

THE ROLE OF INTERNATIONAL AGENCIES IN AIDING IN WORLD FOOD PRODUCTION

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It is an honor and a pleasure to represent the World Bank Group at this symposium on the prospects for the world's food supply. As you know, the financing of economic development is our business, and we are lending money to support a wide variety of development projects of high economic priority. We are fully aware of the close link between the rate of a country's economic development and the rate of expansion of its agricultural sector. By earning or consuming foreign exchange, this sector is often of critical significance in the balance of payments of developing countries, and it is always an important source of domestic savings needed to finance the country's over-all development program. It is the agricultural sector that provides a great part of the demand for the products of industry, and as the sector increases in efficiency, it releases labor for industrial expansion. We therefore regard agricultural development as a vital ingredient in balanced economic growth.

I doubt if there is any aspect of economic development that has such strongly emotional connotations as the struggle to produce enough food for growing populations. Hunger must surely be the oldest pain known to man, and his search for adequate supplies of food his oldest occupation. What arouses our sentiments is the stark fact that in this technological age, and despite the enormous potential for increased food production, millions in many parts of the world suffer the debilitating effects of malnutrition and live in recurrent fear of starvation. In reference to such an emotionally charged issue, it may seem callous to speak of food production in such coldly professional terms as an ingredient of balanced economic growth.

And yet this problem really does call for just such an appraisal, for simple as the notion of growing more food may appear to be, actual success in doing so depends on a host of actions being taken at different levels and in different sectors of the economy. Thus, while the magnificent rescue operations epitomized by the United States' Food for Peace Program bring relief to those in the existing pockets of critical food shortage, the task of helping the less-developed countries to plant the seeds of self-reliance, and to ensure food production for their future needs, demands a long-term, skillfully planned, carefully coordinated, and properly financed program of development aid.

The lines along which such a program should be planned provide a subject for endless discussion, and some controversy. But it is clear that if the rising demand for food to feed growing populations is to be met, over-all agricultural productivity will have to be increased both by raising the yields of land already under cultivation and by bringing new lands under cultivation. Indeed, for almost half of the world's population, the second alternative scarcely exists, so that their effort to feed themselves must depend almost entirely on raising the productivity of the existing acreage. For countries with a fixed-land economy subject to the pressure of a rapidly rising population, the failure to raise yields can only entail an indefinite postponement of economic advance on all fronts and a steady decline in already

inadequate living standards. No program for general economic development can thrive in this environment.

As to the extent to which the population explosion compounds the difficulties, you will be hearing expert testimony from Dr. Revelle later this morning. Suffice it for me to say that while the effort to control family sizes in the worst-afflicted countries now appears for the first time to be getting under way on a limited scale, we must realize that there will be little real relief from the current oppressive pattern of population growth for at least a generation. We must therefore assume a continuous increase in the number of mouths to be fed, and that the world population which took over half a million years to reach its present level of three billion is almost doomed to double itself in the span of the next 30 to 35 years.

Let me now briefly identify the three institutions of the World Bank Group whom I represent here, all of which share the common purpose of providing and promoting a flow of capital into productive projects and programs in the developing countries. First is the World Bank itself, bearing the official title of the International Bank for Reconstruction and Development. Second is the International Development Association, founded in 1960 as an affiliate of the Bank, and known as IDA. Both the Bank and IDA make long-term development loans to their member countries, but whereas the Bank makes loans on more or less the same terms that borrowers expect to encounter in the private capital markets, IDA extends long-term, interest-free credits, with only a small service charge to borrowers whose debt-servicing capacity makes it impractical for them to borrow on conventional terms. Because World Bank and IDA operations differ only in the terms of their lending—even their staffs are one and the same—I shall be speaking for them both when I describe the policies that we are pursuing in relation to agricultural development in the developing countries.

The third institution is the International Finance Corporation, founded in 1956 and devoted to promoting investment in private industrial and mining enterprises, mostly in the developing countries. Although less directly involved in the agricultural sector, the IFC is, nonetheless, supporting in a number of cases the processing and marketing of agricultural commodities, and the supply of agricultural inputs, especially of fertilizer.

The World Bank, in its 20 years of operations, has lent nearly \$10 billion, the greater part of it in financing so-called infrastructure projects such as electric power and transportation, which provide the basic framework for a country's economy but which generally do not attract private investors. Such financing has accounted for some two thirds of the volume of the Bank's lending. Most of the remaining one third has been devoted to industry, agriculture, and, in recent years, education. IDA has extended almost \$1.3 billion worth of credits for much the same types of projects.

By the end of 1965, the Bank and IDA had together provided nearly \$1 billion of loans and credits for the direct support of agriculture. The greater part of this—more than \$600 million—has financed irrigation and flood control projects. The rest has been lent for a wide range of purposes, including land clearance, farm improvement and mechanization, crop-processing and storage, livestock improvement, and fishing. I should also point out that projects financed in other sectors have in many cases afforded very substantial benefits to agriculture, notably road projects

which have provided the agricultural community with greater access to suppliers and to markets. Considerable benefits have also been derived from projects extending electric power and telecommunications into rural areas.

In recent years we have been consciously striving to make a greater direct impact in the field of agricultural development. Our experience has taught us that our earlier efforts were inspired by an insufficient understanding of the numerous human and institutional problems which impeded effective use of capital resources in this sector. We have become keenly aware that capital is only one of the essential elements required to bring about a substantial increase in agricultural production, and that it can be applied only as rapidly and effectively as other elements of the agrarian structure permit. In some countries, extensive land reform and other changes in land policies are prerequisites. There is nearly always a need to strengthen or introduce other aspects of agrarian reform in the field of agricultural administration, research and extension services, the supply of farm requisites, and market opportunities. Until such reforms have been carried through, there can be little really effective use of farm credit, the capital element of the agrarian structure at farm level.

Finally, I think we must recognize that despite all that has been done in the way of research and experimentation regarding cropping patterns, a very great deal remains to be done along these lines to guide the farming communities in the individual developing countries. In a large part of the underdeveloped world there is still inadequate knowledge of soil and climatic conditions, and much to be learned about adapting plant strains to local conditions. We are still a long way from being able to tell an individual farmer where his best opportunities lie, and perhaps still further from designing a rational division of labor between developing countries in the field of agricultural production. Too many export crops, particularly in the realm of tropical agriculture, are already showing burdensome surpluses, and too many countries are planning to diversify production into lines which would exhibit burdensome surplus if all of them succeeded. This problem lies at the heart of a major study which is presently being undertaken by the World Bank and the FAO in conjunction with the International Coffee Council in an attempt to give guidance to coffee-producing countries as to how they might best diversify their agricultural production. It is already clear, I might add, that part of this necessary diversification must lie in the direction of industrialization as well as in the development of new cropping patterns.

For all these reasons, we find that many countries cannot effectively absorb much capital for agricultural development at the present time. To take irrigation as an example, there are many irrigation projects around the developing world which are not giving reasonable yields or not leading to significant intensification of production. If proper advantage is to be taken of irrigation, for instance by the introduction of multiple cropping, extensive changes have to be effected in farming practices, including the proper performance of field work through mechanization, application of fertilizers, use of pesticides, efficient marketing, and adequate credit. In other words, the provision of supplies and services to farmers, including the provision of technical advice, becomes the limiting factor, rather than any shortage of capital. But if these administrative and organizational problems

can be solved, our experience shows that large and sometimes spectacular results can be achieved.

Back in 1960, the Bank lent \$42 million to Iran for a multipurpose project on the Dez River in the province of Khuzistan for electric power generation, irrigation, and flood control. In the area of the Dez project was a population of approximately 150,000 whose chief livelihood was subsistence agriculture. Conversion to irrigated crops could greatly expand their productivity, but a program of investment in physical irrigation work could be a complete waste of money without many organizational and administrative innovations designed to introduce new and improved farming methods. The Government very wisely decided to proceed with a pilot project first, covering some 50,000 acres, accompanied by the creation of a new irrigation-operating authority and the provision of supporting services to educate farmers in sound agricultural management. Outside consultants were employed to launch this program and to train Iranians to take over the management. A great deal of agonizingly hard work has had to go into this task, but the results are very encouraging, and we hope that the basis will soon be established for a major expansion in the irrigated area of the Dez project.

Another example: Before the early 1950s, the former African areas of Kenya were farmed under the tribal system. There was no security of tenure nor incentive to husband the soil or improve the temporary and often scattered holdings. Embarking on a program of reform, the Government first enlisted the cooperation of the tribal authorities in the consolidation and demarcation of holdings and registration of titles. They then provided extension services to propose a farming plan for each holding and to guide the farmers in the use of new techniques. Water supplies, feeder roads, and market outlets were developed. The role of farm credit through this initial period was limited. Emphasis was given to placing the farmer in a productive agricultural setting in which he could, in succeeding years, make efficient and intelligent use of credit.

The World Bank came onto the scene in 1960 with a loan of \$5.6 million to help finance the last three years of the program, including the building or improvement of over 400 miles of feeder roads. By 1962, some 2½ million acres had been consolidated into registered holdings and about a quarter of a million farm families were farming much more efficiently. In 1964, an IDA credit of \$4.5 million was extended to cover about three quarters of the cost of an extension of the road program, and IDA is currently considering extending a credit which would enable Kenya's Agricultural Financial Corporation to provide credit for on-farm development and husbandry improvement to selected smallholders after their farms have been consolidated and registered.

A third example of the importance of preparing the ground for capital investment takes us to Latin America. In 1950, the Government of Uruguay invited the Bank and the FAO to send a joint mission to undertake a survey of agricultural problems. Animal production based on grassland is the backbone of Uruguay's economy. Wool, meat, milk, and by-products represent about three quarters of the total value of agricultural output and provide most of the country's foreign exchange earnings. Among the mission's recommendations, special attention was drawn to the need for a comprehensive livestock development program, requiring fundamental changes in the techniques and pattern of farming.

What was needed was a demonstration to the nation's livestock farmers of the advantages of modern techniques of pasture improvement and management such as had been successfully applied elsewhere, particularly in New Zealand and Australia. It took years of effort, however, to secure the establishment of an organization which could effectively select farmers to participate in the demonstration, provide technical assistance, recommend development plans for individual farms, and supervise the execution of each farm program. Technicians had to be trained in the new methods, and the necessary legislation had to be passed in the face of numerous obstructions. Eventually, in 1958, these preparatory steps were taken and the Bank made a loan of \$7 million to cover most of the foreign exchange requirements of a pilot program to provide technical and financial assistance to selected livestock owners on a pilot group of 600 farms. Pastures and soil fertility were improved by fertilizing and reseeded, farms were subdivided with fencing to permit controlled rotational grazing, and improved control of livestock diseases was introduced.

This program has been a great success. Throughout the country's farming community, word has spread of the three- to fourfold increases in livestock production in the selected areas. With demand for credit rising, the Bank has recently made a new loan of \$12.7 million to expand the operation. Within three years a quarter of the grassland farmers of Uruguay will have acquired enough practical experience to develop their own properties and to extend advice to their neighbors. The program as a whole will have an immense impact upon Uruguay's economic development and upon its chronic balance of payments difficulties.

In addition to illustrating the importance of preinvestment preparation, these examples point to the great importance of agricultural credit. After irrigation, agricultural credit is the second largest category of Bank lending to agriculture. Our program of lending to credit institutions includes providing them not only with financial resources but also with extensive technical assistance designed to improve their organization and operations. Due to shortage of local personnel with relevant experience, it has been necessary to bring in foreign experts to develop sound management and operating procedures. But the technical soundness of the on-farm investment plans is equally important. Demand for credit is sometimes overestimated, since the effective use of credit is often limited by the lack of technical advice available to farmers to guide their operations. As more technical personnel become available, both from abroad and through local training programs, the role of these credit institutions can and should greatly increase. During 1965, the Bank and IDA financed the expansion of medium and long-term agricultural credit through institutions in Morocco, Mexico, Pakistan, Peru, the Philippines, Paraguay and Uruguay, and a dozen similar projects in other countries are currently under active consideration.

Speaking more generally, the work of the World Bank and IDA in the field of agricultural development has increased considerably in recent years. At the close of 1965, we had 25 agricultural projects under negotiation, involving possible Bank or IDA financing totaling \$250 million. Another 43 projects were in various stages of identification and preparation, and we have now established an active interest in the agricultural sector in 60 countries. In order to intensify this work, the Bank and IDA have considerably expanded their own agricultural staff, and 2 years ago this month reached agreement with the FAO on a cooperative program

designed to increase agricultural investment in the developing countries by identifying and preparing new projects suitable for investment. A special team was established within FAO, and this team and the Bank's Agriculture Division are cooperating in bringing new projects to the point where they can be considered for financing by the Bank or IDA. Since the partnership commenced, the FAO staff have participated with us in 105 missions to 49 countries.

The World Bank also has a similar cooperative program with UNESCO, directed toward the identification and preparation of projects for investment in educational facilities in developing countries, particularly at the level of secondary and technical schools and teacher-training institutions. We are confident that such efforts will, in the long run, greatly benefit agricultural development. Some of our investments in educational facilities, for instance in two agricultural colleges in Pakistan, will produce an increased flow of agricultural technicians and administrators. But also, more broadly, it is an established fact that general advances in educational standards increase people's ability to understand, learn, and put into practice new agricultural methods and practices. Again we see the interplay of the manifold factors contributing to the growth of agricultural productivity.

I think it is now widely agreed that whatever success may be achieved in improving agricultural output by the introduction of better seeds, new methods of cultivation, increased or more regular supplies of water, etc., a really significant breakthrough in agriculture requires a major increase in the application of the right kinds of fertilizer. On the scale on which we have to approach this problem, this means manufactured chemical fertilizers. We know that the natural resources required—essentially hydrocarbons associated with petroleum production and refining, phosphate, and potash—are abundant in many parts of the developing world. But they are rarely found together, and they are rarely in adequate supply in the countries and regions where the potential demand is greatest.

The technology exists for very large-scale production of the basic fertilizers and fertilizer ingredients. Furthermore, we have reason to believe that a great deal of private capital would welcome opportunities for large-scale investment in fertilizer production. But knowing how to produce, and even where to produce at lowest cost, takes us only part of the way toward a solution of the problem. Equally important are markets and distribution facilities in the countries where the need is greatest. Distribution systems are also, unfortunately, much more complicated and difficult to create than the fertilizer plants themselves. The needs of the developing countries can only be met if the whole fertilizer complex from raw material to farmer is approached as one system, including production, distribution, and technical assistance to farmers who have to learn how to use the end product.

In consultation with private industry and interested governments and international agencies, the Bank is currently giving special attention to the question of what role our institutions can play in this challenging field. Our affiliate, the International Finance Corporation, is actively engaged in several important fertilizer projects in some of the countries where the need for new capacity is great. We would be receptive to new ideas from any source as to how our financial and technical resources might be brought more effectively to bear on the problem of assuring adequate supplies of fertilizer to the hungry regions of the world.

I close by noting that despite—or perhaps because of—the prophets of doom, there is in fact much convincing evidence around the world of what can be done to raise agricultural productivity; of how irrigation, modern inputs, and farmer training has raised Israel's food production by 150 per cent in a decade; of how countries such as Japan, Mexico, Taiwan, Thailand, and the Philippines, for example, are increasing their food production faster than their population numbers. Other countries, now seriously lagging, can catch up with the front-runners if they—and we—make the necessary effort. In this great task, we in the World Bank Group hope and expect to play a part.