The Ecologist

Vol 22 No 5 September/October 1992 £3 (US $6)

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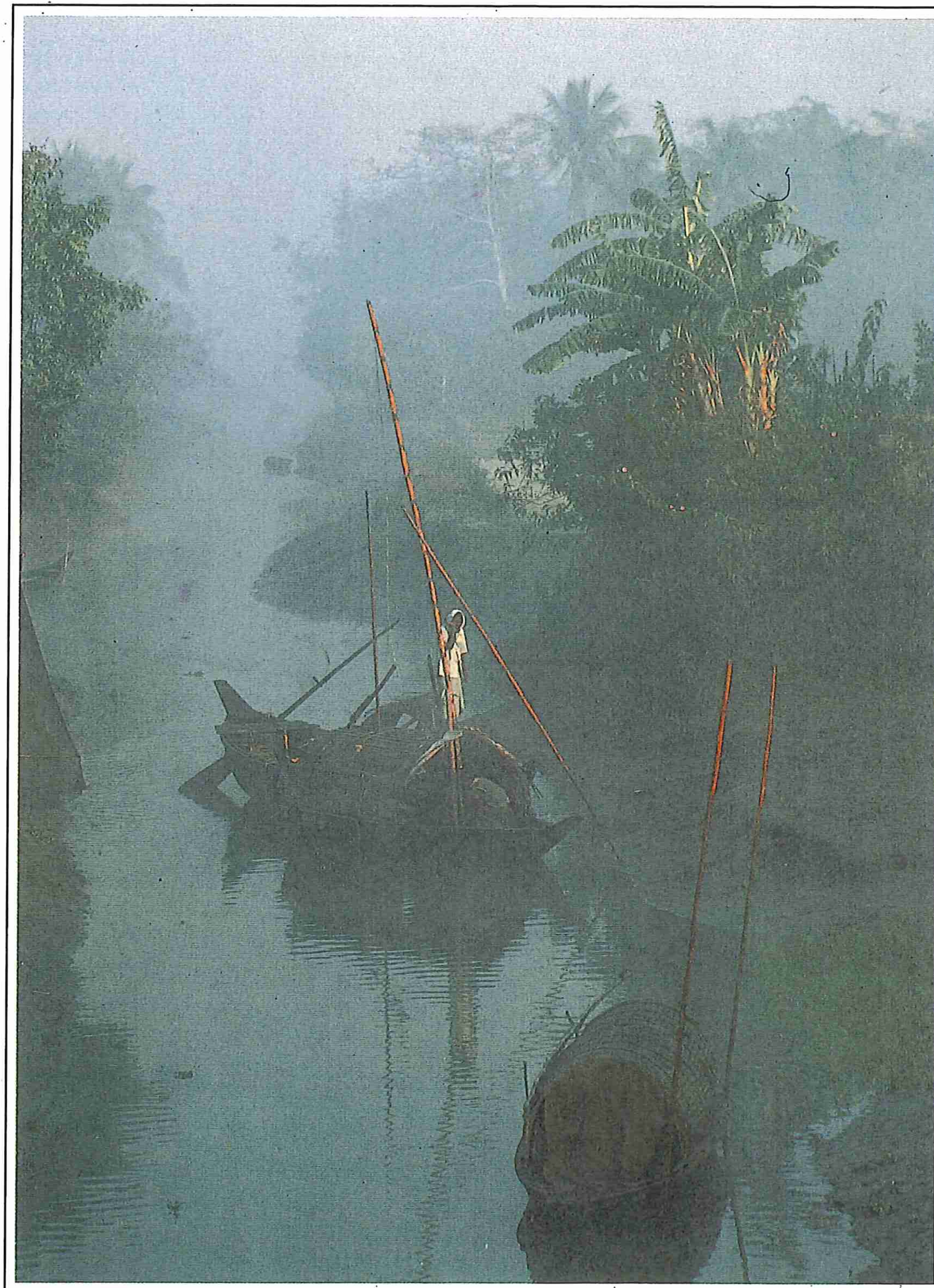

ISSN 0261-3131

Water and Bangladesh

Living with the floods

Image Bank

Feed corn stored in the United States. Subsidies for US agribusiness create vast surpluses that dominate the world market. Eighty-five to ninety per cent of US and EC grain exports are handled by just five companies. Under these conditions, any talk of a "free market price" is sheer nonsense.

Free Trade versus Sustainable Agriculture

The Implications of NAFTA

by
Mark Ritchie

In the name of "free trade", agribusiness in the US has sabotaged the farm support system that since the 1930s protected farmers from the vagaries of the market. In its place, a system of "deficiency payments" has been introduced, which benefits grain corporations, rather than farmers. The recent signing of the North American Free Trade Agreement (NAFTA) by Canada, Mexico and the US has taken the process a step further; measures to protect small farmers, consumers and the environment in all three countries are likely to be abolished.

Two competing visions have emerged of the future of agriculture. The first, often referred to as sustainable agriculture, calls for social and economic initiatives to protect the environment and family farms. This approach emphasizes the use of public policy to preserve soil, water and biodiversity, and to promote economically secure family farms and rural communities. It calls for farming practices which are less chemical- and energy-intensive, and marketing practices which place a high priority on reducing the time, distance and resources used to move food between production and consumption. Another goal is to improve freshness, quality and nutritional value by minimizing processing, packaging, transportation and preservatives.[1]

An opposing view, often referred to as the "free market", "free trade" or "deregulation" approach, pursues "economic efficiency" in order to deliver crops and livestock to processors and industrial buyers at the lowest possible price. Almost all social, environmental and health costs are "externalized", ultimately to be paid for by today's taxpayers or by future generations. Basing their arguments on neo-classical economic theories dating back over two hundred years, the proponents of this approach maintain that any government intervention in the day-to-day activities of business diminishes economic efficiency. They seek to scale back or eliminate farm programmes such as price supports and supply management, as well as land-use provisions designed for environmental protection. In world trade, they support the opening of state and national borders to unlimited and deregulated imports and exports. These policies are heavily promoted by agribusiness corporations involved in the trading and processing of farm commodities, which want to pay as low a price as possible, and by suppliers of farm inputs, who want to sell a maximum amount of chemicals, fertilizers and other products.[2]

The differences between these two conflicting views lie at the heart of the debate over modern agricultural policy. Recently the controversy has been given particular prominence by the trade negotiations taking place under the auspices of both the North American Free Trade Agreement (NAFTA) and the General Agreement on Tariffs and Trade (GATT).

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Trade versus Husbandry: A Recurrent Conflict

Conflicts concerning agricultural trade and the environment have occurred throughout history. For example, a book entitled *Grain Through the Ages*, published by the Quaker Oats Company, describes the effects of free trade upon the Roman Empire in the first and second centuries BC:

> "One reason for the decline of grain farming in Italy was the importation of grain into Rome from the rich grain lands of Sicily and Egypt. In Sicily these grain lands had been appropriated by rich men and scheming politicians who farmed them with slave labour. As a result the markets of Rome were flooded with cheap grain. Grain became so cheap that the farmers who still owned small pieces of land could not get enough money for the grain they raised to support their families and pay their taxes. They were forced to turn their farms over to rich landowners. On the land of Italy slave gangs working under overseers took the place of the old Roman farmers, the very backbone of the state.
>
> "The farmers, after their land had been lost, went into the city walls, leaving the scythe and the plough. They worked now and then at a small wage. They ate mostly bread made of wheat which was distributed to them by any politician who wanted their votes at an election.
>
> "The land itself became poor . . . The use of slaves meant that the land was badly worked because usually the slaves did as little as they possibly could unless they were under the eye of the overseer."

This example from ancient Italy mirrors many of the concerns we face today, even down to the provision of welfare for displaced farmers. But the ideological debate over "free trade" is relatively recent, dating back to the 18th and 19th centuries. The first climax of this debate came in 1846, when the free trade advocates in the British parliament voted to repeal the Corn Laws which regulated imports of wheat in order to protect British farmers from sudden drops in prices. The main advocate of repeal, Richard Cobden, was quite aware of the environmental implications of his free trade proposals. In one of his most famous speeches before Parliament, he proudly explained that free trade would lead to a dramatic intensification of British agriculture, including "draining, extending the length of fields, knocking down of hedgerows, clearing away trees which now shield the corn." He urged farmers to "grub up hedges, grub up thorns, drain, and ditch."

Many, if not most, of Cobden's free trade colleagues understood that free trade would put enormous economic pressure on British farmers, just as the cheap imports from slave estates had done to the farmers in Italy, and that in their struggle to survive British farmers would intensify production, by draining wetlands, cutting hedgerows and clearing woodland. Despite much destructive activity of this kind between 1846 and 1870, English agriculture went into a long decline and by 1903 Britain was importing nearly four-fifths of its wheat.

A Money-Laundering Scheme

The "free trade vs. sustainable agriculture" debate has a long history (*see* Box above), but in the 1970s and 1980s, it took on a new importance as presidents Nixon and Reagan, with the help of the Republican-controlled Senate, implemented the most free-market oriented US farm policy since the 1920s. Legislative changes, culminating in the 1981 and 1985 Farm Bills, adapted, undermined and finally sabotaged the farm support system that had been elaborated in the 1930s to protect farmers from the vagaries of the economic system.

The policy of minimum farm prices for grain was first established in F. D. Roosevelt's presidency, through the US Department of Agriculture's Commodity Credit Corporation (CCC) crop loan programme. Under this system, Congress established an annual minimum price per bushel — the CCC loan rate — roughly equivalent to the average cost of production. If the price offered by the grain corporations at harvest time fell below this price floor, farmers had the right to borrow an amount of money equal to the CCC loan rate for every bushel they produced; this was intended to tide them over until the following summer, when prices would normally rise. If the grain corporations still refused to offer prices to farmers above these minimum levels, then farmers could forfeit this grain to the government without repaying the loan. This system worked well: in most years, the grain companies offered prices above the minimum level in order to get farmers to sell, and there was very little forfeiting of grain.

However the system was bitterly opposed by agribusiness corporations who resented the fact that the government intervened to keep prices at production costs levels. Grain traders wanted to build up a surplus of cheap grain to export, while petrochemical companies and farm machinery manufacturers saw this as a way of increasing sales. In 1971, President Nixon began to panic about rising US trade deficits, and agribusiness spotted an opportunity to get rid of the Roosevelt programmes. They suggested to Nixon that if he lowered the loan rate to below the cost of production it would give them an international price advantage, making it possible for them to squeeze other countries, especially France, out of world markets.

US farmers, unwilling to see prices fall below the cost of production, fought back. Nixon struck a compromise, allowing prices to fall to satisfy the grain exporters, while promising farmers direct payments from the government to cover their losses. The administration set the floor-price paid to farmers, or loan rate, at a very low level — the level, in fact, that the corporations advised was competitive. It then guaranteed security for farmers by setting a "target price", roughly equivalent to the costs of production. The loan rate was the price the corporations wanted, the target price was the price the farmers said they needed to survive, and the difference was made up by the taxpayer in the form of direct payments to farmers, called "deficiency payments". It was a cunning policy, because these payments appeared to be direct subsidies to farmers; but the purpose of the payments was to support farmers who were selling their crops to corporations at prices far below the costs of production, which in fact meant that the real subsidies were going to agribusiness. It was, in essence, a money-laundering scheme.

During the first years of this programme, the combination of the market prices and the deficiency payments covered basic costs. But the budgetary crisis created by the Vietnam war led to cutbacks in every sector, including farm programmes. By the end of the 1970s, Congress was no longer asking how high the target price needed to be set to insure that farmers survived, but how low it needed to be set so that deficiency payments stayed within a limited budget. The combination of low prices and falling deficiency payments meant that most farmers no longer received enough income to cover their costs.

In consequence the past decade has been one of crisis for the US farmer. According to the US Department of Agriculture, the average cost of production for corn (maize) in the US has been around $3.10 per bushel, roughly $125 per tonne, over the last decade. Farmers receive $1.50 per bushel in market prices and $1.00 per bushel in deficiency payments, leaving them about $0.60 short on every bushel.[3] For many farmers, especially younger ones still buying their land and machinery, their total income is not enough to cover all costs. Many have been forced into bankruptcy and foreclosure: the US has lost nearly 30 per cent of its farmers since 1980.[4]

Some farmers have found ways to produce corn for less than the average price, but often at a high long-term cost. For example, many have taken full or part-time work outside the farm to subsidize their farming operations. The stress upon families and communities has been serious, with large increases in marital problems, spouse and child abuse, and suicides. Many farm families have stopped paying health insurance so as to reduce monthly expenses by $500 to $1,000 per month.[5]

But perhaps the most common way of reducing short-term costs of production has been to intensify production methods, by abandoning soil and water conservation practices and using greater quantities of fertilizers and pesticides. Aside from the adverse environmental effects, this intensification has created enormous surpluses, forcing the Reagan administration to impose one of the largest, most expensive and most environmentally damaging land set-aside programmes in US farm history, known as the Payment in Kind (PIK) system.

The Effects Abroad

The creation of a surplus of cheap grain to sell on the international market was, of course, one of the main objectives of the agribusiness lobby. Agribusiness economists convinced Congress that lower prices would "drive other exporting countries out of the world market." Former Senator Boschwitz, a ranking Republican on the Agriculture Committee, stated this as an explicit goal: "If we do not act to discourage these countries now, our worldwide competitive position will continue to slide and be much more difficult to regain. This should be one of our foremost goals of our agricultural policy and the Farm Bill."[6] Economists promised a huge growth in export volume, enough to offset losses due to low prices.

Contrary to the computer projections, although the volume of exports rose, lower prices meant that their value fell from the late 1970s level of $40 billion per year to less than $30 billion by 1985.[7] In constant dollars, farm exports in 1990 reached only half the 1981 level, even though the number of bushels shipped was higher. This low price/high volume policy required a significant increase in US imports of oil, fertilizer, tyres and machinery imports, all of which became more costly over the same period, ultimately increasing the trade deficit.

The flaw in the agribusiness logic was that other countries cannot simply stop producing or exporting farm products just because the US wants them to and sets low world prices to try to drive them out of the world market. The debt servicing obligations of countries such as Brazil, Argentina and Thailand make them dependent on food exports for hard currency earnings. When the US drops its prices, other countries simply lower theirs to match, or try to boost the volume of their exports in hopes of making up for the lower prices.

Great as the costs have been for US farmers and taxpayers, the costs to the rest of the world have been just as high. Confronted with extremely low priced grain imports in their local markets, making it impossible for them to sell their own crops at a profit, many Third World farms have been wiped out as a direct result of these deficiency payment programmes. Deficiency payment schemes have been described as "death warrants" for Third World farmers.

The European Community, similarly, has kept pace with the US by creating its own agricultural surpluses, through a system of price support mechanisms. Within the framework of the current GATT negotiations, multinational grain corporations have persuaded the EC Commission, under Ray MacSharry, to switch to a deficiency payment programme similar to that used in the US. It is reasonable to expect that the scenario that unfolded in the US will be repeated in Europe. The combination of prices and payments will be tolerated for a few years, and then budget cuts will be used to reduce payments, bankrupting many of Europe's struggling farmers. The eventual human, environmental, and budgetary costs of the MacSharry proposals, both in Europe and in the Third World, are incalculable.

Reaction to Free Market Farm Policies

Reagan's free market policies in the US were not introduced without resistance. Farmers and small-town residents blocked foreclosure auctions and occupied government offices and banks. In 1984 and 1986, voters threw out numerous incumbent Senators and Representatives, including Republican Senators in the farm states of Iowa, North Dakota, South Dakota, Georgia, and Illinois. Rural America demanded an end to the destruction of their farms, families, livelihoods and communities.

The protests came not only from farmers and small town residents. Consumer and environmental groups began to express concern over the safety of food and the ecological impact of chemical- and energy-intensive production methods being encouraged by free market policies. The National Toxics Campaign, for example, launched a nationwide campaign to introduce farm programmes which would set farm prices at levels equal to the full cost of production, including all the environmental costs, while limiting production to the amount needed to balance supply with demand.[8] A number of family farm groups and rural citizens' organizations also advocated this approach, as a way to restore economic vitality to rural America.

Agrochemical companies began to fear that many of these new proposals could lead to stricter pesticide regulations. Laws were passed that greatly increased companies' financial liability for harm done to workers, farmers and communities through the manufacture, storage or application of their products. To avoid these regulations and liabilities, many chemical companies began to move the production of the most dangerous products overseas. Corporate farm operators also moved abroad their most chemical- and labour-intensive operations, such as cotton, fruit and vegetables.

Reacting to this sharp increase in overseas production of US food supplies, a number of states and the federal government imposed progressively stricter pesticide residue regulations on imported foods. By 1989, as much as 40 per cent of imported food items inspected by the Food and Drug Administration (FDA) were rejected for reasons of unsafe chemical residues, contamination levels or other violations of US standards.[9] However, due to budget cuts, the FDA now inspects only two per cent of all the imports. This has prompted a number of states, including California, Minnesota and Wisconsin, to implement additional food safety regulations at the state-level in response to intense consumer lobbying.

Countering the Backlash

Agricultural corporations feared that a political backlash might result in Reagan's free trade legislation being dismantled, especially if a Democrat were elected to the White House. They therefore began to explore ways to prevent this happening. The strategy they devised was to move policy-making on these issues out of the hands of state legislatures and Congress, and into the arena of international trade negotiations.

In US trade policy, the government executive has the opportunity to overrule Congress and pre-empt local and state governments. Trade negotiations, for example, are conducted in secret by the White House. It is extremely difficult, even for most members of Congress, to get information about what is being negotiated until it is too late to analyse implications or to affect the outcome. Furthermore, special rules govern the approval of trade agreements. Under the "fast track" approval process, Congress cannot amend in any way the proposed agreement. Time for debate is very limited. Congress can only rubber-stamp the final text, either "Yes" or "No".[10]

In this legislative context, social and environmental regulations in the form of farm policy reforms or food safety standards could be termed "trade barriers" and then dismantled under the guise of "liberalizing trade". New rules for international trade could even roll back pesticide and other environmental regulations, while prohibiting restrictions on imported foods. Agribusiness companies have therefore joined with other business interests, such as financial services, drug and chemical companies, and computer manufacturers, in pressuring the Reagan administration to spearhead an international drive to deregulate trade.

The principal global framework for trade negotiations is the General Agreement on Tariffs and Trade (GATT). This worldwide agreement, which more than 100 countries have signed, was drafted in 1947 with a brief to establish rules for the conduct of international trade. There is currently an effort to re-write these rules as part of the Uruguay Round, named after the country where these talks were launched in 1986.

One of the most important features of the Uruguay Round proposals is the demand that nations should no longer be able to limit the volume of agricultural or other raw material imports. Existing import quotas should be subjected to a process called "tariffication," in which import controls are converted into import taxes, called tariffs, and then phased down or out within five to ten years. This would be a disaster for sustainable agriculture in both the poor countries of the South and in the North.

If accepted, this proposal would alter the rules governing world trade in food, natural fibres, fish and forestry products and would seriously limit the right of GATT member nations to implement a wide range of natural resource protection laws at local, provincial and national levels.[11] Many poor countries now use import controls, often in the form of quotas, to protect their local agriculture and fisheries from being wiped out by cheap imports from industrialized countries such as Australia, Canada, the US or Europe. If these countries are prohibited from imposing import quotas, their own local farmers will be forced to use ever more intensive and environmentally damaging methods of production in an attempt to survive. Those farmers who are not able to intensify will eventually be pushed off their land, leading to the consolidation of smallholdings into huge corporate-style farms. This is exactly what has been occurring in the US with the support and encouragement of the Department of Agriculture over the last 20 years.

US-Canada Free Trade Negotiations

Aside from the GATT negotiations, the US has been involved in various bilateral trade talks. The first of these to promote extensively the free trade agenda of agribusiness were those between the US and Canada, concluded in 1989. The agreement opened the US-Canada border to greatly increased shipments by multinational food companies in both directions. The talks were used to weaken or repeal food safety and farm security laws, opposed by agribusinesses on both sides of the border.[12] Canada, for example, had to loosen its stricter regulations on pesticides and food irradiation. And there have been moves to weaken the Canadian Wheat Board and to alter drastically the system of supply management used to protect Canadian family farmers in the poultry, egg and dairy business.

Besides blocking efforts to achieve a more sustainable agricultural system, the US-Canada agreement was a setback for environmental protection in general. It almost eliminated Canadian government spending on ecological efforts such as wetlands protection and forest replanting. These types of government subsidies were labelled "trade distorting" and essentially banned. In fact, only two types of government subsidies are allowed under the US-Canada deal: to help expand oil and gas exploration, and to subsidize companies and factories producing military weapons.[13] The US is guaranteed long-term, low-cost access to Canadian oil, gas and uranium resources, encouraging continued dependency on non-renewable fuels.

Among the wide range of environmental protection measures that have been challenged as unfair trade barriers are US laws banning asbestos, Canadian rules to protect ocean fishery stocks from depletion, state-level laws in the US to encourage small-scale factories through tax incentives, and requirements that newsprint must contain recycled paper. In each case, the challenging country considered that the social or environmental policy of the other country placed their own domestic industry at a competitive disadvantage.

An important lesson to be learned from the US-Canada Free Trade Agreement is that there were negative effects for family farmers and the environment on both sides of the border. Deregulated trade is not an equation that benefits one country or the other, according to the skill of their respective negotiators. On the contrary, both countries pursue the interests of their transnational corporations rather than the interests of the general public. The US-Canadian deal is a good example of how family farmers, consumers and the environment on both sides of the border can lose under "free trade."

The NAFTA Agreement

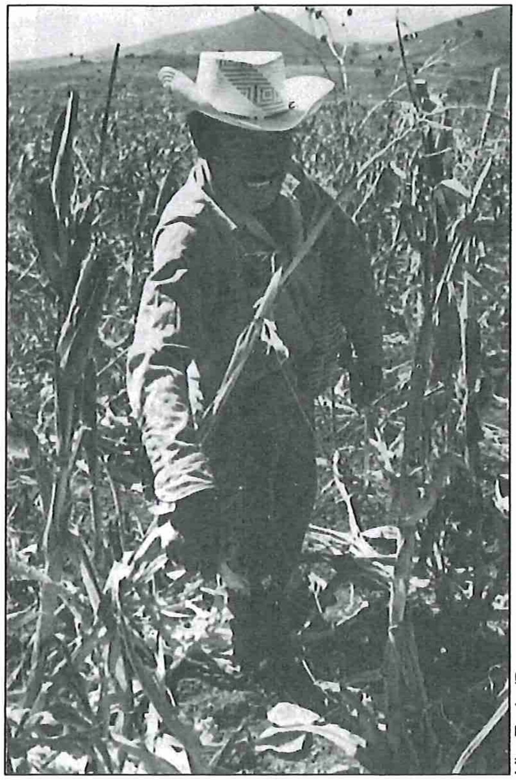
But for the agribusiness and agrochemical countries that pushed it through, the US-Canada Free Trade Agreement did not go far enough. Almost before the ink was dry, the very same corporations began to pursue the extension of the trade agreement to Mexico. This they see as the next step in their plan for a free trade zone encompassing the whole of the Western hemisphere, the "Enterprise of the Americas Initiative."[14]

There are two main threats to sustainable agriculture in the North American Free Trade Agreement (NAFTA). The first is the stated objective of increasing the "scale of production."[15] A number of specific provisions in the text will lead to both increased corporate concentration in the processing sector and the further expansion of large scale "factory farms" in all three countries.[16]

The second is the stated goal of eliminating each government's ability to regulate the importing and exporting of goods. If local, state and national governments can no longer regulate the flow of goods across their borders, as a result of the NAFTA talks, farmers, consumers, workers and the environment will suffer.

The pursuit of these objectives will have grave effects for farmers in Mexico. One of the major demands of the multinational grain companies based in the US is unlimited access for their exports of corn and other grains to Mexico. At present, almost three million Mexican peasants grow corn and sell it at price levels set high enough by the government to ensure that they have enough cash income to survive. This system requires that the Mexican government regulate imports very carefully so that this price level is not undermined.

Economists in both Mexico and the US predict that if the grain companies are successful in their efforts to force open the Mexican corn market, the price paid to Mexican peasants will fall dramatically, forcing one million or more families off their land. Most of these families have worked at some time in the United States, so it is assumed that many will head north in search of either farmworker jobs in the countryside or service sector work in the major cities. Others will move to Mexico's urban areas, such as Mexico City and Guadalajara, already dangerously polluted.


Liba Taylor/Panos

Harvesting corn by hand in Oaxaca, Mexico. Farmers such as this are likely to be put out of business by machine-harvested corn from the USA.

Destroying Family Farms in the US

The United States, too, has used import regulations to sustain a domestic agricultural sector. For example, Congress has established strict controls on the level of beef imports allowed into the country in the Meat Import Act of 1979. But fast-food hamburger retailers have pushed the Bush Administration hard to make sure that any NAFTA agreement will abolish or weaken these controls, allowing them to import more hamburger meat. Since beef can be produced cheaper on cleared rainforest land in southern Mexico, a sharp increase in US beef imports from this region would cause an acceleration in the destruction of the rainforest. Mexico has also started to trans-ship beef raised on destroyed rainforest regions in Central and South America.[17]

Unlimited beef imports would also lower the income of family-sized cattle producers in the US, whose share of the market would be cut and who would have to sell at a lower price to compete. With more beef coming in from overseas, there would also be a smaller market for US-grown hay, corn and other feeds.

This could create serious environmental problems in parts of the United States, quite apart from those affecting Mexico's rainforests. The state of Minnesota, for example, has generally poor soil in the northern region, often hilly with a thin topsoil. The only agriculture production suited for this land, and indeed needed to maintain it, is beef and dairy cattle grazing. If Minnesota's diversified, family beef operations were put out of business by imports from Mexico, the fragile land would most likely be put into row crops, soya beans or corn. On these hillsides, such crops would cause the topsoil to wash away at a non-sustainable rate, destroying the productivity of the land.

The US meat-packing industry is also looking to Mexico for lower wages, weaker occupational health regulations and less

IATP

An example of cross-border co-operation, rather than competition. Members of the Mexican National Union of Regional Farmers' Organizations and the Kansas Farmer's Union meet at the border to accompany farm equipment bought by the Mexicans in Kansas. The trip was organized by the Institute for Agriculture and Trade Policy.

strict environmental standards. Cargill Corporation, for example, has already relocated part of its meat-packing operations to Mexico in anticipation of the North American Free Trade Agreement. Over time, cattle and hog production will move closer to these meat-packing facilities, since livestock cannot be shipped over long distances without serious loss. Again, workers, their communities and the environment will suffer.

US fruit and vegetable production is also threatened by the agreement. US producers currently operate under substantial regulations concerning chemicals and worker rights. They pay higher taxes and extend more worker benefits than producers in Mexico. Even if US and Mexican produce growers had the same pesticide regulations on paper, there is little chance that violators of food safety regulations would be caught, because the Food and Drug Administration inspects only two per cent of the food coming across the border. Consumer confidence could be seriously damaged by a few isolated incidents of poisoning.

As well as weaker environmental laws, low wages give Mexico a competitive advantage. Edward Angstead, president of the Growers and Shippers Association of Central California, estimates the cost of farm labour in Mexico at $3 per day, compared with $5-15 per hour in California — an attractive proposition for many companies. Pillsbury Company's Green Giant division, for example, is moving a frozen-food packing factory from Watsonville, California to Mexico in anticipation of NAFTA. The company believes the agreement will allow it to bring cheaper products formerly produced in Watsonville back into the US without tariffs and with few food safety controls.[18] The move means that the farmers in the area who grew crops for the factory will lose their market, and the farmworkers and cannery workers will lose their jobs. The impact on the community will be catastrophic.

A similar trend in the textile and clothing industry, where many factories are closing and moving to Mexico, is reducing markets for US produced cotton. Such factories are often a source of off-farm employment for many farm families, providing an extra income to supplement low farm prices. They serve as the economic backbone of many small towns, and their loss will further undermine rural communities.

Reducing Consumer Confidence

Increased food trade between the US, Mexico and Canada is likely to reduce consumer confidence in the safety and quality of food. Food processors will need to over-process, over-package and alter their produce genetically, for it to survive long trips and periods of storage. Quality, taste and nutritional value will be diminished. In the absence of uniform food-safety laws or country-of-origin labelling regulations, consumers cannot be sure about their food. If US farmers cannot use DDT or Alar while imports with residues of these chemicals are allowed, their competitiveness will be threatened, forcing them to support a weakening of domestic standards. On the other hand, efforts to "harmonize" such regulations under the auspices of the free trade agreement are likely to be simply an underhand attempt to weaken them.

For example, some Mexican milk now comes from cows treated with Bovine Growth Hormone (BGH), a milk-production drug banned in Minnesota and Wisconsin in response to consumers' and dairy farmers' demands. US consumers have expressed their grave concerns about this product's potential human health effects, especially when they found out that experimental milk from BGH test-herds here in the US was being mixed with commercial milk. Over a dozen surveys have shown that consumers will buy fewer dairy products when there is a chance that they might contain BGH.[19] US dairy farmers face a potential loss of markets and lower prices if Mexican milk containing BGH is allowed into the country.

This erosion of consumer confidence has already occurred as a result of the US-Canada Free Trade Agreement: evidence of serious problems posed by the lack of proper regulations for the inspection of imported meat set off a storm of publicity which increased consumer fears about the safety of meat. At a time when cooperation is needed to solve major environmental problems, the NAFTA appears to be creating new conflicts between farmers, environmentalists and consumers.

At the same time organic farmers on both sides of the border are under threat. In the US, the general lowering of prices on commercially grown fruits and vegetables will make it hard to charge the prices needed to cover organic growers' additional costs. Meanwhile, expansion of fruit and vegetable production in Mexico will increase the overall use of chemicals, further disrupting natural pest-control patterns. Organic farmers cannot use pesticides to control pests driven to their fields by their neighbours' spray. Since they are dependent on natural predators for their own biological pest management, any increase in chemical spraying on neighbouring farms will disrupt their efforts to use biological pest management.

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31. Minkin, S. F., op. cit. 28.
32. Shapan Adnan, op. cit. 5., original emphasis.
33. Amid much confusion, it seems component 3.1 Jamalpur Pilot, funded by the EEC and France, and component 20, the Compartmentalization Pilot Project, funded by The Netherlands and Germany, are already underway. Two projects, which were initiated before 1988 but have been brought under the umbrella of the Flood Action Plan, have also begun: component 1 Brahmaputra Right Embankment Strengthening, funded by the World Bank, and component 21/22 Bank Protection and Pilot Project, funded by France and Germany,
34. Resolution of the working group on coastal protection, adopted at the seminar "Bangladesh Disaster: Issues and Perspectives", Delft, The Netherlands, 3 September, 1991. Coastal embankments, some two to three metres high, combined with planting trees on the seaward side of the embankments can mitigate the effects of massive tidal surges, but the main function of these embankments along an 800 kilometre coastline is to protect agricultural land from normal high tides and tidal salinization.
35. See, for example, Clause 1 of the Resolution on the Catastrophe in Bangladesh, adopted by the European Parliament on 16 May, 1991.
36. Koch, F., *The Land Reclamation Project in Bangladesh — A Case Study on Cyclone Preparedness,* Delft Hydraulics, Delft, April 1988, p.9.
37. Koch, F., op. cit 36.
38. "Unpardonable Unpreparedness", *Holiday,* 10 May, 1991.
39. Within two years after independence from Pakistan, US $2 billion in external resources flowed into Bangladesh, more than it had received in 24 years as East Pakistan. Since then, the influx has continued at over US$1 billion per year. The World Bank and Japan are at present the two major donors.
40. Koch, F., "Cyclones and coastal protection", paper presented to the seminar "Bangladesh Disaster: Issues and Perspectives", IHE Delft, The Netherlands, 3 September, 1991. In the World Bank's cost/benefit analyses, loans to build coastal protection against cyclone-induced tidal surges for "humanitarian" benefits could not be econmically justified.
41. Boyce, J. K., op. cit. 2.
42. Saiful Haque, *Landreform in Bangladesh — Promise and Reality,* paper presented to the seminar "Bangladesh Disaster: Issues and Perspectives", Delft, The Netherlands, 3 September 1991.
43. Saiful Haque, op. cit. 42; and see, for example, Matiur Rahman and Syed Ajijul Haque, *Stories about the Looting by the Rich* (in Bengali) Suchna, Dhaka, April 1987; speech by President Shahabuddin Ahmed in *Sangbad,* 22 Choitro 1397 (1990).
44. Pearce, F., op. cit. 16.
45. World Bank, *Bangladesh: action plan for flood control.* Asia Region, Country Department I, Washington DC. 11 December, 1989, p.4, cited in Boyce, J. K., op. cit. 2.
46. Shear, L. op. cit. 22. Projected increases in wet season agricultural production are based on unrealistic assumptions of optimum performance of the compartments, despite difficult socio-economic conditions.
47. Pearce, F., op. cit. 16.
48. Shapan Adnan, op. cit. 5.
49. Boyce, J. K., op. cit 2.
50. Pearce, F., op. cit. 8.