Impact of the Bank’s rural development lending

Since the global food crisis of the early 1970s, the World Bank has accelerated its lending for agriculture and rural development, and has substantially reoriented it toward raising the productivity of the low-income groups. This article provides an interim assessment of this strategy.

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Since 1973, the Bank’s direct lending for agricultural development in the developing world has grown from $1.4 billion a year to $3.3 billion in 1978 and totaled more than $10 billion over this five-year period. The figure for 1978 represents 39 per cent of all Bank lending in that year, and over 40 per cent of all external commitments to agriculture. As each dollar the Bank invests is supplemented by local investment, the total value of projects in which the Bank participates is substantially more than its own contribution: in the last five years the total combined investment has exceeded $24 billion, perhaps as much as 15 to 20 per cent of all public investment in agriculture in the developing world. (These amounts represent direct investment in agriculture; they exclude the indirect effects on the sector from lending to other sectors, which are also appreciable.)

This assessment is on the impact of the Bank’s lending for agricultural development, especially on the rural poor. It will be based on the Bank’s experience with some 75 projects which have been completed and over 500 others which are still being carried out.

Projects can have various kinds of economic impact. In the great majority of cases, the main objective is to increase producer incomes by raising output and productivity of the farm enterprise. Many projects are designed to assist the small farmer as a producer. Such projects may also have a major impact on the rural poor through the creation of new employment opportunities, often at higher levels of productivity, both on the farm and in local business and services relating to agricultural development. Projects also affect the poor as consumers; some through the provision of improved services and amenities such as drinking water, primary schools, and local health centers, and others—actually the great majority of projects—which generate increased supplies of food for local consumption.

Project work

Raising incomes for smallholders involves raising productivity, and some of the more successful projects have involved increasing the output of traditional crops. Others have involved changing the composition of crops sown. The increased output of traditional crops has come largely from the more effective use of improved
seeds, fertilizer, and water—in systems which have helped over 10 million farmers throughout the developing world increase their output of rice, wheat, corn, and cassava and their incomes. Other projects have involved changing this product mix. The shifts in the crops sown have resulted in farmers changing from subsistence production to the production of high-value crops. These crops, grown on smallholder schemes in countries as diverse as Brazil, Indonesia, Kenya, Senegal, Tanzania, and Tunisia, have involved the production of sugar, tea, fruit, vegetables, sisal, and cotton. The smallholder tea project in Kenya, one of the oldest projects of this kind, for instance, increased the incomes of the farmers from around $50 a year to three times that amount.

Projects intended to raise the incomes of the rural poor call, first, for a clear identification of the proposed beneficiaries, and then for the design of projects so that this group will indeed directly benefit from them. In practice, each project design is unique to specific local circumstances. However, it is possible to summarize the main activities emphasized by Bank projects aimed at the rural poor, and their impact.

Irrigation. The effects of irrigation on the production and output of such crops as rice have been widely recognized. Irrigation permits the expansion of intensive cultivation—often making double cropping possible—in areas that are otherwise too dry or too subject to climatic variation to be productive. In the rice economy countries of Asia, those where less than 35 per cent of the farmland is irrigated have average yields of two metric tons per hectare; those where 75 per cent of the farmland is irrigated have average yields of over four metric tons per hectare. Perhaps 40 per cent of all increases in rice yields over the last decade can be attributed to an expansion of irrigation—and this is the largest single component of Bank lending in agriculture.

As far as can be estimated, the Bank is now responsible for 25 per cent of all additional public investment in irrigation. Bank-financed irrigation is now responsible for increasing annual grain production—primarily rice—by about 750,000 to 1,000,000 tons. Equally important, the construction and operating standards established by the Bank have become generally accepted by domestic authorities, with very significant repercussions on the efficiency of national irrigation programs. Bank-financed irrigation schemes, especially in the rice producing areas of Asia, are typically sited in areas of already dense and long-established settlement, frequently with a mix of small (sometimes fragmented) holdings and some larger holdings and sometimes incorporate arrangements for off-farm activities. In such situations, benefits to the poor from these projects are significant, both from the increased incomes of the producers and from enhanced employment opportunities on and off the farms.

A comprehensive analysis of incomes and investments that followed a Bank-financed rice irrigation project in Malaysia indicated that all classes, including the landless, benefited proportionately from the investment. In terms of absolute increase, the impact was obviously greatest for the farmers who started at the highest income level. However, in terms of living standards, the greatest impact was unquestionably on the lower-income small farmers and landless who were able for the first time to afford the necessities for a decent and productive life. The study also indicated that the "secondary" benefits generated in nonfarming activities were, in aggregate, about as large as the project's direct farm impact. For every dollar of direct investment in rice production, there was about 75 cents of investment by blacksmiths, small merchants, and local small-scale manufacturers. Careful post mortems of projects in India and Mexico indicate that as a result of the projects wage rates increase, benefiting the poor, and that the level of migration out of the rural areas declines while other indicators of social well-being—such as school attendance, infant mortality, and the number of bicycles sold—improve.

A recently completed project in the Philippines illustrates the extent of impact when irrigation is associated with a program of land reform. Before the project started, some 24,000 farm families were accommodated on roughly 80,000 hectares. With irrigation, over 90 per cent of the area is now double cropped and yields have about doubled in the former dryland areas. In total, 1979 production is expected to show a more than threefold increase due to the project. At the same time, with land reform, the area in 1978 accommodated 45,500 farm families, the reduced average holding size being more than compensated by increased productivity. Results in Egypt, Indonesia, and many parts of Africa can attest that this is not an isolated phenomenon.

Fertilizer. All evidence shows that chemical fertilizers have played an important role in increasing yields and output in developing countries—and most projections indicate that increased supplies of fertilizers will be a major factor in future food production. The World Bank has become the most important source of finan-
sional and technical assistance for the construction of fertilizer plants in developing countries. Most of these plants are government-owned and are aimed at encouraging import substitution. Bank-supported projects account for roughly 25 per cent of the incremental nitrogen fertilizer, 35 per cent of the phosphates, and 100 per cent of the potash that has been produced since the early 1970s. This additional fertilizer—about 750,000 metric tons annually—can generate roughly 6 million tons of additional cereal, or about half the increase in the output of developing countries during the same period.

An example of a major effort based on increased use of fertilizer with a direct impact on production and income is the current Bank-supported program in northern Nigeria. Only a short while ago, Nigeria was a net exporter of food. But rising incomes brought a greatly increased demand for grains while production declined. The World Bank has made plans to commit over $1 billion for area development projects that will encompass the entire country. Interim results are impressive. The use of chemical fertilizers in the first three projects areas increased from 2,000 to 50,000 tons in only three years. Since 1976, production has more than doubled and sales of improved plows, new seeds, and other inputs have increased at a remarkable rate. The projects are at present reaching 200,000 farm families, more than a million people, and in due course will be expanded to reach most of Nigeria's 18 million farming households. Elsewhere, in areas as different as Tanzania, Thailand, and Turkey, Bank-sponsored projects are enabling large numbers of low-income farmers to use fertilizers to increase their output and income.

Other infrastructure. The lack of rudimentary road systems has been a crucial bottleneck to rich and poor in reducing the efficiency of the marketing of either inputs or additional production. Recognizing this, the World Bank investment program over the last three years has helped to finance the construction and rehabilitation of over 80,000 kilometers of rural roads, a network longer than the entire interstate highway system of the United States.

The Bank makes investments in other facets of rural development. Rural electrification schemes are one example. Projects which the Bank has helped to finance have brought power to 30,000,000 rural people—many of them very poor—over the last few years. Financing places for students in agricultural training institutions is another example. Already the 23 projects that have been completed provide 10,000 places for training agricultural specialists. This represents a small proportion of the total places that will eventually be created when the 140 ongoing educational projects are implemented.

Agricultural extension. In many states in India, the Bank has been financing a "training and visit" extension system to improve the capabilities of working farmers. This system, which the Bank helped to pioneer, ensures that field agents keep in close contact with a manageable number of "contact" farmers, who then disseminate improved techniques to their neighbors. At the same time, the agent is kept abreast of the advice he should give through fortnightly in-service training programs. The extension agent concentrates initially on basic details—such as timely planting, proper row spacing of seed or plants—which require no new cash inputs. The programs are cheap, averaging about US$1 per hectare. In India, the observed impact as reflected in output figures has been impressive (see table).

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<thead>
<tr>
<th>Effects of extension on Chambal Project</th>
<th>(Rajasthan, India)</th>
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<tbody>
<tr>
<td>Crop</td>
<td>Average yields</td>
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<tr>
<td></td>
<td>(in tons per hectare)</td>
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<tr>
<td></td>
<td>Before project 1975/76</td>
</tr>
<tr>
<td>Paddy</td>
<td>2.00</td>
</tr>
<tr>
<td>Sorghum</td>
<td>0.44</td>
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<tr>
<td>Wheat</td>
<td>1.17</td>
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<tr>
<td>Sugarcane</td>
<td>40.90</td>
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After only three years, 90 per cent of the farmers were following the extension agent's advice. While the amount of fertilizer used hardly increased at all, it was applied much more efficiently and there was a tenfold increase in the number of farmers using improved varieties of seed. Yields increased by at least 50 per cent. Moreover, the diffusion of the new technology from the contact farmers to others has proceeded smoothly, with the gap between their respective yields progressively narrowing (now at 9 per cent).

Agricultural credit. Bank-financed programs for rural credits have been deliberately reoriented to make sure that an increasing proportion of these credits accrue to disadvantaged groups who formerly had no access to institutional credit. In this way, many credit institutions in developing countries have "eased" into providing loans for the poor; as they have gained experience so the volume of loans for smallholders and tenants has increased. Such a shift has resulted in considerable modifications in organization and criteria for determining the creditworthiness of small farmers.

A study undertaken by the Government of India is one of the few evaluations of the impact of rural credit programs on raising the incomes of the poor. More than 750,000 Indian farmers have taken advantage of the rural credits financed by the Bank. Half of these funds have helped to raise the incomes of very small farmers, much of the credit being used to provide supplemental irrigation, permitting double cropping and increased production. The Government's own evaluation concluded that the credit program, and more especially the small-farm component, had had a considerable impact on raising incomes of the rural poor.

In northeast Brazil, under the Bank-supported Polonordeste program, specific credit mechanisms for helping sharecroppers and the landless have been developed. The mechanisms are designed to suit the needs of these people which cannot be fulfilled through conventional channels. To date experience has demonstrated that such initiatives are feasible without unacceptable default rates and have led to increased production and income.

The multipurpose project. One initiative taken by the Bank in its lending for rural development is the multipurpose project that combines a wide range of activities usually within the framework of some national or regional program. A midterm review of an ongoing project in Mexico illu-
trates the impact of such projects. This project concerns carefully selected low-income communities scattered across Mexico in some 30 "microregions." About four years after project inception, some 75,000 low-income families have benefited under the project through investments ranging from irrigation, soil conservation, bee-keeping, electrification, roads and marketing services, schools, health care, and water supplies. Thus far, about 30,000 families have experienced an income increase of at least 15 percent since the commencement of the project, largely through small-scale irrigation and fruit production. An interesting feature of this type of project is the widespread and "quickly" obtained benefits through social infrastructure and electrification.

A special class of poverty-oriented multipurpose projects financed by the Bank involves land settlement and development. One of the most ambitious currently under way is the transmigration project in Indonesia. This project will move very large numbers of the most impoverished families from densely settled Java to the outer islands of Indonesia, where they will be resettled on partially cleared land. The initial—hitherto small-scale—effort in this part by the Bank has resulted in the annual incomes of some 2,000 farm families rising from about $300 to over $500.

Some lessons

The experiences gained through implementing the approximately 500 projects now under way are both positive and negative. Many were "pioneer" projects either involving activities new to the Bank or work with new agencies. Experience shows that there is often a need for considerable flexibility as circumstances change and as implementation reveals new possibilities or demonstrates the likelihood of failure. For example, in Mauritius a project designed to give temporary and permanent employment for landless workers had provided for some land development but the land—for various reasons which had nothing to do with the project—was not available. A new agreement was made with the Government, and the financing was switched into what had become a successful initiative to provide improved training to develop trade skills among the younger workers. There are many other projects where adjustments have had to be made as more has been learnt about the resource base and technical needs to increase production. In some instances, though, proposed technologies have simply not worked and projects have led to little substantive changes in output and incomes.

In many countries, experience with a first generation or pioneer project forms the basis for subsequent projects. Transmigration in Indonesia is a case in point. Such experience may also form the basis for an expanded national program that goes forward without continuing Bank or other external support. For example, the Mexican program referred to earlier now embraces over 100 microregions. Total expenditures are more than $300 million per annum, while the Bank's support to the programs through project finance now amounts to less than 15 percent of the annual flow.

Through direct involvement at the project level and more general dialogue and inter-change, the Bank has exercised a marked influence on national policies and programs for rural development in many developing countries. There is now widespread acceptance that the rural sector is generally grossly undercapitalized and that greater emphasis on agricultural and food production is essential for balanced economic growth. Perhaps more significantly there has also been a growing adoption of the view that growth and equity in the rural areas can be served by raising the productivity of hitherto neglected small farmers and other low-income groups in the rural areas. This is best done by programs specifically designed for this purpose. Such programs are now in effect in more than 100 countries, ranging from the largest in Asia to the smallest country in Africa.

In the last few years it has become clearer which factors contribute most to the impact of specific projects. First and foremost, there is no substitute for government policies which combine (1) adequate incentives to farmers to produce, and (2) increases in the capabilities of rural operating agencies. Most projects are intended to provide a large number of individual producers with an opportunity to raise their output. Whether farmers take advantage of this opportunity has often been determined by external factors, such as the weather, international and national market price changes, or political change.

Weather is important. In the Sahelian zone in Africa, for instance, output fell in Bank-financed projects in the early 1970s because of the drought; in South Asia, on the other hand, production in Bank-supported projects during this period increased in part—although not wholly—as a result of very good monsoons. A special study of some 18 completed smallholder projects in sub-Saharan Africa, all of whom appraised and approved before 1973, illustrates a number of these points. While as a group these projects fared well and in fact reached more small farmers than originally envisaged, a number of them performed poorly. In particular, projects involving rain-fed field crops (as distinct from irrigated areas or tree crops) were not very successful. In many cases, given the prevailing cost and price structures, the farm investments supported by these projects were not sufficiently attractive to farmers; they were also often too risky given the hazards of the environment and markets. Some similar problems are also reported for more recent projects still being implemented.

The experience with smallholder projects illustrates one of the several constraints on the expansion of Bank operations to address the problems of rural poverty. Tens of millions of small farmers produce very little in precisely those unfavorable conditions which currently available technologies cannot adequately overcome. Similarly, there are many hundreds of millions of people in the rural areas who either do not have access to land, or whose holdings are too small to sustain themselves and their families. These people can be reached through, for example, the creation of employment opportunities, both permanent and temporary. The Bank has financed more than one million temporary jobs through investment in raising production, land clearing projects, and public works programs. Nevertheless, experience serves to re-emphasize an important general lesson that the contribution to employment creation, either of the Bank specifically or of viable agricultural projects in general, is necessarily a limited one.

One other lesson of recent experience—perhaps the most important of all—is that poverty-oriented projects often need more time to be effective than conventional projects. In retrospect, this is not altogether surprising. Projects intended to help the poor may require several concurrent activities, often including (1) developing technology to suit small farmer capabilities and circumstances; (2) training and motivating extension staff; (3) training farmers and wider communities for full participation and self-management of institutions such as cooperatives; and (4) preventing discrimination against the poor and the pre-emption of benefits by the richer local leaders, who are sometimes more aggressive entrepreneurs. Preventing such discrimination may include, for example, redefining the laws that govern institutions like cooperatives or changing conditions governing water rights or land tenure. These changes are especially difficult to achieve in societies where land and water are equated with political power. In several projects, for instance, improved technology has been provided to help tenants increase their production but—without se-
curity of tenure—they have been displaced by landlords, or the landowners have captured much of the increase in surplus.

In sum, rural development often describes a process involving changing attitudes (including those of bureaucrats), institutions, and old ways of doing things. Experience shows this is often a good deal harder and more lengthy a process than, say, constructing a new power station or planting a new forest. Often, too, results seem to accumulate slowly—almost imperceptibly to the day-to-day observer or participant. Experience also sometimes shows, though, as in the extension projects in India, that once the breakthrough is made, the results can be spectacular.

Prospects

We are as yet far from the point at which the impact of the overall lending effort can be fully and reliably assessed. The major, recent part of the Bank’s program to reach the rural poor is still being implemented; many of these pioneer projects will need to be followed up through successive stages involving perhaps an overall 15- to 20-year horizon; a number of critical supporting elements and institutional changes will also take time to come to fruition.

Ultimately, success in this field is to be measured as much by the creation of a local capacity for long-term development—a capacity for sustained change—as by any immediate benefits, important though the latter may be. Most important of all is the requirement for sound domestic policies to ensure that increases in agricultural production are sustained and that low-income producers are given every opportunity to increase their output. Increasing investment and the supply of external capital to agriculture are important, but in our view making better use of existing investments, with comparatively modest incremental outlays to improve efficiency, can yield very high returns. National policies on pricing, land reform, taxation, special facilities for low-income producers, and so forth are at least as important in influencing production as the total flow of resources to a particular country.

A number of recent Bank-financed projects are associated with such policy and institutional reforms. The costs of continuing and expanding Bank efforts are increasing, particularly as projects move into progressively less developed regions, and attempt to deal with more difficult problems. But if the additional resources and governmental commitment are forthcoming, and if expectations are cast in the right time perspective, our experience shows that the chronic poverty now prevailing in many rural areas of the world can be significantly reduced through such efforts.

All these articles originally appeared in Finance & Development, a quarterly magazine published jointly by the International Monetary Fund and the World Bank that presents articles written by staff members of the two institutions on issues concerning international finance and economic development. The first article was published in June 1978; the last in the series was published in September 1979.

Since these articles appeared, David L. Gordon has retired from the Bank and Edward Jaycox has become Director of the Country Programs Department in the East Asia and Pacific Regional Office. In addition, the responsibilities of the Energy, Water and Telecommunications Department of the Bank have been divided; there is now an Energy Department, headed by Yves Rovani, and a Transportation, Water and Telecommunications Department. Finally, Leif E. Christoffersen is today Assistant Director, Rural Development, in the Agriculture and Rural Development Department.