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IMPROVING HUMAN NUTRITION THROUGH AGRICULTURE: THE ROLE OF INTERNATIONAL AGRICULTURAL RESEARCH

Can agricultural research have a more positive impact on the state of human nutrition? IFPRI organized a CGIAR-wide workshop in October to address this question. Hosted by the International Rice Research Institute (IRRI) and held in the Philippines, the workshop brought together 90 agricultural and nutrition scientists from around the world there. They discussed the merits of breeding staple food crops for micronutrient density and the need to give greater attention to existing food-based approaches for reducing malnutrition. Scientists from 10

CGIAR centers presented a variety of research explicitly driven by concern for human nutrition. Colleagues from universities and research organizations in developing and developed countries commented on the CGIAR presentations. Representatives from several multilateral, bilateral, and nongovernmental organizations also attended the meeting, which was sponsored by the U.S. Agency for International Development (USAID) and the government of Norway.

TAKING STOCK OF CGIAR RESEARCH ON NUTRITION

Research findings from the IFPRI-coordinated research project "Identifying Agricultural Strategies for Reducing Micronutrient Malnutrition" provided a focus for many of the discussions. IFPRI and three other CGIAR

centers—Centro Internacional de Agricultura Tropical (CIAT), Centro Internacional de Mejoramiento de Maiz y Trigo (CIMMYT), and IRRI—have teamed up with the University of Adelaide and the U.S. Department of

Agriculture to develop micronutrient-dense staple food crops (rice, wheat, maize, beans, and cassava) using conventional breeding techniques, based on genetic material contained in international germplasm banks. The most progress has been made on rice: a high-yielding, disease-resistant, iron-

dense, aromatic rice variety has been identified. Nutritionists are planning a feeding trial to test whether the extra iron in this specific variety can be absorbed by humans. A breeding strategy that gets plants to fortify themselves could provide a low-cost, sustainable way to reduce micronutrient malnutrition in humans.

Research scientists from eight CGIAR centers presented work on increasing the supply and consumption of nonstaple foods such as vegetables, fish, and livestock, while reducing the negative effects of naturally occurring toxins in the food system that inhibit nutrition and consequently human growth and development. The challenge for the future is to design research and programs so that their impact on the dietary quality and health of poor households is strengthened.

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Barbara Underwood, President of the International Union of Nutrition Sciences, greets Dr. Luisa P. Ejercits-Estrada, first lady of the Philippines, as Dr. William G. Padolina, IRRI Deputy Director General for Partnerships, looks on.

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CONWAY SPEAKS AT 25TH ANNIVERSARY

On February 29, 2000, IFPRI celebrated its 25th anniversary at a reception and dinner. IFPRI opened its doors on August 15, 1975, in Washington, D.C., with just a few staff and a small budget. The CGIAR began financially supporting the institute in 1979, when IFPRI joined the consultative group. Today, IFPRI has a staff of about 150 and an annual budget of US\$20 million.

IFPRI's founding director and several of its original staff attended the event, together with the Institute's current and former staff, Board of Trustees, friends, and members of the Washington media corps. IFPRI Board Chairman Martin Piñeiro and his wife Cecilia and Director General Per Pinstrup-Andersen and his wife Birgit welcomed the 250 guests.

Gordon Conway, president of the Rockefeller Foundation, provided the keynote remarks. Conway lauded IFPRI's quarter century of research dedicated to better understanding the world food situation and its



Gordon Conway, president of the Rockefeller Foundation, addresses the guests at IFPRI's 25th anniversary dinner.

implications for developing countries. He cited IFPRI's direct contribution to many policy improvements around the globe and credited IFPRI with debunking some pervasive miscon-

POLICY RESEARCH TO FEED THE POOR
 25
 Years
 1975 - 2000

ceptions, such as the one that world food shortages simply stem from inequitable distribution. Conway also noted that the international community has benefited greatly from IFPRI's

continuous and objective projections of food supply and demand in the developing world.

The program also included remarks by Martin Piñeiro, the outgoing chairman of



Top, from left to right: Martin Piñeiro, I dafnay Green, Gus Schumacher, Susan Schumacher. Bottom, from left to right: Per Pinstrup-Andersen, Cecilia Piñeiro, Gordon Conway, Birgit Andersen.

IFPRI's Board; Dale Hathaway, the founding director of IFPRI; August Schumacher, Jr., undersecretary for Farm and Foreign Agricultural Services at the U.S. Department of Agriculture; and Pinstrup-Andersen.

Stanley Wood, a senior scientist at IFPRI, amused the guests at IFPRI's 25th anniversary dinner with a humorous poem he wrote to commemorate the occasion.

To mark the anniversary IFPRI has published two booklets that look back on the Institute's first quarter century: *25 Years of Food Policy Research: Reflections*, by Per Pinstrup-Andersen, and *IFPRI's First 10 Years*, by Curt Farrar (which can be downloaded from www.ifpri.org). ■

The World Trade Organization: What It Is and How It Really Works

In Seattle this past December, the vehemence of protesters against an international ministerial meeting of the World Trade Organization (WTO) attracted worldwide media coverage (see the accompanying interview). Many people, watching the angry protesters, asked themselves what was the WTO and what had it done to incite such enmity.

The demonstrators argued that unaccountable international bureaucrats in the WTO were dictating rules that violated the sovereignty of individual countries—rules that were making their food unsafe and their air dirty, killing sea turtles, and stealing their jobs.

What follows tries to clarify some of those issues and criticisms.

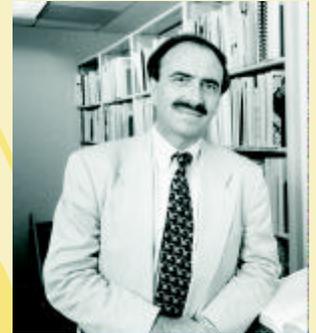
Fact: The WTO is run by member countries through their duly appointed public officials. These public officials not only make the substantive, strategic decisions in the WTO General Council, but, differing from other international organizations like the IMF or the World Bank, they also carry out a fair amount of the operational activities through committees and working groups. Thus, it is the governments—and *not* international bureaucrats—that make decisions through their officials. Whether any given government accurately represents the views of the people of a given country is an issue that only the political processes of that country can properly address, not the WTO.

Fact: The WTO legal framework has been accepted as domestic law by member countries and adapted within each country's particular internal legal framework. The argument that the WTO administers a supranational law, which encroaches upon the sovereignty of the member countries and tramples upon their domestic laws is mainly heard in the United States, where there has always been a strong current favoring unilateralism—the freedom to act without internationally imposed legal or other constraints.

Fact: The WTO dispute settlement mechanism is an arbitration procedure agreed to by all member countries. The WTO cannot force the country losing an arbitration case to change the domestic laws and regulations that do not comply with WTO obligations; neither can the WTO impose "stiff financial penalties" for noncompliance. Disputes arise when countries differ on the application of the WTO legal framework. In such cases, members have agreed that the WTO dispute settlement mechanism will resolve disagreements. As with other international arbitration systems, the WTO mechanism is placed outside the domestic institutions of any of the parties to the dispute—no country wants to have its differences with another nation decided by domestic institutions of the other party. Once the Dispute Settlement Body, which is made up of all WTO Members, has adopted a decision that finds a member country not in compliance with some aspect of the WTO agreement, there are three alternatives. First, the Member country can change its offending practice, but the WTO cannot force it to do so. Second, the country at fault could offer the complaining country market access in a different product that would be equivalent to the value of trade lost because of the offending practice. These compensations are defined and accepted by the countries in dispute. If they still cannot reach agreement, the only alternative left is for the complaining country to withdraw equivalent trade concessions from the country found at fault. These trade sanctions are defined and administered by the complaining country, not the WTO. Moreover, the sanctions are not "stiff financial penalties," but are simply the withdrawal of trade concessions previously agreed upon.

Fact: The dispute settlement process already provides information to the public. Members of civil society can participate in the dispute settlement process. The panel members

by Eugenio Díaz-Bonilla
Research Fellow, IFPRI



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WTO STRUGGLES IN SEATTLE

Research fellow Eugenio Díaz-Bonilla of IFPRI's Trade and Macroeconomics Division represented IFPRI at the turbulent World Trade Organization (WTO) meetings

in Seattle this past December, where he spoke at the opening symposium. Here he gives us his views on what happened in Seattle and why.

Q *RP: Did the extent of the protests in the streets at the WTO meetings surprise you?*

A **Díaz-Bonilla:** Having followed the exchanges on the Internet beforehand, I was not surprised. What I did not expect was that the most blatant misrepresentations of what the WTO is and does would go unanswered by the U. S. government, as the host of the meeting, and by the European Union, especially since most of the protesters were American or European.

As the main architects and beneficiaries of a system of international rules and institutions, advanced western countries should

have made a better effort to explain to their constituencies the importance of the international system developed since the end of World War II and the significance of the creation of the WTO in 1994 as a component of that system. The unchallenged circulation of gross misrepresentations contributed to the climate that led to hostility and violence in the streets. The medium-term threat is the weakening of commitment to the international rule of law and the intensification of power politics.

Q *How would you characterize the protesters?*

A Although all of the protesters were critical of the WTO, they had very different agendas. First, the violent demonstrators have to be separated from the rest. The self-styled anarchists (basically middle-class youths from developed countries) do not believe in markets or in the functioning of democracy. They wanted to destroy the WTO as a symbol of the capitalist system they detest.

Leaving aside the anarchists, there were at least four different groups, along developing/developed and reformist/abolitionist dimensions. NGOs with a developing-country and reformist perspective criticized the WTO for quickly advancing causes in

which developed countries were interested (such as intellectual property rights), while moving slowly, if at all, in areas of great importance to poorer countries, such as agriculture and textiles. In this context, several NGOs opposed or did not actively support the introduction of labor and environmental standards for fear of tilting the WTO's institutional power and agenda further away from poorer countries. These groups, although not shy in voicing criticisms of the WTO, appeared more interested in reforming the institution than trying to stop the negotiations.

Contrary to the reformist view, some groups advocated the elimination of the WTO

or the exclusion of agriculture from the WTO framework. They argued that the WTO was completely dominated by industrialized countries and therefore beyond repair. They did not explain, however, how developing countries would be better off in a system in which power politics prevailed, with the industrialized countries retaining all the pre-WTO instruments of trade protection and retaliation but without any of the post-WTO restraints.

Protesters from developed countries, mainly labor unions and a combination of consumer, environmental, and antiglobalization groups, differed from critics from developing countries and also among themselves. Some wanted the WTO to impose labor and environmental standards on trade issues, in fact strengthening the WTO. Others, however, complained that the WTO was too

powerful and encroached upon the sovereignty of different countries by forcing them, for example, to accept free-trade rules over other legitimate concerns such as food safety. In spite of their different positions, the two groups joined forces and constituted the bulk of the street demonstrators, who were non-violent but appeared very angry and determined to stop the negotiations.

Some protestors made valid points for institutional and policy reform, but others perpetuated gross misrepresentations of what the WTO stood for. Unfortunately, the latter received more attention. Of course, if all the allegations were true, there would be more than enough reason to be against the WTO. But most of the latter criticisms misrepresented the nature of the WTO (see the accompanying *Commentary*).



Police in riot gear in Seattle

Q *In many quarters, the next round of trade negotiations the Millennium Round was considered a done deal. What in the end scuttled the talks, and did the public protest have a significant effect on the negotiations?*

A There were always reservations about a large round. With the formation of the WTO as a full-fledged international organization, some argued that a “round” was superfluous, since ongoing negotiations on multiple issues within the new organization were now possible. Others were concerned that, while in theory bringing together different issues under an umbrella negotiation would allow all parties to compromise, in practice a large round with too many issues would overwhelm the process.

To sort out the technical and political issues involved would have required more preparation time in Geneva, but the WTO was without a director general for several

months, and some of the deputies only took office a few weeks before the Seattle meeting. Also, a successful launching of broad trade negotiations would have required a greater investment of political capital on the part of the developed countries; however, for different reasons, they were not prepared to do it. The European Union could not agree to cut their agricultural export subsidies without having a comprehensive round that would have allowed some gains in other sectors. The United States felt that an ambitious round of trade negotiations would be a hard sell domestically, and it kept pressing for labor and environmental standards. Rather than a new large round, the developing countries

wanted to focus on implementation of the 1994 Uruguay Round agreements, particularly on issues like textiles, which they felt industrial countries were not implementing as agreed. They interpreted the insistence upon labor and environmental standards as a protectionist ploy. Yet, for all the public rhetoric, the elements of a compromise were all there but would have required a greater investment of time and political capital.

Demonstrators did have an influence on the outcome, although smaller than what they claimed. At first, ironically, the outside pressures created a climate of common purpose among the delegations. However, many people agreed that the atmosphere of

the negotiations changed after President Clinton's interview in a Seattle newspaper, where he was interpreted as siding with the demonstrators and suggesting the use of trade sanctions to enforce labor and environmental standards. While at first everyone attributed the street problems to the lack of preparation by a police force that never had faced such an experience, after President Clinton's remarks some representatives from developing countries came to believe that the harassment they felt in the streets and the pressures in the negotiations were all part of the same design. I do not share this interpretation, but the atmosphere changed in a way that made compromise less likely.

Q *Did the developing countries play a significant role in this meeting?*

A Yes, and they are playing an increasingly significant role in the workings of the WTO, as exemplified by the different governing and operational bodies chaired by developing-country officials. For instance, the General Council, the highest WTO authority, is chaired by Tanzania. Out of the five working groups established in Seattle to draft the terms of reference for the new round, three were chaired by developing countries: agriculture by Singapore and Bangladesh, market access by Lesotho, and institutional reform by Chile and Fiji. Chairing the working groups may not necessarily translate into greater influence by the developing countries, but I think there was a serious attempt by the industrialized countries to facilitate larger participation of developing countries in this meeting.

However, the WTO is still trying to find the right operational procedures to balance two realities: that the developing countries are the numerical majority of the WTO

membership, but that the largest proportion of world trade takes place among industrial countries, basically the United States, the European Union, and Japan. It is unrealistic to assume that these countries will make their trade systems dependent on a world majority rule. Although the WTO is a one-member, one-vote organization, in practice it works on the basis of consensus, not voting, which allows both realities to be accommodated. I think that both industrial and developing countries did much in Seattle to begin to shed the habits of the past that do not work anymore. Industrial countries can no longer decide among themselves and count on automatic acceptance from the rest, and developing countries can no longer indulge in posturing and requests for free rides. All countries, I believe, are adjusting to the new scenario, but the proper operational mechanisms are still evolving. For instance, everybody knows that a final proposal cannot

be drafted by individual representatives of the 135 countries that are members of the WTO. But who decides which countries participate in which one of the smaller

drafting groups is an important operational issue, which, considering the rumors circulating in Seattle, led to some disagreements that were not resolved there.

Q *What happens next? What are the implications for developing countries if the Millennium Round is postponed indefinitely?*

A The WTO is a forum where members basically try to resolve trade disputes according to the set of rules agreed upon by all of them. In that sense, the WTO operates both as a place where countries can directly and freely discuss with other members their trade concerns and as an arbitration mechanism in a dispute if countries are unable to solve a specific problem through direct negotiations. Also, during the Uruguay Round, which ended in 1994, participants agreed that negotiations should continue for some sectors, including agriculture. This is the so-called “built-in” agenda. All aspects of WTO’s operations (administration of past agreements and negotiation of new issues agreed upon during the previous round)

will continue, with or without a new and more ambitious round of trade negotiations.

I think that the preparatory work before and during the Seattle meeting, for all the problems, helped to clarify the issues now on the table, and the WTO members will be working on them in the coming years, whether they call it the Millennium Round or not. As they did for this Ministerial, developing countries should continue to work on their own positions, which of course are not homogeneous across countries, as well as on the possible tradeoffs and compromises needed to put together a balanced agenda and outcome for the negotiations.

Q *What is IFPRI’s comparative advantage in the trade sector, and how can we most effectively contribute to the coming policy debate?*

A As an independent policy research organization, IFPRI can contribute significantly, as it has in the past, to the policy debate on trade and agriculture. Food security, poverty, and the environment are all key issues in the debate about trade and agricultural policies. For instance, is trade hurting or helping food security in poor developing countries? Are poor consumers and poor producers positively or negatively affected by the policy changes related to the WTO agreements? How about the environment? The outcome of

these debates will help shape the new agreements on agriculture. It must be remembered that the WTO legal framework covers not only traditional trade issues, such as market access or export subsidies, but also domestic agricultural policies. In that sense practically all the work that IFPRI does—from macroeconomic to household-level research, with markets, technology, and the environment in between—is extremely relevant to the current debate on the WTO and agriculture. ■

CONFERENCE ON BIOTECHNOLOGY DRAWS
400 PARTICIPANTS

There is considerable debate in both the media and academic circles about the risks and benefits of modern agricultural biotechnology. Most of this debate relates to the commercial cultivation of genetically modified crop varieties in the industrialized world. So far, very little attention has focused on the role that biotechnology might play in the developing countries, or how it might benefit poor farmers and consumers in those countries.

To help fill this knowledge gap, the Consultative Group on International Agricultural Research (CGIAR) and the U.S. National Academy of Sciences jointly convened a conference entitled "Ensuring Food Security, Protecting the Environment, and Reducing Poverty in Developing Countries: Can Biotechnology Help?" The gathering, held October 25–29, 1999 at World Bank headquarters, attracted over 400 participants. Those attending—from both the industrialized and the developing world—included scientists, policymakers, industry and nongovernmental organization (NGO) representatives, and farmers.

Panels at the conference addressed such topics as potential risks to the environment and human health, policy and ethical issues, the roles of the public and private sectors, intellectual property issues, and communications issues related to addressing public concerns. There were also break-out sessions that addressed questions specific to the various regions of the developing world.

IFPRI Director General Per Pinstrup-Andersen was the lead speaker on a panel on "Risk and Impact on Social and Economic Order." His talk, "Modern Biotechnology for Food and Agriculture—Social and Economic Risks and Benefits for Low-Income People in Developing Countries" addressed the potential benefits to poor farmers and consumers in developing countries, such as drought- and pest-tolerant crops, agricultural productivity gains, and more nutritious crops.

At the same time, Pinstrup-Andersen stressed the need for appropriate institutional safeguards to minimize a range of risks. In addition to testing and public policy regulations to protect the environment and human health, his paper addressed socioeconomic risks, such as industrial concentration, and the need for policies that ensure that poor farmers are able to gain access to new technologies. He emphasized that without a substantial public sector role in agricultural biotechnology research, it is unlikely that much attention will be given to the crops and cropping systems most relevant to poor farmers and consumers, as these do not promise the private sector a sufficient return to cover the needed research and development investment.

Pinstrup-Andersen's presentation was followed by responses from Bongive Njobe-Mbuli, the director general of South Africa's Department of Agriculture; Professor Alain de Janvry of the University of California at Berkeley and a member of the CGIAR Technical Advisory Committee; and Jean Marc Von der Weid, director of ASPT-A, a Brazilian NGO that works with poor farmers on agroecological projects. Von der Weid is a member of the CGIAR NGO Committee.

The panel presentations and floor discussions stimulated a wide range of views as to the potential risks and benefits of biotechnology for sustainable food security in developing countries. In addition to providing a forum for dialogue and lively exchange of views, the conference recommended key areas in which the CGIAR should become engaged: facilitating information gathering and sharing, identifying problems and setting priorities, helping to build national capacity, helping ensure compliance with biosafety standards (such as efforts to minimize health and environmental risks), and managing intellectual property where appropriate. ■

COMPLEX PROBLEMS FACE DEVELOPING COUNTRIES AS URBANIZATION RISES

By 2020 more than half of the population in Asia and Africa and 80 percent in Latin America will live in urban areas. Reducing poverty, hunger, and malnutrition and improving living conditions can be more difficult in urban areas than in rural areas, according to IFPRI research fellows James Garrett and Marie Ruel in an article that appeared in the December 1999 issue of *Choices*.

“Policymakers and aid officials frequently know what tools and programs they can use to promote social and economic development in rural areas, where agriculture is key. But the urban environment is more complex and diverse,” they say. An IFPRI study shows that the number of poor and malnourished children in urban areas is growing in a number of countries, including India and China.

Other differences between rural and urban poor include:

- Urban dwellers purchase most of their food, while rural people, even those who do not live on farms, grow at least some of their food. Consumer food prices and the ability to earn a cash income are, therefore, much more important in cities. Because the urban poor often work in low-paying jobs where they earn and spend wages daily, they often can only afford to buy small quantities of food at a time, which means they generally pay higher per-unit prices than if they could buy in bulk.
- Because they work at jobs in diverse sectors, the health of the overall economy is more important to urban dwellers than the health of domestic agriculture, while the security of almost all rural people is tied to agriculture.
- Having secure housing is crucially important to the livelihood of urban dwellers. Their home is often the base for household enterprises and a foundation for an entire network of social support. Eviction threatens the mechanisms by which the poor survive in cities.

- Although land is scarce, 40 to 50 percent of urban people in Latin America and Africa farm, even if they do it illegally on public land. They may have only a few tomato plants or a small animal, but these can add nutrients to their diets and cash to their incomes.
- Many women work long hours in the streets or in factories, which makes it hard for them to prepare food and care for children. At the same time the money they earn helps to meet the children’s needs. The nutritional status of city children depends on how well families, especially women, balance demands on their time.
- The typical urban diet is different from that consumed by rural families. On the one hand, it is more diverse and higher in protein. On the other hand, it is higher in fat and refined carbohydrates, which, combined with more sedentary lifestyles, can lead to chronic diseases and obesity. Foods purchased from street vendors frequently make up a large part of the food intake of urban dwellers.
- Although poor city dwellers usually live closer than rural people to health facilities, safe water supplies, schools, and sanitation facilities, they often cannot afford to use these services. Unsanitary and overcrowded conditions contribute to disease and death among children and cause illness among adults, threatening their ability to work and support their families.

To meet the challenges of urban poverty, governments and communities must work together to develop strategies. New measures must establish a viable food economy to which the poor can gain access, promote environmentally friendly urban agriculture, create infrastructure for a clean and healthy physical environment, and disseminate information about good health and nutrition practices.

Efforts to eliminate urban food insecurity and malnutrition must be broad-based. In creas-

(CONTINUED ON PAGE 10)

*(CONTINUED FROM PAGE 1)***INTEGRATING AGRICULTURE INTO EXISTING MICRONUTRIENT PROGRAMS**

For maximum effect, plant breeding and other agricultural strategies for reducing micronutrient malnutrition must be integrated into existing policies and programs: supplementation, fortification, and efforts to improve dietary quality and diversity. Workshop participants discussed micronutrient programs in the Philippines in depth, as a case study to give plant scientists some perspective on what programs are currently being implemented, their costs, their effectiveness, and their limitations. For example, the government of the Philippines spends over \$20 million dollars annually for vitamin A fortification and supplementation programs alone. Despite the many agencies and actors already involved and the large amounts of funds being spent relative to the costs of agricultural research, much remains to be done to solve the problem.

WHAT IS NEXT?

Workshop participants agreed that more emphasis should be placed on agriculture's role in the fight against micronutrient and other forms of malnutrition among the poor. They identified

research gaps and discussed what institutional arrangements would best meet the objective of getting the CGIAR more directly involved in fighting malnutrition.

On the research side, expanded funding is needed to accelerate the pace of breeding for improved nutrient density in CGIAR crops. Questions of genetic variability, interactions between new genotypes and the environment, and whether the best features of high-yielding varieties can be combined with micronutrient density have largely been answered. The question of whether these extra minerals and vitamins can be absorbed by humans is a high priority for research. And food systems need to be studied to identify how the supply of non-staple foods such as vegetables, livestock, and fish can be expanded for maximum nutritional benefit.

Institutionally, workshop participants agreed to undertake an initiative on human nutrition that would involve various disciplines and collaborative partnerships both inside and outside of the CGIAR. The first step in this endeavor will be to develop a framework for action that includes a range of food-based interventions. ■

URBAN POOR *(CONTINUED FROM PAGE 9)*

ing people's incomes or food supply alone is not sufficient; such changes must be accompanied by improvements in education, health care, and the environment. The many actors in a community must coordinate their actions to address problems at different levels. Some problems, for example, are unique to each household (household incomes) while others

affect an entire community (lack of water). Strategies must also support, and not replace, the poor's own dynamic strategies for coping with problems. Working together, the government, the private sector, and households can overcome the challenges of urban poverty, food insecurity, and malnutrition in the next century. ■

NUTRITION CHALLENGES FROM THE WOMB TO OLD AGE

In many developing countries malnutrition is a vicious circle that begins before birth, gets transmitted during reproductive stages of life, and lasts into old age, according to a report produced by the United Nations Administrative Committee on Coordination/Sub-Committee on Nutrition (ACC/SCN) in collaboration with IFPRI. Undernourished girls and women give birth to underweight and stunted babies. As these infants grow, they are less able to learn and, eventually, are more likely themselves to be parents to low-birthweight and undernourished babies. As adults, they are less able to generate livelihoods and less well equipped to resist chronic disease in later life.

Built around the theme “nutrition throughout the life cycle,” the 4th *Report on the World Nutrition Situation* gives new estimates of the magnitude and distribution of malnutrition at each stage of the human life cycle. It provides the latest information on the size and distribution of the malnutrition problem in developing countries and its consequences for overall economic and human development.

Nutritionists are learning more and more about the effects of micronutrients on human health, and the report describes advances in knowledge and new data on the extent of micronutrient deficiencies. While the benefits of breastfeeding are well understood, the report describes developments such as increasing HIV/AIDS and urbanization that can raise questions or difficulties for breastfeeding mothers.

The 4th *Report* also highlights the importance of nutrition for the overall development process and examines how broad changes on the global stage—financial crisis, globalization, urbanization, the spread of HIV/AIDS, and new information technologies—are affecting nutrition. The new human rights paradigm may help guide policymakers as

they develop nutrition policies and programs, the report explains.

Refugees and displaced populations are particularly vulnerable to undernutrition. The report gives an overview of trends in the humanitarian nutritional response to displacement emergencies, presenting six case studies from Africa, Asia, and the Balkans.

The report was released at the 27th session of the ACC/SCN, hosted by the World Bank and UNICEF in Washington, D.C., April 10–14. During a luncheon panel launching the report, Richard Jolly, chairman of the ACC/SCN, said, “We now have nutritional data for 65 countries showing trends over recent decades, and we have ‘snapshots’ of 116 countries. These data show that South America has brought down malnutrition dramatically over the last 20 years, and there has been some improvement in South Asia. But the challenge is bigger in places like Eastern and Southern Africa.”

Although data on worldwide nutrition are increasing all the time, the need for still more and better data is urgent, according to Per Pinstrup-Andersen, director general of IFPRI: “We still don’t have reliable data over time on where the malnourished are and why they are malnourished. I don’t see how we will meet our global nutritional goals without this information.”

The 4th *Report* shows that although progress is being made in reducing malnutrition, much remains to be done. Greater long-term investments in fighting malnutrition can make lifelong and intergenerational improvements in the quality of life for billions of people.

The report is available from the ACC/SCN Secretariat, c/o World Health Organization, 20 Avenue Appia, CH1211 Geneva 27, Switzerland; telephone: 41-22-791-04-56; fax: 41-22-798-88-91. This report also can be downloaded from IFPRI at www.cgiar.org/ifpri/pubs/pubs.htm#general. ■

that act as arbitrators are selected with the approval of the countries party to a dispute, from a pool of experts approved by WTO member countries. Nongovernmental organizations (NGOs) could and do work directly through the political process in member countries to influence all aspects of national decisions regarding trade, including the composition of panels. NGOs have been particularly active in the United States and the European Union, which have been complaining or responding parties in more than 90 percent of all cases considered by the WTO dispute settlement process.

The decisions of the panels, including the points made by the different parties in their submissions (confidential or not), are public and available on the WTO web page. NGOs have been able to make independent presentations through member countries, for example, through the US in the shrimp-turtle case. Even more, the Appellate Body in this case ruled that panels could accept documents put forward by NGOs directly. The panels in the dispute settlement process can call expert witnesses from any source, governmental or nongovernmental. The U.S. government has suggested that all submissions be made public from the beginning and that panel hearings be open to the public. WTO members may eventually accept these suggestions, but it can be argued that they are incremental improvements in a system that is now fairly transparent.

A different issue is whether panels should, mandatorily and independently from the member countries party to a dispute, hear NGO presentations. In fact, NGOs that criticize what they consider to be WTO secrecy and lack of democracy and ask for their own direct access to WTO deliberations, appear to be placing themselves in similar standing to governments representing the member countries. Of course, NGOs cannot be granted such status, and the democratic approach to influencing a government's position is through the domestic political process. Developing countries also have opposed the possibility of direct presentations

by NGOs because they feel the dispute settlement process could be swamped by presentations from well-financed NGOs from developed countries and, if panels are forced to consider all those arguments, poor countries would not have the economic and legal resources to answer them all, further tilting the process against the weaker parties.

Fact: The WTO does not impose free-trade values over other important societal values, such as protecting food safety, clean air, or endangered species. Rather, the WTO holds that in pursuing environmental or consumer protection objectives, foundational values of every civilized society such as the rule of law, nondiscrimination, and due process cannot be overlooked. The argument that the WTO is affecting food safety, polluting the air, and killing sea turtles stems from misrepresentations of the rulings in three notorious cases, one against the European Union (the beef-hormone case), and two against the United States (the shrimp-sea turtle case and the gasoline case). In all three cases the final arbitration rulings made clear that all countries have the right to choose the level of protection they desire. But the rulings also stressed that such nontrade concerns must be pursued in ways that respect the rules accepted by all WTO Members.

In the shrimp-sea turtle and the gasoline cases, the WTO arbitration process found that the United States, in pursuing legitimate nontrade objectives, was either discriminating against foreign producers in favor of domestic ones or among foreign producers—violating two rules that constitute the basis for fair trade under the WTO. After the final WTO rulings, the United States, through its internal decisionmaking process, chose to protect endangered species and maintain its benchmark for air quality, but in ways that also respect the basic obligations of the WTO agreements.

The beef hormone case was brought by the United States and Canada against the European Union for banning imports of beef from countries using hormones for growth promotion in cattle. The US and Canada argued that

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RECENT PUBLICATIONS

- ***Out of the Shadow of Famine*, edited by Raisuddin Ahmed, Steven Haggblade, and Tawfiq-e-Elahi Chowdhury. 307 pages; 23 figures. Hardcover: \$70; paperback, \$35. Available from the John Hopkins University Press, 2715 N. Charles Street, Baltimore, MD 21218-4319 USA; telephone: 1-800-537-5487 or 1-410-516-6957; fax: 1-410-516-6998; email: bkinfo@jhupress.jhu.edu; web: www.press.jhu.edu/press/books.**

Since 1990 the Bangladeshi government has dismantled its food rationing system, privatized grain distribution, eased restrictions on international trade, and reduced its own presence in grain markets. These changes, described in a new book from IFPRI and the Johns Hopkins University Press, have helped transform the country's food markets and food policies to free Bangladesh, which hosted two of the worst famines in the 20th century, from the constant threat of famine.

Out of the Shadow of Famine describes the foundations for these developments. Improvements in agricultural science in the 1970s roughly doubled farm yields, while in the 1980s liberalizing reforms rapidly increased rice cultivation. The increases in production, coupled with improvements in infrastructure and a more slowly growing and increasingly urban population, have substantially changed the structure of food grain markets.

- ***Explaining Child Malnutrition in Developing Countries: A Cross-Country Analysis*, Research Report 111, by Lisa C. Smith and Lawrence Haddad**

Although developing countries have made great strides in reducing child malnutrition since the 1970s, 167 million children under age five were still underweight in 1995. The share of malnourished children has declined from 47 percent in 1970 to 31 percent by 1995, but their number has stayed about the same. Even under the optimistic scenario considered in this report, 128 million children are projected to still be undernourished in 2020.

By finding out more about the causes of malnutrition, researchers and, by extension, policymakers, hope to identify ways to eradicate it everywhere. The *immediate* determinants of a child's nutritional status are dietary intake and health. These, in turn, are influenced by three household-level *underlying* determinants: food security, adequate care for mothers and children, and a proper health environment. Finally, the *underlying* determinants are influenced by the *basic* determinants: the potential resources available to a country or community and a host of political, cultural, and social factors that affect their utilization.

Focusing on the underlying determinants, the report identifies priority areas for reducing child malnutrition at the quickest pace in each developing region in the coming decades. It uses four variables to represent the determinants: national food availability (for food security), women's education and women's status relative to men's (for both quality of care and food security), and access to safe water (for the quality of the health environment). It also explores the roles of two basic determinants, using per capita national income to capture the availability of resources in a country and democracy as an indicator of the political context that influences malnutrition.

Results of this study indicate that, of the variables representing the four underlying determinants considered, more education for women offers the best hope for future reductions in child malnutrition in all developing-country regions. In addition, in Sub-Saharan Africa and South Asia greater national food availability is equally important. Not far behind in the list of priorities is improvements in women's status relative to men's. Improvements in health environment quality must also continue, but the report suggests that this is a priority area only for Latin America and the Caribbean. The report emphasizes that investments in these areas—all of which are critical to defeating malnutrition—will not be made unless enough economic resources are available and the political will exists to do so. Therefore, continued economic

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growth and enhanced democracy must also be priorities. This report can be downloaded from IFPRI at www.cgiar.org/ifpri/pubs/pubs.htm#rreport.

- ***World Food Prospects: Critical Issues for the Early Twenty-First Century, Food Policy Report*, by Per Pinstrup-Andersen, Rajul Pandya-Lorch, and Mark W. Rosegrant**

Almost all of the increased demand for food between 1995 and 2020 will take place in the developing world, according to a new IFPRI food policy report. In developing countries during that period, population is expected to grow by 32 percent, urbanization will continue apace, and per capita incomes will increase. Despite these changes, in 2020 a developing-country person will consume less than half the amount of cereals consumed by a developed-country person and slightly more than one-third of the meat products.

The report examines trends in world food demand, supply, and trade. Unless strong action is taken by both developing countries and the international community, food insecurity and malnutrition will persist in 2020 and beyond, the authors report.

World Food Prospects also discusses six critical issues that could influence the future world food situation. For example, new information on factors that improve nutrition could help refocus efforts to eliminate child malnutrition. Current low grain prices may threaten producer incomes and thus future food production. Developing countries will need to participate effectively in trade negotiations to avoid losing the benefits liberalization can offer. And new farming and agricultural research practices may help small farmers in developing countries be more productive in the future. This report can be downloaded from IFPRI at www.cgiar.org/ifpri/pubs/pubs.htm#fpr.

- ***Urban Livelihoods and Food and Nutrition Security in Greater Accra, Ghana, Research Report 112*, by Daniel Maxwell, Carol**

- Levin, Margaret Armar-Klemesu, Marie Ruel, Saul Morris, and Clement Ahiadeke**

In the past only a small share of the Sub-Saharan African population lived in cities. Today the urban population is approaching 40 percent. The percentage of city dwellers who are below the poverty line is also growing rapidly. In Accra, Ghana, 9 percent were poor in 1987; by 1993, 23 percent were poor. How do they cope? This compelling case study of the effects of the urban environment on the livelihoods, food security, and nutritional status of the poor in Accra, a city of more than 2 million, is based on a 1996–97 survey that looks at everything from food consumption and employment to sanitation conditions and the care and feeding of children.

One phenomenon of urban living that is well documented in this study is the importance of foods purchased—and often consumed—away from home. Almost 40 percent of the total food budget of the group with the lowest income went to purchase foods sold on the street. Even more surprisingly, the richest group surveyed spent 25 percent of their food budget on street foods. Clearly, reliance on street foods is a coping strategy (people buy small quantities of food from vendors when they do not have enough cash to purchase the ingredients to prepare a full meal at home). But it is also a part of normal urban living because it saves preparation time and effort.

Increasingly people in Accra earn their living from informal wage labor or self-employment, rather than from formal jobs. This is especially true for women, who are most likely to be self-employed as petty traders or street food vendors—low-paying jobs—while men mostly work as skilled or unskilled laborers. Many households, particularly those headed by women, rely heavily on gifts, remittances, and borrowing to make ends meet.

Roughly 40 percent of households in Accra can be classified as food-insecure and many others are vulnerable, according to the report. Nearly one-fifth of children under the age of three years are stunted (low height-for-age). Fifty-five per-

cent of the primary caregivers of small children worked full time and cared for their children while they worked, although most children did not show ill effects from their mothers' working. Children from households where care practices were deemed to be poor were likely to be malnourished. And care did not necessarily improve with higher incomes: only education of the mother was found to have a profound effect on the quality of child care provided.

Urban poverty is a fact of life in Sub-Saharan Africa today and is sure to worsen over the next 20 years. To address the causes in Accra, this report recommends a broad range of programs at both the city and household levels. The study is a collaborative effort of the International Food Policy Research Institute, the Noguchi Memorial Institute of Medical Research in Accra, and the World Health Organization. This report can be downloaded from IFPRI at www.cgiar.org/ifpri/pubs/pubs.htm#rreport.

• ***Exercises in General Equilibrium Modeling Using GAMS, Microcomputers in Policy Research 4a (with supplement, 4b), by Hans Löfgren***

Over the past decade, the increasing power and reliability of microcomputers and the development of sophisticated software designed specifically for use with them has led to significant changes in the way quantitative food policy analysis is conducted. These changes

cover most aspects of the analysis, ranging from the collection and analysis of socioeconomic data to the conduct of model-based policy simulations. IFPRI's Microcomputers in Policy Research series reflects the Institute's ongoing experience in adapting microcomputer technology for use in food policy analysis in developing countries.

The fourth publication in this series presents a set of exercises relating to computable general equilibrium (CGE) models. CGE models represent one type of economywide model used in policy analysis. This type of model explicitly recognizes that changes that affect one part of the economy can have repercussions throughout the rest of the economy. They are particularly useful in capturing the indirect effects of a policy change. The purpose of the manual is to develop the ability of the reader to construct, modify, and conduct food policy simulations using GAMS (General Algebraic Modeling System), one of the most popular softwares for solving CGE models. The model that is developed in the concluding exercise provides a starting point for applied policy analysis. A supplement to the manual provides the keys to the exercises. The manual also comes with a CD-ROM with a limited capacity version of GAMS together with numerous examples of GAMS programs linked to the exercises. This publication can be ordered from IFPRI at www.cgiar.org/ifpri/pubs/pubs.htm#microcomputer. ■

IFPRI DATA SETS AVAILABLE

IFPRI often collects primary data or compiles and adds value to secondary data to support its research and policy analysis. These data sets provide a wealth of information on households, communities, agricultural sectors, and national indicators. From these data sets, indicators are developed that measure welfare and the impact of policy reform at the household, local, regional, and national levels. Data sets are cur-

rently available for Egypt, Honduras, Malawi, Pakistan, Philippines, Tanzania, and Zimbabwe. Descriptions appear on IFPRI's website.

Researchers can request data sets by filling out the appropriate form on the website at www.cgiar.org/ifpri/data/dataform.htm. Requested data sets are for the use of the requestor only and cannot be used by others without the permission of IFPRI. ■

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INTERNATIONAL

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COMMENTARY (CONTINUED FROM PAGE 12)

there were international standards for the use of those hormones agreed to by the countries participating in the Codex Alimentarius of the Food and Agriculture Organization of the United Nations, and that the EU prohibited only the use of hormones for growth promotion in cattle production, but allowed the use of those or similar products for other purposes in beef production and for other meat products. Under the WTO agreements any country has the right to maintain stricter levels of protection than those agreed to internationally, by conducting a risk assessment study that justifies a level of protection. The WTO arbitration process concluded that after about a decade of applying restrictive measures, the EU had not conducted

such risk assessment, violating WTO obligations. The EU, within its rights, chosen not to lift the ban. Because the parties involved could not reach agreement on possible compensations in other products, the United States and Canada (not the WTO) withdrew trade concessions from the EU equivalent to the value of beef exports negated by the hormone ban.

As is the case with any institution, the WTO can be improved. But to do so, misconceptions have to be corrected. Without rule-based, open, and fair trade, the global system could go back to the rule of the strongest. Developing countries only stand to lose if such a reversion to old-style power politics occurs. ■