely foreseeable what statistical publications will be needed for FAO's programs, though the Technical Committee on Statistics has made certain recommendations. There may be monthly commodity bulletins. There will certainly be yearbooks of agricultural production statistics continuing the work started by the I.I.A. and, of course, new yearbooks in other fields. Timeliness in publication is an essential, and the statistics should be accompanied by interpretations and commentaries. In the words of the Interim Commission's First Report to Governments (paragraph 27), FAO should "not only gather data; it should find out and say what they mean."

172. FAO will publish surveys of particular regional or world problems and summaries of significant scientific developments, with special emphasis on trends and interrelations. It may issue journals of general international interest in each of its principal fields.

173. It is of paramount importance that all publications attain the highest standards of accuracy, reliability, usefulness, and skill in presentation. Attention should be paid to form, make-up, and typography. Much will depend on clarity and attractiveness; it is important to choose clear and distinctive type and to plan carefully the layout of statistical tables, charts, maps, and illustrations. Arrangements should be made to have published material of widespread interest and value translated into languages that will be understood by the people of the different countries.

PUBLIC EDUCATION

174. Nations will not expect FAO to undertake educational campaigns within their countries—that will be their responsibility; but they should be able to look to it for suitable material and for advice and help. Thus it will not be sufficient for FAO to disseminate information exclusively in the form of publications for use by experts. There is a very great task ahead in making the objectives for which the nations are establishing FAO understood by the general public in all Member coun-

tries. It will be helpful to governments to have the problems of nutrition, agricultural production, forestry, and fisheries widely discussed, especially from the standpoint of an integrated approach.

175. FAO should prepare simple material setting out the main issues and objectives. It should be ready to furnish advice and assistance on suitable projects for making motion-picture films and film strips, for though it may not have sufficient funds to make such films itself it will be in a position to supply ideas and information to government agencies and others undertaking such work; great strides have been made in recent years in the use of films for educational purposes. FAO might appropriately build up a library of films, photographs, and other illustrative material. It should be prepared to furnish factual material to reporters and journalists, and to radio and other speakers wishing to give talks on the problems of nutrition, agriculture, fisheries, and forestry, and on FAO policies in these fields.

INQUIRIES

176. Any international organization covering as wide a range of activities as FAO will almost inevitably receive a large number of requests for information; indeed, one of the functions of the organization is to serve as a world clearinghouse for information on developments in food and agriculture, forestry, and fisheries. When the FAO staff cannot itself furnish the data or material requested, it will be expected to advise inquirers where the information can best be obtained. FAO should at an early stage give some unit in the organization the primary responsibility for handling such inquiries promptly and adequately.

LIBRARY

177. A comprehensive library on food and agriculture, forestry, and fisheries will be one of the important working tools of FAO. The library should be designed not only to serve the needs of the staff but for the use of persons all over the world who are concerned with problems in these fields and for whom its facilities will be available for research. It should publish annotated bibliographies and make microfilm and photostatic reproductions of important documents available to those who need them.

178. FAO may be expected to take over the existing libraries of the I.I.A., C.I.S., and C.I.B., to which it will add its own reports and acquisitions. One of the many advantages of having the headquarters of FAO in the same locality as that of the other international organizations with which it will be most closely associated would be that by combining forces better library facilities could be provided. Under such circumstances exchange facilities could be arranged among the various libraries, or possibly a common library might be created.

REGIONAL OFFICES

179. Not all types of information need to be distributed on a world basis. Some can best be handled regionally by regional offices, since nations have problems, dictated by climate, geography, and stage of development, which are in many cases

sharply differentiated by regions. Article X of FAO's Constitution contemplates the establishment of regional offices, and activities on a regional basis have been recommended in the discussion of missions and conferences in the present report.

180. In fact, the urgency of regional problems has already brought certain organizations into existence; for instance, there are regional agricultural organizations in the Middle East and in the Caribbean with which FAO must make working arrangement. It does not follow that FAO should attempt to create a world network of similar bodies. In some places there may be a small office, in others no more than a correspondent or group of correspondents. In some it may be possible to share accommodations and secretariat with the regional branches of other international agencies. The Director-General will have to consider what form of organization may be most appropriate in each case.

7. The First Year

DURING the first year or so of FAO's operations the world will be emerging from the ordeal of war. Institutions, traditions, habits, and policies will be in a state of flux. Many governments will try to use the reconstruction period to attain a better level of agricultural production by reorientation or other means. They will want to secure better living standards for their farmers and to initiate sound policies relating to food and agriculture, forestry, and fisheries. Many new international arrangements will be in the making, and it will be easier for governments to begin new programs before old patterns of thought and action become re-established. This will be a time of opportunity such as occurs only rarely in history. As the Interim Commission's First Report to Governments points out (paragraph 138), "to delay the beginning would be to delay the whole program" of FAO.

182. In some countries the war has so dislocated economic life that food distribution has broken down, millions are hungry, and farmers lack draft power, fertilizers, seeds, and livestock. Meanwhile in other countries farmers are wondering whether they can continue their prosperity and their production patterns into the peace; while in some food-exporting countries governments are preoccupied with the problems of high domestic price levels and a possible accumulation of unsalable agricultural surpluses after the war. Each nation has anxieties regarding the postwar period, but anxieties of very different kinds.

183. The requests and proposals submitted to FAO by various countries, some for short-term, others for long-term action, will be many and various. There is sure to be far more demanded than the organization can possibly perform. It will have to choose, and its choice will be dictated by two considerations: what is most urgent and what it can reasonably undertake, equipped only with its first-year installment of staff and resources. At the end of the inaugural Conference the Director-General will have to begin recruiting a staff. Candidates have to be sought out, interviewed, and approved and then have to free themselves from their current employment, all of which takes time. A staff of high quality must be found even if that makes it difficult to recruit rapidly. The budget provision in Annex II to FAO's Constitution suggests that the staff in the first year may be at much less than half its ultimate full strength.

184. It seems useful, therefore, to make in this chapter a short list of certain activities which might be given priority, based for the most part on proposals made

by the five Technical Committees. This, even if approved by the Conference, should not in any sense be regarded as an instruction to the Director-General. It is rather a series of suggestions for his consideration—work which might be initiated if circumstances warrant.

185. In the field of food and nutrition, some of the most pressing requests made of FAO will undoubtedly come from countries still suffering acute wartime food shortages. They may ask for assistance in kind or for advice on emergency rationing and distribution programs. Requests which call in the main for relief should go to the United Nations Relief and Rehabilitation Administration, though when UNRRA's plans for rehabilitation have long-term significance FAO will properly collaborate. There will, however, be urgent problems other than those with which UNRRA is concerned, especially in countries where food is perennially short of people's needs.

186. One of the immediate steps will be for FAO to help in the setting up of national nutrition organizations in as many countries as possible. Experience has shown that these organizations can greatly facilitate the work of surveying nutritional needs in relation to existing dietary habits and determining what can be done to bring about improvements. Some of the wartime food management measures put into effect by various countries to safeguard the health of their people are capable of continued and in some cases even wider application; they should be appraised to see that the gains made are not lost but are in fact extended wherever possible. The viewpoint FAO should keep in mind is that even under unfavorable conditions and at existing economic levels, the diets of large population groups can be improved by applying nutritional knowledge, and that to undernourished or seriously ill-nourished people, even a slight advance can mean a considerable gain in health.

187. It should also be kept in mind that the problem of improving nutrition is inseparable from many of the other problems with which FAO will deal. Most of the suggestions to be made in this chapter for action in the first year have a direct or indirect bearing on nutrition and food management. For example, the fact that great numbers of people in the world are perennially hungry, ill-clothed, and ill-housed, and some are even subject to more or less periodic famine, should be taken into account in all international discussion of possible overproduction of certain commodities in certain areas. The public will not view downward production adjustments with equanimity while there is so great a need elsewhere for the same products. They will demand progress in resolving this paradox.

188. In agricultural production a vast range of problems awaits attention. Selection for the first year should be based partly on what services would give reasonably prompt benefits and partly on which ones promise to be useful to a large number of countries. The Technical Committee on Agricultural Production has listed a number of recommendations which would soon benefit hundreds of thousands of farmers. These include such matters as increased growing of vegetables and fruits, increased production of eggs by better poultry-keeping, the introduction of better hand tools and simple machinery, the use of fertilizers and of better cultivation practices and better varieties of plants, better control of insects and of plant and animal diseases,

and better livestock feeding practices. Some of these improvements would neither be costly nor require elaborate effort to introduce. FAO should make the necessary contacts with governments and with research institutions so that on request it can help to get some of these reforms started, particularly those that might be most useful in the less developed countries.

189. In some cases this would require sending missions to the countries or regions concerned. Among the requests for such technical missions, FAO might immediately make ready to provide advisers on extension services, the development of which will be one of the basic requirements in almost all of the less developed countries, and on the increased production of protective foods—dairy products, poultry, vegetables, and fruits—especially useful for countries where the diet is seriously deficient.

190. In the broad field of commodity situations and production programs, FAO should begin at once to make the best possible appraisal of production, exports, imports, and consumption of major commodities in all countries. This will provide the basis for advice, which is likely to be sought early in FAO's existence, on the adaptation of production to changing world conditions, including better integration with consumption needs.

191. In fisheries, which is a new field for any world agency, the first need is to survey resources, especially in those areas where fish might be used as the quickest means of adding needed protein and other nutrients to the diet, and determine how they can be most rapidly rehabilitated and developed. This will be an urgent matter in view of the fact that a world shortage of foods of animal origin may continue for some time after the war. Cooperative arrangements should be made promptly with regional fisheries organizations, and a study of fisheries statistics and fisheries research should be started as soon as possible.

192. In marketing there will be requests from less advanced countries for advice on setting up or improving facilities. Since a few such countries have already initiated notable improvements, the first step for FAO would be to survey what has been done and report on its applicability to other areas. Certain more advanced countries may wish to explore the possibility of achieving economies in distribution costs. Here a first service would be to survey the wartime experience in simplified distribution and draw attention to arrangements that may have permanent value.

193. The supply of all the lumber needed to provide shelter for displaced persons and for the rehabilitation of war-torn areas is likely to create a serious problem, complicated by the fact that forests have suffered substantial damage by battle, by overcutting, and by failure to replant. FAO should lose no time in assembling information about the present productive capacity of forests, and about requirements and supplies of major forest products in different areas. It should assist governments in planning such national and international measures as will be called for to forestall further forest destruction without delaying the progress of reconstruction, the resumption of international trade, and the beginnings of industrial expansion. Simultaneously, international surveys might be initiated on the present status of forest management; recent experiences with new methods of wood utilization and

the peacetime prospects of these methods; and the need for qualified forest personnel, their availability, and facilities for training.

194. Most of the economically advanced countries are supremely interested in the supply-demand situation for particular products—especially those that were chronically in oversupply during the inter-war period—and for agricultural commodities in general. They will urge, and rightly, that FAO should start immediately to study the world picture with a view to detecting maladjustments, actual or incipient, and recommending correctives. This will involve not only a review of the staple agricultural products, food and nonfood, but also an analysis of national policies and commitments for the next few years. One of the most useful functions FAO can fulfill will be to convene meetings of experts from different countries to appraise urgent situations and recommend what can be done about them, with a view especially to working out programs that will supplement rather than conflict with one another.

195. One of the early activities will be the assembling of statistical information on important phases of production, marketing, and consumption of food and other agricultural commodities. A current reporting service will need to be established immediately. As soon as the necessary steps have been taken to amalgamate the work of FAO with that of the I.I.A., the C.I.B., and the C.I.S., steps will need to be taken to build upon and extend the statistical series developed by these organizations. Concurrently, new series of statistical inquiries will have to be planned in collaboration with governments in the field of food consumption and of fisheries. At the same time, work should be started on the projected world census of agriculture, forestry, and fisheries. An undertaking of this character requires extensive and painstaking preliminary work. Therefore, at an early date, negotiations should be opened with the governments looking to the formulation of plans and the preparation of schedules. For both current statistical reporting and the census project, some personnel and certain statistical materials from the I.I.A. could be used to advantage.

196. There are certain to be requests, and indeed some institutions are already overwhelmed with queries, to provide information on advances recorded in the various sciences during the war years—in the nutrition and food sciences, in the agricultural and forest sciences, in food technology and wood technology. Scientists in war-torn countries have been out of touch with what has been going on in their fields, and they have much ground to cover in as short a time as possible. FAO should endeavor to have summaries of recent scientific progress prepared for wide distribution.

197. There will be a number of administrative matters which require attention in the first year. The Director-General may find it advisable to set up advisory committees at least for nutrition, agriculture, forestry, fisheries, and statistics to assist the organization. He should also seek to set up standing joint committees with the other functional agencies that may exist or have been established in fields related to the work of the FAO. Relationships should be established with existing regional organizations, and there will be many contacts to be made with research

agencies, universities, scientific organizations, and other institutions. A detailed cataloging of all the agencies from which FAO can get information for its own use and that of the Member countries, or with which it might cooperate in various ways, should be begun as soon as possible.

198. This would seem to be a sufficiently ambitious program for the first year. In some directions it will probably prove to be too ambitious; in others good fortune may permit greater progress. The circumstances which will then prevail cannot be foreseen at the time this report is written. If the Director-General accepted a program of this character as a general objective, he would modify it to suit circumstances and opportunities. These might be very different from what is generally assumed. Not inconceivably there might be such acute famine or near-famine conditions in certain parts of the world that most of the programs mentioned in this chapter would have to be abandoned temporarily and every available effort devoted, in cooperation with UNRRA, to trying to avert disaster. Alternatively, the situation might turn out much better than has been predicted. Reconstruction programs in liberated countries might move along rapidly, and FAO might rapidly find its feet.

199. The success of FAO's policies will depend largely on their adaptability. The organization must in these early days be prepared to seize whatever opportunities offer. It must somehow resolve the paradox that while its services will be urgently needed in the immediate period, it cannot become a truly experienced international servant till later. The first year may have great significance, but the years that follow will matter even more. FAO should undertake whatever short-term programs appear suitable to meet urgent needs while at the same time it is preparing itself for the long pull.