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JAPAN AND THIRD WORLD AGRICULTURAL DEVELOPMENT

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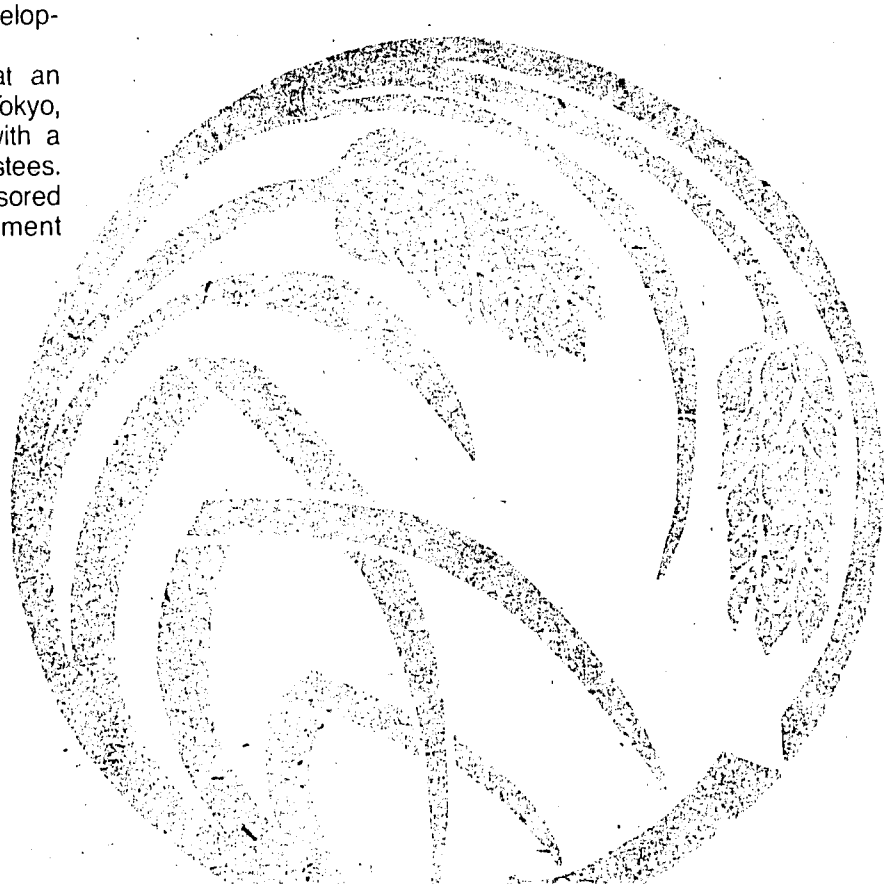
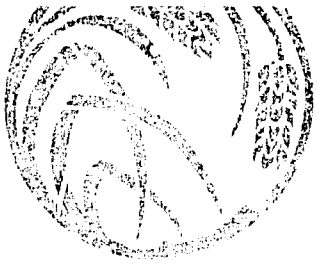
The briefs that follow deal with the relevance of Japanese development experience to the economic strategies of Third World countries. Because agriculture played a key role in Japan's development—and agricultural growth is vital to the overall growth of developing countries—Japan's increasing commitment of material resources to Third World development is treated in the context of its intellectual contribution to the theory and practice of an agriculturally led growth strategy. These briefs therefore explore the global economic situation, Japan's expanding role in it, the stages of Japanese development and the applicability of lessons learned to developing countries, and the implications for development assistance policy.

The briefs were presented at an international symposium held in Tokyo, April 19, 1989, in conjunction with a meeting of IFPRI's Board of Trustees. The symposium was jointly sponsored with the International Development Center of Japan.





JAPAN AND THIRD WORLD DEVELOPMENT

Saburo Okita, Institute for Domestic and International Policy Studies

The present picture painted by robust economic expansion in the OECD countries over the past few years has been marred by a number of serious disequilibriums facing the world economy: economic growth in OECD countries has been sustained despite the persistence of major balance-of-payments disequilibriums; developing countries have achieved uneven development; and there has been a reverse net flow of capital from the poor to the rich.

Development assistance policy is one of the most important means of rectifying these disequilibriums and achieving balanced growth for all the world's economies. This paper examines the policies Japan can pursue to encourage economic development in the Third World. It reviews international trends in economic assistance thinking over the last 20 years as well as changes in Japan's assistance policies.

DEVELOPMENT ASSISTANCE THINKING DURING THE LAST TWO DECADES

At the time the Commission on International Development, better known as the Pearson Commission, wrote its report, "Partners in Development," in 1969, most thinking on development assistance leaned toward placing a priority on those countries that were making a strong policy effort in bootstrap development, in the hope that development assistance would enable these countries to eventually sustain themselves without aid. Development assistance was based on the efficiency principle of concentrating on the countries with the best development prospects in order to reduce the number of impoverished countries as quickly as possible.

However, enervated by their everyday destitution and at the mercy of international commodity markets and economic trends in the industrialized countries, many developing countries found themselves unable to either raise their savings rates or expand their exports as much as they wanted to. At the same time, concern was expressed that concentrating on the countries with the best graduation prospects might lead to writing off the more impoverished countries. As a result it was argued that development assistance policies should also include provision for basic human needs and that the efficiency principle should be tempered with what might be called the welfare principle.

In 1987, the World Commission on Environment and Development issued a report entitled "Our Common Future" that highlights the importance of ensuring that we achieve sustainable development to meet the needs of the present without compromising the ability of future generations to meet their own needs. In thinking about development assistance, it is now necessary to add consideration of sustainable development to the old balance between the efficiency principle and the welfare principle. Given the need to formulate new ideas suited to our current situation and to revitalize the world economy, now is the time to discuss and agree on a variety of ways to deal with the structural issues between North and South.

CHANGES IN JAPANESE AID POLICY

It might be useful to classify Japan's assistance policies into five stages in order to review the evolution of Japanese thinking on development assistance and discover how Japan can help developing countries. (The dates indicate when each stage started.)

Stage one:	Payment of reparations (1954)
Stage two:	Lending and investment as economic cooperation (1958)
Stage three:	Economic cooperation integrated with Asian foreign policy (1965)
Stage four:	Responsibility as an economic power (1980)
Stage five:	Role as a current account surplus country (1985)

Following the conclusion of reparation agreements in 1954, Japan paid reparations and provided grant economic assistance as a form of quasi reparations in stage one. Because the payments were in such a form, there was a conscious policy decision made not to inquire whether the funds were actually contributing to the recipient country's economic development. While Japan's reluctance to be too aggressive in identifying and defining the uses of aid is partly explained by the fact that Japan sees its assistance to developing countries as a partnership and that Japan has high expectations for the developing countries' own bootstrap efforts, its reticence is also in part a holdover from the days when Japanese assistance started out as reparation and quasi reparation.

In the second stage, Japanese assistance has surely functioned as one means of promoting trade. Although there was some criticism that these Japanese assistance policies were weighted heavily toward the Japanese industry's own commercial needs, it must be remembered that Japan's per capita GNP at the time was only about US$280—which would qualify Japan to receive assistance under today's standards—and that it was obviously necessary to consider the economic needs of the donor country as well as the recipient countries.

The third stage, in which Japanese economic cooperation was broadly integrated into Japan's Asian foreign policy, started around 1965, because of the close geographical, historical, cultural, and, therefore, political and economic, ties that Japan has traditionally had with the Asian countries.

In the 1970s, as the two oil crises and their aftermaths dulled growth rates in the industrialized countries and threatened to derail the entire world economy, Japan turned in one of the better economic performances, rising to become the undisputed number two economic power among the industrialized democracies. In the fourth stage, Japan was ambitiously expanding its aid through its first and second medium-term targets for official development assistance (ODA).

As a result of continuing efforts to expand the ODA volume since the 1960s and the yen's continuing appreciation, Japan's ODA became the second-largest in the world and accounted for about 18 percent of the DAC (the Development Assistance Committee of the OECD) member countries' total ODA in 1987 (Table 1). Also, Japan scored current account surpluses of US$49.2 billion in 1985, US$85.8 billion in 1986, US$87.0 billion in 1987, and US$79.5 billion in 1988. Thus stage five may be characterized as a period in which Japan was called upon to play an unstinting role as a major supplier of capital and as a market for imports from the developing countries, above and beyond the normal responsibilities accruing to an economic power.

Table 1
Japan's comparative aid performance

	ODA Net Disbursements in 1987			Average Annual Growth, Real Terms 1981/82-1986/87	Grant Element of 1987 ODA Commitment (%)[a]
	$ million	% of GNP	% of DAC Total		
Canada	1,885	0.47	4.5	6.2	99.9
France					
w DOM/TOM	6,525	0.74	15.7	1.7	89.3
w/o DOM/TOM	4,489	0.51	10.8	3.1	
F. R. Germany	4,391	0.39	10.6	-0.9	85.7
Italy	2,615	0.35	6.3	18.0	90.9
Japan	7,454	0.31	17.9	5.7	75.4
United Kingdom	1,865	0.28	4.5	-2.9	98.9
United States	8,945	0.20	21.5	2.2	97.2
Total DAC	41,532	0.35	100.0	2.6	90.2

Source: OECD.
[a]Excludes debt reorganization.

JAPANESE INITIATIVES FOR THIRD WORLD DEVELOPMENT

Constitutionally barred from any military role in securing international peace and stability, Japan has opted to make foreign assistance its primary contribution to the international community. Japan recognizes that economic and social stability in the developing countries are indispensable to the maintenance of world peace and stability. As the world's second-largest economic power, Japan needs to contribute more from a global perspective. Accordingly, it is expected that Japan will expand its development assistance to the non-Asian LDCs, especially to the Sub-Saharan African countries. Japan has promised to provide approximately US$500 million in additional nonproject-type grant assistance to these countries in the three years 1988-1990. Private direct overseas investment has also increased sharply in recent years, from US$12 billion in fiscal 1985 to US$33 billion in fiscal 1987, and further to US$47 billion in fiscal 1988, of which about 30 percent went to the developing countries.

The situation of a huge reverse net flow from the poor to the rich makes it especially important to emphasize the complementary nature of private- and public-sector capital and to promote more supportive interaction between the two kinds of flows when considering the recycling of Japan's current account surpluses. In doing so, it is imperative that the governments of the industrialized countries and the international development agencies do everything possible to encourage the flow of both public- and private-sector capital to the developing countries.

Yet one difficulty is that, at least in Japan's case, the government is running a deficit and it is the private sector that is piling up massive surpluses. Because the private sector seeks to get the best return on its capital, with maximum stability, its money has mostly gone to the U.S. capital market. If we are to redirect this flow of private-sector capital to the developing countries, it is imperative that governments and international development agencies take the lead in providing insurance and other guarantees to alleviate the risk and interest subsidies or other means to make the yields more attractive to Japanese investors.

Partly in response to these and other, similar proposals, such as the United Nations University's World Institute for Development Economics Research (WIDER) April 1986 report, "The Potential of the Japanese Surplus for World Economic Development," and the second report of May 1987, "Mobilizing International Surpluses for World Development: A WIDER Plan for a Japanese Initiative," Japan has announced plans to recycle a total of at least US$30 billion to the developing countries over a three-year period to help them solve their debt and development problems. This includes both the US$20 billion capital recycling program announced in May of 1987 and the US$10 billion capital recycling program announced in the fall of 1986. As of June 8, 1989, some 91.9 percent of this US$30 billion has been committed. It should be noted that this US$30 billion is above and beyond the normal flow of capital to developing countries, that all the assistance is untied, and that some government funds are made available to stimulate the flow of private-sector capital to the developing countries. Furthermore, last June the Japanese government approved a new, fourth medium-term target that calls for efforts to at least double the previous half decade's ODA total—from US$25 billion in the years 1983-1987 to at least US$50 billion in the five years 1988-92. At the same time, this quantitative expansion is to be accompanied by various qualitative improvements.

Japan's ODA as a percentage of its GNP rose from 0.29 percent in 1986 to 0.32 percent in 1988, and in 1992 will reach 0.35 percent, which is the average of the DAC member countries. Japan is also making efforts to increase the quality of its assistance by working through the international financial institutions, cooperating with multilat-

eral assistance programs, and supporting policy dialogue. Yet the gravity of the debt problem makes it imperative that debt policy be developed among the debtor countries, the creditor governments, and the commercial banks and international financial institutions. We are gradually seeing more measures to promote new private-sector investment insurance and provide tax write-offs for the bad debt reserves of banks. This is not enough, however, and it is increasingly important that measures be taken to ensure a broad, strong support for these policies among both the electorate and their representatives. It is also necessary to provide the basic backup organizational strength needed to sustain effective development assistance policies and the resources for this effort. Noting that none of Japan's four medium-term targets for ODA have included any specifics on strengthening the human resources for development assistance, the International Cooperation Study Group in Japan issued a report in March arguing that the need to enhance Japanese assistance implies a concomitant need to draw up a medium-term plan for doubling the number of people engaged in implementing development assistance and to formulate clear-cut goals in this area.

CONCLUSION

We need a global strategy for revitalizing the world economy. Together with expanding ODA and other capital flows to the developing countries, it is essential that Japan promote imports from these countries. In fact, this is already happening, as Japan imported twice as much from the Asian newly industrializing economies in 1988 as in 1986. If Japan can substantially increase its imports from the other Asian countries or the Latin American countries, there is a good chance they will spend part of their foreign exchange earnings for imports from the United States or Europe. Such a multilateral approach will stimulate Third World growth and at the same time serve to reduce bilateral imbalances among the industrialized countries. If these challenges can be met, Japan will be able to recycle its surplus capital to promote economic development and social stability worldwide. While this is not expected to yield any immediate gain for Japanese business, it is most certainly in Japan's long-term interests as an interdependent member of the world community. That is why there must be a new direction in Japanese development assistance.

POLICY IMPLICATIONS OF JAPANESE EXPERIENCE IN AGRICULTURAL DEVELOPMENT

Kazushi Ohkawa, International Development Center of Japan, and Yujiro Hayami, Aoyama Gakuin University

FRAMEWORK

We share a view that technological advance is the crucial factor for agricultural development and that experimental research, extension, and infrastructure building, as well as an upgrading of human capability, are indispensable for the realization of technological potential. Government policies on the one hand and the responses of farmers and landowners on the other—the interactive relationship of these two dimensions—draws our particular attention. Organizational-institutional set-ups required for enhancing technological progress and provision of incentives for provoking innovative activities are the issues focused on in this paper.

The internal production structure of agriculture in Japan and intersectoral as well as international relations have changed a great deal through this century. The performance of the agricultural sector in the national economy, through the interaction of technology and institutions, can usefully be characterized by demarcating the phases of development. The three phases of agricultural development are identified in terms of changes in productivity growth. These phases broadly conform with those demarcated by the pattern of industrialization.

The initial phase, from the Meiji Restoration (1868) to World War I, was characterized by concurrent growth of agriculture and industry through fuller utilization of traditional technological potential in agriculture. The interwar phase was characterized by retardation of agriculture as a result of the exhaustion of technological potential, with a consequent policy shift toward imperial food self-sufficiency by means of agricultural technology transfers to colonies. The post-World War II phase was characterized by a revival of agricultural productivity growth, but the faster growth rate of industrial productivity created agricultural adjustment problems, which pressed the government to strengthen agricultural protection policies.

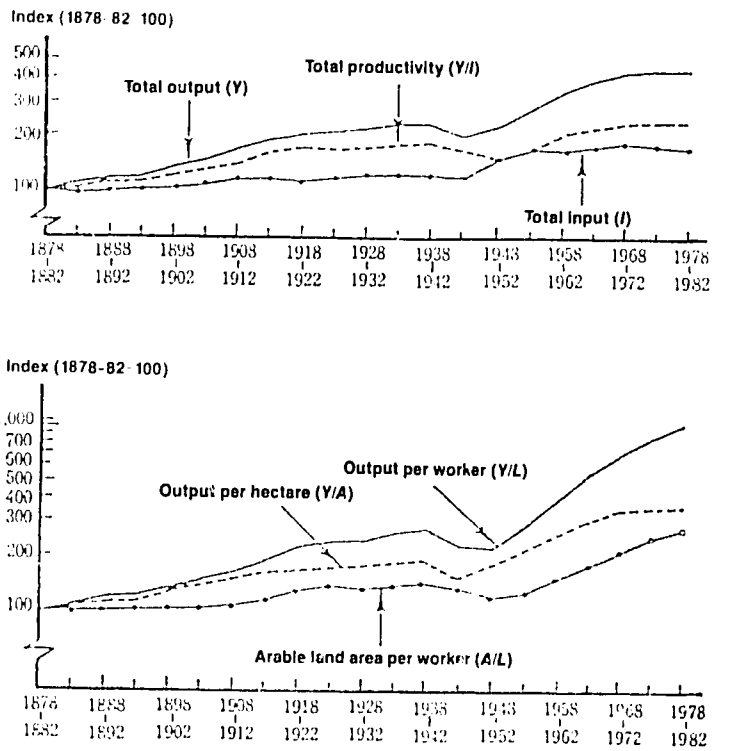
CHANGES IN INPUTS, OUTPUT, AND PRODUCTIVITY

Long-term changes in agricultural inputs, output, and productivity in the modern history of Japan are summarized in Figures 1 and 2.

During the one hundred years from the 1880s to the 1980s, total agricultural output in Japan increased at the average compound rate of 1.6 percent per year, which outpaced the population growth rate of 1.2 percent. Two primary inputs, land and labor, remained relatively stable before World War II. Capital stock grew rather slowly before the war and began to rise sharply in the mid-1960s, corresponding to the progress in mechanization due to a sharp reduction in the labor force in agriculture. The rates of increase in current inputs, especially fertilizer, far exceeded those in other inputs. The rates of increase in the different categories of inputs are inversely associated with changes in their prices relative to the price of farm products. Overall, the rate of growth of total input (aggregate of conventional inputs) was only about 40 percent of that of total output, implying that the remaining 60 percent resulted from an increase in total factor productivity or, stated more correctly, is left unexplained by the increase in conventional inputs.

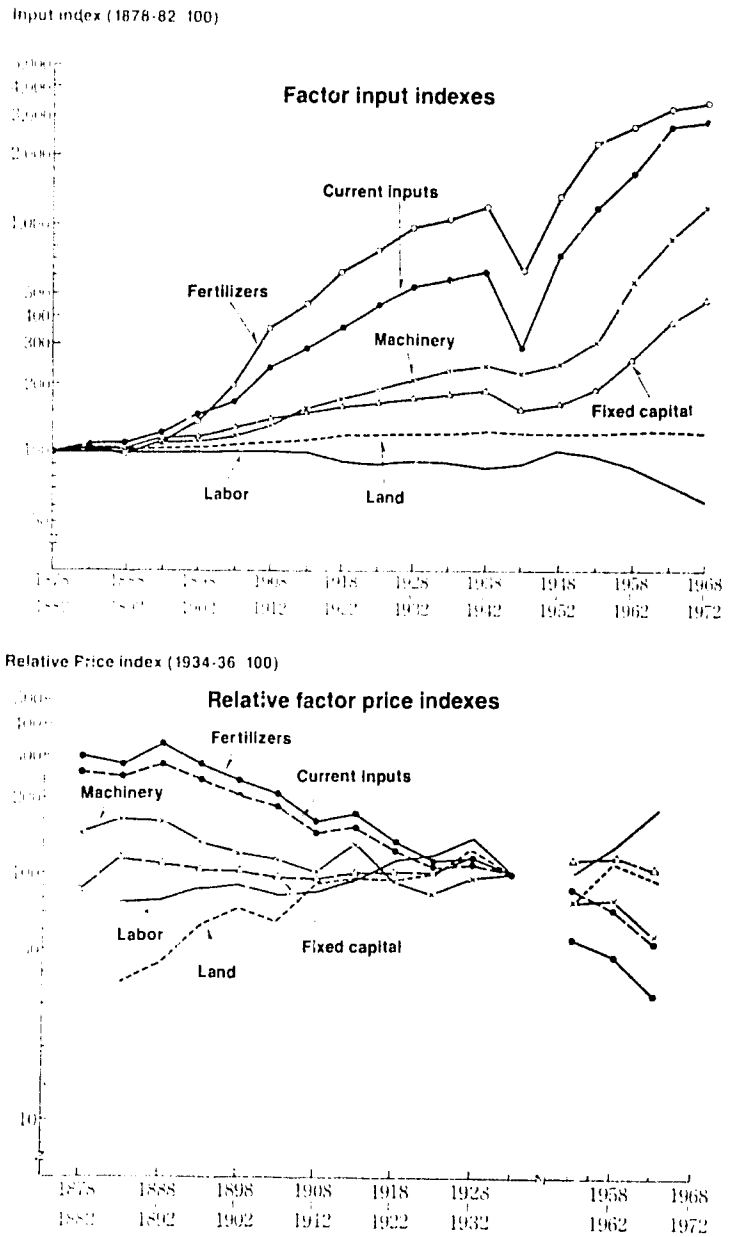
The rates of growth in total output, total inputs, and total productivity differ among the different phases. Output increased relatively fast and at an accelerating rate from the 1880s to the 1910s; then it slipped into stagnation until the 1930s. After the devastation of World War II, Japanese

Figure 1
Trends in total output, total input, total productivity, and labor and land productivities in Japanese agriculture (stock terms, five-year averages, semilog scale)



Source: Yujiro Hayami et al., *A Century of Agricultural Growth in Japan* (Tokyo: University of Tokyo Press, 1975) with the 1973-82 data updated.

Figure 2
Trends in factor inputs in agricultural production and factor prices relative to the price of agricultural products in Japanese agriculture (five-year moving averages, semi-log scale)



Source: Yujiro Hayami et al., *A Century of Agricultural Growth in Japan* (Tokyo: University of Tokyo Press, 1975).

agriculture recovered quickly and sustained rapid growth in output even after the recovery was completed in the mid-1950s. Such differences in agricultural output growth among these three phases were not explained by changes in the rates of increase in conventional inputs; the growth rates of total productivity were high for both the initial and the post-World War II phases, but low for the interwar phase. In other words, the phases of distinct growth in Japanese agriculture resulted mainly from changes in the rate of growth in total productivity.

Except for the three recent decades characterized by rapid reductions in the agricultural labor force, land has represented a major limiting factor of agricultural production in Japan. Agricultural growth despite the land-resource constraint was made possible by increases in output per hectare. In fact, more than 70 percent of growth in agricultural output per worker was brought about by yield increases before World War II. Parallel movements in total productivity and land productivity, especially for the prewar period, suggest that the major growth element in total productivity was technological progress oriented toward saving labor or increasing output per hectare of land.

CHARACTERISTICS AND PROBLEMS OF PHASES

In the initial phase, the government pursued a policy to develop agriculture by means of improving indigenous technologies through an imitative, "technology borrowing" policy. After perceiving the failures of this policy, its new strategy was to identify the best seed varieties and the most productive cultural practices used by farmers. The government actually employed veteran farmers as instructors in agricultural colleges and extension systems. Agricultural experiment stations were set up for screening and tailoring veteran farmers' techniques. During the latter period of this phase, substantial indigenous technological potential was further tested, developed, and refined at these new experimental stations.

In order to facilitate land-improvement projects, the government enacted the Arable Land Replotment Law. This law made participation in the project compulsory if more than two-thirds of the landowners owning more than two-thirds of the arable land area in a district consented to the project. These land-improvement associations were given legal status so that they could receive credit.

Toward the end of the initial phase, technological potential was exhausted as it became perfected and propagated. The national experiment stations gradually came to conduct more basic research, including cross-breeding projects for rice. Results of major practical significance lagged, however, for more than two decades. When confronted with the demand expansion due to World War I, the retardation in agricultural productivity growth resulted in a serious rice shortage and a high price of rice. This induced, in the interwar phase, the adoption of an imperial, rice self-sufficiency program through agricultural technology transfer—first to Taiwan and then to Korea—by means of adaptive research, development, and extension as well as investments in irrigation infrastructure. The success of this program resulted in a large inflow of cheaper rice from these territories into Japan and discouraged Japanese farmers from enhancing productivity growth.

In the postwar phase, the revival of agricultural productivity growth was significant. In addition to the further advancement of biological technology geared for increasing land productivity, the development of mechanical technology geared for saving labor began to be pursued vigorously by farmers, experiment stations, and agribusiness industries. Despite their efforts, productivity growth in agriculture lagged behind industry. During the 1960-80 period, labor productivity in agriculture in Japan grew at a pace similar to that in North America and Western Europe, whereas Japan's labor productivity in manufacturing grew

at more than twice the average rate of other industrial countries. The loss of comparative advantage in agriculture made it difficult for rural people to catch up with the income level of urban people under the free-market conditions. This underlay the strengthening of agricultural protection in a high economic growth regime. Social and political difficulties involved in intersectoral resource allocations would have become unbearable in the absence of the protection policy. The sharp increase in agricultural protection in Japan has provoked serious international trade frictions.

RELEVANCE TO DEVELOPING COUNTRIES

With due recognition to the differences between Japan and contemporary developing nations, there appear to be two basic, common areas of experience.

First, the advantages of the possible absorption of borrowed technological knowledge for latecomers to modern development must be recognized. However, two requirements must be satisfied in order to exploit the advantages: one is that research and development must adapt foreign technologies to locally specific conditions, and the other is that appropriate organizations and institutions must be established to lead an effective integration between the public and private sectors in order to improve the production and marketing infrastructure for agriculture.

Second, the adjustment problem faced by domestic agriculture in Japan's postwar phase was not specific to Japan but is rather common to latecomers with limited land resources (for instance, the newly industrializing economies). The difficulty of agricultural adjustment arises from the limitations of making technological advance of the land-saving, scale-neutral type in agriculture, relative to the pace of technological progress in industry. Growth in agricultural protectionism resulting from this difficulty may become an increasingly serious international problem in the future.

COMMENTS

Theodore W. Schultz, IFPRI

Ohkawa's rich scholarship marks the historical perspective of this paper. The economic analysis of Hayami is strong and clear.

Most of what I know about Japan I have learned from Ohkawa. His scholarship, his vast knowledge, and his great wisdom, place him in a class by himself. My professional debt to him is large indeed.

I shall argue that Japan's overall economic success is unique. Few, if any, of the many existing low-income countries can use Japan's experience as a model.

Japan had a long history of investing in irrigation, infrastructure, and upgrading traditional agricultural technology. The lack of this phase in most of today's low-income countries is a critical difference, as is noted by the authors.

Much is said in favor of a cash crop that does not reduce the production of food crops. But where are there such viable economic opportunities as Japan had in cocoons, silk worms, and raw silk via sericulture? Would that cash crop opportunities in various countries were mentioned: palm fruit in Malaysia, coffee and tea in many, jute in Bangladesh, and cotton in many. In general our international agricultural research centers have been bent on producing more food, unaware that in many low-income countries the existing comparative advantage is in cash crops for export. Research to enhance the productivity of such cash crops should be on the agricultural research agenda.

There is no economic analysis in this paper that shows that protection of agriculture is an efficient policy for eliminating rural-urban income disparity. Taking the long view, it may well be the worst of all policy options for reducing and eliminating this particular income disparity.

Modern Japan, especially so since World War II, is unique for the following reasons:

1. By virtue of having been defeated, Japan has been spared inordinate expenditures on national defense. Limitations on these expenditures were written into the constitution.
2. Out of the ashes of defeat, how did Japan and West Germany manage to earn their living and achieve economic success? It would not have been possible without world markets and trade. The economic barriers to such trade for Japan and West Germany were greatly reduced. Much of the German miracle and the great economic success of Japan had their origins in those trading opportunities.
3. Out of the occupation came mandated Japanese land reform. The new government of Japan was spared the political tensions associated with land reform. Blame for its shortcomings could be put on the occupying powers.

These three important postwar conditions account for a good deal of the extraordinary economic success of the Japanese. With respect to these conditions, Japan is unique. Viet Nam, Sri Lanka, Bangladesh, Burma, and many other countries did not experience these conditions.

COMMENTS

Nurul Islam, IFPRI

Ohkawa and Hayami place primary emphasis on improved technology and infrastructure as the prime movers of agricultural growth in Japan and rightly stress the importance of these two areas to contemporary developing countries. Agricultural extension and training, combined with a rapid expansion of primary and secondary education, including postprimary agricultural high schools, greatly facilitated the diffusion of technological innovations based upon adaptive research in Japan. Few developing countries have been able to attain such an integrated system.

IFPRI's studies on infrastructure confirm its critical role in developing countries in reducing transaction costs, extending markets, diffusing technology, and expanding nonfarm activities.

In most developing countries embarking upon a strategy of rapid growth, investment in irrigation and drainage systems, if technologically feasible, deserves high priority.

In this context, the need for the decentralization of the political and administrative system, thus promoting the participation of farmers in both the construction and maintenance of infrastructure and the mobilization of local resources for development, can hardly be overemphasized.

Japan provided direct subsidies, including low interest loans, for irrigation projects. In spite of a near universal discouragement in recent years of agricultural input subsidies by development agencies and analysts, it is worth examining the circumstances under which subsidies on specific inputs such as fertilizers and irrigation have a high, social benefit-cost ratio.

The role played by sericulture in Japan's rural development demonstrates that foodcrops and nonfood export crops need not necessarily be in competitive relationship with each other, but can be mutually reinforcing.

Japan's experience in terms of the intersectoral transfer of resources also has important lessons. Technological progress led to a high growth rate in Japanese agriculture and generated savings in excess of agriculture's own requirements, thus enabling a transfer to the nonagricultural sector. The contemporary developing countries are faced with a much higher rate of growth of population and demand than in Japan and require very substantial resources for investment in infrastructure, irrigation, research, and so on in order to exploit fully their agricultural potentials. However, a dynamic agriculture, fueled by a large initial investment and technological innovations, will stimulate the growth of the nonagricultural sector through intersectoral linkages and at the same time facilitate a transfer of resources in response to expanding opportunities for profitable investment in the rest of the economy.

In many developing countries, the sector-specific pricing and taxation policies, as well as overall trade and exchange rate policies, have resulted in discrimination against the agricultural sector, even though this has been more pronounced for export commodities rather than for import-competing products. In the latter case, discrimination has been markedly reduced in recent years and in some cases even reversed, especially in the middle-income countries.

The current disarray in world agriculture, which is caused mainly by a high level of domestic support policies and protectionism in the major developed countries, provides an unfavorable external environment for agricultural growth in developing countries by constraining their exports and discouraging domestic production. The liberalization of access of labor-intensive agricultural and processed exports of developing countries, within the framework of the GATT Multilateral Trade Negotiations, to markets in Japan and other OECD countries would support and strengthen the stimulating effects of domestic policy reforms in developing countries and foster a higher rate of growth.

RESOURCE IMPLICATIONS OF AN AGRICULTURE-LED GROWTH STRATEGY—SOURCES OF JAPAN'S COMPARATIVE ADVANTAGE IN FOREIGN ASSISTANCE

John W. Mellor, IFPRI

Japan is the classic case of the use of agricultural development to transform an economy from one that is low income and primarily agricultural into a major industrial power. As such, it can be a useful guide to achieving a similar transformation in contemporary developing countries. Japan's experience also defines specific areas and capabilities in which Japan, as a major donor, can contribute toward growth in the contemporary developing countries: the strategic knowledge necessary to develop the policy framework for implementing an agriculture-led growth strategy; institutional resources within which human capital can be organized into effective research, credit, and distribution systems; and traditional capital resources, especially in response to the massive need for human capital formation and the development of physical infrastructure.

JAPAN AND STRATEGIC PLANNING

As indicated by Japan's example, the basis of agriculture's contribution to economic growth is increased factor productivity in agriculture—generated by technological change—which produces large additions to national income. That income growth provides a structure of demand that specifically encourages the production of labor-intensive, nonagricultural goods and services, thereby stimulating large multiplier effects throughout other sectors of the economy. These expenditure patterns spread the stock of capital more thinly across the labor force, raising the marginal productivity of labor and amplifying the growth impact of capital transfers from foreign exchange earnings. The stimulus to urban growth is widely diffused geographically, fostering a healthier urban base than the few megalopolises of contemporary developing countries.

The potential of agricultural growth to stimulate economic transformation hinges on the emergence of geographically decentralized, small-scale production in both the agricultural and nonagricultural sectors; a favorable institutional and human capital environment to provide the requisite technologies and supporting services for an agriculture-led strategy; and broad participation in development processes through widespread education and the development of extensive systems of rural infrastructure. The interaction of these factors promotes the processes of division of labor, specialization, and trade that are central to development. The relatively recent experience of Japan with these processes, the extensive literature on the subject, and the presence of Japanese who know both that historical literature and contemporary developing countries, all augur well for Japanese leadership in such strategic planning.

JAPAN AND THE POLICY ENVIRONMENT

Because of the complexities in the development of a decentralized, largely private, and small-scale sector, markets must do the bulk of the job in allocating resources in an agriculture-based strategy. Therefore, a critical role of government is to ensure a favorable macro environment to encourage growth in production, savings, and investment. Japan has long recognized the key role of investment in human capital and institutional structures in the development of these market processes. That knowledge and capacity can be transferred to developing countries in the form of technical assistance for building a policy framework. While the cost of such effort is small compared to physical infrastructure, it should be expected to amount to several hundred million dollars a year for developing countries as a whole, suggesting scope for a multimillion dollar a year effort by Japan alone.

JAPAN AND INSTITUTIONAL NEEDS

In an agriculture-led growth strategy, the intensity of human capital requirements are especially great in the small-scale agricultural and nonagricultural sectors, which depend on rapid growth in the number and capabilities of rural entrepreneurs. Rural education needs to be expanded rapidly and, just as important, a large institutional framework must be developed to provide critical public services to the small farmers and small businessmen.

Government played a very important role in the development of Japanese agriculture, both in the building of research and credit systems and in facilitating land improvements. Since public resources are particularly scarce in developing countries, foreign assistance must play a major role in these processes as well. Given that Japan is the largest aid donor and has experience with effective institution building, its share of the complex task of institution building and human capital formation would certainly run to several hundred million dollars per year. In this context it is important to recognize that Japan's own institutional development, and hence its base for bilateral assistance, is different in several respects—for example, it has a very different institutionalization of agricultural research than the United States. Thus, institution building requires coordination among donors in order to maintain consistency over time.

As opposed to the Japanese case where infrastructure was already well-developed at the beginning of the period of technical change in agriculture, contemporary developing countries need to build massive infrastructure as they simultaneously develop the basic processes of technological change. Also, the importance of modern technologies such as rural electricity and the telephone in contemporary development demand greater resources for rural infrastructure than those in the Japanese example. Shortfalls in these resources have a major impact on growth because they postpone bringing a substantial proportion of the population into the development process. This means that for very poor countries, growth will begin only very slowly and then gradually accelerate, unless foreign assistance can add to those resources.

By far the most important and expensive component in rural infrastructure is rural roads. The cost for providing reliable, all-weather roads for the bulk of the rural population is measured in the hundreds of billions of dollars. Even if those resource requirements are spread over 20 years, the large labor and, hence, food component costs are in the tens of billions annually. The opportunity cost of such an investment is at present very low given the surpluses of low-productivity labor in developing countries and surplus food production capacity in developed countries. Foreign assistance could help considerably in accelerating the building of rural roads. Electricity, communications, and irrigation are also necessary elements to ensure widespread participation in the development process. The total cost of rural electrification along a rural distribution system is only about 10 percent of that of roads, but full development of irrigation potential would require as much expenditure as a full road network. And rural infrastructure requires a huge central infrastructure of trunk roads and power generation. It is clear from this that Japan's entry as a major foreign assistance donor offers the potential to greatly accelerate the provision of infrastructure, whether it is at the rural or central level.

FOREIGN ASSISTANCE AND POLITICAL CHANGE

Finally, a switch to an agriculture-led development strategy requires major political change in many developing countries. Contemporary developing countries, coming from an urban-based, colonial tradition, and as the products of generally urban-based independence movements, tend to have governments biased against the decentralization of the political system, which is necessary for an agriculture-based strategy to work. It is striking that Kenya and later Zimbabwe had independence movements much more driven by rural desires and expectations and, consequently, have much more rural-driven political systems than is the norm in developing countries. These examples spotlight the problem in most other developing countries. But if development is to become rapid and broad-based, that rural orientation must arise. Again, foreign assistance, by financing an agriculture-led strategy, could facilitate such political change. It is important that a large, new donor have a sense of historical perspective on the broad political issue. Japan's own history gives an important perspective to this complex set of issues.

CONCLUSION

How Japan, as a major provider of foreign assistance, responds to the resource needs of contemporary developing countries may well be critical not only to the course of foreign assistance in general, but to the efficiency of development processes. By focusing assistance on an agriculture-led development strategy, there is a tremendous opportunity to accelerate progress toward the global objectives of poverty abatement and growth in developing countries. This involves influence in strategic planning, development of policymaking capacity, broad institutional development, and massive investment in rural infrastructure, including the central infrastructure that complements the rural system.

COMMENTS

Shigemochi Hirashima, Meiji-Gakuin University

The argument set forth more than 20 years ago seems to have revived in recent years, that is, the important role to be played by the agricultural sector in the overall process of economic growth of developing countries.

In India, for example, the shift of emphasis in development strategy more towards agriculture in recent years can be explained by the following factors.

First, it has been recognized that the growth of the overall economy is severely affected by the performance of the agricultural sector.

Second, industrial development based on import substitution, with extra emphasis on heavy industry, has stagnated since the mid-1960s. One of the factors accountable for this is said to be the insufficient growth of demand in the rural area.

Third, technological innovation in the mid-1960s has substantially contributed to the increase in foodgrain production in India. However, it has failed to enhance the employment-absorptive capacity of the agricultural sector.

Fourth, the potential of this new technology, given the present state of agricultural infrastructure, seems to have been exhausted in recent years.

Yet, the Planning Commission of India has set forth the foodgrain production target for the year 2000 at 240 million tons for the projected population of 972 million. In order to achieve this objective, chemical fertilizer consumption has to increase from 9 million nutrient tons to 20 million tons in 13 years—an annual increment of 0.79 million tons. There are only 3 years during the past 16 when the annual increment was above this level.

Given the simple facts that 70 percent of chemical fertilizer is being consumed in 100 out of 426 districts that fall into one-third of all the states; that most of these states are areas where irrigated rice and wheat are grown; and that the future consumption increase has to be in the rainfed area, which is 70 percent of the total cultivated area and on which 80 percent of the less-fertilizer responsive crops are grown, it is unrealistic to expect that this target will be reached. But the point here is that Indian planners are being pressured by population growth, labor absorption problems, and foodgrain requirements.

Indian agriculture is raising a fundamental question: why is land productivity—in the region where the irrigation ratio is high and high-yielding varieties and modern inputs are readily available—still far less than that of the East Asian countries? Here the roles to be played by investment in human capital, a location-specific research and development system, and a careful crop husbandry and resource management system, as pointed out by John Mellor, are crucial.

In this context, the relevant aspect of the Japanese experience seems to be the interaction among local agricultural schools, local research and experiment stations, farmers' organizations, and, often, local manufacturing firms producing agricultural implements and machinery. Also, if Japan has had any advantage in the field of education, it has not been at the higher level, but at the intermediate level, in particular in the form of technical education, which has been an integrated part of the "formal" education system of this country.

One more point is worth mentioning. Although developing countries can save time by introducing advanced technology from abroad, they face two serious challenges: on equity and on environmental protection and pollution control. A growth-oriented strategy, demanding, for instance, the expansion of irrigation and fertilizer production, has to be evaluated in the context of these two considerations.

COMMENTS

Hiroya Sano, Japan International Cooperation Agency

As John Mellor points out, the policy prescription imposed on a developing country without the support of a national consensus cannot be implemented on a sustainable basis. In order to be effective in advising the governments of developing countries to take up an agriculture-led growth strategy, the donor community should help build a national consensus to support that strategy. In this connection, the donor community can make a substantial contribution by removing the market distortion created by their subsidized exports of farm commodities. Currently, this subsidy is reducing the benefits of agriculture-led growth and thus preventing the creation of the above-mentioned national consensus.

I fully concur with John Mellor in recognizing the importance of increased rural purchasing power. The success of East and Southeast Asian countries in their economic development is now receiving far more enmity than blessing. But if Japan's experience can be of any use to its Asian friends, it is in the understanding of the importance of domestic markets.

Discussing the Japanese agricultural research system, Mellor points out that the system drew upon the innate knowledge and intelligence of farmer-experimenters. I believe that successful incorporation of veteran farmers (*ro no*) in the research and development process is one of the major advantages of the Japanese approach. According to the observations of several Japanese agricultural experts, intellectuals in many developing countries tend to remain aloof from people in rural communities. I feel that the rate of technological diffusion is most dependent on the relationship between intellectuals and people at the grass-roots level. In this regard, Japan's experience can serve as a useful example for developing countries.

Another characteristic of Japanese agricultural technology is its inclination toward land productivity. This inclination has been motivated by the fact that land is the major constraint in Japanese agriculture. There are quite a few developing countries constrained by the land/labor ratio under heavy population pressure. In those countries, emphasis on land productivity can benefit from the Japanese experience.

In connection with the question raised by Mellor concerning Japanese donor capability, I would like to draw attention to the rather significant discrepancy between monetary and human assistance.

	1980	1987
Official development assistance (in million US$, by calendar year)	3,353	7,454
Number of experts dispatched by JICA (Japanese fiscal year)	1,543	2,274
Number of trainees received by JICA (Japanese fiscal year)	3,393	6,560

Note: JICA stands for Japan International Cooperation Agency.

So far as the physical or monetary components of aid are concerned, we are confident that Japan is a good provider. But Japan's ability is rather limited when it comes to the human component. The most conspicuous limitation is the shortage of personnel equipped with adequate linguistic capability. The availability of personnel is further limited by Japan's life-long employment practice. Another well-known constraint is the overwhelming difficulty that foreign students have in receiving doctoral degrees from Japanese universities.

Japanese aid officials have observed quite a few alarming phenomena concerning the development of human capital. A substantial number of college graduates are unemployed in many developing countries. In some countries, professionals hired by governments cannot devote themselves fully to their jobs: because of low salaries they have to spend substantial portions of their working days earning supplementary income. In some cases, expertise acquired through the aid program of donors simply accelerates the exodus of trained people from their home countries. How to maximize the benefits of human capital investment is, in my view, another important topic that should be addressed.

INTERNATIONAL COOPERATION FOR THE THIRD WORLD'S AGRICULTURAL DEVELOPMENT

Kunio Takase, International Development Center of Japan

Many people took it for granted that the green revolution was a technical breakthrough involving a harmonious combination of three factors: water, high-yielding varieties, and fertilizers. But few people acknowledged that the fourth and most important factor was the government's political will and capacity to implement such an agricultural strategy. This observation has been reached after careful analysis of the sources of irrigation investments during 1968-1984, and the comparison of increases in cereal production and per capita caloric intake among 15 Asian countries.

THE CHANGING WORLD ECONOMIC SCENE

The world experienced a series of economic crises throughout the 1970s and 1980s, including two oil shocks, several food crises, a rapid fall of international prices of agricultural products, accelerating inflation, and rising debt burden. Under these circumstances, a major reorientation of food and agricultural development policy becomes inevitable in order to rescue the economies of developing countries, prevent the spread of agricultural protectionism, and maintain a harmonious international economic order into the next century.

THE GOALS OF THIRD WORLD AGRICULTURAL DEVELOPMENT

Stable Supply of Food with Balanced Nutrition

After the serious efforts of the past two decades, the average nutrition level in 15 Asian countries reached the satisfactory per capita caloric intake level of 2,260 calories per day (see Table 1). But per capita protein intake was still deficient. This implies that future food and agriculture policy should encourage production of protein-oriented food, including livestock, fisheries, and diversified food crops such as maize, soybean, and pulses, both for human and animal consumption. Japan, Korea, and Taiwan are following more or less the same line, with rice in surplus but wheat, maize, and soybean imported in large amounts, resulting in a heavy drain on foreign exchange. But unlike these three countries, which can afford these policies, other Asian countries should concentrate on agricultural diversification, using to their advantage climate conditions that enable annual multicropping and a supply of abundant, low-cost labor. Another important area of research would be the development of irrigation technology suitable for nonrice crops, which have been absent in monsoon Asia.

Table 1
Cereal production and nutrition level in 15 developing countries in Asia

Country	Cereal Production			Per Capita Calorie Intake			Per Capita Protein Intake		
	1966-68	1981-83	Increase	1965	1982	Increase	1965	1982	Increase
	(million metric tons)		(percent)		(calories/day)			(grams/day)	
Afghanistan	3.7	5.0	35	2,120	2,280	160	63	70	7
Bangladesh	16.2	22.3	38	1,960	1,920	-40	41	42	1
Burma	7.6	14.9	96	2,020	2,460	440	45	65	20
Cambodia	2.8	1.5	-47	2,160	1,790	-370	56	43	-13
India	92.8	165.6	79	2,150	2,050	-100	55	50	-5
Indonesia	17.4	37.6	116	1,920	2,380	460	42	51	9
Korea	6.9	8.4	22	2,280	2,980	700	59	83	24
Laos	0.8	1.1	38	2,080	1,980	-100	45	53	8
Malaysia	1.3	2.0	54	2,310	2,680	370	52	63	11
Nepal	3.2	3.8	19	2,020	2,020	0	51	49	-2
Pakistan	8.7	18.6	114	2,190	2,280	90	59	58	-1
Philippines	5.9	11.3	91	1,890	2,390	500	-	55	-
Sri Lanka	1.2	2.2	83	2,080	2,380	300	47	43	-4
Thailand	13.8	21.3	54	2,190	2,300	110	48	46	-2
Viet Nam	9.1	14.3	57	2,260	2,020	-240	52	46	-6
Average	191.4	329.9	72	2,110	2,260	150	51	54	3
						(7 percent)			(6 percent)

Source: FAO.

Generating Remunerative Income and Productive Employment

Historically, agriculture has been considered less remunerative than the manufacturing and service sectors. in the long run it is inevitable that the share of agriculture in a country's economy will decline in terms of GDP, exports, and employment. The process of industrialization, however, is quite different from country to country and is based on comparative advantages. Korea, having comparatively high-skilled labor but few natural resources and severe climate conditions, had no other option but to develop agroinput industries. In China, after the liberalization of the agricultural commune system, farmers were allowed to engage not only in agricultural diversification but also in nonagricultural commercial activities. Unlike these two countries, Thailand was endowed with abundant natural resources under tropical climate conditions and a large supply of low-cost labor, all of which enabled it to become a newly agroindustrializing economy, in contrast to the newly industrializing economies. Since the ASEAN countries do not have sufficient international competitiveness in the high-value-added manufacturing sector, agroindustry will continue to dominate their economies for some years to come.

Environmental Preservation and Rural Amenity

As economic development has progressed, land, water, air, forests, and even global climate have been affected and the preservation of environment and ecology has increasingly become an important issue, not only for agricultural development but for human existence. In the agricultural sector, special attention should be given to the increasing difficulties related to soil erosion, soil fertility, water quality, health hazards, and social adjustments. In terms of the environment it is also important to control population pressures. Tackling these issues can ultimately contribute to achieving the goal of rural amenity.

GLOBAL FORUM FOR SUSTAINED AGRICULTURAL DEVELOPMENT

There are several international institutions dealing with various problems related to food and agricultural development. They are: the Food and Agriculture Organization of the United Nations (technical), the Consultative Group on International Agricultural Research (CGIAR) (research), the World Bank, regional development banks, and the international Fund for Agricultural Development (finance), the International Monetary Fund (compensatory financing facility), the United Nations Industrial Development Organization (agroindustry), the United Nations Conference on Trade and Development (commodity), and the General Agreement on Tariffs and Trade (trade). Due to the rapid globalization of the agricultural economy and the complicated interactions between various factors, it is essential to establish a global forum to discuss the issues that affect development. It may be most practical to expand and restructure the CGIAR system. In addition to 13 international agricultural research centers (IARCs) in the CGIAR system, there are another 13 IARCs, some of which are important to the CGIAR from nutritional, agroindustrial, and environmental points of view. The present governing boards of the 13 IARCs under the CGIAR are narrowly focused: 80 percent are agricultural scientists, 18 percent are economists, and 2 percent are engineers. They could be restructured into a more well-balanced set of disciplines and geographical distribution in order to address a more comprehensive global focus.

CONCLUSIONS

The Japanese government has already initiated innovative efforts in international cooperation for Third World agricultural development, in addition to its contribution through the Japan International Cooperation Agency and the Overseas Economic Cooperation Fund (OECF) since the early 1960s. Examples are the New Asian Industries Development Plan and doubling official development assistance (ODA) to US$50 billion for the five-year period 1988-1992. Japan could further contribute to this goal by (1) actively participating in restructuring the CGIAR system; (2) making more effective use of ODA through a more systematic strategy and with comprehensive policy dialogue and coordination; (3) accepting agricultural exports from developing countries; and (4) providing fully integrated international cooperation on ODA, trade, and private investment, based on Japanese experience both in food and agricultural development and in agroindustrial development.

COMMENTS

M. Syeduzzaman, IFPRI

Kunio Takase's paper deals with lessons and examples from Asian developing countries, but his suggestions about greater attention to agricultural research and environment are also relevant to developing countries in other parts of the world. Two basic issues highlighted by Takase are the goals of Third World agricultural development and the idea of a "global forum" for sustained agricultural development.

The author has correctly referred to the importance of domestic and external environments as the key factors determining the success or failure of the green revolution in Asian countries. While he makes a very valid point regarding political stability and implementation capacity, supporting analysis would have made it more convincing.

Three other factors should also have been noted in this connection. These are natural disasters (which have had severe adverse effects on agriculture in many low-income Asian countries), inadequate or ineffective population policy (which has definitely pushed the goal of self-sufficiency in food away in many low-income Asian countries), and inadequate macroeconomic policies. By and large, countries that were bypassed in the green revolution process in Asia (Afghanistan, Bangladesh, Cambodia, Laos, Nepal, and Viet Nam) have been adversely affected by these factors or suffered from prolonged civil strifes or both.

The goal of a stable supply of food with balanced nutrition is rightly placed at the top of the list. It will call for public investments in infrastructure, agricultural research, diversification of agriculture, and appropriate institutions for marketing of input and outputs, supported by appropriate macroeconomic and sectoral policies.

The second objective, that is, generating remunerative income and productive employment, is, in fact, at the heart of the sociopolitical goal of economic development in general and agricultural development in particular. If structural change in the GDP is to bring about a corresponding structural change in the employment pattern, appropriate investments will be needed for human resource development to ensure growing productivity in the agricultural and nonagricultural sectors.

As regards the third goal—environmental preservation and rural amenity—it is possible to dovetail investment programs and projects for increasing agricultural production with objectives and targets for environmental improvement such as prevention of soil erosion, maintenance of soil fertility, and appropriate water management. In addition, productive agricultural activities such as afforestation, social forestry, and horticulture development will serve the dual goals of agricultural diversification and environmental improvement.

These considerations offer scope for greater international cooperation, particularly cooperation between Japan and other developing and low-income Asian countries. Japanese ODA could be profitably utilized primarily through bilateral programs for infrastructure investment, direct productive investment in the agricultural sector, human resource development, and agricultural research.

Takase's reference to the low level of external resource support in the agricultural sector in Asian countries is appropriate. External support for the agricultural sector has not been systematic except from the two multilateral development institutions—World Bank/International Development Association and the Asian Development Bank. Japanese support has been narrowly focused on direct production of cereals and has not been made available, at least until recently, either for broad-based water control/development projects or for diversification of the agricultural sector. Support by the U.S. Agency for International Development in selected countries has been reasonably systematic—particularly for promotion of fertilizer use and agricultural research. But with the declining level of U.S. bilateral assistance, Japan and the two multilateral institutions have to take a larger role on these issues.

Takase ends by saying the right thing—aid by industrialized countries has to be complemented by trade and investment. If there is to be an integrated agroindustrial pattern of development in the low-income Asian countries following the pattern of Thailand, it will call for the flow of private investment from Japan and the East Asian newly industrializing economies, as well as access to the agricultural markets of industrial countries.

As regards the idea of a "global forum" for sustained agricultural development, what is basically needed is greater coordination of resource flows geared to a country's specific situation. In a way FAO provides a global forum, on the basis of which bilateral and multilateral donors provide their resource support. And the CGIAR system provides a good research framework. The strategic considerations regarding the CGIAR system enunciated in 1983 remains equally valid today. The question is whether these objectives can be better served by an expansion of the CGIAR system or otherwise. An important consideration in discussing a reorganization of the research system should be whether the efforts of the centers are adequately funded. According to available information, the percentage of donor funding for agricultural research that was channeled to the CGIAR dropped from 26 percent in 1971-72 to 18.5 percent in 1980. There are also indications that commitment of investment resources for the agricultural sector by major multilateral institutions declined in the 1980s.

Finally, in any review of the CGIAR system, two other issues will deserve consideration: (1) the development of horticulture—in view of the growing importance of these products in international trade and in the economies of many low-income countries, and (2) the management of factors (soil, water, pests, micronutrients, and so on), side by side with commodity research, as countries face greater land constraints.

COMMENTS

Joachim von Braun, IFPRI

This commentator is much in favor of Kunio Takase putting food security and nutritional improvement up front among the goals for agricultural development. The means for pursuing this goal are (1) food output growth and, related to this, (2) employment and income growth through gains from specialization captured by more intracountry and international trade, and (3) strengthening the health and sanitation conditions in rural areas. Food production goes a long way toward solving the hunger problem (caloric deficiency) through its employment, income, and price effects. Increasingly, however, IFPRI's research shows that solving the nutritional problem (symptoms of underweightedness, especially of preschool children) requires that public institutions delivering health care to the poor are strengthened in tandem with expanded food availability and income in low-income countries. The more of a free trade environment that can be generated, the less need there is for concern from a food security perspective that agricultural production patterns of individual countries and regions reflect balanced diets. Specialization in labor-intensive crops (vegetables, fruits), including their processing in the producing countries, offers potentials for employment and growth.

Takase's proposal to build a "global forum" for agricultural development is of great relevance and warrants further discussion. Such a forum might not only permit effective use of existing comparative advantages of the various multilateral and bilateral agencies active in the field of agricultural development, but also provide leadership. Building a global forum around the CGIAR, as suggested by Takase, may raise the issue that the existing international agricultural research system should not be overburdened by new functions and shifted from a research to an information-clearing orientation. Continued expansion of first-rate research, probably with a broader agenda than addressing the hunger problem from a staple-food-production perspective, is required. Maximizing the capacity to borrow (old) technologies must not constrain the capacity to develop (new) technologies. Expanding the international agricultural research system with new functions and new centers should be a deliberate, carefully planned process backed up by long-term resource commitments to assure its sustainability and effectiveness.

PRICE AND TRADE POLICIES FOR AGRICULTURAL DEVELOPMENT

Romeo M. Bautista, IFPRI

The role of price and trade policies in promoting agricultural development is important because they determine in substantial part the economic incentives necessary to encourage greater efficiency of resource use, expand agricultural investment, and develop and adopt improved technologies. There is also increasing recognition that relative price movements create opportunities for institutional change and that institutional innovations cannot be viable unless the economic benefits to individuals or groups in society exceed the costs. Beyond the production effects, changes in relative agricultural prices, especially of staple food, have significant implications for income distribution in low-income countries.

Most present-day developing countries were under colonial rule for a long period, during which their economies were closely integrated with those of the colonizing countries. After independence, rapid industrialization became a dominant objective of development policy for many of these countries, motivated as they were by a desire to diversify their economies from a perceived overreliance on primary production. An industrial development strategy based on import substitution was adopted, promoting import-competing industries behind high tariff walls or quantitative import restrictions or both. Since the initial expansion of the manufacturing sector required large imports of capital goods and materials, the needed foreign exchange was made available at highly favorable terms. Although industrial and trade policies have become more outward-looking since the early 1970s, as manufactured exports have come to be regarded as a "good thing," the foreign trade regime in many developing countries has continued to provide substantial protection to import-substituting industries.

PRICE AND TRADE POLICY BIASES AGAINST AGRICULTURE

Restrictions on foreign trade affect relative prices and production incentives in two ways. One is through the differential effect on the domestic prices of tradable goods; the other is through the effect on the real exchange rate, which in turn affects the domestic prices of tradable goods relative to home (nontradable) goods. Protection to industrial-import substitutes penalizes the production of agricultural goods in the following ways: (1) the rise in the domestic price of protected industrial output reduces the relative price of agricultural products; (2) the cost of industrial inputs (fertilizer, pesticides, farm equipment) to agricultural production increases; and (3) the induced appreciation in the real exchange rate renders agricultural export and import-competing products less profitable relative to nontradables. IFPRI studies on Argentina, Colombia, Nigeria, Pakistan, Peru, the Philippines, and Zaire indicate that the heavy protection of industrial products in those countries has indirectly taxed agricultural import-competing and export production to a significant extent.

Other government policies not specifically directed to the agricultural sector have affected relative production incentives in developing countries. Since the early 1970s, some of these countries have actively encouraged the expansion of manufactured exports, providing export producers direct subsidies that partially compensated for the general policy bias against exports. For example, industrial exports were given subsidies at average rates of 16 percent in the Philippines and 4 percent in Bangladesh during 1979-80, while import-competing industries were being directly protected by tariffs and other related taxes of 26 percent in the Philippines and 28 percent in Bangladesh.

Monetary and fiscal policies, foreign borrowing, and nominal exchange rate management have also led in many cases to real exchange rate overvaluation, thus reducing the profitability of agricultural tradable goods production. In Nigeria during 1970-82, the adverse effects on agricultural incentives of the increased oil export earnings and associated changes in income, inflation, and exchange rates had not been effectively counterbalanced by government policies.

There are, finally, the agricultural sector-specific policies that directly affect production incentives for farmers and that can reinforce or mitigate the indirect price penalty due to industrial and macroeconomic policies. At one time or another, developing-country governments have suppressed producer prices of specific farm products through the operation of agricultural marketing boards or imposition of explicit export taxes, or both. A large number of studies have been done on the direct price effects of sector-specific policies for particular agricultural products, and they reveal wide differences across products, especially between export crops and import-competing food products. In general, the major agricultural exports have been "disprotected" (taxed) much more heavily than the principal food crops, which were given positive direct protection in some higher-income developing countries.

Unlike the anticipation by policymakers of the direct price impact of sector-specific policies the indirect effect on agricultural incentives due to real exchange rate misalignment induced by trade and macroeconomic policies is frequently unintended and poorly understood. A notable finding from recent studies is that the negative indirect price effects on agricultural tradable goods arising from real exchange rate overvaluation typically dominate

the direct price effects. In terms of the total (direct plus indirect) effects, it is not uncommon that agricultural export products are taxed in excess of 40 percent and import-competing food crops by more than 20 percent in lower-income developing countries (Table 1).

Table 1
Average direct, indirect, and total nominal protection rates for principal food and export crops

	1975-79			1980-84		
	Direct	Indirect	Total	Direct	Indirect	Total
	(percent)					
Food crops						
16 developing countries	20	-25	-5	21	-27	-6
11 lower-income LDCs	11	-33	-22	13	-35	-22
Export crops						
16 developing countries	-11	-25	-36	-11	-29	-40
11 lower-income LDCs	-13	-33	-46	-13	-35	-48

Source: Calculated from basic data from Anne O. Krueger, Maurice Schiff, and Alberto Valdés.

The price bias against agriculture due to trade and macroeconomic policies leads to a resource transfer out of the agricultural sector. Offsetting this would be the amount transferred into agriculture through government spending. Calculations of net resource transfers out of agriculture show an annual average in the Philippines of about 25 percent of agricultural value added during 1970-82, while in Malaysia (where the real exchange rate has not been significantly overvalued) the corresponding figure is only 5 percent.

IMPLICATIONS FOR DEVELOPMENT POLICY

While the extraction of agricultural surplus to finance industrial capital formation is frequently assumed to be a concomitant to structural transformation during development, the efficiency with which the transferred resources are used outside agriculture can be questioned. In virtually every developing country where the industrial sector has been highly protected, policy-induced distortions in product and factor markets have led to the inefficient use of investment resources for manufacturing. At the same time, one cannot discount the opportunities for rapid productivity growth in agriculture if the capital requirements for needed investments are met. Indeed, the adoption of improved agricultural technologies in many Asian countries since the late 1960s has been influenced significantly by the extent of public investments in irrigation, transport, electrification, health, and education in the rural areas. An additional consideration is the stimulus given to nonagricultural production by rural incomes increasing due to rising agricultural prices and productivity. This form of rural growth linkage is at the heart of recent proposals for the adoption of an employment-oriented, agriculture-based development strategy.

The removal of export taxes, both explicit and implicit, and of any price disprotection to food crops, would be significant steps in the right direction for many developing countries. On efficiency grounds, it is preferable to rely as much as possible on land, income, and consumption taxes, rather than on trade taxes that distort production incentives. "Getting prices right" for agriculture also requires that the conduct of trade and macroeconomic policies, not just sector-specific pricing policies, be examined for their effects on the real exchange rate. It will be necessary to prevent the real exchange rate from being overvalued, so as to not impair the price competitiveness of agricultural tradable goods production. There is also a need to complement the improved agricultural price incentives with rural infrastructure development in order to overcome existing supply constraints and enhance the multiplier effects of agricultural growth on the rest of the economy.

Foreign assistance can make a significant contribution in support of developing-country efforts to promote agriculture-based development and undertake price and trade policy reform. Improving access to developed-country markets, promoting stability of the economic environment for developing countries, providing assistance for the efficient provision of public goods, and short-run financing of the transitional costs in switching policy regimes are some desirable directions for international support.

Because liberalization policies often lead to increased food prices and lower real wages in the short run, the poor are especially vulnerable. Food aid can be a useful means to protect the poor (if it is additional to financial foreign assistance), permitting a phased adjustment of food prices for poor families. Foreign resources could also be usefully allocated to help develop labor skills and retrain workers shifting to other occupations in response to the changed structure of labor demand that will be induced by the policy reform.

COMMENTS

Fumio Egaitsu, The University of Tokyo

Romeo Bautista's paper represents the present, mainstream view of development theory. It criticizes any kind of sectoral protection and insists that all production sectors be given equal opportunities and incentives. The protection given to import-substitution industries in many developing countries is criticized because, together with several other oft-stated reasons for its failure, protection overvalues exchange rates and thus disfavors other areas of the economy, especially farming.

Development policy based on export-oriented, light consumer goods industries, which have been successful in Taiwan and South Korea, is not recommended because developing countries now face a different situation in the world economy: lower rates of economic growth as well as the protectionist policies of developed countries.

Thus Bautista's recommendation is the domestic-demand-oriented development strategy that gives primary emphasis to agricultural development. Agricultural development is expected to lead the national economy through rural growth linkages, that is, through the increased demand for industrial products induced by a rise in agricultural incomes.

The role of government in this development strategy is rather limited. What is required of government is, except for the elimination of interventions and taxation policies unfavorable to agriculture, not much more than the provision of public goods such as investments in research and infrastructure.

So this strategy is essentially a recommendation of free trade and competition. All sectors should compete based upon the principle of comparative advantage.

Primary emphasis should be given to agricultural growth, given the dominance of agriculture and the rural sector. The dominance of agriculture is, however, not enough to justify its leading role in a development strategy.

First, the present world market of agricultural products is highly distorted. It operates under the heavy burden of widespread overproduction and related government interventions in high-income countries. The causes of overproduction and intervention are not expected to be eliminated in the foreseeable future. It is rather likely that the distortion will continue for some time. Second, the dominance of agriculture does not necessarily mean that it has a comparative advantage in developing countries. Factor endowments, especially land endowments, in many developing countries are unfavorable to agriculture as is shown by high man-land ratios.

Another problem with this strategy is its disregard of infant industries. Some industries in developing countries may justify protection and promotion by the government. The recommendation of "equal incentives," however, may stifle infant industries that have potential comparative advantages.

It is difficult to argue for or against the recommendation of free trade and removal of intervention. No one can reject the theoretical possibility of efficient resource allocation through competitive markets, as described in text books of neoclassical economics. At the same time, however, scarce empirical evidence exists for the feasibility of competitive markets, because the world market has never been in a state of pure competitive equilibrium.

COMMENTS

Keiji Ohga, National Research Institute of Agricultural Economics

Romeo Bautista emphasizes the role of agricultural growth and its intersectoral linkage with the rest of the national economy in promoting self-sustained economic development. He points out that the heavy protection of industrial activity in many developing countries has indirectly taxed the production of agricultural commodities that are exported or that face competition from imports, especially through the medium of overvalued exchange rates.

Bautista's conclusions have been clearly supported by research conducted in recent years through the use of policy simulation analyses that he and others have done using applied general equilibrium models. Their results have shown the linkage between rural growth and the rest of the national economy. Their combined work lends support to the idea of the adoption of an employment-oriented, agriculture-based development strategy.

I basically share the view that the removal of export taxes and price protection of agricultural products "would be significant steps in the right direction for many developing countries." Overvalued exchange rates must be adjusted to reflect real value in order to restore the price competitiveness of agricultural products. Such a strategy would lead developing countries to a more open and market-oriented trade regime. However, I do not feel it would be appropriate to follow a completely free trade system.

International trade in agricultural products has been in deep trouble in the 1980s. Developed, exporting countries are suffering from low prices, large surplus stocks, rapidly increasing budget costs for agricultural support, weak demand for agricultural products, subsidy wars, and increasing trade tensions. OECD reports have pointed out that the basic cause of international trade problems are domestic agricultural support and protected trade. The GATT trade regime has failed to impose strict prohibitions against the export of agricultural commodities from developed countries at prices below the cost of production, a practice called export "dumping." Although GATT rules strictly prohibit the dumping of manufactured goods it has allowed exporters of agricultural products to use this trading practice without challenge. Often with the help of their governments, exporters in developed countries are able to sell rice, wheat, corn, and dairy products on world markets at prices less than their true cost of production.

In spite of, or perhaps because of, this pattern of international agricultural trade, farmers around the world fail to earn sufficient income to support their families. Many farmers are losing their land or are unable to reinvest to improve productivity due to the low prices created by export dumping. It could be correct for developing countries to pursue more open and market-oriented trade policies, but they must also pay attention to the problem of dumping on the world market. If food-importing countries liberalize their agricultural policies too quickly, they may risk their political stability. They cannot neglect the instability of food production in the developed, grain-trading countries and the reality of the dumping of commodities on international markets. It is very important to try and build a stable trading system, perhaps utilizing a grain reserve system under the auspices of an international organization.