

STERILE FIELDS:

THE IMPACTS OF

INTELLECTUAL PROPERTY RIGHTS

AND TRADE

ON BIODIVERSITY AND FOOD SECURITY

WITH CASE STUDIES FROM
THE PHILIPPINES, ZIMBABWE AND MEXICO

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INTRODUCTION

Farmers and Biodiversity

Life is a process equally dependent upon nutrients, the waters, air, light from the sun, and the cycles of death. In fields, forests and waters, cohabitation amongst species perpetuates the process of life. Over many millions of years, the Earth has become populated with a bountiful array of genetic diversity that sustains us all.

Through myriad innovations, traditional peoples learned to cultivate this diversity for food, shelter and clothing. Diversity was the foundation of life, to be honored and preserved.

The cultivation of diversity has been incorporated as a high art by human cultures through millenia. With the know-how of generations of experience, farmers have learned to provide food crops well-adapted to local soils and water cycles. They select the seeds of the most productive plants to improve the next harvest. They transfer pollen from one plant to another to combine desirable traits and enhance the food supply. Over time, farmers have generated a vast wealth of agricultural biodiversity especially adapted to the particular conditions of most regions on Earth.

Suddenly, in this -- our own generation, we discover that the planet's gene pool is no longer expanding. It is shrinking. With every extinction, ecological micro-catastrophes occur. The human eye may not always see the destruction. But, in each ecosystem, the survivors must adapt or perish.

Today, scientists and philosophers wonder whether the gene pool of the planet may eventually become too narrow for adaptation -- that is, whether a global catastrophe may occur. It is not impossible that, even

from our human point of view, the loss of key species may cause gaps in the cycle of life so great that major portions of the food supply fail.

Food Security and the Uruguay Round

After harvest, farmers bring their produce to market. Traders often broker these deals. Modern exporters and importers make billions of dollars, acting as intermediaries between producers and consumers in different countries.

Historically, governments have established rules to manage this trade. Tariffs on imports generated revenue for the government. Quantitative and qualitative restrictions on imports conserved markets for local producers. Minimum residue limits on pesticides or bans on genetically-engineered foods guarded consumer health and satisfaction. Anti-trust legislation was designed to limit how dominant a company can become in controlling the supply of a particular product, and thus its price.

The Uruguay Round of trade negotiations, however, resulted in rules that -- to the contrary -- limit governments, freeing trading companies from so-called "barriers to trade":

ï The U. R. Agreement on Trade-Related Aspects of Intellectual Property (TRIPs) limits the way in which governments can reward innovation, develop strategic industries, and transfer technologies, requiring them to allow patents on plants and animals or defend an alternative approach to restricting the exchange of seeds and other genetic materials.

ï The U.R. Agreement on Agriculture limits the way in which governments can support farmers and manage commodity supplies, requiring them to import basic foods.

ï The U.R. Agreement on Sanitary and Phytosanitary Standards limits the way in which governments can regulate food safety, requiring them to follow the standards of the "Codex Alimentarius Commission," an inter-governmental bureaucracy dominated by corporate lobbyists.

ï The U.R. also founded the World Trade Organization, a membership-based institution with executive, legislative and judicial functions designed to enforce these rules with the power of economic sanctions.

The Uruguay Round was concluded in 1994, but many countries have already begun to revise their national laws to comply with these "free trade" rules. Defenseless at the border, many nations are losing their productive capacity, becoming dependent upon imports. Transnational corporations have gained new markets and increased their control of key products, displacing diverse local food and seed varieties with a handful of genetically-identical commercial varieties.

Many farmers, and not just in developing countries, have found it impossible to compete with world prices that are artificially low due to the geopolitical arrangements made by global policymakers encouraged by just a few transnational corporations. Developing country producers have an even harder time. Their traditional markets are now flooded with imported foods.

Meanwhile, U.R. prohibitions on domestic support for farmers have forced millions of families off the land and into cities lacking the jobs, housing, sanitation, and other social infrastructure with which to cope. With millions of acres unplanted, many formerly food-sufficient nations are suddenly becoming dependent upon imports. Yet in the food-exporting countries, the 1996 harvest was threatened by harsh weather and diseases that ravaged crops made especially vulnerable because of their genetic uniformity.

The world's grain supply hit the lowest level since World War II. World prices reached all-time highs for corn and wheat. Food-importing countries suddenly faced not only dependence upon their suppliers, but a near doubling in the price!

The promise of cheap imported food suddenly became a nightmare of huge cash outflows, empty grain bins, deserted fields and, in some places, hungry people.

ABOUT THE URUGUAY ROUND

"TRIPS" AGREEMENT

Intellectual property rights (IPR) grant exclusive rights to monopolize an invention or other industrial knowledge for extended periods of time, usually 17-20 years. They generally take the form of patents, trademarks, or copyrights and have traditionally fallen under the domain of national law. Different countries have produced different IPR laws, each one a balance between industry's desire to capitalize on its investments in technological development and the rights of society to benefit from its intellectual as well as its financial contributions to industry.

Plant Patenting, Plant Breeders' Rights, and Farmers' Rights

Under the new U.R. rules, all GATT/WTO member countries must not only strengthen their IPR laws concerning the mechanical technologies of industrialization, they must also apply IPR to the use of plants, microorganisms, and other life forms. The actual text of the TRIPs Agreement states that all members "shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof." (*Sui generis* is a Latin phrase meaning "of their own kind.")

Simultaneously, governments are given the option to exclude from patentability: "plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes." In other words, anything that can be genetically manipulated can be patented and monopolized, claimed as the private property of giant transnational agricultural and pharmaceutical corporations.

And so the race to genetically engineer everything and be first to the patent offices is on. The immense amount of genetic data being churned out by automated DNA sequencers has created a flood of patent applications to the U.S. Patent and Trademarks Office (PTO.) According to PTO staff, it could take a single senior staffperson 90 years to examine what has already been submitted for patents at a cost of more than \$20 million for processing, yet fees may come to only \$100,000.

Plant breeding is increasingly coming under the control of a small number of transnational companies. Of 1,500 seed companies in the world, 24 hold a combined market share of more than 50%. Of these, eight are transnational corporations and all 24 are parent companies in the agricultural sector with subsidiaries food processing, trade, and agro-chemicals. This concentration of seed and agri-business companies -- which depend upon patents to avoid sharing their benefits -- is expected to increase further. Transnational seed companies are even seeking patents to control whole crops. Both cotton and soybean, in their engineered forms, are subject to sweeping patent applications, giving sole ownership of their products to single corporations.

The commercial goal of developing plants with only the most marketable traits leads to a decline in the pool of genetic diversity. In the U.S. alone, a survey of seed banks showed that some varieties of non-commercial crops such as chufas, martynia and rampion have been lost entirely. When all possible uses of a patented trait are monopolized, further research and development on the genetics of that trait are stifled -- limiting the genetic diversity of plants bred to express such a trait.

Furthermore, plant breeding programs are designed to produce genetic uniformity, in order to meet the legal requirements of the 1978 Convention of the Union for the Protection of New Varieties of Plants

(UPOV) which grants exclusive "Plant Breeders Rights" (PBR) over the seeds of new varieties to their developers. Breeding for uniformity means that, over time, distinct varieties will become less and less distinct.

Originally, UPOV also granted farmers the "privilege" of saving seeds at harvest and informally exchanging them with other farmers, despite PBRs, and likewise granted breeders an "exemption" allowing them to use the genetic material of restricted seeds to develop new varieties without paying royalties or penalties. In 1991, however, UPOV was amended to eliminate both the farmers' privilege and the breeders' exemption -- creating new rules for farmers' use of their harvested seed and severely limiting breeders' use of genetic material covered by PBR. The revision also allows governments to grant both PBR and patents not only to genetic material but to whole crops.

As UPOV has moved away from farmers' rights, the Food and Agriculture Organization (FAO) of the United Nations has sought to define "Farmers' Rights" with the support of the Convention on Biological Diversity. In 1983, the FAO adopted the "International Undertaking on Plant Genetic Resources" to promote the availability of plant genetic resources for the purposes of scientific research, plant breeding and genetic resource conservation. In 1989, the FAO endorsed a concept of Farmers' Rights as an Annex to the Undertaking that specifically recognized farmers' contributions to developing biodiversity and the obligation to share with them the benefits of their work -- the exact opposite of patent restrictions. In fact, this resolution stipulates that "plant genetic resources are a common heritage of mankind to be preserved, and to be freely available for use, for the benefit of present and future generations."

Another FAO resolution in 1991 proposed implementing Farmers' Rights through an international fund to support plant genetic conservation and utilization, particularly in developing countries. Governments agreed that the resources of the fund should be substantial, and sustainable, and that the donors of genetic resources would determine and oversee its management. A 1993 resolution requested the Undertaking be revised as binding international law in harmony with the Convention on Biological Diversity, a process which is presently underway.

Genetic Engineering and Biosafety

The U.R. TRIPs Agreement brings plants under corporate control by claiming patents for the "novelty" of genetically engineered varieties. And yet genetic engineering is a relatively new science, with many as yet untested impacts on biodiversity, biosafety, economic and social welfare, and food security.

Some genetically engineered organisms may produce unanticipated harmful impacts in its new environment. A group of scientists at Oregon State University in the U.S., for example, found that a bacteria genetically engineered to more efficiently convert agricultural wastes to ethanol fuel also destroyed much of a fungus essential to the recycling of nitrogen through plant roots. If this product had been commercialized, it could have led to desertification throughout its biological range in the field.

Genetically engineered fish and shellfish pose even greater ecological risks, since all aquatic organisms are undomesticated and have the capacity to survive in nature, moving easily from the controlled environment to the wild. For example, of 46 exotic fishes which have successfully invaded U.S. waters to date, 22 escaped from aquaculture facilities. No fish farmer can ensure sea pens are indestructible. A 1988 storm tore apart hundreds of sea nets and their moorings at a Norwegian facility, allowing a million farmed salmon to escape; catches in later years have shown that these animals spread very widely. A similar accident with transgenic fish, such as the Chinook salmon which grows 11 times faster than normal or the Atlantic salmon with an antifreeze gene from winter flounder, could lead to global disruptions of salmon communities and their ability to reproduce normally.

More than 2,000 applications for the experimental release of genetically engineered organisms have been filed with the U.S. government alone. At least 90 releases of genetically engineered plants have taken

place in developing countries, some of which are entirely unregulated. Illegal releases have occurred in India, where 80 different genetically engineered species of microbes were illegally imported from Japan and released into the field, in Kenya and in Argentina, where a genetically engineered vaccinia-rabies virus was set loose in 1986.

Such risks have led governments to begin negotiating a legally-binding protocol on "biosafety" as part of the Convention on Biological Diversity. In addition to ecological threats and human health risks, some governments are concerned about the potential social and economic impacts of genetic engineering. Forty percent of all present production processes in the world are based on biological material, much of it now exported from developing countries as raw commodities. Via genetic engineering, patents, and "bio-reactors," agricultural products can be reduced to plant compounds and brought under the control of transnational corporations. Initial assessments by the International Labour Organization suggest possible employment losses in the Third World of up to 50%, due to the application of biotechnologies.

Conflict with the Convention on Biological Diversity

Many governments have noted possible conflicts between the TRIPs provisions and the objectives of the Convention on Biological Diversity. After all, the Contracting Parties to the biodiversity convention agreed to cooperate to ensure that intellectual property rights "are supportive of and do not run counter to its objectives" - which are the conservation and sustainable use of biodiversity, and the equitable sharing of its benefits.

Some governments have expressed concern that intellectual property rights for industry, as defined in the TRIPs agreement, will prevail over the traditional rights and rights holders recognized in the Convention on Biological Diversity. Indigenous and local communities, according to the biodiversity convention, should share in the benefits derived from the use of their knowledge, and have the right to approve and be involved in plans to widen the use of their traditional innovations and practices.

Other governments have noted a contradiction between the rights of patent holders and the goal of diffusing environmentally-friendly technologies, asking whether intellectual property rights could be regulated in order to promote technology transfer. Researchers seeking the enormous financial returns of a patented product are contractually obliged to work in secrecy. Or they may fail to develop products from the patent, waiting to use the engineered gene later to monopolize a "more important" crop. Of course, this disincentive for sharing knowledge applies not only to research in the laboratory, but also to the transfer of technologies across countries.

The TRIPs provisions were so controversial during the Uruguay Round negotiations that the final agreement states that they "shall be reviewed four years after the date of entry into force" -- in other words, in 1999. Between now and then, peoples and their governments can strive to organize defensible *sui generis* instruments that preserve the public interest -- defining the collective rights of Indigenous Peoples, strengthening the definition of Farmers' Rights with the FAO International Undertaking, building up Farmers' Rights and biosafety protocols under the Convention on Biological Diversity, and insisting that patents DO run counter to the objectives of the convention.

ABOUT THE URUGUAY ROUND AGREEMENT ON AGRICULTURE

The Agriculture Agreement has three major sections covering market access, domestic support, and export competition. Each consists of a set of basic principles outlined in the main text, and a set of what are called "schedules" that are included as an annex to the main text. The schedules outline, on a country-by-country basis, the ways in which each country will implement the basic principles. Because the

schedules and formulas were also negotiated, they vary considerably from country-to-country -- as will the long-term impacts.

Market Access

The original GATT rules, under Article XI, allowed governments to adopt domestic supply management programs, including restrictions on imports, in order to control production levels, avoid the temptation to export surpluses, and relieve "critical shortages of foodstuffs." The original Article XX reinforced this, exempting countries from other GATT rules when national food security was at stake.

Early in the Uruguay Round negotiations, however, the U.S. called for abolishing all controls on imports. As some countries defended their domestic markets, the compromise resulted in formulas that, over a period of years, require increasing imports by certain percentages of domestic consumption. The schedules vary -- but generally, countries must import, as an absolute minimum, at least 2% of their domestic consumption of all foods, up to 5% by 2000. If a country imported more than these percentages during the 1986-88 base period used in the formula, it must continue to import the higher quantity. Developing countries were able to negotiate some exemptions when the imports are a predominant staple in their traditional diets.

In addition, specific non-tariff barriers or qualitative policies that restrict imports in some way -- such as quotas, variable levies, minimum import prices, state trading measures, and voluntary restraint measures -- must be abolished and/or converted into tariffs, a process called "tariffication," regardless of the fact that a quota or other non-tariff barrier is very different from a tariff. The effect of a qualitative measure, for example, is predictable while the impact of a tariff can be dramatically altered by the manipulation of exchange rates and market prices. Non-tariff policies can effectively control the outflow of hard currency, too, by restricting imports quantitatively, whereas tariffs cannot.

Furthermore, the text calls for reductions in tariffs over time, in order to deliberately increase imports. For poor countries which cannot afford to subsidize their own farmers, tariffs can be essential tools to balance subsidized imports, bringing prices in line with domestic markets. For developing countries, the minimum reduction is 10% per item, with the average reduction reaching 24% over 10 years.

In industrialized countries, tariffs must be reduced by an average of 36% over six years with a minimum reduction of 15% for any specific item. Precisely because the formula is based on averages, there is considerable room for manipulation: the industrialized countries may maintain prohibitively high tariffs on products of interest to developing countries by reducing tariffs more steeply on products of less interest.

All in all, a policy of obligatory imports contradicts a policy of national food security although the occasional exemption for some traditional staple foods may create an incentive for increasing domestic production of those crops. And tariffication distorts the effects of non-tariff trade policies; in some cases, tariffication will result in high financial barriers to market access -- no better than the non-tariff barriers replaced.

Domestic Support

Coupled with import controls and supply management, government support for domestic producers has been essential in most countries to offset competition from subsidized world market prices. Aggressive exporting countries, on the other hand, prefer not to compete with national support prices.

Officially, the Uruguay Round agreement calls on GATT/WTO members to reduce their spending, direct and indirect, for domestic farm programs. Governments must calculate all domestic support in monetary terms and add it all up; this number is referred to as the "Aggregate Measure of Support" (AMS). The main text of the agreement establishes the principle that each country's total AMS should be reduced over

time -- 20% over six years for industrialized countries and 13.3% over 10 years for developing countries.

In fact, the U.S. and the European Union manipulated the formula so that they will be able to increase their agriculture subsidies if they so choose. To illustrate how this manipulation could work, consider the following. The historical base line for the AMS of the U.S. was set at \$20 billion. However, the formula used to establish 1995 levels of support resulted in an \$8 billion figure. Thus, the agreement to reduce the \$20 billion figure by 20% over 6 years means that by the year 2000, the U.S. can still subsidize agri-business up to \$16 billion -- double 1995 levels of support.

Furthermore, the calculation of the AMS rests on an arbitrary "world price" as the base line reference point, yet world prices fluctuate dramatically -- as observers of the 1996 commodity futures markets can affirm -- suddenly changing the value of AMS calculations across the board.

Direct payments to farmers under production-limiting schemes were exempted -- although only a few rich countries can afford to pay their farmers not to farm. By means of "producer retirement" and "resource retirement" schemes, governments are encouraged to offer financial support to farmers who wish to change their occupation, on the condition that they do not return to farming. These farmers will have no say in what happens to the land they leave and are often forced to become non-productive recipients of state welfare.

Exemptions from the principle of AMS reductions were also made for countries where the AMS is less than 5% of the total value of that nation's agricultural production; for investment and input subsidies in low-income or resource-poor developing countries; and for countries encouraging diversification from illicit narcotic crops. For all countries, certain insurance and safety net schemes, disaster relief, environmental programs, research, and regional assistance are also exempt.

Export Competition

In principle, the U.R. Agreement on Agriculture also requires industrialized GATT/WTO members to reduce their direct subsidies to exporters by 36% in monetary terms and by 21% in volume by 2000, compared to the 1986-90 reference period. For some crops, the reference period was moved to 1990-91, to increase the upper limit from which the reductions must occur. For developing countries, the monetary subsidies must decline by 24% while the volume of subsidized exports must decline by 14%.

During the contentious negotiations, these terms promising that there would be reductions in U.S. and EU export subsidies were used to promote the Uruguay Round as a whole. The upper bounds were set so high, however, that actual reductions will not materialize. In 1996, the U.S. Congress extended and amended the Export Enhancement Program through 2002, urging the U.S. Secretary of Agriculture to continue to use export subsidies to maintain its position in world markets. Also in 1996, the European Union resumed using export subsidies after a year without.

What's more, this section of the Agreement on Agriculture legitimizes food dumping, in apparent contradiction to the GATT's Article VI. In short, the Uruguay Round enables agri-business to continue to enjoy extensive export subsidies while farmers' supports are slashed.

REPORT FROM THE PHILIPPINES

As in most South East Asian countries, rice is the basic staple food of the Philippines, where it is grown on about a third of all farmland by an estimated one million rural households. However, growing rice by no means assures one of having enough to eat. According to a 1986 report, farm children in Central Luzon, the Philippine rice bowl, had among the highest rates of malnutrition in the country.

During the 1980s about 70% of all Filipinos were 40-60% deficient in protein intake and 40-80% deficient in caloric intake. The daily cost of living in 1993 was about 125 pesos, the mandated minimum wage was about 68 pesos, and the average farm worker earned just 41 pesos a day. In 1995, the National Statistics Board estimated that one out of five Filipinos could not afford to feed themselves and two out of five families fell below the official poverty line of 7,212 pesos (about U.S.\$277) annual income.

The Rice Crisis

In 1994, the Philippine Confederation of Grains Associations (Philcongrains) urged the government to speed up land reform, rural infrastructural development and credit assistance for rice and corn self-sufficiency. Philgrains warned the government that under import liberalization mandated by the Uruguay Round Agreement on Agriculture, "farmers would be at the mercy of unscrupulous fly-by-night traders" who could not compete with the subsidized grain imports, including those from the European Union and U.S. Though the Philippines was committed to import only 59,000 metric tons of rice in 1995, Philgrains' prediction that cheaper rice imports would swamp the country was fulfilled.

Suddenly in August 1995, the price of rice doubled throughout the country. The rice price jump consumed at least a fifth of the official minimum daily wage. To avoid food riots, the government's mobile rice caravans distributed the meager rice stocks of the National Food Administration (NFA) in Manila's poor neighborhoods.

Peasant organizations and consumer groups rejected government accusations that farmer and consumer hoarding had caused the crisis. Instead, they demanded government support for national grain production and increased NFA purchases of domestically produced rice to sell to consumers at stable prices. NFA had bought less than one percent of 1994's bumper rice harvest, the least in the agency's history. The rest of the crop was bought by rice traders who were able to drive up the price by withholding stocks from the market. Despite another bumper rice crop in 1995, the government imported extra stocks from Thailand and Vietnam and sold them through the NFA at pre-crisis prices.

The government at first denied that Big Seven Cartel rice traders had caused artificial shortages to drive up prices. However, the National Bureau of Investigation and Bureau of Internal Revenue were forced to examine Cartel operations after the traders' prices for rice stayed at their crisis levels despite government intervention to lower prices. Nonetheless, the government said that it was powerless to act against the Cartel, due to inadequacies in the legal system.

In August 1996, an official announced that government credit programs had increased rice output, and that reserve stocks were on hand for for 70 days. The Philippines would probably not need to import more rice in 1996 than the 846,000 metric tonnes already imported. However, many Filipinos lack access to staples, rural communities are reportedly eating the seeds for rice and corn. Meanwhile, the supply and price crisis has spread to meat, eggs, wheat and corn.

Food Insecurity After The Uruguay Round

The Philippines' official policy, driven by its Structural Adjustment Program with the World Bank and the Uruguay Round, is to plant fewer hectares of rice and other traditional crops in the future. The High-Value Crops Act of 1995 (R.A. 7900) offers financial and technical assistance, tax holidays and infrastructure support for agribusiness to switch to producing fruits, vegetables and flowers. The marketing of agro-exports remains in the hands of transnational agribusiness firms, such as the U.S.-headquartered Del Monte and Castle and Cook (via Dole Philippines) and the Japanese-headquartered Marubeni.

In 1996, a year of high world prices for grains, the government enacted trade legislation that exceeds the compliance schedule for its commitments under the Uruguay Round Agreement on Agriculture. In May, the Speaker of the Philippine House of Representatives, José de Venecia, obtained passage of The

Agricultural Tariffication Act (Republic Act 8178). RA 8178 abolishes quantitative restrictions on agricultural imports and repeals vital provisions of the 1992 Magna Carta of Small Farmers (R.A. 7607), which prohibited imports of certain agricultural commodities if those commodities are produced locally in sufficient quantity. With the passage of RA 8178, the government has removed minimal import restrictions allowed under the Uruguay Round. Philippine Aggregate Measures of Support for any agricultural commodity are no more than half the levels allowed by its Uruguay Round commitments.

Cargill, the giant U.S.-based agribusiness, together with the U.S. Embassy in Manila, lobbied heavily for RA 8178's passage. The lobbying effort implemented Cargill's belief that "self-sufficiency is not a practical answer to Asia's growing food demand." (Daniel Amstutz, a former Chief Executive Officer in Cargill's futures trading and commodities division, played a pivotal role in drafting the U.R. as the Reagan Administration's Chief Negotiator for Agriculture.) U.S. threats of trade sanctions for violating U.R. commitments helped to overcome Philippine congressional resistance to the legislation.

In a 1994 review of all the Philippine laws that would have to be abolished or changed in order to conform with the U.R. agreements, one commentator wondered: "Are you saying that we do not need the legislative branch of the government? That Congress would just need to pass an enabling act: 'All those laws, provisions, articles, sections that are deemed inconsistent with GATT coverage and agreement are hereby repealed?'"

In addition to legislative repeal of food security, President Fidel Ramos has been issuing Executive Orders that will "liberalize" other aspects of the Philippine economy even beyond the degree of trade liberalization called for by APEC trade ministers in their July 1996 meeting. At that meeting, the Philippines, opposed only by Japan and Korea, joined other APEC countries in following the U.S. call for preparing further agricultural trade liberalization as terms of the U.R. Agriculture Agreement in the year 2000.

"Super Rice": A Solution ?

"BIOTECH OFFERS BEST HOPE FOR A HUNGRY WORLD," blares a headline in the *Financial Times*. Yet South East Asians who had relied on "Miracle Rice" (IR8), developed by the Philippine-based International Rice Research Institute (IRRI), have cause to be skeptical about the promises of the IRRI's new biotech "Super Rice."

Through expanding irrigated land and quintupling fertilizer use, IRRI claims that annual growth rate in Philippine rice production increased from 2.3% before 1964 to 4.5% per annum between 1965 and 1980. However, while using a constant amount of fertilizer, rice yields at IRRI's research farm decreased at a rate of 1.25% per year from 1966 to 1987, a total of 27.5% in 21 years. From 1966 to 1980, IR8's yield fell from 9.5 tons per hectare to about 2 tons per hectare while still receiving 120 kilograms of pure nitrogen fertilizer per hectare. Yet by 1990, IR8 and similar varieties were planted on about 80% of Philippine rice crop area.

When IR8 and its cousins left the research farm and entered the harsher environment of Philippine agriculture, the infamous "side" effects of rice production began to dwarf the fame of the Green Revolution. These "side" effects included pesticide-caused deaths of rice farmers, estimated at 4,000 in the Philippines alone during the 21-year life of IR8; polluted groundwater and soil degradation; lowered nutritional quality (measured by IRRI primarily in terms of calories); loss of flavor; social, political and economic disruption as governments altered traditional rice farming cultures to introduce IR8 and other Green Revolution rices.

In 1994 testimony to Philippine Senate hearings on the Uruguay Round, Nicanor Perlas reported that 70% of all Philippine soils under Green Revolution agriculture were chemically degraded, resulting in lowered yields and lowered nutritional value of crops. Other unanticipated effects of the industrialized agriculture

were accelerated diseases and weakened resistance to insect infestation, due to monocultural cropping.

Brown planthopper (BPH) has ravaged millions of metric tons of rice in Vietnam, Thailand and Indonesia, as well as in the Philippines. Indonesia lost more than a million tons of rice to BPH in 1977, enough to feed 2.5 million people, and continues to lose a large portion of its wet season rice harvest to BPH every year. According to SEARICE, a Philippine-based non-governmental organization (NGO), "the brown planthopper was not a major problem in 'Southeast Asia until IRRI technologies (breeding and pesticide applications) made it one."

IRRI is one of sixteen research centers in the Consultative Group of International Agriculture Research (CGIAR) Centers. The CGIAR Secretariat is housed in the World Bank.

IRRI denies that its research strategy contributed to the spread of BPH. Kevin Gallagher, a former IRRI scientist, said that IRRI's BPH strategy of breeding pest resistance in rice assumed the need for insecticides. "But Peter Kenmore, head of the FAO's Rice IPM Program for Asia and the Pacific said, "[t]rying to control such a population outbreak [of BPH] with insecticides is like pouring kerosene onto a housefire."

Because IRRI has little direct interaction with farmers and non-laboratory farming conditions, its technological tools for dealing with pest, disease and yield problems tend to ignore resource management approaches, including on-farm research, in favor of genetic determinism. Biologists have criticized IRRI biotechnology for assuming that the traits of an organism are encoded in a single or few genes and that these genes can be manipulated irrespective of their cellular and extra-cellular environments.

At the 1995 Federation of Crop Sciences Societies conference, the head of IRRI's biotechnology research unit, justified IRRI's development of a genetically altered rice that would resist yellow stem borer infestation, one of the most serious rice pests today. Yet the yellow stem borer, like BPH, can be controlled through natural biological control mechanisms already demonstrated on over 5,000 hectares of Philippine rice fields. The millions of dollars IRRI invests in developing a genetically altered rice would be better invested, critics say, in studies to involve farmers in controlling pests in field conditions through community ecology approaches.

IRRI persists in its technological approach, arguing that "[s]ocioeconomic factors have essentially no effects on cropping intensity. We conclude that it is physical environments, particularly the presence of irrigation and to a lesser extent the adoption of modern varieties, that determines cropping intensity." And IRRI's Medium-Term Plan for 1994-98 abandoned research on the "relationships among growth in productivity, environment, and poverty" as one of its priorities.

Responses

Absent a decisive and consistent policy shift towards sustainable development, rice insecurity would seem to be the future not only of the Philippines, but perhaps of many Asian-Pacific nations. If this policy shift succeeds, it will do so because various and even divergent groups in civil society will have consistently persuaded government officials and business people that not to do so would invite the kind of food insecurity that not only causes great suffering and loss of economic productivity, but the downfall of governments themselves.

Despite U.S. and transnational corporate pressure for fast-track liberalization, Philippine NGOs have negotiated an agreement with the Philippine government to discuss APEC commitments within a framework of sustainable development. Chief among government commitments made to the NGOs is that it will not impose a uniform 5 percent tariff on all imports by 2004, but will specify differential tariffs after an extensive two-year study of affected economic sectors. Non-governmental organizations argued that because the Philippines will chair APEC in 1996, Canada in 1997 and Malaysia in 1998, there is a good

opportunity for APEC to pursue sustainable development, rather than trade liberalization, as its fundamental objective.

REPORT FROM ZIMBABWE

Many peasant farmers in Zimbabwe primarily women, curse the day when they turned their backs on their traditional crops, sorghum and millet, and planted government-provided maize hybrid seed as a condition of obtaining credit. The government's generosity was based upon an agro-export growth strategy tied to Zimbabwe's Structural Adjustment Program (SAP) with the World Bank.

Imported Maize, Drought and Hunger

Peasant farmers who adopted the government's hybrid maize and fertilizer package and were fortunate enough to make a profit from maize sales, did not make a fortune. The 1991 gross average margin from maize sales for peasant farmers in four regions surveyed was about Z\$200 (about U.S.\$20 at an October 1996 exchange rate), while secondary school fees for one child were Z\$400 per year. Less fortunate farm families have had to rely on non-farm jobs or diminishing remittances from family members living in urban areas. Fertilizer prices rose about two and a half times from 1980 to 1989. Nonetheless, the World Bank report praised Zimbabwe's adoption of chemically intensified agriculture in 1991.

That year, the World Bank obligated the government to sell surplus maize stocks, stored as security for drought years, to help "stabilize" its national budget at a time when the Zimbabwean dollar had been sharply devalued. Having no national stock of maize seed, in 1992, Zimbabwe contracted for maize seed with Cargill and Pioneer Hybrid. The government had to pay with foreign currency reserves designated for economic development.

Then came the 1992 drought. Overall Zimbabwean food production fell by half, because of its dependency on foreign maize and wheat, compared to a 27% drop in neighboring Mozambique where a higher percentage of drought resistant millets and sorghum was planted. The severe decrease in Zimbabwean national food security struck a nation with empty maize bins. In 1993, the government announced that it would keep 936,000 metric tons of an anticipated 2 million ton maize harvest as a strategic food reserve and would seek ways to fund that storage.

But the possession of maize seed was no guarantee of household food security either. Even in the high-rainfall areas, just half of all rural families enjoyed household food security in 1994. Many households face the possibility that their maize is contaminated by a toxic fungi, wide-spread in Africa, which has been associated with high rates of liver cancer and a suppression of the immune system in children. There was a greater prevalency of childhood malnutrition among those who cash-cropped hybrid maize compared to those who grew sorghum and millet for home consumption. Rural children became stunted, as farmers sold maize they needed for home consumption at low prices to pay off the high cost of chemical inputs and loans.

Ironically, these distressed sales of maize showed up as macro-economic "growth" and testimony of the success of the agricultural SAP.

Structural Adjustment and Macro-Economic Indicators

A 1991 World Bank report mistakenly interpreted increased Zimbabwean maize sales as a sign of enhanced household food security in rural areas. The government's announcement of a 13 percent increase in agricultural output in 1995 prompted one journalist to suggest that "Zimbabwe is generally

self-sufficient in food." Yet this statistic included tobacco, the country's greatest earner of export revenue, accounting for 22 percent of all revenues that year.

An extensive survey of peasant farmers in 1994-1995 concluded that "[d]espite a huge increase in hybrid maize grain sales in the smallholder sector, which has contributed to a high level of national food security, household food security has remained precarious while the majority of farmers in the more marginal areas are short of seeds of their traditional crops."

The disparity between macro-economic measures of crop production and the reality of household food insecurity has part of its origins in the agricultural strategy followed by the post-colonial government to try to overcome the effects of apartheid. In 1980, the year of Zimbabwe's liberation from the colonial ruins of white-ruled Rhodesia, 6,000 white farmers owned 45 percent of arable land, mostly high rainfall areas, while 700,000 black peasant farmers farmed about 50% of arable land in low-rainfall areas, with another 5% in high rainfall areas farmed by 8500 black farmers. At this time, small landholders accounted for about 6 percent of commercial maize.

By 1989, the smallholders produced about 55 percent of the nation's commercial maize crop, as a result of comprehensive government intervention including wide distribution of inputs and loans, a vastly expanded agricultural extension agent force, and the establishment of primary health care clinics for hundreds of thousands of rural people who had no government health care previously. During the same period, the large scale commercial sector increased its output of maize by 300 percent, benefitting from better lands in higher rainfall areas and easier access to credit. Increased maize exports from 1986 to 1991 caused journalists to dub Zimbabwe the "bread basket of Africa."

As small landholders increased their cash crop production, however, the land and resources available for growing subsistence crops dwindled. Women, the major providers of household food security, lost part of their fields as well as their choice over what to plant, as men sought to increase their arable land for cash crops. The largest supplier of crop seeds in Zimbabwe, the Seed Coop, does not even include millet in its seed advertising brochures. Maize seeds, on the other hand, are given out free as part of a government seed/fertilizer package.

A Second Green Revolution?

Proponents of the so-called Green Revolution have declared the first "revolution" towards high-input high-yield staple grains to be a success in Asia and Latin America, and now wish to bring a second Green Revolution to Africa: "What are needed are a few venturesome scientists who can work across disciplines to produce appropriate technologies and who have the charisma and courage to make their case with political leaders in order to bring these advances to fruition."

Likely, they will introduce their technologies in the form of genetically engineered maize seeds, distributed free as part of a World Bank Structural Adjustment Program. With its new emphasis on private sector investments, the World Bank will likely encourage the use of genetically engineered seeds for floriculture, horticulture and tobacco growers.

Like most developing countries, Zimbabwe will probably allow private companies to introduce new varieties without tests and approvals, according to a report of the World Bank and the United Nations Development Programme on "Import Barriers for Agricultural Imports." In Zimbabwe, the registration of planting new varieties is voluntary.

Critics of the Green Revolution argue that proponents overestimate the benefits and underestimate the environmental and socio-economic costs of their project. Absent from the World Bank's 1996 advice on "Good Practice" in agriculture is an analysis of how its Structural Adjustment Programs (SAPs) have affected agricultural biodiversity. The report estimates that from 1988 to 1995, only 10 percent of its

agricultural loans had biodiversity conservation as an explicit objective.

Responses

The resilience of peasant farmers and their traditional seeds, however, defies the Green Revolution. Despite an imported crisis, farmers have taken advantage of Africa's agricultural biodiversity to achieve degrees of food-security outside the formal commodities trading system. Farmers have produced this food despite unfavorable climates, and the rising costs of inputs and falling yields and prices of Green Revolution crops.

For most Zimbabweans -- indeed for most Africans -- growth in agricultural trade has not resulted in enhanced food security. Especially since the 1996 world grain shortages, when African countries experienced a near tripling in the cost of wheat imports, analysts have been looking carefully at non-commercial food sources as a way to avoid future food security crises. By sharing access to traditional seed, increasing the production of traditional foods, and improving coordination among traditional food providers, particularly women, smallholders in Zimbabwe are coping with the present crisis.

REPORT FROM MEXICO

Maize, also known as "corn," is the principal food of the Mexican diet, and the principal crop-- planted on 40% of arable land as of 1990. That year it was estimated that two to three million Mexicans grew corn, mostly on small parcels -- 65% of 5 acres or less -- of often poor quality land. Most farmers produce corn principally to feed their families, and yet about 40% of Mexico's commercial corn is produced by them as well.

Structural Adjustment, NAFTA and "Comparative Advantage"

Due to falling revenues from oil exports, a cash-short Mexican government declared a temporary moratorium on paying interest on its foreign debt, in August 1982. Mexican access to international capital markets closed immediately. As a condition of renegotiating loan terms, Mexico was forced to accept the conditions of the International Monetary Fund (IMF) and World Bank for restructuring the Mexican economy. These conditions of Mexico's Structural Adjustment Program (SAP) included reducing public expenditures, eliminating subsidies, privatizing state enterprises, devaluing currencies, conforming to "free" trade policies, and removing barriers to foreign investment and ownership.

SAP-mandated reductions in public support for peasant farmers changed Mexico from a nearly food self-sufficient nation in basic grains to a major food importer in just over a decade. Agro-exports increased 3% annually from 1988 to 1993, while imports, largely from the U.S., increased 22% annually. At the same time, agricultural employment fell 4.5% annually among 25 million producers, about a third of all Mexicans. During this period, one in five rural Mexicans received no cash income and three of five received less than the minimum wage of \$65 a month. According to some of Mexico's leading policy analysts, family farming underwent a process of "demodernization" to prepare for NAFTA.

Following the terms of the Uruguay Round negotiations closely, the North American Free Trade Agreement (NAFTA) required Mexico to abandon price supports and import restrictions that fostered family farming and national food security. According to the theory of "comparative advantage" touted by free trade proponents, Mexico would be able to import basic grains more cheaply than it could produce them.

However, when world prices for basic grains jumped to record levels in the past year, the theory proved to be false. The price increases, greatly exacerbated by the December 1994 Mexican peso devaluation, make imported corn more expensive than domestically grown corn. Prices are not expected to drop substantially before the year 2000.

As a result of policies undermining Mexican family farmers, Mexico produced 2.5 million tons less corn in 1995 than in 1994, and had to import 2.5 million tons of higher priced corn from the U.S. In 1996, Mexico demand for imported corn is expected to increase to 4 million tons. Because the U.S. fulfills grain export commitments to Europe and Japan first, Mexico faces the threat of widespread hunger, if the U.S. cannot fulfill its commitments.

The failures of "free" trade macro-economic and agricultural policy, combined with the record price hikes in basic grains in 1996, have gravely imperiled Mexican food security. Transnational grain exporters and processors, such as Cargill and Archer Daniels Midland, will be the main beneficiaries of these policies as they freight more and more expensive corn out of the U.S. to meet increasing Mexican demand.

After NAFTA's approval in 1993, "demodernization" accelerated as financial and technical assistance went to agro-exporters. NAFTA's predicted benefits for Mexico disappeared on December 20, 1994, when the peso -- kept artificially high throughout the contentious NAFTA negotiations and the Mexican election -- was sharply devalued. Following the devaluation, the costs of producing corn and other crops rose 40%. Agricultural loans, available at 30% interest prior to the peso crash, soared to 120% interest.

According to orthodox economic theory, with Mexico's prices below the world market price because of the peso devaluation, domestic production for domestic markets should have been stimulated. Prices should have been allowed to rise to cover costs, and domestically produced grains would still have been cheaper than imported grains.

Nonetheless, in February 1995, the Mexican government was advised by the World Bank and IMF to continue to depress prices to reduce domestic grain production and to import supplies, largely from the U.S. In late summer 1995, the Mexican government followed that advice. To facilitate quicker and greater imports, it decided that the 15 year phase-out of protection against corn imports negotiated in NAFTA would be completed by 1998. As of October 31, 1995, Mexican corn imports were up 71.9% over the same time period in 1994. In 1995, Mexico increased the tariff-free portion of those imports to 3.3 million tons, 28% more than the 2.5 million tariff-free tons agreed to in NAFTA.

Hunger in the Countryside, Hunger in the Cities

Because of high costs, government-depressed prices and other hostile government policies, many farmers stopped producing corn and other basic grains. The Mexican Department of Agriculture reported a 41% decrease in fall 1994/winter 95 production for 10 basic grains, with an anticipated 1995/96 harvest of just half of that. Four million farmers may have left some about 25 million acres unplanted because of these federal policies and the drought in northern Mexico. As of October 1995, some 1.8 million family farmers had been forced to migrate since NAFTA went into effect on January 1, 1994.

Falling post-devaluation wages and rising unemployment have made it difficult for many Mexicans to afford to eat. The government estimates that about 2.8 million Mexicans lost their jobs during the first 22 months of NAFTA.

From 1983-1989, 40% of all government agricultural support went to corn, much of it in the form of subsidizing the purchase of tortillas, the principal form in which Mexicans eat corn. Subsidies of basic foodstuffs were among the public expenditures slashed to achieve macro-economic objectives stipulated in the February 1995 U.S.-Mexico loan agreement and in the loan Letter of Intent with the IMF. (The loan agreements were intended to "stabilize" the Mexican economy in order to regain the confidence of

investors whose capital flight contributed to the peso crash.)

By October 1995, the estimated monthly cost of feeding a family of five was US\$340, while the legal minimum monthly wage was US\$90. And yet, that December, the Mexican government announced that it was discussing how to phase out the subsidy for corn tortillas, the basic food for most Mexicans. Eliminating the subsidy would at least double the price of tortillas.

The minimum wage now buys 40% of what it did in 1982, when SAPs were first imposed. On April 1, 1996, the government increased subsidized milk prices 50 percent and tortilla prices 27 percent in Mexico City, both of which outstripped the 12 percent increase that raises the minimum wage to \$3 per day. A 1996 inflation rate of 30% is further eroding every Mexican's buying power.

Per capita consumption of corn, wheat, fruit and vegetables has dropped by 29% during the past six years. The United Nations Food and Agriculture organization estimates that per capita consumption of corn, beans and wheat has decreased about 35 percent in Mexico over the last ten years. According to Mexico's National Nutrition Institute, 16 % of Mexican children and 80% of all Chiapans are malnourished. Already, eighty children under the age of one year die each day of malnutrition. Between January and April 1996, the government of the northern border state of Chihuahua reported that 77 people had died from malnutrition and dehydration.

White Corn, Yellow Corn, Genetically Engineered Corn

Mexico is a "center of origin" for corn. Blue corn, red corn, speckled corn, white corn, yellow corn -- thousands of varieties were developed by Mexican farmers throughout human history. In modern times, white corn became the favored variety for tortilla-making among the peasants. The grain trains moving U.S. corn into the country, however, are carrying yellow corn, the variety grown in the U.S. for cattle feed. The displacement of traditional maize with relatively flavorless imported cattle feed not only threatens biodiversity, limiting the gene pool from which the Mexican people can continually improve corn breeding -- it is an insult to the dignity of the Mexican people.

Meanwhile, agri-business is preparing the way to introduce genetically engineered corn. The U.S. Department of Agriculture approved the first herbicide-tolerant corn, a product of the AgrEvo USA company, in July 1995. Also that year, the U.S. Environmental Protection Agency granted approval for full commercial use of genetically engineered corn, cotton and potatoes containing genetic information from Bt, a naturally occurring bacteria that acts as an insecticide. A dispute over the patent rights to Bt-corn was resolved in early 1996, when a federal judge held that Monsanto did not violate Mycogen's patent on the process, and prohibited Mycogen from challenging Monsanto further.

And in August 1996, the NAFTA Sanitary/Phytosanitary Committee announced it would review whether it was the proper venue for regulating continental trade in genetically modified crops, including corn.

The NAFTA text on intellectual property rights is even more restrictive than the Uruguay Round TRIPs Agreement. An industry group calling itself the "Intellectual Property Committee" -- consisting of Bristol-Myers, Squibb, FMC, Hewlett-Packard, Johnson & Johnson, Monsanto, Procter & Gamble, DuPont, General Electric, IBM, Merck, Pfizer, Rockwell International, and Time Warner -- urged U.S. Trade Representative Carla Hills in 1992 to consider the TRIPs agreement as "a floor -- not a ceiling -- for the level of protection that must be involved in NAFTA's section on intellectual property."

The companies' plea was heeded. Among NAFTA's rules that are more stringent than TRIPs is obligatory compliance with UPOV, either the 1978 or 1991 versions; and "at least" 20 years of protection from the date of filing for the patent. Furthermore, a party to NAFTA "may extend the term ... to compensate for delays caused by regulatory approval processes" and may not carve out exclusions "solely on the ground that the party prohibits commercial exploitation in its territory of the subject matter of the patent."

As transnational corporations seek to extend their commercial control throughout Latin America, the U.S. will use its influence to help them monopolize the hemisphere's plant genetic resources. The political pressure is so intense, an Argentine businessman participating in a forum on technology and IPR held in Colombia in 1996 called it "imperialistic." The discussion became so heated that the U.S. called in heavily armed security guards.

To achieve its goal of extending highly restrictive IPR and other features of neoliberal policy throughout the hemisphere (with the exception of Cuba), the U.S. has organized negotiations aimed at a "Free Trade Agreement of the Americas" by the year 2005. Eleven working groups were set up in 1996: Argentina chairs the group on subsidies (especially agricultural subsidies), El Salvador chairs the group on market access, Mexico chairs the group on sanitary and phytosanitary standards, and Honduras chairs the group on intellectual property rights.

Responses

In May and June 1996, women and children responded to the scepter of hunger by stopping corn and wheat trains and breaking into them, emptying tons of grain by the sackful and barrelful. Other peasants seized a luxury estate owned by former President Salinas de Gortari's brother in law, declaring it was constructed fraudulently on community land. The Popular Revolutionary Army has launched armed attacks while the Zapatistas maintain their control of parts of Chiapas while demanding a peaceful transition to democracy in Mexico.

Faced with revolt, grim statistics and a two-week grain supply, President Ernesto Zedillo launched a program to foment corn production. In June 1996, Mexico prepared to spend \$2 million to buy about 10 million metric tons of corn, wheat, sorghum, soy, pinto beans. In August, Mexico's Agricultural Minister announced that corn import quotas would be cut in order to encourage sales of corn domestically grown on the national market.

Mexican civil society has organized numerous activities in response. A nationwide movement has arisen to free the people of debt, referred to as "El Barzón" -- meaning "the yoke." The "New Peasants' Movement" has consolidated hundreds of regional and local networks of grain producers and other social and economic organizations, which are working together as well as independently to achieve alternative policies for the production of basic grains.

A National Forum for Food Sovereignty, held in August 1996 in Mexico City, brought together farm groups, small and medium-sized agribusinesses, non-governmental organizations and academics from all over Mexico to sift through myriad proposals for food security -- such as how to finance and implement their own plan for restoring idle lands to productivity, with the goal of producing a million metric tons of corn in one to three years.

CONCLUSIONS AND RECOMMENDATIONS

Abandoned fields, toxic fields, sterile fields... Eye-witnesses in much of the world can testify to the ravages brought about by industrialized agriculture, with its massive doses of chemicals and genetically-uniform monocultures. Wielding free trade ideology, its proponents trot about the globe advocating more of the same.

With \$13 million from the Nippon Foundation, for example, the founder of the Green Revolution, Norman Borlaug, and G. Edward Schuh, dean of the Humphrey Institute at the University of Minnesota and a

former World Bank executive, have founded the Sasakawa Africa Association (named after a former Japanese industrialist.) Their goal: to change African government policies towards farming and increase corn yields. Their method: organizing foreign fertilizer manufacturers and seed traders, including the Monsanto and Cargill companies, to lobby for expanding their markets in Africa so agriculture can be a "powerful engine" for economic growth.

Suspicious of such promises, developing countries during the Uruguay Round insisted upon a safety net. One of the outcomes of the Round was a Ministerial "Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net Food-Importing Developing Countries" (LIFDCs.) The Decision commits developed countries to provide compensation to LIFDCs if they are adversely affected by higher world food prices as a result of the implementation of the Uruguay Round.

However, there is strong disagreement about the impact of the Uruguay Round on world prices and net food import bills, and corresponding disagreement on whether or not to implement the Ministerial Decision. The United Nations Food and Agriculture Organization, on the one hand, estimates that price increases in basic commodities could lift the food import bill of LIFDCs by some \$10 billion by 2000, of which \$1.4 billion may be attributed to the Uruguay Round provisions. The FAO analysis concludes that both weather and the reductions in government intervention required by the Agreement on Agriculture have affected price increases; that food aid will remain low because the Uruguay Round no longer permits government stocks as a supply control measure; and that Uruguay Round-prescribed reductions in export subsidies will structurally change agricultural production patterns and thus import supply availability. The International Monetary Fund, on the other hand, insists that the Uruguay Round's impact on net food import bills are negligible, arguing that the recent price spikes are "unrelated to the Round."

Ultimately, the World Trade Organization Committee on Agriculture will determine whether or not developing countries' acknowledged struggle with food security is due to trade liberalization, and therefore, whether or not the Marrakesh Decision should be implemented.

As governments exercise diplomatic means to resolve such differences, which are probably more political than factual in nature, non-governmental organizations are increasingly more engaged in the same international negotiations. Among their recommendations to the world's governments:

- 1) Implement the Marrakesh Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net Food-Importing Developing Countries promptly;
- 2) Acknowledge the established principle that food security is a fundamental human right, consistent with Article 25 of the 1948 Universal Declaration of Human Rights;
- 3) Revise the International Undertaking on Plant Genetic Resources to ensure the implementation of Farmers' Rights through a substantial international fund controlled by the donors of genetic materials, and include Farmers' Rights and other provisions of the International Undertaking as a legally-binding protocol of the Convention on Biological Diversity "to ensure that intellectual property rights support and do not run counter to" the objectives of the Convention;
- 4) Conclude the negotiation of a legally-binding Biosafety Protocol under the Convention on Biological Diversity with utmost speed -- fully addressing socio-economic issues and provisions

for liability and compensation in the case of accidents resulting from the release of genetically engineered organisms;

- 5) Adopt and implement the United Nations "Draft Declaration on the Rights of Indigenous Peoples" which recognizes their right "to control, develop and protect their sciences, technologies and cultural

manifestations, including human and genetic resources, seeds, medicines, knowledge of the properties of flora and fauna, oral traditions, literatures, designs and visual and performing arts" and develop protocols of the Convention on Biological Diversity consistent with these provisions;

6) Revise the Uruguay Round TRIPS clauses regarding the patenting of plants and other living material between now and the year 1999, enabling *sui generis* national legislation that prohibits all patents on life or that otherwise respects the rights of Indigenous Peoples, Farmers' Rights, collective community rights, and the healthy functioning of genetically diverse ecosystems;

7) Revise the Uruguay Round Agreement on the Application of Sanitary and Phytosanitary Measures establishing minimum international food safety standards instead of limitations on food safety, and rid the Codex Alimentarius Commission of corporate influence;

8) Initiate negotiations toward a global Sustainable Food Security Convention to elevate food security to the highest level of priority within international law: at a minimum, enabling governments to implement national food security plans that could exempt staple foods from WTO rules and disciplines that undermine these plans; coordinating an international network of local, national and regional food reserves; facilitating international commodity agreements to ensure access to staples that nations are unable to provide for themselves; and creating mechanisms to aid governments in disputes over food and agriculture policy with other entities such as the WTO;

9) Revise the Uruguay Round Agreement on Agriculture between now and the year 2000: at a minimum, reinstating and improving upon former GATT Article VI (which prohibited export dumping), Article XI (which allowed the use of import restrictions to maintain the integrity of domestic supply management programs), and Article XX (which created exemptions from GATT rules and disciplines for, among other things, products essential for national security, natural resource conservation, and the protection of human, animal or plant life or health); and

10) Build local, national, regional and global political systems based upon the full participation of all segments of civil society.

ANNEX:

ABOUT THE URUGUAY ROUND AGREEMENT ON SANITARY-PHYTOSANITARY STANDARDS

The Uruguay Round Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) prohibits countries from legislating food safety regulations that create trade barriers and that differ from those established by the Codex Alimentarius Commission, an international body that sets international food safety standards, unless:

ï they are "necessary" for the protection of human, animal or plant life; and

ï they are based on "scientific principles" and not maintained "without sufficient scientific evidence;" or

where such evidence is insufficient, they may "provisionally" adopt regulations based on "available pertinent information" while seeking information "for a more objective assessment of risk" and a subsequent review.

Codex Alimentarius (meaning "Food Code" in Latin) consists of standards, guidelines and principles regarding food production and processing, including the concentration of additives, contaminants, pesticide residues, and animal drug residues; procedures for sampling and analyzing processed foods and for hygiene practices; and labeling. Recent initiatives address the inspection and certification of food imports and exports, and the labeling of genetically engineered foods.

Recently, the U.S. and the European Union have been locked in conflict over the U.S.' determination to export growth hormone-produced beef and genetically engineered soybeans to Europe. At a 1995 meeting of Codex, the U.S. instructed its 19 delegates representing various corporations to lobby the delegates of other countries regarding three key votes on the definition of "sound science" and the health risks of using hormones to promote growth in beef cattle and milk production in dairy cows.

For many years, Codex Alimentarius has been linked to transnational food corporations. The U.S. food industry financed the U.S. government's participation in Codex at its founding in 1962. More than four out of five non-governmental participants on national delegations at many Codex committee meetings represent industry. The International Federation of National Associations of Pesticide Manufacturers, for example, has sent dozens of representatives to Codex meetings. Among non-governmental participants at the 1991 Codex meeting, 26 represented public interest groups and 662 represented industry.

The food industry has even better access to decisionmaking, seated as members of official delegations. Half of the official delegates on both the U.S. and the United Kingdom delegations at the 1989 Nutrition Committee meeting were corporate officials. During the two-year period of meetings referred to as Codex's 19th Session, from 1989-1991, a total of 445 industry representatives served on national delegations, compared to only 8 representatives of public interest non-governmental organizations.

A government wishing to defend local or national food safety regulations more stringent than those of Codex bears the burden of proof, and must convince a WTO dispute resolution panel that the regulation is both necessary and scientific. Where a government is less protective of health, however, the WTO has no jurisdiction. Thus, the net effect of the Uruguay Round SPS Agreement is a lowering of food safety standards in many countries, to the advantage of transnational food exporters.

ABOUT THE WORLD TRADE ORGANIZATION

With the creation of the World Trade Organization (WTO), the traditions of GATT itself -- flexible negotiations among consenting parties through a series of negotiating rounds -- were abolished. In their place, the WTO uses voting and binding dispute resolution procedures backed by economic sanctions to enforce its decisions. Chief among the WTO's characteristics is the legislative and judicial power to address areas that had formerly been strictly national in scope by prefixing the adjective "trade-related" to any issue at all. The WTO is a permanent political body and can, with a three-fourths majority, establish new obligations at any time; under the old GATT, the principle of non-discrimination gave every country an implicit veto toward any new obligations that might be proposed.

Instead of sovereign contracting parties who choose to participate or not in any of the 180 or more treaties comprising the earlier GATT system, the WTO has "members" which must agree to each of the agreements of the Uruguay Round in order to participate in the world trading club at all. Self-exclusion is

almost unthinkable for governments, especially for developing countries bound to structural adjustment policies, net food-importing dependence, and the "open investment" regimes aggressively promoted in today's integrated economy. Indeed, one of the WTO's explicit goals is "achieving greater coherence in global economic policymaking" with the IMF and the World Bank.

The WTO even assumed the power to require each member to "ensure the conformity of its laws, regulations and administrative proceedings with its obligations as provided" in the Uruguay Round agreement. Under these rules, the WTO can oblige members to enforce the revision of certain national, state and local laws -- such as regulations for pesticides, use of public lands, or nutrition labeling -- to minimize their "trade-restrictive" effects or to bring them into compliance with often weaker international standards. According to the Office of the U.S. Trade Representative, even "Indigenous Tribes" recognized through a century of treaties negotiated according to the U.S. Constitution, will be considered "sub-federal jurisdictions" under the WTO.

Disputes resulting over implementation of the Uruguay Round are decided in secret by panels of trade experts appointed by governments; the rules prohibit the members of a dispute panel from releasing documents and from disclosing their opinions to the public. When a dispute panel judges that a country's trading behavior or domestic law does not comply with the rules of the Uruguay Round agreement, the country may bring an appeal before another panel of appointed appellate judges. Whereas formerly a unanimous opinion of all the GATT contracting parties was required before retaliatory trade sanctions could be imposed to enforce a dispute panel's finding (and there were no appeals and no appellate panel -- generally, a losing country would negotiate a satisfactory settlement well before retaliation was proposed), the WTO appellate panel's findings are absolutely binding unless all WTO Members -- including plaintiffs and defendants -- unanimously agree to reject its decision.

A losing country must change the offending practices, laws or administrative procedures within a reasonable period of time. If it fails to do so, the winning country can retaliate by asking the WTO for permission to suspend a certain amount of its trade with the loser. For example, if a country refuses to change a food-related law judged to be unnecessarily stringent, it could lose opportunities to trade in agricultural products with the other country -- or pay an equivalent monetary compensation. If this penalty is ineffective, then the winning country can "cross-retaliate" with sanctions against industrial products and other perhaps more costly sectors of the economy.

Sanctions and cross-retaliation are powerful economic instruments. In fact, the mere threat of sanctions is often sufficient to persuade countries to change their laws or other trade practices. Sanctions are also a single-sided sword, their effectiveness being relative to the disputing countries' economic dependence, market shares, and import sensitivity.

Altogether, the new and powerful WTO enforces a series of commercial trade agreements that jeopardize biological diversity and food security everywhere. Unless civil society worldwide insists upon a more democratic form of political organization, the future of life on Earth may be at risk.