

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

IFPRI
REPORT 1993

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Per Pinstrup-Andersen

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INTRODUCTION

THE YEAR IN REVIEW

The year 1993 was an eventful year for IFPRI. We finalized our new medium-term plan, sharpening our research focus on key issues and policy areas on which we can have the most impact. We identified priority areas of research for IFPRI, taking into account the changing food and agriculture context in the developing world and the benefits to be gained from strategic research that extends beyond the boundaries of a single study country. IFPRI's research is designed to have international externalities. To conduct research in this way, we began to organize ourselves into integrated multicountry research programs (MPs), which develop and apply a common analytical framework for a particular policy issue to a small set of countries and later generalize the results for application elsewhere. Seventeen MPs were identified. To ensure that the results of our research are put to use and are relevant to decisionmakers, we are strengthening our outreach activities and moving IFPRI closer to decisionmakers. The Outreach Division was created to handle overarching outreach activities such as information dissemination, training, and capacity building, while the research divisions continue with their project-specific outreach.

In setting IFPRI's research priorities, we asked ourselves as well as colleagues, collaborators, and decisionmakers, what are the most pressing food policy-related issues that confront the developing world today? What food policy research will achieve the highest payoff and have the greatest impact on the largest number of poor people? In the next two to three decades, farmers and policymakers in developing countries will be challenged to provide food at affordable prices for almost 100 million more people every year—the largest annual population increase in history—as well as for the more than 700 million people who already do not have access to enough food for healthy, productive lives; to increase cereal production for use as livestock feed; to make more productive use of land and other resources as the financial and environmental costs of further area expansion become prohibitive; and to meet the increasing food and feed needs without further degradation of the natural resource base.

Extensive discussions led to identification of four priority areas of research for IFPRI: accelerated growth and transformation in agriculture; natural resource management policies; macroeconomic reforms and trade policy; and household food security and nutrition. Brief highlights of the new research initiatives follow.

Accelerated Growth and Transformation in Agriculture: Many developing-country governments are attempting to reform their markets,

but an insufficient understanding of why markets fail and how reforms can be best designed and implemented has hindered market reforms. IFPRI has developed an ambitious research program focused on reforming agricultural markets in the Third World, particularly Ghana, Senegal, Cameroon, Malawi, Zambia, and Madagascar. IFPRI's research will help guide policymakers through the reform process. For long-term growth and poverty reduction, market reforms need to be accompanied by diversification of agriculture into new crops, livestock, and fisheries, and by new export promotion strategies. Research on these two topics has been completed in Bangladesh and will be expanded to other countries.

Natural Resource Management Policies: Recognizing that in the developing world, the issues of poverty, low agricultural productivity, and natural resource degradation are inseparable, IFPRI's research program integrates natural resource management policy with production technology policy. Research on fragile lands aims to assist policymakers to identify successful strategies to encourage farmers to invest in rehabilitation and improvement of fragile areas such as steep hillsides of Central America and nonirrigated dryland areas of the Sahel. In the Brazilian Amazon, IFPRI has begun research to identify factors that influence how farmers make decisions about forest and land use; research findings will aid policymakers across the developing world to design and implement policies and programs that slow the pace of forest destruction for agricultural use while improving human welfare. In response to the growing problem of availability and allocation of water for agricultural use throughout the developing world, IFPRI has initiated research in Egypt, India, Jordan, and Mexico on innovative methods for allocating water within agriculture as well as between agriculture and other uses.

Macroeconomic Reforms and Trade Policy: In recent years, many developing countries have undertaken major macroeconomic policy reforms and structural adjustment programs, but little is known about their effects on agricultural growth and rural development. Similarly, despite general awareness that reforms place a heavy burden on poor people, little is known about which policies can make reforms more beneficial to the poor. Policymakers need to know how reforms affect the agricultural sector and poverty. To address that need, IFPRI is studying macroeconomic reforms in a number of developing countries to improve the information base on the consequences and implications of reforms. Plans are also under way to pursue research on regional trade integration, an area of growing importance. Not much is known about the expected benefits to developing countries of participation in regional trade arrangements.

Household Food Security and Nutrition: The institute is building on its past work on subsidies, commercialization of small-scale agriculture, and transfer programs to help governments develop sustainable solutions to poverty and food insecurity. More than one billion people are at risk of death, blindness, or reduced cognitive ability because of micronutrient deficiencies in their diets. IFPRI is leading the research effort in the

Consultative Group on International Agricultural Research (CGIAR) to reduce "micronutrient malnutrition" by identifying policies that will encourage adoption of nutrient-rich diets and by coordinating research that will seek to fortify crops that are currently part of the diet through plant breeding. Research has also been initiated to identify cost-effective policies and programs to protect the poor during transition periods and allow them to participate in the economic growth process. IFPRI is working together with policymakers in Ethiopia and Botswana on the design of employment-based "safety nets" that may have other targeted food distribution components attached. Extensive research on labor-intensive public works programs in several African and Asian countries has demonstrated that such programs can be effective in targeting poverty. Credit also helps to reduce risks: research is exploring innovative credit programs for the poor.

These are just a few of the many research initiatives under way at IFPRI. During 1993, IFPRI conducted research in 33 developing countries around the world (see map). While we have a greater concentration in Sub-Saharan Africa, a notable degree of research is in progress in Latin America and Asia. For more information on IFPRI's research priorities and MP plans, I encourage you to review our *Medium-Term Plan, 1994-98*, which is being revised and will be available in mid-1994.

Underlying our work is research on household and community behavior. We believe that understanding the potentials and limitations of specific policies requires an in-depth understanding of relationships within households and the influence of gender. We also believe that interdisciplinary research is essential to fully identify and analyze policies to meet food needs in the world. We have invested in building an effective interdisciplinary mix at IFPRI, and when needed to strengthen that mix, researchers from outside IFPRI are invited to participate in our projects. As in the past, the new research efforts are based on primary data collected from households, communities, and markets. This is IFPRI's "trademark" and the basis of its continuing comparative advantage.

Even as we were rethinking our research priorities and approaches, our ongoing research projects were yielding rich findings and impacts. Major results from each research division are presented later in this report. It is not easy to measure the impact of policy research in terms of social goals such as reduced poverty or food insecurity. IFPRI would like to develop methodologies on impact assessment and conduct an empirical impact study. In the meantime, let me draw your attention to some indicators of the impact of two of IFPRI's long-term collaborative research relationships. IFPRI has had a number of research, training, and capacity-building projects in Bangladesh and Pakistan and for some years now has maintained offices in Dhaka and Islamabad.

In Bangladesh, IFPRI's research project on rural infrastructure, which showed that rural infrastructure had an impressive impact on diffusion of agricultural technology and on rural nonfarm incomes, contributed to greater policy attention to rural infrastructure and encouraged foreign assistance to invest in rural infrastructure projects.

Map of developing countries in which IFPRI conducted research, 1993



Note: Study countries are in red.

Research findings from the project on public foodgrain policies, which indicated that the rural rationing program had 70-90 percent leakage rates and high costs, supported the government's decision to abolish the program. Savings to the Bangladesh government were substantial, while negative effects on the poor were very limited due to inappropriate targeting of the subsidies eliminated. Targeted programs such as the Food for Education program have been initiated in place of the rural rationing program.

In Pakistan, an external evaluation of IFPRI studies, as part of an independent evaluation of USAID-funded technical assistance in Pakistan, found that IFPRI studies were directly responsible for over Rs 4.7 billion in savings. Findings from IFPRI's research have contributed



to the derationing of wheat flour, cancellation of a loan proposal to build extra storage capacity, a rationalization of the interest rate structure on institutional production loans, and reconsideration of the government's storage policy for wheat, among other policy changes.

During 1993 we made a great deal of progress in planning our medium-term activities and in conducting research on and analyzing strategies to meet food needs in the world, especially of the poorest groups. This annual report highlights some of our major research findings and capacity-building efforts.

Per Pinstrup-Andersen
Director General

RESEARCH RESULTS

ENVIRONMENT AND PRODUCTION TECHNOLOGY DIVISION

Accelerating agricultural production in the developing world through the spread of new agricultural technologies without degrading the natural resource base is the focus of research in the Environment and Production Technology Division. During 1993 the division continued to redefine the scope of its work in the areas of forest margins, fragile lands, and water management. In addition, research continued or was completed on Indonesian food crop production, fertilizer use in Zambia, agricultural productivity growth in Pakistan and India, critical food policy issues for Sub-Saharan Africa, forestry and agroforestry policies in Latin America, and long-term rice supply and demand.

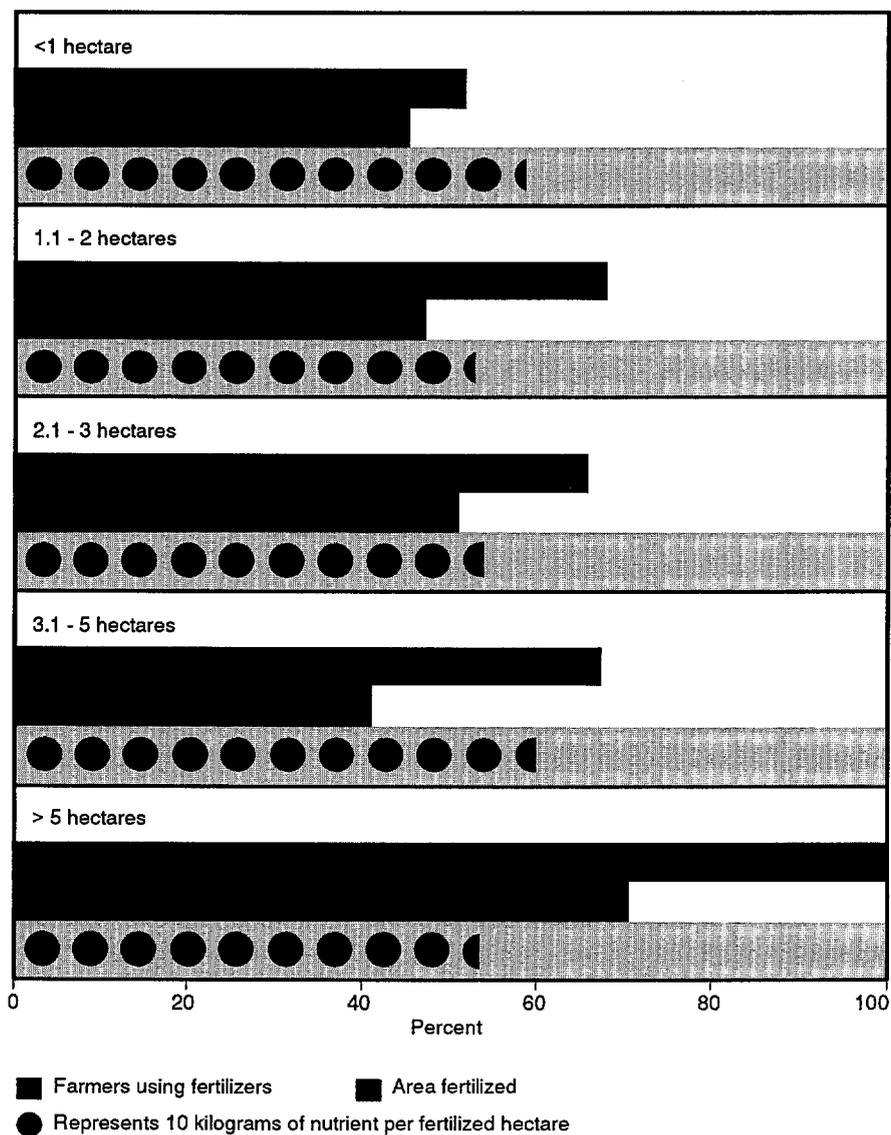
Research activities in the division produced a number of results that have significance for food policy.

■ Almost 20 years of subsidies of irrigation and fertilizer by the Indonesian government to encourage rice, corn, soybean, cassava, and sugar production led to high costs and, in some cases, overuse of fertilizers and pesticides. Research suggests that with the elimination of government incentives, rice and corn can compete as substitutes for imported rice and corn, but not as exports. The outlook for cassava as an export crop is good if the European Union continues its quota system for purchasing cassava from developing countries. However, sugar and soybeans offer the least likely prospect for economic viability without heavy subsidies. The elimination of subsidies will reduce the possibility of overuse of chemicals and fertilizers. (From Research Report 93)

■ Within countries in Sub-Saharan Africa there are broad differences in how crops respond to fertilizer, depending on factors such as regional agroclimatic conditions and farming systems. Farmers will use yield-increasing inputs in land-surplus regions if physical responses of crops to fertilizer are high, prices are favorable, and farmers are able to market surpluses. However, government support programs for education, credit, input distribution, infrastructure, and marketing must be in place. Research from Eastern Province, Zambia, indicates that in the plateau regions, where the physical and social conditions were favorable, two-thirds of the households used fertilizer on more than half of the cropped area, which included hybrid and local maize—three times the national average. (Figure 1) (From Research Report 94)

■ Research on Pakistan and India found that factor productivity growth in the crop sectors—measured as the total value of crop output

Figure 1
Fertilizer use by farm size, plateau region, Zambia, 1985/86



Source: Dayanatha Jha and Behjat Hojjati

There is little difference between farm sizes in rate of fertilizer use, percent of area fertilized, and rate of application on farms up to 5 hectares. Farms in the smallest category had marginally lower rates of both fertilizer adoption and area fertilized.

divided by the total cost of inputs—explained about one-third of output growth in these sectors for the years 1957 to 1985. Because it measures output against inputs, this “true” productivity is an important measure of long-term growth. This research also found that the main sources of this growth have been public research and extension, improvement in human capital through expansion of literacy, and private research (the latter in India). The research suggests that the governments have underinvested in research and extension, which were profitable with rates of return of more than 50 percent. (From an article by Rosegrant on factor productivity in Pakistan and India)

During 1993 the division organized one symposium and three workshops in which new research activities were discussed. In the symposium on critical food policy issues for Sub-Saharan Africa, organized by IFPRI and the Natural Resources Institute of the United Kingdom, 50 United Kingdom administrators and researchers and IFPRI staff discussed natural resource management, sustainable farming systems, markets and privatization, and policy responses to emergencies for the region. The participants agreed that planning and implementing projects in natural resource management requires farmer and community involvement to ensure solutions appropriate to local conditions, that agricultural and research extension systems need to be more localized, that donor-imposed market reforms must have the support of local policymakers, and that relief programs need to be coordinated with long-term development needs.

In a workshop on smallholder irrigation in Zimbabwe, Zimbabwean policymakers and researchers discussed the results of a cross-sectional analysis of the performance of four types of irrigation schemes that serve communal area cultivators. The results indicated that community-managed schemes generally outperformed similar government-managed ones in overall water-use efficiency and net agricultural income per unit of land and unit of water. Conclusions also indicated that informal irrigation systems on *dambos*—small wetland areas—outperform more traditional government- and community-managed small-scale systems. Although fragile, these systems are well managed by farmers, suggesting that present legislative restrictions should be eliminated.

As part of IFPRI's role in an ongoing project to identify policy research priorities for tropical forestry and agroforestry in the developing countries, IFPRI organized with IICA a workshop in San José, Costa Rica, which brought together more than 40 experts to discuss forestry in the region. The group, drawn from countries in the region with different types of forest and agroforestry conditions, raised a number of common problem areas requiring research. These included effects of national and international macroeconomic and environmental policies on forest conservation, the welfare of forest-dwelling people, and the development of nontimber forest-product markets; factors influencing human migration into forest areas; issues related to the undervaluation of forest resources; and determinants of greater participation of local communities,

small-scale farmers, and private industrial enterprises in sustainable management of forest resources.

In a workshop on rice supply and demand, several IFPRI staff, some 30 research collaborators from Bangladesh, China, India, Indonesia, Pakistan, the Philippines, and Thailand, and other food production experts met to discuss evolving government policy priorities for rice and other major food crops, examine the effects of prices and investment in technology on the growth of these commodities in Asia, and consider the likely prospects for supply and demand balances in the region. The participants, who have just begun research on the seven-country study, confirmed the importance of investment in research and irrigation in sustaining growth in the major food crops in the region.

RESEARCH RESULTS

MARKETS AND STRUCTURAL STUDIES DIVISION

The transformation of a rural economy based on subsistence agriculture to one based on commercial agriculture is affected by the state of its markets for inputs such as seeds and fertilizer and that of its markets for farmers' products. In addition, the level of development of infrastructure and institutions plays an important role. Research in the Markets and Structural Studies Division is based on the assumption that undistorted and unencumbered markets are essential to successful transformation of agriculture. Currently, throughout the developing world, policymakers are grappling with market reform. Research is needed to assist them in sorting out issues related to the sequencing and comprehensiveness of reforms as well as needed supplementary actions.

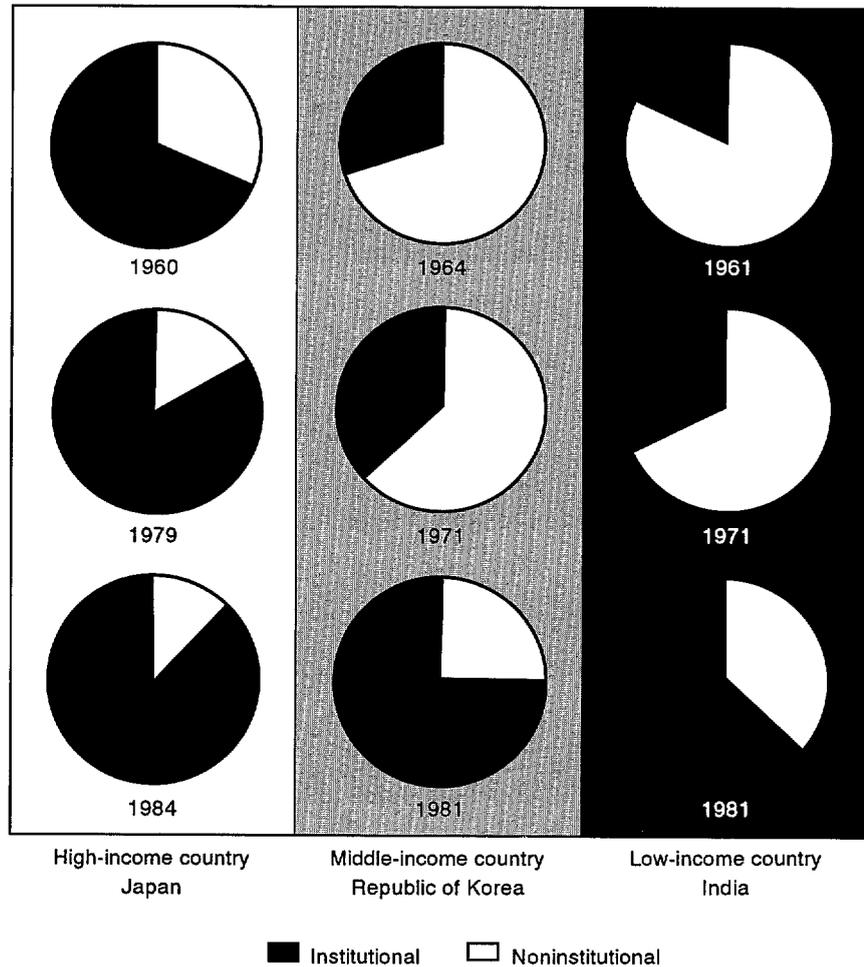
A second premise on which research is undertaken in the division is that transformation should occur in such a way as to encourage a mix of products and income diversification that accelerates growth through the exploitation of domestic and foreign markets, alleviates poverty, and reduces the instability of income and the food supply. Among the considerations is the need for government policymakers to understand the consequences of the timing and degree of reforms.

Research efforts of the division center on agricultural input and output market reform, income and crop diversification, and export promotion. During 1993 this produced research results on institutional financing of agricultural development in the developing world, rice procurement and agricultural development issues in Bangladesh, and price policies in West Africa. A number of results of policy significance were identified.

■ Contrary to much of the literature that holds that rural financing follows demand and is not led by the supply of credit, research indicates that the availability of new technology, which spawns an increased need for financial services, and the emergence of rural financial institutions should be simultaneous. In both developed and developing countries, integrated rural financial markets emerge not as a result of unguided market forces but as the result of deliberate public policy. Four countries with successful rural financial institutions—Japan, Taiwan, the Republic of Korea, and the United States—all have institutions that are publicly supported. (Figure 2) (From Food Policy Review 1)

■ The Bangladesh government's procurement price for rice or paddy affects farmers, traders, and millers and has implications for

Figure 2
Farm household borrowing in Japan, Republic of Korea, and India,
various years



Source: Bhupat M. Desai and John W. Mellor

The share of institutional loans to farm households increased over time in all Asian countries. However, the share of institutional loans in the high-income Asian countries was on average about 30 percent higher in the 1950s and 1960s than in low-income Asian countries. The share of institutional loans increases with the increase in opportunities to raise per capita real national income, especially rural income.

producer incentives, consumer welfare, budgetary costs, market prices and supply, and the pace and pattern of agricultural growth. As the government continues to move away from involvement in the foodgrain markets of the country, how procurement issues are handled is crucial. Of the three criteria used to determine procurement prices—cost of production, world price, and domestic market price—the domestic market price is the most important. Recent moves by the government to procure rice at market prices suggest great cost savings—US\$41 million in the 1992 postharvest season. (From Food Policy in Bangladesh Working Paper 6)

■ In western Niger, research on the potential response of rural households to changes in prices resulting from structural adjustment programs indicate that these programs may adversely affect food security during the transition to a more sustainable set of economic incentives. In this region of Niger, nonfarm activities account for up to half of household income, whereas agricultural exports, primarily crop (pulses) and livestock sales, account for only 10 to 15 percent of incomes. Rural households spend about 40 percent of their incomes on locally produced coarse grains, 10-14 percent on pulses and livestock, and 13-15 percent on manufactured goods. Attempts to stimulate agriculture through higher prices can assist households to increase their income from agricultural exports, yet any gains will be offset in the short run by increases in the cost of net food grains and manufactured goods. Investment in infrastructure to decrease transaction costs and in measures to increase the agricultural supply response is necessary. (From special report on agricultural policies in Niger)

As part of its work on diversification of input and output markets and export promotion the division hosted, in collaboration with the Bangladesh Institute of Development Studies, a workshop on agricultural diversification in Bangladesh to address the question of what other agricultural products could economically and technically be produced to accelerate agricultural growth given that Bangladesh has had a rice surplus in recent years. The participants agreed that many nontraditional products have higher profitability rates than rice, but that technical and risk factors prevent farmers from diversifying into these high-value, nontraditional products.

In collaboration with the American Association of Agricultural Economists and the Environment and Production Technology Division, the division organized a conference in Orlando, Florida, on post-green revolution agricultural development strategies in the Third World that was attended by more than 180 participants from universities, multilateral donors, foundations, and Third World institutions. The participants agreed that Third World countries as a group will need to greatly increase food imports from developed countries over the next two decades and that although long-term trends for world cereal prices are probably stable and favorable to consumers, there are uncertainties about how trade policy reforms and biotechnology will affect supplies. The participants noted that growth in Third World food supplies, given the major decline in support

for agricultural research and investment in developing countries and a recent decline in their cereal yields, would require greater investment in infrastructure, support institutions, and human capital. Further agricultural progress will depend on market policy reform and maintaining a flow of knowledge to farmers through research and extension. In areas of Asia where green revolution technologies permit multiple cropping of irrigated rice, major ecological challenges loom. The participants were uncertain whether agricultural transformation would occur in those regions of Africa where green revolution technologies have not taken hold, especially given the current abandonment of public support for agricultural development. They agreed that these areas will likely present major challenges for food security over the medium and longer run, even if world cereals prices remain low.

RESEARCH RESULTS

FOOD CONSUMPTION AND NUTRITION DIVISION

Having adequate food supplies at the global, national, or household level is a necessary but not sufficient condition to guarantee food security and good nutrition for individuals. Access to and effective use of food and other resources are also important. Research in the Food Consumption and Nutrition Division analyzes the effects on nutrition and food security of general economic and agricultural policies as well as specific income, food, and nutrition interventions. In addition, the division attempts to understand the constraints and incentives influencing household and intrahousehold behavior, often in relation to specified policies or program interventions. The division also monitors global, national, and household food and nutrition conditions in order to identify the effectiveness of such interventions.

During 1993 division research focused on six areas related to food security of the poor: famine prevention in Africa, labor market policies and employment programs for food security, credit policies, nutrition monitoring, gender and intrahousehold aspects of food policy, and the links between urbanization and agriculture. Research completed in the division during the year included a number of results of significance to policy formulation.

■ Inadequate nutrition can exist in as much as 20-30 percent of the population even when a country has a sufficient food supply. A quality diet may be too expensive for poor households, or nutritional knowledge may be lacking. Chronic illness may interfere with an individual's absorption of nutrients. Agricultural development has an important role to play in improving nutrition. Nutritional benefits flowing from agricultural policies and programs include increased food consumption resulting from higher household incomes and lower food prices, improved health and sanitation facilities from higher agricultural incomes, and less work time for pregnant and lactating women. However, the means of raising income and improving nutrition outside of agriculture need to be pursued as well. (From Occasional Paper on linkages between agriculture and nutrition)

■ Rural public works programs initiated in the 1960s and the mid-1970s in Bangladesh led to a strengthening of and increasing participation in government administrations. In addition, programs promoting road construction led to economic gains by encouraging the development of larger secondary markets, shifting from subsistence to commercial farming, and increasing the number of traders. Programs that improved irrigation led to increased yields and cropping intensity.

Improved food security was found to be an overall benefit. Realization of still greater benefits will require improving technical expertise in project selection, design, and implementation; encouraging community initiative to undertake small projects with voluntary labor; and eliminating exploitation of the poor and weak participants by dominant local elites. (Table 1) (From Working Papers on Food Subsidies 7)

■ Between 1976 and 1990, Pakistan's GNP per capita more than doubled. Yet in the late 1980s, 40 percent of children up to five years of age were found to be underweight. The impressive economic growth in Pakistan in the 1980s did not translate into improvements in nutrition because of health and education factors. Education of women, at least through primary school, is nearly three times more effective in improving the nutritional status of children than increasing incomes by 10 percent. Where diarrhea and other illnesses are widespread, nutritional status is threatened regardless of calorie intake levels. (From Research Report 96)

■ The share of the developing world's population living in urban areas has risen from 25 to 40 percent since 1965. Although a large proportion of the undernourished populations of developing countries continues to be in rural areas, there is an urgent need to address

Table 1
Effect of Food for Work projects and infrastructure on rural household income, Bangladesh, 1985

No FFW project or developed infrastructure	FFW project	FFW project and developed infrastructure
Farm income		
7,372	9,284	10,414
Nonfarm income		
974	1,181	2,819
Total		
8,346	10,465	13,233

Source: Mahabub Hossain and M. Mokaddem Akash

Food for Work (FFW) project areas with underdeveloped physical infrastructure had 25 percent higher incomes than areas without the project. There was a positive income effect of about 60 percent in villages with both Food for Work projects and better physical infrastructure facilities.

problems of urban food insecurity and malnutrition. Alleviating rural food insecurity requires improved technologies, expanded rural infrastructure, and community-based action. In urban areas there is a need to focus more on employment, public social safety nets, and food safety and health policies. (From Occasional Paper on urban food security)

■ The interactions between economic and political considerations are of vital importance in designing and carrying out sound and sustainable policies that affect food and nutrition. Successful policies and programs to improve nutrition require not only identification of the key actors but also their goals, rationales, and relative power. In addition, policymakers must understand their own interactions, dependencies, competitions, vested interests, and opportunities to form mutually beneficial coalitions. To ensure that nutrition is not overlooked in the policy planning process, national institutions need to be strengthened through information on how the costs and benefits of alternative policies and programs affect both the malnourished and others who may support or oppose specific policies. (From IFPRI/Johns Hopkins University Press book on political economy of food and nutrition)

An international policy workshop on employment for poverty alleviation and food security brought together 60 policymakers in charge of employment and poverty programs, policy advisers, analysts, and experts from 20 developing countries as well as representatives from various aid agencies and nongovernmental organizations to discuss strategies and conceptual issues and report new research results from long-term studies in Africa, Asia, and Latin America. These results indicate that employment programs have contributed to poverty reduction, particularly transitory poverty in drought-prone countries, created employment in rural areas, and strengthened the ability of rural households to borrow in times of need. The participants agreed on a number of ways to improve the effectiveness of employment programs to alleviate transient and chronic poverty, including clarifying objectives and goals of programs and building them into long-term development programs, refining programs to target the poor more effectively, and broadening the participation of local institutions and strengthening their capacity to implement and sustain programs.

Finally, much of the research in the Division, and in other divisions within IFPRI, is heavily dependent on data collected through household surveys in the field. During 1993 IFPRI published a review of the experiences with household surveys focused on food policy. The outcome of a meeting held the previous year, this Occasional Paper on data analysis identifies data needs for emerging food policy questions, assesses the role of household surveys in policy and project planning and implementation, and discusses operational aspects of survey management.

RESEARCH RESULTS

TRADE AND MACROECONOMICS DIVISION

Domestic policies and the international environment affect the food, agriculture, and rural sectors of developing countries. Research in the Trade and Macroeconomics Division analyzes the effects of changes in trade and macroeconomic policies and in world market conditions on the economic performance of these sectors. Research also addresses the effects of macroeconomic policies on the linkages between sectors and the further repercussions on overall economic performance, a key determinant of food security nationally.

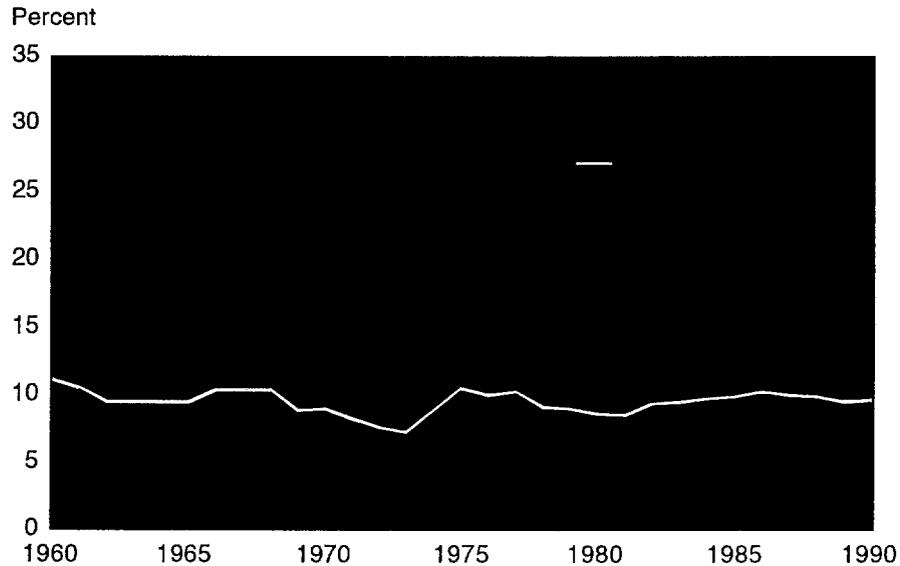
During 1993 completed research of the division focused on analyses of international, regional, and domestic policy issues. This included the role of agriculture in the development strategy of Third World countries, agricultural trade reform in southern Africa, and sectoral growth in Chile. Research produced a number of results of significance to policy.

■ Economic policies adopted by developing countries since the early 1950s have produced several strong incentive biases. The production of nontradable goods was favored over that of tradable goods; within the tradable goods sector, import-competing goods were favored over exports; in the export sector, manufactured goods were favored over agricultural products; and within the agricultural sector, domestic food crops were favored over export crops. Economywide policies such as subsidies for industrial exports and unsustainable fiscal deficits have led to overvalued exchange rates that are detrimental to agricultural exports. Agriculture has also been affected by sector-specific policies such as taxes on export crop production, harmful pricing policies set by state marketing agencies, artificially low food prices for urban populations, and low investment in agricultural extension, infrastructure, and technology. (From Bautista and Valdés book on bias against agriculture)

■ Domestic protectionist policies in southern Africa, including trade policies and artificially determined foreign-currency, producer, and consumer prices, have restricted regional trade far more than political barriers between countries. Barriers to liberalization of agriculture include resistance to change by those with vested interests in the status quo, popular opposition to rising food prices caused by initial reform adjustments, and underdeveloped communications and human resources that limit both political and economic reform. An environment that encourages more open markets and international competition would widen the opportunities for economic growth in countries in the region and enable the region to realize the advantages of closer ties with a free South Africa. (From Occasional Paper on agricultural policy reforms in Malawi, Zambia, and Zimbabwe)

■ Chile's overall economic growth from 1962 to 1990 was strongly affected by the pace of capital accumulation as well as by economic stability and favorable external terms of trade. Conditions conducive to overall growth in Chile also favored the expansion of agricultural output, which was strongly influenced by prices. Because real agricultural prices were determined largely by the level of the real exchange rate, a change in policy in favor of trade in the last part of the 1970s and throughout the 1980s affected agricultural production positively. (Figure 3) (From Research Report 95)

Figure 3
Share of agriculture in total value added and total employment in Chile, 1960-90



Source: Juan Eduardo Coeymans and Yair Mundlak

The relative long-term constancy of agriculture's share in Chile's total output, which averaged 9.66 percent in 1960-64 and 9.46 during 1986-90, was the result of overcoming constraints to agricultural growth through expansion of exports.

OUTREACH

OUTREACH DIVISION

Outreach continues to be a high-priority area for IFPRI. In 1993 IFPRI established this new division with the objectives of providing information for policymaking, strengthening the capacity of developing countries to conduct food policy research, promoting information exchange between IFPRI and those involved with policymaking, and facilitating the implementation of food policies. During 1993 these activities were undertaken through four programs: publications and information; seminars, workshops, and conferences; training and capacity building; and research.

PUBLICATIONS AND INFORMATION

IFPRI's publications continue to be the principal means of disseminating research findings. These include research reports, books, occasional papers, working papers, and reprints of articles published externally by IFPRI staff, which are directed to the policy research community. Less-technical publications, directed to the policymaking community, include abstracts of research reports, food policy statements, food policy reports, and policy briefs. General information is provided in the annual report, brochures, briefs, and a newsletter. During 1993 IFPRI initiated two new series. The first, Food Policy Review, presents substantive syntheses of research on major food policy issues. The second publication series was established in conjunction with a new IFPRI Lecture Series. IFPRI continued to diversify the kinds of publications issued in order to reach new audiences. It continued to develop and disseminate shorter and less-technical publications to donors, press, and IFPRI's broader audiences. These included IFPRI's second Food Policy Report (these reports are timely, in-depth, nontechnical overviews of regional or international policy issues) and a number of conference briefs (two-page topical summaries prepared as handouts for international meetings). IFPRI also facilitated the publication of IFPRI authors in nontraditional sources. In 1993 this included articles in *Choices* and *World Agriculture*.

In addition to the regular dissemination of new publications by IFPRI to individuals and organizations on its mailing list, amounting to about 70,000 pieces annually, some 20,000 requests for publications and information were also processed. A complete list of publications for 1993 and a list of referees for IFPRI's research report and IFPRI/Johns Hopkins manuscripts for 1992-93 appears in the Publications and Papers section.

In the area of public awareness, IFPRI expanded its participation in issues of importance to the general public. This included a January Symposium on Food, Poverty, and the Environment: How Secure Is Our Future Food Supply? Participants in the symposium included IFPRI's director general and directors general from three other CGIAR centers. The symposium was covered in more than 40 newspapers worldwide and by a number of radio programs.

WORKSHOPS, SEMINARS, AND OTHER MEETINGS

The results of IFPRI research are also communicated through IFPRI workshops, which bring together IFPRI collaborators and staff to discuss research design, methodologies, results, and the policy implications of the work. IFPRI also holds seminars around the world with high-ranking government officials of developing countries and IFPRI staff and board members to discuss major policy issues related to agricultural development. These meetings, listed below for 1993, are discussed in the division research sections.

- *Symposium on Food, Poverty, and the Environment: How Secure Is Our Future Food Supply?*, January 29, Washington, D.C., U.S.A.
- *Critical Food Policy Issues for Sub-Saharan Africa* (cosponsored with Natural Resources Institute), March 24-25, Chatham, United Kingdom
- *Workshop for IFPRI-IRRI Rice Supply and Demand* (cosponsored with IRRI), April 13-15, Los Baños, Philippines
- *IFPRI-Bunda College of Agriculture, University of Malawi Workshop on Priorities for Agricultural Policy Research*, May 3-5, Lilongwe, Malawi
- *Regional Workshop on Forestry and Agroforestry Policy Research in Latin America* (cosponsored with IITA), July 19-23, San José, Costa Rica
- *Post-Green Revolution Agricultural Development Strategies in the Third World: What Next?* IFPRI-AAEA Preconference Workshop on International Agricultural Development, July 30-31, Orlando, Florida, U.S.A.
- *Workshop on Irrigation Performance in Zimbabwe*, August 4-6, Juliasdale, Zimbabwe
- *Policy Workshop on Employment for Poverty Alleviation and Food Security*, October 11-14, Airlie, Virginia, U.S.A.
- *Symposium on Implications of Economic Reform for Food and Agricultural Development in Egypt*, November 28-29, Cairo, Egypt

During 1993 IFPRI established a new internal Policy Seminars series designed to present results of recently completed research on

topics of interest to IFPRI and Washington-area policymakers and policy analysts. IFPRI also established the IFPRI Lecture Series, a forum for speakers at the forefront of current thinking and for an exchange of ideas on controversial issues related to food, agricultural, and environmental policy and the alleviation of hunger and poverty. The 1993 meetings, held in Washington, D.C., are listed below.

IFPRI Policy Seminars

- Resources and Global Food Prospects: Supply and Demand for Cereals to Year 2030 — Pierre Crosson, Resources for the Future, June 24
- External Shocks, Purchasing Power Parity, and the Equilibrium Real Exchange Rate — Sherman Robinson, IFPRI, July 14
- The World Food Outlook: Malthus Must Wait — Donald Mitchell and Merlinda Ingco, The World Bank, September 13
- Agricultural Productivity in the Third World: Patterns and Strategic Issues — Christopher Delgado and Per Pinstруп-Andersen, IFPRI, September 15
- Feeding and Greening the World — Derek Tribe, Australian Academy of Technological Sciences and Engineering, October 27

IFPRI Lecture Series

- Science and Agricultural Transformation — Donald Plucknett, CGIAR Secretariat, World Bank, September 9

TRAINING AND CAPACITY BUILDING

In the past, IFPRI has helped develop the capacity of developing countries to conduct research principally by improving the skills of researchers in these countries through their participation in collaborative research projects. IFPRI also provided informal training of its research collaborators by including them in all stages of its policy research activities. With the establishment of the Outreach Division in 1993, IFPRI moved to expand its training activities to help strengthen the institutional capacity of developing countries to conduct food policy research. IFPRI initiated a plan to work directly with an African educational institution, Bunda College of Agriculture, University of Malawi, in order to build this capacity. It is expected that this exercise, which includes participation in a two-year Master of Science degree program and short-term training programs for policy analysts and decisionmakers, will be replicated in West and East Africa and South Asia.

At the request of FAO, IFPRI developed a training module that uses IFPRI research reports as case studies for training policy analysts. The first for this series, "Analyzing Effects of Policies on Household Decisions and Outcomes: A Case Study of Rwanda," was the basis for an FAO training exercise of policy analysts from 12 Arabic-speaking countries. In addition, IFPRI participated in a training course conducted by the Harvard Institute of International Development.

RESEARCH

Planning food and agricultural policy research and setting the priorities in collaboration with developing-country institutions is one approach to joint research and outreach activities at IFPRI. A major component of IFPRI's collaborative training and capacity-building activities at Bunda College of Agriculture is research on food, agriculture, and nutrition policy. A workshop on agricultural policy research in Malawi sponsored by IFPRI, UNICEF-Malawi, and Bunda College of Agriculture, University of Malawi, was organized in Lilongwe, Malawi, with more than 100 participants from academic institutions, government and nongovernmental organizations, donor institutions, and other CGIAR centers. The group set priorities for future collaborative research in market reforms, alternative technologies and land use patterns, land tenure and natural resources management, household food security and nutrition, and national food security and rural credit. These priorities were based on the relevance of research to policymaking, the extent of the knowledge gap, the size of the affected target groups, and the expected impact of policy research. IFPRI will undertake research in collaboration with researchers from Malawi and incorporate the results into the regional outreach efforts based at Bunda College.

OUTREACH

COLLABORATION

IFPRI's field-based research is conducted in collaboration with developing-country partners, which helps build the capacity for policy research within national research systems and helps IFPRI shape its research to the needs of developing countries. During 1993, IFPRI collaborated with some 80 institutions in the developing world. In addition, five IFPRI staff members were posted to developing countries as part of collaborative projects with institutions in these countries.

IFPRI also undertakes research in collaboration with other international agricultural research institutions. This collaboration provides a focus on the policy factors that affect the development and use of new technologies developed in the other institutions.

A third group of collaborators includes multilateral and developed-country institutions. These collaborations help IFPRI identify gaps in knowledge and adopt new methodologies. Collaborations include shared staff appointments, joint projects, consulting arrangements, and conferences and seminars.

COLLABORATING INSTITUTIONS IN DEVELOPING COUNTRIES

29

AFRICA

Botswana

Ministry of Agriculture
Ministry of Finance and Development Planning
Ministry of Health
Ministry of Local Governments and Lands

Ethiopia

Addis Ababa University
Ethiopian Nutrition Institute
Ministry of Agriculture
Ministry of Environment and Natural Resources
Ministry of Planning and Economic Development

Ghana

Ministry of Agriculture
Ministry of Health

Kenya

African Economic Research Consortium
Ministry of Planning and Economic Development

Madagascar

Ministère de la Recherche Appliqué au Développement

Malawi

Bunda College of Agriculture

Mali

Institut d'Economie Rurale
Système d'Information des Marchés

Namibia

Namibian Economic Policy Research Unit

Niger

Institut National de Recherches Agronomiques du Niger

Senegal

Institut Sénégalais de Recherches Agricoles

South Africa

University of Cape Town

Tanzania

Food and Nutrition Commission
Ministry of Public Works
Planning Commission
Prime Minister's Office
University of Dar es Salaam

Zambia

Rural Development Studies Bureau
Zambia National Commercial Bank

Zimbabwe

Agritex
Ministry of Local Government, Rural and Urban Development
University of Zimbabwe

ASIA**Bangladesh**

Bangladesh Institute of Development Studies
Ministry of Food

People's Republic of China

China National Rice Research Institute
Development Research Center
Nanjing Agricultural University

India

Andhra Pradesh Agricultural University
Annamalai University
Centre for Study of Regional Development
Gujarat Institute of Area Planning
Indian Agricultural Research Institute
Indian Agricultural Statistics Research Institute
Indian Council of Agricultural Research
Indian Institute of Management (Ahmedabad)
Ministry of Agriculture
National Centre for Agricultural Economics and Policy Research
National Council for Applied Economic Research
National Institute of Rural Development
Rajendra Agricultural University
Tamil Nadu Agricultural University
University of Madras

Indonesia

Center for Agro Socio Economic Research
Center for Strategic and International Studies

Pakistan

Pakistan Institute of Development Economics
University of Agriculture, Faisalabad

Philippines

Philippine Institute for Development Studies
University of Philippines, Quezon City

Thailand

Kasetsart University
Thailand Development Research Institute

LATIN AMERICA**Argentina**

Red de Instituciones Vinculadas a la Capacitación en Economía y
Políticas Agrícolas en América Latina y el Caribe

Brazil

Empresa Brasileira de Pesquisa Agropecuária
Instituto Sociedade, População e Natureza

Chile

Universidad Católica de Chile

Costa Rica

Instituto Interamericano de Cooperación para la Agricultura

Grenada

Grenada Food and Nutrition Council

Guatemala

Asociación Femenina de Desarrollo de Sacatepéquez
Fundación ULEU
Instituto de Nutrición de Centro América y Panamá

Honduras

Centro de Comunicación Popular de Honduras
Escuela Agrícola Panamericana

Jamaica

Caribbean Food and Nutrition Institute

NORTH AFRICA/MIDDLE EAST**Egypt**

Al-Azhar University
Cairo University
Institute of National Planning
Menoufia University
Ministry of Agriculture and Land Reclamation
Zagazig University

COLLABORATING CGIAR INSTITUTIONS

Center for International Forestry Research
Centro Internacional de Agricultura Tropical
Centro Internacional de la Papa
International Center for Agricultural Research in the Dry Areas
International Centre for Research in Agroforestry
International Crops Research Institute for the Semi-Arid Tropics
International Irrigation Management Institute
International Livestock Centre for Africa
International Rice Research Institute

COLLABORATING INSTITUTIONS IN DEVELOPED COUNTRIES AND MULTILATERAL AGENCIES

Australian National University
Cornell University, U.S.A.
Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ),
Federal Republic of Germany
Food and Agriculture Organization of the United Nations
Institute of Development Studies, United Kingdom
International Center for Research on Women, U.S.A.
International Fund for Agricultural Development
Kobe University, Japan
LaTrobe University, Australia
Michigan State University, U.S.A.
National Association of Wheat Growers, U.S.A.
National Research Institute of Agricultural Economics, Japan
Natural Resources Institute, United Kingdom
Overseas Development Institute, United Kingdom
Oxford University, United Kingdom
The Population Council, U.S.A.
Rockefeller Foundation, U.S.A.
School for Social Sciences, Japan
Tottori University, Japan
United Nations Centre for Human Settlements, Kenya
United Nations Children's Fund, Haiti, Malawi
Universidad Politécnica de Valencia, Spain
University of Adelaide, Australia
University of Athens, Greece
University of Colorado, U.S.A.
University of Copenhagen, Denmark
University of Illinois, U.S.A.
University of Kiel, Federal Republic of Germany
University of Maryland, U.S.A.
University of North Carolina, U.S.A.
University of Pennsylvania, U.S.A.
University of Stuttgart (Hohenheim), Federal Republic of Germany
University of Washington, U.S.A.
Virginia Polytechnic Institute and State University, U.S.A.
World Bank
World Food Programme
World Health Organization of the United Nations
World Resources Institute, U.S.A.
Yale University, U.S.A.

OUTREACH

PUBLICATIONS AND PAPERS

RESEARCH REPORTS AND ABSTRACTS

Research Report 93

Economic Incentives and Comparative Advantage in Indonesian Food Crop Production, by Leonardo A. Gonzales, Faisal Kasryno, Nicostrato D. Perez, and Mark W. Rosegrant, 1993.

Research Report 94

Fertilizer Use on Smallholder Farms in Eastern Province, Zambia, by Dayanatha Jha and Behjat Hojjati, 1993.

Research Report 95

Sectoral Growth in Chile: 1962-82, by Juan Eduardo Coeymans and Yair Mundlak, 1993.

Research Report 96

Poverty, Household Food Security, and Nutrition in Rural Pakistan, by Harold Alderman and Marito Garcia, 1993.

Policy implications of each research report are summarized in the four-page *IFPRI Abstract*, which is published in English, French, and Spanish.

OTHER SERIES

IFPRI/Johns Hopkins Books

The Political Economy of Food and Nutrition Policies, edited by Per Pinstrup-Andersen. Baltimore, Md.: The Johns Hopkins University Press for IFPRI, 1993. US\$38.50.

Food Policy Reviews

Number 1

Institutional Finance for Agricultural Development: An Analytical Survey of Critical Issues, by Bhupat M. Desai and John W. Mellor.

Each Food Policy Review is summarized in a two-page *Synopsis*, which is published in English, French, and Spanish.

Occasional Papers

Agricultural Policy Reforms and Regional Market Integration in Malawi, Zambia, and Zimbabwe, edited by Alberto Valdés and Kay Muir-Leresche, 1993.

Urban Food Insecurity and Malnutrition in Developing Countries: Trends, Policies, and Research Implications, by Joachim von Braun, John McComb, Ben K. Fred-Mensah, and Rajul Pandya-Lorch, 1993.

Linkages Between Agriculture and Nutrition: Implications for Policy and Research, by Eileen Kennedy and Howarth E. Bouis, 1993.

Data Needs for Food Policy in Developing Countries: New Directions for Household Surveys, edited by Joachim von Braun and Detlev Puetz, 1993.

Working Papers on Food Policy in Bangladesh

Number 6

Determination of Procurement Price of Rice in Bangladesh, by Raisuddin Ahmed, Nuimuddin Chowdhury, and Akhter U. Ahmed, 1993.

Working Papers on Food Subsidies

Number 7

Public Rural Works for Relief and Development: A Review of the Bangladesh Experience, by Mahabub Hossain and M. Mokaddem Akash, 1993.

Lecture Series

Number 1

Science and Agricultural Transformation, by Donald L. Plucknett, 1993.

Food Policy Reports

Aid to Agriculture: Reversing the Decline, by Joachim von Braun, Raymond F. Hopkins, Detlev Puetz, and Rajul Pandya-Lorch, 1993.

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General Information

Senior Research Staff 1993

International Food Policy Research Institute (general information brochure)

Bringing Sustainable Growth to Africa (brochure on Africa)

IFPRI Report, Vol. 15, Nos. 1-3

Information Briefs

Population and Food Security Nexus, May 1993

Conference Briefs

Implications of Economic Reform for Food and Agricultural Development in Egypt, prepared for IFPRI/Egyptian Ministry of Agriculture and Land Reclamation symposium, November 28-29, Egypt.

Critical Food Policy Issues for Sub-Saharan Africa, prepared for IFPRI/Natural Resources Institute symposium, March 24-25, United Kingdom.

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SPECIAL REPORTS

Consumption and supply impacts of agricultural policies in Niger. Prepared with the Institut National de Recherches Agronomiques du Niger by Jane Hopkins and Thomas Reardon for the U.S. Agency for International Development.

Consumption and supply impacts of agricultural price policies in the peanut basin and Senegal Oriental. Prepared with the Institut Sénégalais de Recherches Agricoles by Valerie Kelly, Thomas Reardon, A. Abdoulaye Fall, Bocar Diagana, and Lisa McNeilly for the U.S. Agency for International Development.

Credit for the rural poor in Sub-Saharan Africa. Prepared by Manfred Zeller, Gertrud Schrieder, Joachim von Braun, and Franz Heidhues for the Deutsche Gesellschaft für Technische Zusammenarbeit.

Effects of selected policies and programs on women's health and nutritional status, 2 vols. Prepared by Eileen Kennedy and Marito Garcia for the U.S. Agency for International Development.

National workshop on food, agricultural and nutrition policy research in Malawi—Setting the priorities. Prepared by Suresh Babu, Ousmane Badiane, Tesfaye Teklu, and Duncan Ngare for UNICEF/IFPRI and Bunda College, University of Malawi.

Rural finance for food security of the poor: Concept, review, and implications for research and policy. Prepared by Manfred Zeller, Gertrud Schrieder, Joachim von Braun, and Franz Heidhues for the Deutsche Gesellschaft für Technische Zusammenarbeit.

Understanding gender-differentiated constraints to farm household investments in adolescents: Implications for their nutritional status Prepared by Howarth E. Bouis, Marilou Palabrica-Costello, Orville Solon, and Azucena B. Limbo for the International Center for Research on Women.

Urban examples: Policy and project lessons of how governments and the urban poor attempt to deal with household food insecurity, poor health, and malnutrition. Prepared by Maarten D. C. Immink for UNICEF.

Water markets in Pakistan: Participation and productivity. Prepared by R. Meinzen-Dick and M. Sullins for the U.S. Agency for International Development.

PAPERS PRESENTED BY IFPRI STAFF

In addition to the publications mentioned above, in 1993 IFPRI staff presented more than 80 papers in various forums organized by organizations other than IFPRI. Presentations were made at seminars, workshops, and conferences in institutional settings that included universities and academic society conferences, nationally and internationally organized research colloquia, and bilateral and multilateral advisory group meetings. These intensive interactions with policymakers and researchers on issues related to food policy enabled IFPRI to contribute to policy dialogues and discussions on research and methodology, complementing other forms of outreach.

PUBLICATIONS REVIEW COMMITTEE AND REFEREES

All manuscripts submitted for publication as IFPRI research reports and IFPRI/Johns Hopkins University Press books undergo extensive review, both inside and outside IFPRI. The Publications Review Committee oversees these reviews and makes recommendations for publication. The Committee comprises seven research fellows and the director of the Information Program.

IFPRI is most grateful for the efforts of the following external referees who reviewed manuscripts for the research report series during 1992 and 1993.

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FINANCIAL STATEMENTS

Summary of financial information for the years ended December 31, 1993 and 1992. The full financial statements and the independent auditors' report are available from IFPRI on request.

Balance Sheets December 31, 1993 and 1992 (US\$ thousands)

		1993	1992
Assets			
Current Assets	Cash and cash equivalents	\$296	\$596
	CGIAR unrestricted grants receivable	400	1,163
	Special project contracts receivable	2,348	1,878
	Other receivables	231	433
	Other current assets	160	81
	Total current assets	3,435	4,151
Other Assets	Property and equipment, net	581	549
	Total assets	\$4,016	\$4,700
Liabilities and Fund Balances			
Current liabilities	Accounts payable	\$432	\$452
	Accrued vacations	491	530
	Advance payment of CGIAR unrestricted grant funds	0	1,000
	Unexpended CGIAR restricted grant funds	417	978
	Unexpended special project contract funds	461	477
	Other liabilities	46	21
	Total current liabilities	1,847	3,458
Noncurrent liabilities	Deferred rent	780	277
	Accrued post-retirement benefits	182	138
	Total noncurrent liabilities	962	415
	Total liabilities	2,809	3,873
Fund balances – unrestricted	Working capital fund	625	278
	Net investment in property and equipment	582	549
	Total fund balances – unrestricted	1,207	827
	Total liabilities and fund balances	\$4,016	\$4,700

**Statements of Revenue, Expenses, and Changes in
Working Capital Fund Balance**

For the Years Ended December 31, 1993 and 1992
(US\$ thousands)

		1993	1992
Revenue			
Grant and contract income	CGIAR – unrestricted	\$7,298	\$6,655
	CGIAR – restricted	560	410
	Special project income – restricted	4,975	5,901
Investment income		20	29
Other income		24	23
Total revenue		\$12,877	\$13,018
Expenses			
Program services	Direct research (including outreach)	\$8,583	\$8,537
	Direct research support (information dissemination and computer services)	0	865
	External reviews	0	12
	Total program services	8,583	9,414
Nonprogram services		48	102
General and administrative – indirect support		3,866	3,845
Total expenses		\$12,497	\$13,361
Excess (deficiency) of revenue over expenses		\$380	\$(343)
Transfer (to) from net investment in property and equipment		(33)	(217)
Increase (decrease) in working capital fund		347	(560)
Working capital fund balance, beginning of year		278	838
Working capital fund balance, end of year		\$625	\$278

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Schedule of Expenses by Type
(US\$ thousands)

		1993	1992
Expenses			
	Personnel	\$5,556	\$5,615
	Fringe benefits	2,193	2,000
	Collaboration/field expenses	1,467	1,852
	Travel	886	1,138
	Computer	85	121
	External publications	307	382
	Trustees' expenses (non-travel)	42	55
	Office operations	1,753	1,975
	Equipment purchases – special/restricted projects	3	39
	Depreciation	205	184
Total		\$12,497	\$13,361

