

hungry for power

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ನೂರಾಬರೂರು: ನೆಲೆನು ಕ ಕೂ, H.D. ಕೋಟೆ.

DEVIL

"Are your hands tied by weeds? Round-up will set you free!"



Hungry for Power details the impact of food and agricultural transnationals on food security. Between them, the food and agribusiness corporations have huge control over every part of the food chain, from land to seeds, crops to chemicals, processing to marketing.

Hungry for Power spotlights the activities of Nestlé, Cargill, Monsanto, Chiquita, Zeneca, British American Tobacco - all are charged with undermining global food security.

Food security is too important to be left in the control of transnational corporations. The international community must take action to curb the power of transnational corporations where their activities threaten food security.

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Cover photo. Monsanto billboard in India marketing its herbicide, Round-up.
"Are your hands tied by weeds? Round-up will set you free!"
(Farmers' Link)

The UK Food Group

The UK Food Group exists to promote action on global food security through the collective effort of civil society. We represent a unique body of expertise and experience, with members drawn from the UK's leading non-governmental organisations (NGOs) working on food and agriculture issues.

Our priority areas of action are: research; raising awareness; education and outreach; advocacy; and facilitating South-North exchanges of experience and information.



hungry for power

The impact of transnational corporations on food security

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Introduction: from cradle to grave

John Madeley

'From the cradle to the grave' is a sentence heard less frequently than it used to be. Western governments have long prided themselves that their welfare systems protect the basic needs of their citizens 'from the cradle to the grave'. But with cutbacks in welfare services, the claim has become muted. As money for welfare service has come under pressure, and as globalisation and privatisation have taken hold, so the role of the state has been reduced, in western, eastern European and developing countries. And new economic superpowers have emerged, the Transnational Corporations (TNCs). Producing goods which they assure us are good for us 'from the cradle to the grave', the power of these corporations is not only huge, it is in danger of spiralling out of control.

As food is the most basic need of humankind, the food company TNCs are especially powerful. Without food, we don't survive. But how do the food TNCs tap into this basic need, and how do they really operate?

This account tells the story of a scandal - how a number of the world's most powerful TNCs are abusing their dominant position, to the detriment of millions of the poor. It looks in particular at how they operate in developing countries, although their activity in Western countries is often cited. Most of these companies produce, manufacture, process, trade or sell food. Two of them, BAT and Zeneca, do not produce food but their activities affect food supplies.

Between them the food corporations have huge control over every part of the food chain - from land to seeds, crops to chemicals, processing to marketing. All the companies studied are in a dominant position in their sector. And, as contributors show, some of their activities, far from providing life, are leading to an early grave for many.

This account is written to increase awareness about what the corporations are doing. And what they are doing, and what is happening, is a matter of deep

concern. As Brewster Kneen points out, we are seeing an unprecedented consolidation of control of food in the hands of a tiny elite of corporate directors and senior executives. But this is sounding the alarm for people around the world, and resistance is growing.

Conditions of 'dependency, serfdom and destitution' of which Kneen writes, are all too likely to come about unless there is a huge increase in awareness about where these companies are leading us, plus a turnaround in government policies. Increased awareness is likely to lead to demands for changes in the way the corporations operate, and for greater and more effective regulation and control over their power.

Early to the grave

For some people, the journey from cradle to grave is tragically short. This account begins by examining the role of Nestle, the market leader in manufactured baby foods and the biggest employer of labour of the TNCs examined in this study.

A mother's breastmilk is universally recognised as the finest food there is for an infant, not just in its early months but up to the age of two years. Sadly it was the medical profession in the 19th Century who appeared to misunderstand the way that breastfeeding works, and who introduced harmful practices such as the separation of mother and baby. It was the profession who paved the way for a commercial baby food industry. As early as 1873, Nestle was exporting its 'Milk Food' to the colonised world, becoming the first company to corner the global market. The promotion of 'infant formulae' to mothers has continued, with Nestle and other milk companies seeking to persuade mothers to use their products. It is the manner of that promotion which is an abuse of power.

Today, over 125 years later, one and a half million infants die every year, according to World Health Organisation estimates, because they are not

breastfed. Yet baby food companies continue to market artificial foods in ways that undermine breastfeeding. The cycle of diarrhoea and malnutrition caused by unsafe bottle feeding has been referred to as "commerciogenic malnutrition" – malnutrition caused by pursuit of profit. For millions of the most innocent people in the world, infants, the grave has come early.

A WHO International Code of Marketing of Breastmilk Substitutes, adopted by the World Health Assembly in 1981, was supposed to stop abuses in the marketing of these foods. Subsequent Resolutions have addressed questions of interpretation and changes in marketing practices and scientific knowledge. The 1994 Resolution makes it clear, for example, that there should be no donations of breastmilk substitutes "in any part of the health care system."

Nestle claims to abide by the Code. But the code that Nestle abides by seems to have little in common with the WHO Code. For, as Mike Brady writes, from many parts of the world are still coming reports of code violations. In India, the company is in court for alleged violations of the country's laws on the marketing on infant formulae. In Malawi, Nestle ignored a government request to label products in Chichewa, the national language, until the issue was raised at its shareholder meeting. In Gabon, Nestle was told by the Ministry of Health that the methods it was using for marketing its infant foods were in "flagrant violation" of the governments requirements. In the Philippines, Nestle has been exposed for hiring graduate nurses, calling them health educators and sending them to visit breastfeeding mothers at home to try to convince them that the company's infant formulae complements breastfeeding. Nestlé claims to adhere to national laws but has been known to use subtle measures of persuasion. When the government of Zimbabwe implemented the WHO Code, for example, the company threatened to disinvest. Eighteen years after the code was adopted, says

Mike Brady, baby food companies are still fighting its implementation. 'To ensure that companies behave ethically there have to be independent, transparent and effective controls on their marketing activities', he urges. Such controls must be enforced. Unless and until Nestle abides by the spirit and letter of the WHO code, consumers around the world have decided to boycott its products.

In January 1999 it was reported that shares in Nestle 'fell sharply...following a mysterious slump in sales'¹ Not such a mystery perhaps, but maybe a sign that the boycott is hitting where it hurts the most.

The food on our plate

Unlike Nestle, Cargill is hardly a household name. Yet this 'Invisible Giant' is one of the world's largest TNCs.² It is nonetheless a private, rather than publicly-owned company, under no obligation to tell anyone about its activities. And it has been known to boast that when we get up from breakfast table each morning, much of what we have eaten – cereals, bread, coffee, sugar etc – have passed through its hands.

Cargill is the world's largest international grain trader, accounting for over half the trade, the world's largest oilseed trader, the second largest phosphate fertiliser producer, and a major trader in grain, coffee, cocoa, rice, sugar, seeds, malt and poultry. It has a greater sales turnover in coffee than the national output of any of the African countries in which it purchases coffee beans. It processes and trades cotton, and has helped in development and marketing of hybrid maize, sunflower, sorghum and soybeans.

Significantly, Cargill has 'structural control of the food system', in terms of integration' up and down the food chain', says Kneen. And it also played a key role in the international trade policy of the United States. When US trade negotiators speak, it is often Cargill's policy they will be expounding, Cargill's business they will be protecting.

Cargill has tried to convince developing countries that self-sufficiency in food output is not a practical answer to their problems. 'Expanded trade is necessary to smooth out regional supply swings and harness the productivity of lowcost producers worldwide' it told Asian countries. Well, it would say that, wouldn't it? Self-sufficiency would wrest control of the food chain away from Cargill. It would sound the death-knell of the company as it now exists. As Alistair's Smith's contribution shows, Cargill's vision of food security in Zimbabwe goes directly against government efforts towards regional food security based on large local, district or national level physical stocks.

Brewster Kneen brings out the depth and extent of Cargill's multifarious operations, seemingly in every nook and cranny of the world. The key question is whether the public have any choice in whether this company should be part of our food future. As Cargill is an economic superpower, par excellence, it should be subject to at least a degree of democratic control. So wide is Cargill's reach that a boycott of its products would be difficult. But especially in a time of greater openness, Cargill has to change if it wants public confidence and respect.

The gene in our food

The US-based company Monsanto has taken the lead in applying genetic engineering to crops; it is the centre of the huge controversy over whether such crops can increase food security. The company believes that this technology will feed a hungry world, allowing for the breeding of crops that resist pests and disease and lead to increased yields, and also that the use of pesticides and fertilisers will be reduced.

But, as Andy Whitmore details, the facts suggest otherwise. No one knows the risks to people's health of genetically engineered crops, or how they might affect the environment. Monsanto's Total Protection System, dubbed the Terminator Technology – which has been developed by one of its subsidiaries – would terminate the ancient farmer practice of saving seed from one season for use in

the next. Monsanto claims that new seed would increase crop yields, but most farmers in developing countries could only buy new seed each year by getting into debt. But terminator genes could infect crop which are growing in near-by fields. And farmers are hardly enthusiastic about a system that would oblige them to buy their seeds from a transnational corporation.

This is a key issue. Monsanto's Roundup Ready (RR) soybeans has allowed the company to exert more direct control over farmers, and is not a good omen for the future. Farmers who plant RR soybeans have to sign a contract with Monsanto agreeing not to use any of the harvested crop as seed for the next year. The company demands the right to inspect fields up to three years after planting and has used private detectives to investigate farmers. It has prosecuted farmers who breach its conditions. It is difficult to see how this level of control will benefit food security.

Given that the science of genetic engineering is new, as Whitmore points out, 'and the fact that it concerns something as fundamental as food, one would hope that governments would be keen to regulate the industry in order to protect their citizens'. But effective regulation is nowhere near enough. Like Cargill, Monsanto has the closest links with the US government and is powerful enough to have a huge influence over its policy, domestically and internationally.

People in Europe and Africa have reacted strongly against genetically modified foods. Leading Africans have made it clear that the technology will not help food security on the continent. If enough people make it clear that they do not want these foods, they do not have to be part of the food mix of the future.

The green gold

Bananas have become Europe's favourite fruit. Europeans living in the EU's 15 countries eat 11 million kilos of them every day. Behind this one fruit

lies a world of intrigue, power and poverty. Hardly surprising that large TNCs are involved.

Anne Claire Chambron tells the story of a fruit which has become green gold to a small number of companies, but which is a life or death matter for millions in Central, East and West Africa, Latin America and the Caribbean. She points out that bananas are grown by millions of small-scale farmers in developing countries for household consumption and local markets, and that most of this production is achieved with few or no external inputs. Once a producer grows for export markets, however, considerable and growing levels of external inputs, such as chemicals and fertilisers, are required to compete in those markets. Enter the TNCs.

World trade in bananas is dominated by three TNCs – Chiquita Brands, Dole Food and Del Monte. Together these companies produce and control 65-70 per cent of world exports, 'which allows them to control the market and, to a considerable extent, to set the rules of the game', says Chambron. Food security has suffered as large tracts of land have been taken over by the banana companies, with a destructive effect – driving people from their land and work. 'The displaced peasantry is either transformed into plantation workers, and/or an unschooled, underfed, underemployed reserve of cheap rotating labour, desperate to work for meagre sums under appalling conditions', says Chambron.

The environment has suffered as banana TNCs have grown bananas in monoculture fashion and used huge amounts of toxic pesticides on their plantations. When land deteriorates the companies move on, and have continuously expanded plantations by deforestation. Unit costs and wages are low, but small producers, especially in the Caribbean, who continue to grow the fruit on small plots, find it difficult to compete with the giants. Like Cargill and Monsanto, Chiquita has a powerful say over US trade policy. This became clear in January 1999 when a trade war loomed over

bananas between the EU and US ostensibly. In fact the war was effectively a fight between two economic powers – the European Union and Chiquita. It was Chiquita who pressed for the EU to import more bananas from Latin America. It is Chiquita that was powerful enough to run the US government's policy. But who elected anyone at Chiquita to do that?

A code of conduct is urgently needed for the banana industry, based on negotiations with banana workers and unions and representatives of NGOs closely involved in the issue. And fairly-traded bananas need to move centre-stage; a recent EU study of consumer attitudes in Europe found an overwhelming interest in buying such bananas. Again the consumer has a key part to play.

The chemical connection

The final two studies are about companies that do not grow, export or market food, but which do have an important impact on food supplies. Without pesticides, global food production would collapse, claims the agrochemical industry. Yet experience shows that crop yields can be maintained without heavy dependence on pesticides.

Pesticides are toxic chemicals which are deliberately introduced into the environment. All will have some unintended effects on health, the environment and on the economics of farming, particularly if not used in accordance with good agricultural practice. Three million pesticide poisonings occur each year, according to WHO estimates, resulting in 20,000 unintentional deaths. Again, the grave comes early.

Zeneca, one of the major pesticide producers, sells its products in 130 countries. In 1997 this business brought a profit of £223 million on sales of £1.6 billion. Also in 1997, Zeneca spent £163 million on agrochemical research to maintain its position. The company's biggest selling product, paraquat, is highly toxic.

Conditions of use in developing countries make pesticide application dangerous. Small-scale farmers and plantation workers are not trained to use the poisons and low literacy levels make reading complex label instructions difficult. Users often cannot afford protective clothing or servicing of spray equipment, they may have limited access to washing facilities, and medical facilities are not on hand in case of accidents.

In areas where pesticide-dependence has caused pest resistance and crop failures with devastating effects on farmers incomes, the companies themselves have recognised that more training is required before farmers are able to effectively use pesticides. In small-scale farming systems, participatory integrated pest management training can help farmers increase yields and reduce chemical inputs. But, as Barbara Dinham says, the thrust of globalisation is to open new markets and draw more farmers into pesticide use.

A smoking gun

When people in Western countries think about smoking, they think of the damage it does to health. The health of people in developing countries also suffers from smoking, but the effects of tobacco are much wider and more serious. This chapter looks in particular at the role of British American Tobacco, which is the dominant TNC in most of the developing countries that grow tobacco.

With smoking increasingly becoming a habit of the past in western countries, the tobacco TNCs have looked South in their bid to maintain profits. This targeting of the world's poor countries is one of the most cynical moves of transnational corporations.

Tobacco production affects food security in a number of ways, as this chapter explains. It grows on land which could grow food, it damages the environment, causing a further threat to land, and it distorts family spending patterns. Cigarettes are shamefully advertised and promoted in many

developing countries without any health warnings whatsoever.

Like the other tobacco giants, BAT promotes its products aggressively, as this chapter shows. When smoking-related disease kills 3 million people to their grave each year, the companies have to recruit new smokers to maintain profits. The companies' claims that their promotion is aimed at increasingly their share of the market, rather than gaining new smokers, strains incredulity.

Tobacco brings in foreign exchange for a few countries, but the cost of treating smoking-related disease is mounting and likely to exceed any foreign exchange benefits. There are alternatives to tobacco, as this chapter explains. Many crops can grow on land that is now under tobacco.

Consolidation

Arising from these studies are many questions, like, for example, just who is running food policy – elected governments or unelected corporations? Where is all this consolidation of power leading us? How can urgently needed changes be made to wrest control back to people?

Common to all these accounts of TNC activity are company mergers, with the companies buying up others to consolidate their hold on the market and secure corporate control over food supplies. Common to all these unelected corporations is the powerful hold they have over elected governments. Common to all is the arrogance that comes with a power that TNCs are well aware is often greater than government. The corporations have a bigger annual turnover than the gross national products of most developing countries where they operate. They bring jobs and make goods that earn foreign exchange. Their wider and more damaging impact may not be obvious. A government doesn't like to risk offending them and may even end up in the bizarre position of defending a corporation that is exploiting the country.

The press may also be muzzled and a TNC's activities will be kept hidden. Years ago I visited a remote, tobacco-growing area of an African country. I wanted to find out the real effects of tobacco production on the people and their environment. I found that a large number of trees were being axed to 'cure' the tobacco, and that no one had heard of the company's tree replanting scheme. I heard of farmers growing tobacco for a pittance and of local water supplies being poisoned by pesticide running off the tobacco fields. I went back to the capital, wrote the story and took it to the features editor of a leading daily paper. 'Fantastic – we just can't do investigative journalism like this', he said. It was an ironically prophetic comment. The following day he rang me to say – sorry, but the editor could not risk running the story. The tobacco company was a major advertiser in the paper and, besides, the government would be deeply offended and might stop its own advertising.

Changes are urgently needed in the ways food TNCs operate, but when the companies have such a powerful hold over governments and media, what realistic hope is there of effective control? Publicity is vital. There is an urgent need for more research and publicity about what the corporations are doing. If national and even international media can't or won't touch material like this, then the internet has a key role to play, enabling activists to spread information and increase awareness.

To change a situation we need to know a situation, to understand just how powerful and entrenched these corporations have become, and we need to know what they are doing. The food TNCs are hungry for power, power that will further consolidate their already entrenched positions. But millions are going hungry, seeing food security slip away from them, because of the way this power is abused. It is time to call a halt.

Everyone has the right to adequate food. In the pursuit of profit, TNCs must not damage that right.

But the goal that governments agreed at the 1996 World Food Summit, to half the number of hungry people in the world by 2015, is unlikely to be reached unless TNC power is brought under control.

References

- 1 'Sales slowdown sparks fall in Nestle shares', *Financial Times*, 22 January 1999.
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Food for infants: how the baby food industry competes with breastfeeding

compiled by Mike Brady

There can be no food more locally produced, more sustainable or more environmentally friendly than a mother's breastmilk; it is the only food required by an infant for about the first six months of life. Yet, the World Health Organisation estimates that 1.5 million infants die around the world every year because they are not breastfed. Despite these deaths, baby food companies continue to market their products in ways that undermine breastfeeding. The cycle of diarrhoea and malnutrition caused by unsafe bottle feeding has been referred to as "commerciogenic malnutrition" – in other words, malnutrition caused by pursuit of profit.¹

Background*

The United Nations Children's Fund (UNICEF) states that where water is unsafe, a bottle-fed child is up to 25 times more likely to die from diarrhoea than a breastfed child.² In poor conditions, if a baby is not breastfed she is almost sure to get an infection, usually in her gut, which causes diarrhoea and dehydration. If she survives, her tiny damaged body may not absorb vital nutrients and this makes her vulnerable to another infection. It is this cycle of malnutrition and infection which kills most babies. The less breastfeeding a baby gets, the more likely she is to die.

The baby who receives both breastmilk and artificial milk has a dose-related risk of death: the more artificial feeding the greater the risk, the more breastfeeding the less. Those babies who survive bottle feeding will not be undamaged: their long term growth and development and even their eyesight can be affected by the cycle of infection and malnutrition.³ In the affluent North a bottle-fed baby, even in the best conditions, is five times more likely than a breastfed baby to get a gut infection, but at least she can be helped quickly.⁴ It is not so easy to save a life in the poor South.

Historical context

Until the 19th century, most babies were breastfed, everywhere in the world. High infant mortality rates

were mainly due to infections and other illnesses which medicine had not learned to treat. Lack of breastmilk was not a widespread problem, for if a mother died or was very ill, another woman breastfed the baby. In a few societies, a small minority avoided breastfeeding: for example, in 17th century England, some noblewomen sent their babies to be wetnursed so that they could conceive again more quickly. It was known that breastfeeding inhibited fertility and women were under pressure to produce many heirs.

Farming women earned money and spaced their own pregnancies by breastfeeding noble children as well as their own. In other regions the class pattern was reversed: in the colonised Caribbean, slave owners forced slave women to stop breastfeeding at 14 months instead of their customary three years in order to 'breed' more slaves.⁵

During the 19th and early 20th century in Europe and the United States, the medical profession began to influence infant feeding practices. Perhaps because they were men, they misunderstood the way breastfeeding worked and introduced many harmful edicts. These included separation of mother and baby; curtailing the frequency and duration of breastfeeding; washing nipples; and giving pre-lacteal and supplementary artificial feeds. Any restriction or interruption of breastfeeding impedes most women from establishing a full lactation or lessens their breastmilk supply. These old and harmful doctors' dogma persists in medical text books, training and practice and have spread to almost every society. UNICEF launched the Baby Friendly Hospital Initiative in 1991 to change hospital practices and give support to breastfeeding.

The rise of the baby food industry
As breastfeeding was made more problematic through medical interference, mothers turned to bottles and artificial milk. The assumption that breastfeeding is difficult permeates most information channels, which review all possible

problems of breastfeeding while skating over the problems of bottle feeding. It is often the advice itself which causes the problems: for example, removing the baby from the breast after a set amount of time causes hunger and colic because the baby does not get the energy-rich hind milk.⁶

As the misguided practices were becoming established, the commercial baby food industry expanded. New processing techniques, such as roller drying and condensation, led to surpluses of cheap milk, which meant that a highly profitable product could then be marketed for babies. As early as 1873, Nestlé was exporting its 'Milk Food' to the colonised world, becoming the first company to corner the global market. Others followed, and in British-controlled Malaysia several brands of tinned baby milk were advertised intensively from the 1880s onwards.

Nestlé's Condensed Milk, which along with other brands of this product had been condemned as unsuitable for infants by British doctors, was promoted in Singapore and Malaysia as 'ideal for delicate infants', even though it lacked the essential vitamins A and D and led to rickets and blindness. Such marketing inspired the late Dr Cecily Williams, a pioneer in tropical paediatrics, to say in a speech to the Singapore Rotary Club in 1939, "...misguided propaganda on infant feeding should be punished as the most miserable form of sedition; these deaths should be regarded as murder."⁷

During the Second World War, milk advertising stopped in Malaysia, breastfeeding rates rose and infant mortality fell. Yet in Britain after the war, the authorities saw a 'need' to resume milk advertising. It is important to be aware that unethical marketing by companies is an old tactic, but that its success was enhanced by the 'breastfeeding problems' that medical practice unwittingly created.

In the 1950s and 1960s, some European doctors working in the developing world observed that

serious diarrhoea, plus other infections and malnutrition, were becoming more common among the younger infants. Exclusively breastfed babies rarely become severely malnourished; it is when inadequate or contaminated weaning foods became a major proportion of the diet that the cycle of malnutrition and diarrhoea is a threat.

Breastfeeding into the second or third year (with other solid food) is vital not only because of the nutrients but because the anti-infective properties protect against disease.

Doctors such as Derrick Jelliffe and Catherine Wennen realised the link between bottle feeding and illness, which Dr Jelliffe named 'commerciogenic malnutrition'. He and other health workers wrote to the companies to point out the effects of the marketing, but they were ignored.

The decline in breastfeeding

"I would just be talking rubbish if I were to say that the multinational companies were operating in the less developed countries primarily for the welfare of those countries.... They are not bishops, they are businessmen."⁸

The creation in 1944 of the Bretton Woods institutions, the International Monetary Fund (IMF) and the World Bank, the emergence of newly-independent nations and improvements in transport and telecommunications, presented attractive opportunities to companies in the North. Moreover, falling birth rates in the North had led to saturation of the baby food markets and the companies were seeking new ones in the developing world. "The high birth rates permit a rapid expansion in the domain of infant nutrition", wrote Norris Willat of Nestlé in 1970 at the same time that the companies were receiving information about the dire effects of bottle feeding.⁹

Breastfeeding declined rapidly in the 1960s. In Mexico in 1960 almost 100 per cent of six-month-old babies were breastfed; by 1966 it was only 40

per cent. In Chile, in 1960, over 90 per cent of 13-month-old babies were breastfed, in 1968 only five per cent; in Singapore in 1951 over 80 per cent of 3-month-old babies were breastfed, by 1971 it was only 5 per cent.¹⁰ By 1979 the infant formula market was valued at an estimated US\$ 2 billion worldwide, of which the developing country share had changed from one third to one half during that decade.¹¹ In 1998 the worldwide baby food market was estimated to be worth US\$ 8 billion.¹²

Nestlé says that its infant food business only makes up a few percent of its turnover, yet it also refers to it as one of its "main strategic pillars".¹³ The company controls about 40 per cent of the baby milk market; it not only builds a baby food market through its promotion, much of which takes place through the health care system, it builds itself a reputation as a "nutrition company". After entering new markets with baby foods, it follows up with convenience foods and confectionery.¹⁴

The International Code of Marketing of Breastmilk Substitutes**

Many people concerned with North/South issues think the baby food problem has been resolved; this is not so. Public interest in the issue reached a peak in the 1970s when revelations about the baby food companies' aggressive marketing practices in the South were published by the magazine *New Internationalist* and the charity *War on Want*. A libel suit by Nestlé against a Swiss group who translated *War on Want's* publication *The Baby Killer* in 1976, backfired on the company by generating wide adverse publicity. A boycott against Nestlé was launched in 1977, triggering a US Senate Committee of Inquiry.

Dr. Halfdan Mahler, Director-General of WHO, was asked by the US Senate to convene an international meeting. As a result the WHO/UNICEF Meeting on Infant and Young Child Feeding took place in October 1979. The idea of a code of marketing had been proposed by the International Organization of

Consumer Unions (IOCU) in 1971, and was raised at the 1974 World Health Assembly, but it was not until the 1979 meeting that it was really pursued. In addition to representatives from the UN agencies and governments, 28 people were invited to represent the concerns of charities, church groups, mother support groups, and health professional bodies. These included agencies such as OXFAM, *War on Want*, the Christian Medical Commission, the International Confederation of Midwives, the International Paediatric Association and Baby Milk Action (a campaigning group set up to coordinate the Nestlé boycott in the UK). Also invited were 26 people to represent the industry.

Guidelines

During the meeting the decision was reached that a code of marketing should be drawn up and presented to the World Health Assembly. The International Code of Marketing of Breastmilk Substitutes was adopted by the Assembly in 1981, under a resolution that set out guidelines for both companies and governments.

Six of the NGOs at the meeting decided it was important to work together to encourage implementation of the International Code and to monitor company activities. The International Baby Food Action Network (IBFAN) was formed.

Meanwhile the Nestlé boycott had spread to 10 countries and the International Nestlé Boycott Committee (INBC) was formed to coordinate it. It was decided to suspend the boycott in 1984 after meetings with Nestlé when the company agreed to adhere to the Code and issued a public statement to this effect. As the oldest and largest baby food manufacturer, and the world market leader, Nestlé's policies have always influenced the other companies. This agreement was therefore seen as a breakthrough.

By 1986 it was clear that Nestlé was breaking its word. It transpired that the company had diverted

some of its marketing budgets from public promotion into expanding the placing of large quantities of free or low cost milk in maternity facilities. These free supplies inevitably get used where there is routine bottle feeding of newborns, which sabotages the establishment of lactation; they are also passed on as free samples. In 1988 Nestlé was told it had six months to put its house in order by the boycott coordinators. In 1989 the boycott was relaunched.

The World Health Assembly adopted a further resolution in 1994 making it clear that there should be no donations of breastmilk substitutes "in any part of the health care system." For the first time the United States, which had voted against the International Code in 1981, supported it by voting in favour of the 1994 Resolution.

While donations of infant formula supplies are less widespread, the companies have switched to donating follow-on formula and complementary foods to new mothers; they continue to distribute promotional materials and to co-opt health professionals to promote products. 'Milk nurses' – sales staff who 'advise' mothers on infant feeding – have reappeared in recent years (see section on the Philippines).

Fuelled by continuing evidence of malpractice, the Nestlé boycott was active in 18 countries in 1998, now coordinated by the UK IBFAN group, Baby Milk Action. In the UK it is the most popular consumer boycott.¹⁶

Implementation of the Code

By 1998 IBFAN had grown from its initial six groups to over 150 in more than 90 countries, most of them in the South. Every few years IBFAN conducts an international monitoring exercise and publishes the results in a report, *Breaking the Rules*.

Baby Milk Action, has played a key role in lobbying for Directives of the European Union to reflect the

provisions of the International Code and Resolutions. This resulted in the adoption of an Export Directive and Council Resolution which are binding on EU based companies. Baby Milk Action is also a resource centre for NGO capacity building and has recently focused on building the IBFAN network in Eastern Europe and the Commonwealth of Independent States (CIS).

Under the requirements of WHO resolutions, and the International Code, the Director General of WHO prepares a report on the state of implementation every two years and this is discussed at the World Health Assembly. Generally a resolution is then adopted addressing questions of interpretation, new marketing strategies and developments in scientific knowledge. The subsequent resolutions have been the subject of a concerted attack by Nestlé, which refuses to acknowledge their importance.¹⁷

Response of the baby food industry***

After the World Health Assembly adopted the International Code of Marketing of Breastmilk Substitutes in 1981, transnational corporations became concerned about the power of global coalitions of citizens. Not only had such coalitions lobbied at international and national levels for stricter regulation of transnational business; they had also researched and exposed publicly what they considered to be harmful business practices and used consumer boycotts to influence corporate practices.

In August 1980, Nestlé's then vice-president, Ernest Saunders, wrote in a secret memorandum to the company's General Manager, Arthur Furer: "In view of the overall propaganda campaign now being mounted through IBFAN, and the professionalism of the forces involved, it is always possible that we could even win a battle in the US and lose the war as a result of determined pressure on Third World governments and medical authorities. It is clear that we have an urgent need to develop an effective counter-propaganda operation, with a network of

appropriate consultants in key centres, knowledgeable in the technicalities of infant nutrition in developing countries, and with the appropriate contacts to get articles placed".¹⁸

Five months later, they had found the person to lead their counter operation: Raphael Pagan Jr., an experienced Public Relations (PR) executive, was appointed president of Nestlé's newly-founded Coordination Center for Nutrition. Officially the Center coordinated Nestlé's 'nutrition activities' in the United States; Pagan, however, described the centre as a "crisis management task force" which had an "early warning system and political threat analysis capability".¹⁹

While working for Nestlé, Pagan spelled out a comprehensive PR strategy for TNCs to fight for corporate 'survival' and to deal 'constructively and effectively' with the 'international regulatory mood'. This strategy included:

Establishing an issues management unit (such as Nestlé's Coordination Center for Nutrition) with a "responsive, accurate corporate issue and trends warning system and analysis capability"; "organising effective NGOs, and gaining representations for them at every possible UN agency". (By NGOs, Pagan meant generally international business organisations such as the International Council of Infant Food Industries (ICIFI) which subsequently became the International Association of Infant Food Manufacturers (IFM). Working with national and international civil servants, "not to defeat all regulation, but to create regulation that legitimises and channels our rights, opportunities and contributions"; "allying ourselves to some affirmative popular aspiration in the world so as to be visibly contributing not only to the world's wealth, but to its finding a freer and more open road towards meeting its heartfelt needs than the road offered by statists or by the no-growth, small-is-better redistributionists" while at the same time "reaching out to hold an ongoing dialogue with

the many new publics whose understanding we need to remain in business"; separating the "fanatic" activist leaders from those who are "decent concerned" people, and "stripping the activists from the moral authority they receive from their alliance with religious organisations".²⁰

Years of practice

Nestlé has now had many years of practice with these tactics. A recent example arises from the Church of England's support for the Nestlé boycott. In 1991 the governing body, the General Synod, adopted a boycott call. In 1994 a motion was put forward for the Church to disinvest from Nestlé. Nestlé responded with an assault on its critics that led to letters of complaint from NGOs such as Save the Children. The Synod was confused by the conflicting claims of Nestlé and the NGOs, however, and suspended the boycott while gathering its own evidence.

The Interagency Group on Breastfeeding Monitoring (IGBM) was formed as a result, a group of 27 church, development and academic organisations which commissioned research in Bangladesh, Poland, South Africa and Thailand. This concluded that companies, including Nestlé, were violating the International Code in a "systematic, rather than one-off manner." The Synod debated the resulting report, *Cracking the Code*, in 1997. Nestlé, fearing a boycott amendment, supported the initial motion which only noted the report and called on companies to abide by the International Code and subsequent, relevant World Health Assembly Resolutions. An amendment affirming the conclusions of *Cracking the Code* was passed, but not one calling for the resumption of the boycott. Instead it was suggested that the Church would use its investment in Nestlé to enter into dialogue and promote change.

A year after the Synod, Baby Milk Action wrote to the Church of England Board for Social Responsibility and asked if it had taken any issues up with Nestlé

and was told that none had been. Meanwhile the York Council of Churches accepted a £100,000 donation from Nestlé.²¹

Nestlé's Public Relations department immediately used the vote to try and undermine the boycott by telling those who questioned its marketing practices that following the independent research reported in *Cracking the Code*, the Church of England dropped the boycott.

Fighting the regulations

Nestlé has issued many statements such as its 1996 "Charter" setting out its "infant formula marketing policy in developing countries." Nestlé presents this as its implementation of the International Code, neglecting to mention that the Code applies to all breastmilk substitutes and all countries. While it contains other loopholes,²² evidence suggests Nestlé does not even implement all of the undertakings it does contain. For example, it states that Nestlé supports implementation of the International Code in national measures, but Nestlé lobbies for weaker measures.²³

In India when Nestlé was prosecuted under the Infant Milk Substitutes Act it responded by issuing a Writ Petition against the Indian Government, arguing that key sections of the law should be struck out (see case study below p. 16).

When Zimbabwe implemented the International Code and subsequent relevant World Health Assembly Resolutions, Nestlé threatened to disinvest.²⁴ The industry as a whole is exploiting concern about HIV transmission through breast-feeding to argue for the International Code to be scrapped.²⁵ This is a nonsensical argument as the Code does not ban the use of breastmilk substitutes and part of its aim is "ensuring the proper use of breastmilk substitutes, when these are necessary".

In Malawi, Nestlé ignored a government request to label products in Chichewa, the national language,

until the issue was raised at its shareholder meeting.²⁶ In Gabon, Nestlé was told by the Ministry of Health that the methods it was using for marketing its infant foods were in "flagrant violation" of the governments requirements. But Nestlé refused to change its marketing methods stating it was respected for its "ethical and responsible" marketing.²⁷

Companies benefit from distance and the reluctance of the media in industrialised countries to focus on malpractice in developing countries. In 1998, for example, it was reported in Pakistan that baby food companies pay hospitals and doctors up to US\$5,000 after which the hospital or doctor is bound to recommend the company's formula for six months, or one year, depending upon the deal; this was not picked up elsewhere.²⁸

In the Philippines, Nestlé has been exposed for hiring graduate nurses, as "Health Educators" who promote Nestogen infant formula to new mothers in the community. When questioned on this in the UK, Nestlé simply denied that it happened. A doctor from the Philippines, Imelda Ben, raised this at Nestlé's 1996 shareholder AGM, but no positive response was forthcoming (see case study below).

The future

"Business... should not be lumped with the many single-issue NGOs, but be accepted as an interlocutor of a different stature, as the engineers of wealth", Peter Brabeck-Letmathe, Nestlé chief executive office told an UNCTAD Global Investment Forum in October 1996.²⁹

Nestlé Chairman Helmut Maucher's "biggest gripe is over-regulation"³⁰. The company uses its position as "the world's largest food company" to push for deregulation in all available fora. Helmut Maucher is President of the International Chamber of Commerce (ICC) which held an international meeting in Geneva in September 1998 to build bridges between the leaders of transnationals and UN bodies. The programme included meetings

between UN staff and CEOs to put in place work plans for the coming year. A primary goal of the ICC is closer involvement with the World Trade Organisation and a role in drafting the international standards which will regulate business in future.³¹

Nestlé also Chairs the European Round Table which consists of the Chief Executives of a number of European transnationals and gives them formal and informal access to government and European Union policy makers.³²

While Nestlé pays lip-service to the “breast is best” message and claims to put infant health first, it sometimes reveals another side to its marketing approach. Baby Milk Action produces monthly Campaign for Ethical Marketing action sheets which highlight specific violations of the International Code and Resolutions and encourage supporters to write letters to baby food companies concerned asking them to change their practices. One such case headlined “Nestlé and self-regulation in the United States” focused on a Nestlé advertisement in the US for Carnation Good Start infant formula which has the slogan “Bring out the best in your baby”.

Advertising of breastmilk substitutes is banned by the International Code. A voluntary ban on advertising of infant formula was implemented in the US through an agreement between the American Academy of Paediatricians (AAP) and the baby food companies. This collapsed in the late 1980s when Nestlé entered the market, sued the AAP and the companies under anti-trust legislation and began advertising (Nestlé ultimately lost the court cases, but now all companies advertise). Attempting to justify advertising infant formula in the US, Nestlé responded to a letter writer as follows:

“Marketing and advertising benefit the market place and consumers by increasing competition, lowering prices and helping to educate consumers on product choices. In addition, the US believes that

women and parents have a right to information on infant feeding options in order to make an informed choice on how best to feed their baby.”

Nestlé claims the customer benefits by increased competition. This does not acknowledge the fact that the International Code was adopted because “the marketing of breastmilk substitutes requires special treatment, which makes usual marketing practices unsuitable for these products” (from the preamble). Nestlé is not only competing with other manufacturers of breastmilk substitutes, it is competing with mothers who produce milk naturally and do not have millions of dollars to spend boasting how it is the very best for their babies.

But there is a counter-movement. The UNICEF Baby Friendly Hospital Initiative is changing hospital practices and a body of evidence is growing on the positive effect that this has, both on infant health and economically.³³ Following the adoption of the Innocenti Declaration in 1990, many countries have appointed national breastfeeding coordinators. World Breastfeeding Week, organised by the World Alliance for Breastfeeding Action, helps to raise awareness of the benefits of breastfeeding.

In December 1998 IBFAN was awarded the Right Livelihood Award (the ‘alternative Nobel Prize’) “for its committed and effective campaigning over nearly twenty years for the rights of mothers to choose to breastfeed their babies... free from commercial pressure and misinformation with which companies promote breastmilk substitutes.”

Yet, eighteen years after it was adopted the baby food companies are still fighting implementation of the International Code and Resolutions. To ensure that companies behave ethically there have to be independent, transparent and effective controls on their marketing activities. The structures are being put in place – over half of the world’s population is now protected by national

measures implementing the International Code and Resolutions. Those measures must be enforced, even if takes the threat of fines or imprisonment.

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Nestlé in India

Arun Gupta

Since the adoption of the International Code of Marketing of Breastmilk Substitutes, 20 countries are recognised as having implemented all or nearly all of its provisions, and a further 27 countries have implemented many of them. India was one of the first 10 countries to initiate such action. The Government of India adopted the Code and promulgated it as the Indian National Code for Protection and Promotion of Breastfeeding in December 1983.

To enforce the provisions of this Code, pending the framing of a full-fledged law, labelling requirements were prescribed under the Prevention of Food Adulteration Rules. Finally, in 1992, The Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act, 1992 (the IMS Act) was enacted. This Act came into force in August 1993 along with Rules framed for its enforcement.

The IMS Act does not aim to ban the products under its scope, but seeks to strictly regulate marketing and promotion of the products. It prohibits the promotion of breastmilk substitutes, which the Act calls infant milk substitutes, and feeding bottles, while permitting promotion of complementary foods, which are dubbed “infant foods” under the Act. It aims to curtail misinformation and misdirected “education” of pregnant women and mothers of infants about breastfeeding, and prohibits contact between industry and pregnant women or mothers of infants. By creating awareness among pregnant women and lactating mothers about the benefits of breastfeeding, and by providing accurate and factual information, the government hopes to reverse the decline in breastfeeding.

The Act seeks to ensure the proper use of infant milk substitutes and infant foods. The idea of the government is to restrict and control the use of

these products by advocating their use only on the advice of a health worker. It defines the role and responsibilities of health care institutions and health workers to ensure the proper use of infant milk substitutes, feeding bottles and infant foods. The Act completely prohibits any form of promotion or advertising of infant milk substitutes (formula) and feeding bottles. However, it allows promotion and advertising of infant foods (complementary foods) subject to certain restrictions regarding accompanying information regarding the benefits and superiority of breastfeeding, publication of a prominent statement that “mother’s milk is best for your baby”, and so on. It completely prohibits contact by manufacturers and distributors with a pregnant woman or the mother of an infant, and does not permit demonstration of products within the scope of the Act, except by health workers.

Also prohibited are gifts, utensils, and so on, by manufacturers and distributors to pregnant women, mothers of infants, or members of their families, for the purposes of promoting infant milk substitutes and feeding bottles. Free and subsidised supplies are also banned, as are use of health care facilities for putting up posters, calendars and the like, or for any promotional activities.

Unfortunately, while the IMS Act bans the use of baby and mother pictures or other graphics, which idealise the use of infant milk substitutes (formula), it does not place a similar embargo on infant foods and feeding bottles. Restrictions are placed on sponsorships and subsidies by industry to persons in health care facilities, but there are some loopholes here which the companies continue to exploit. Significantly, the Act completely prohibits payment of incentive-based wages to employees of companies manufacturing or marketing products within the scope of the Code.

The enforcement provisions of the IMS Act are significant. Any products violating any provision of the Act are liable to be seized and confiscated, with

extremely expensive provisions for redemption of confiscated goods. In addition to confiscation, strict criminal sanctions and penalties are prescribed under the Act. Indeed, for violation of the provisions relating to labelling and food standards, a minimum mandatory jail sentence of six months imprisonment is prescribed. Interestingly, the Act permits complaints to be filed not only by Food Inspectors under the Health Ministry, but also by representatives of non-governmental voluntary organisations which are engaged in infant health and nutrition, and are notified by the Government for the purpose.

Monitoring the Act

The IMS Act is unique in that for monitoring the marketing practices of baby food companies, in addition to the authorised government inspectors, it has authorised certain citizen's groups to file criminal cases in court in case of violations. It has also provided that upon such complaint being accepted by the Court, it then becomes the duty of the State-appointed public prosecutor to prosecute the case. A number of NGOs have been authorised under the Act to approach the court of law in case of violation of any provision of the Act, to ensure the law is followed in letter and spirit.

In October 1994, Nestlé's advertisements appeared to be violating some provisions of the IMS Act. Some magazines carried adverts for Cerelac, a follow-on food or complimentary food, in Hindi in which Nestlé recommended Cerelac from the fourth month of life. Underlined in the advertisement was – 'Chauthe machine se' – meaning "from fourth month", that is, when the child is just 3 months old. This is a month earlier than is allowed by the law. The advert could suggest that Cerelac should be used at the beginning of the 4th month, but the Act defines infant food "as any food being marketed or otherwise represented as a complement to mother's milk to meet the growing nutritional needs of the infant after the age of four months". The advert could be seen as an attempt by Nestlé to persuade

mothers to start cereal foods when their baby is 3 months old – a month earlier than is allowed by law – and to generate more revenue for the company, knowing fully well that it will reduce breastmilk intake.

It was also noticed that Lactogen, the infant milk substitute sold by Nestlé, did not fully comply with the labelling Rules, especially since the statement that "Mother's Milk is Best for Your Baby" was substituted by "Breast Milk is Best for Your Baby". This is a significant change because, in the Indian context, the word 'Breast' is understood by many to mean the udder of a cow.

I was authorised by Association for Consumers Action on Safety and Health (ACASH) Bombay, which is a notified NGO under the IMS Act, to file a complaint against Nestlé. A complaint was filed in the Court of the Metropolitan Magistrate, Delhi, and after preliminary hearing and scrutiny of the records, Nestlé was summoned to the Court through its Managing Director, under an order of January 1995.

Nestlé resorted to delaying tactics. The company said it did not receive the summons, even though this has been served twice. In July 1995 one of the company's legal representatives was discovered surreptitiously observing the court proceedings and, on being asked why he was there, he informed the Court that he had been sent by Nestlé. It was only then that the magistrate could serve the summons to him, directing Nestlé to appear. Even after appearing in the Court, Nestlé found excuses to delay the hearing. On procedural grounds, the company has managed to delay it up to the present time.

Nestlé claims to obey the Indian law and to follow the International Code in letter and spirit in India. But through a writ petition in the High Court of Delhi, Nestlé has sought to challenge the Constitutional validity of the IMS Act and Rules, and prayed for a stay of the operation of its important provisions. Nestlé complained that the IMS Act and Rules are

impossible to comply with. Its petition was filed in December 1995, and though it has not yet been admitted, Nestlé seeks to exploit the situation by delaying hearing of the criminal complaint on the ground that this petition is pending.

But the company has changed their labels, to conform with the IMS Act and Rules, thus showing that compliance is possible. In June 1997, Doordarshan, the official Indian television, banned the advertisements of infant foods that are not in conformity with the IMS Act. This happened after a series of deliberations and considerations by the various ministerial committees including the Law ministry about the advertisements of infant foods, which were being telecast by Doordarshan.

Nestlé has also adopted new ways of promoting their products. 'Nestlé Nutrition Services' invites doctors to meetings on subjects like "Dangers of unmodified bovine milk", but at the end of the meeting they offer a free lunch and conclude by promoting Lactogen.

Nestlé appears to be still violating the Indian law by advertising Cerelac in a similar fashion through private channels like Star and Zee TV which are relayed from Hongkong, the viewers are very much Indian and advertisements are made for them.

Apart from Nestlé, two other companies were also taken to Court for allegedly violating the IMS Act. Johnson and Johnson faced two cases for selling feeding bottles on discount, and for advertising of feeding bottles and promotion of a "colic-free nipple" (teat). The company apologised in the Court and voluntarily agreed to withdraw completely from the feeding bottle market in India; it stopped manufacturing the bottle in late 1996, finally withdrawing completely in March 1997.

An Indian manufacturer of pharmaceuticals and infant formula, Wockhardt, was taken to Court in Bombay due to alleged violations of the labelling

requirements similar to those committed by Nestlé. Wockhardt also apologised through an affidavit in the Magistrate's Court, undertook to follow the Act, and also volunteered to stop using the name of its formula for other paediatric products such as vitamin drops, which were being used for surrogate advertising of formula. In India, the net will now be spread wider to investigate more alleged violations.

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Nestlé in the Philippines

Ines Av. Fernandez

Nestlé activity in the Philippines started in the early 20th century with a print advertisement for Nestlé Bear Brand, a condensed milk. In 1902, milk was imported into the country for orphanages. After the World War II, a milk influx came via the Food Aid programme under the Philippine-American Friendship; labels imprinted in milk sacks given to public school children. Later, this was translated into commercial selling of milk products from American-based companies namely Mead Johnson, Wyeth (American Home Products) and Abbott-Ross.

In the 1950's, radio soap operas played the known commercial jingle of Nestlé Liberty evaporated milk. In the late 60's and early 70's, Nestlé started an aggressive intrusion into the hospitals and paediatric clinics where the "Pelargon" baby posters were displayed in the wards as well as printed in the daily newspapers. Baby booklets showed Pelargon and Lactogen infant formulas and bottlefeeding babies implying a modern neo-culture. Since then Nestlé has consistently done brisk business in the Philippines.

In 1995, Nestlé's gross sales was 22 billion pesos (about 25 million Swiss francs), making it the 9th largest company in the country. Scarce dollar reserves were brought out of the Philippines into Nestlé's headquarters in Switzerland by the selling of unnecessary products to Filipino mothers and children. When the Philippine government under the Cory Aquino presidency had enacted into law the Philippine Code of Marketing Breastmilk Substitutes and Related Products in 1986, Nestlé resisted it in ways such as issuing an internal memo which instructed the employees or medical representatives to undertake their promotional visits in the homes of the doctors to skirt the law.

Several documents showed Nestlé receipts of deliveries of air-conditioners, refrigerators and

promotional gifts to doctors and hospital directors, an aberration of the Philippine Code. The Code was a result of a longstanding struggle by the consumer groups particularly the grassroots mothers and professionals. During the Marcos and Aquino administrations, mothers struggled to persuade Senators and Congressmen to legislate the proposed Code, which is stronger than the WHO/UNICEF Code.

The lobbying efforts culminated in a street protest march by 1,000 breastfeeding mothers with babies in front of Nestlé office. The women performed a stage play showing Nestlé's alleged misdemeanours where mothers were misled by their advertising promotions. It was covered by the media and prominently featured in front pages around the world. As a result it stirred a public debate. The government formed a drafting committee headed by Department of Health (DOH), presidential lawyers, mothers with their legal advisers. In the same year in 1986, the Philippine Code was enacted into law.

In 1983, UNICEF in Manila had played a significant role in facilitating the formation of the National Movement for the Promotion of Breastfeeding (NMPB). It was a conglomeration of consumer groups represented by the mothers sector, DOH, paediatric and obstetric societies and academics. The consumer groups maintained a vigilant posture in raising the unethical practices of the babyfood companies. Through the process of constant meetings and sharing sessions, DOH officials were enlightened.

In 1984, Nestlé's advertising arm, the Advertising and Marketing Associates, invited the consumer groups to a dialogue; the groups presented the compilation of violations of the International Code. The AMA promised to correct it. But in the end they beguiled the DOH by falsely implying that they had already consulted the consumers group who concurred with their views on the draft Code.

As a consequence, the consumer groups lost confidence in the Nestlé initiated dialogue.

Eleven years have passed after the enactment of the Philippine Code but Nestlé's promotional activities continue unabated. Nestlé pursues aggressive practices like hiring contractual employees who are newly graduate nurses. They are called Health Educators and are paid the equivalent of about 110 to 220 dollars a month. They visit the breastfeeding mothers at home and try to convince them that Nestlé Nestogen 1 and 2 infant formula and follow-on products are good to complement with breastfeeding or good substitutes when they leave the homes to go to the market or work in the rice fields nearby.

The Health Educators show attractive informational materials that violate the Philippine Code. They ask nurses or midwives or community-based health workers (volunteers) to accompany them to homes of the mothers to gain entry; in return they are given promotional gifts. And the Health Educators ask mothers to sign in the logbook to acknowledge their visit.

During immunisation day campaigns, the government DOH, Nestlé Health Educators helped in the municipal health centre of the town. They talked to the mothers with babies lining up for their vaccination. Nestlé provided snack drinks,

Mom, a milk product intended for pregnant mothers, but given to all present in the health centre. The plastic cups with Mom milk carried a printed Nestlé Mom brand name.

Nestlé has given funds to support the practice sessions of the choral group of the Paediatric Society provincial chapter in Bicol, and to the Integrated Midwives Choral Group for their choral competition in Manila. The company's marketing spares no one – young and old, the innocent and the learned. Such marketing corrupts the value of volunteerism ingrained in the community-based health workers who freely service the community. Even the traditional healers were also used as marketers without them knowing that their generosity is exploited.

"Many people now believe in modern superstitions", said a former Philippine Health Secretary, Dr. Alfredo Bengson, "these include the use of bottle milk; These are superstitions no less pernicious than the unhealthy folk traditions. But while the wrong traditional ways are superstitions borne out of ignorance, the wrong "modern" ways are superstitions borne out of greed. And we all know that greed has strong powerful interests."

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Cargill: corporate food security?

Brewster Kneen

Consolidation of corporate control of food supplies is a global concern. An elite of corporate executives and their shareholders are all for it; a vastly greater number of people see a dark road ahead forcing them into dependency and market relations they cannot afford.

In essence the strategy is ancient. Imperial armies (of humans) are expensive and unreliable; besides, the modern corporate executive's image of beneficence would be tarnished by overt violence and threats of violence (though they are still widely used). There are now more subtle ways to gain control, create dependency and extract wealth. Supply lines have always been crucial to the survival of cities, armies and empires, just as the denial of subsistence and the ability to feed oneself has been essential to controlling agrarian societies. The United States understood this well in its war against the people of Vietnam; it is a tragic irony that one of the companies which produced and profited by the production of the defoliant Agent Orange for that war is now hard at work developing a 'technology' to 'defoliate' sterilise, actually any agriculture that does not pay its dues to the company and purchase its goods from the Monsanto store.

Indeed, when we speak of corporate control these days, it is Monsanto that generally springs to mind, with its efforts to gain control over the world's food supply at the level of plant genetics (germplasm, seeds and genetic engineering). Success in this project would lead, on the one hand, to conditions of dependency, serfdom and destitution, and on the other, unprecedented consolidation of control of food in the hands of a tiny elite of corporate directors and senior executives. Fortunately, the company's aggressive tactics are sounding the alarm for people around the world of all classes and a healthy resistance is growing.

There is, however, another form of corporate control that continues to grow silently and unseen like a cancer, epitomised by the venerable and nearly

invisible trader, food processor and speculator, Cargill Inc. This is structural control of the food system, not unlike Monsanto's at the level of the seed, but on the macro scale of global and national trade policy, global commodity markets, and integration up and down the food chain.

Cargill seldom argues its policy in its own words, preferring to mask its programme behind the policies and arguments put forward by academics, policy analysts, development agency spokespersons or men in the World Bank or the United Nations. A good example is an article on agriculture in sub-Saharan Africa in the company's November, 1998, Bulletin, which has been for years Cargill's vehicle for presenting its basic governmental policy recommendations to the 'public'.¹

Cargill uses the UN definition of the problem: "Per capita production which measures everything from corn (maize) to cassava has fallen by nearly a third in the last two decades, according to the United Nations. In addition, the lack of agricultural growth has perpetuated a cycle of poverty that keeps many from buying the food they don't grow."

Next, the company defines the solution: "Agricultural growth both increases a region's food supply and spurs economic development in other sectors so that people can afford to buy more food."

Then it has a UN staff person define the means to the solution: "'Developing countries should not strive to become self-sufficient in their own food production, but rather self-reliant', James Gustave Speth, administrator of the U.N. Development Programme, said in a 1996 publication by the International Food Policy Research Institute. 'They must be able to import the food they can't grow themselves and must use agriculture and other methods of firing up the economy so that they have the incomes to purchase the food needed by their people'".

Cargill also uses the McKinsey Quarterly, published by international business consultants McKinsey & Co., to describe what it views as deficiencies in West African agriculture: "At present, farming productivity is minimal, a result of food crops being produced in near-subsistence conditions on small family-owned or leased plots with scant investment in seeds, fertiliser, pesticides and machinery." The McKinsey Quarterly report says that in order to improve agriculture, "farmers would have to shift to hybrid seeds, use fertilisers and other inputs and improve production methods". The task is enormous, it says, but "agricultural development also holds great potential for foreign businesses looking for long-term investment".

Cargill has been doing business in eight sub-Saharan African nations since 1981. This now totals around \$1.3 billion a year, mainly in processing and trading cotton, coffee, cocoa, oilseeds, sugar, and rice, as well as the development and marketing of hybrid maize, sunflower, sorghum and soybeans.

Five companies

When Dan Morgan's *Merchants of Grain* was published in 1979, there were five global grain companies: Bunge, Louis Dreyfus, Andre, Continental and Cargill. Since then each has differentiated itself, with Cargill emerging as the undisputed ruler of the grain trade while also extending its tentacles into every aspect of the food system on a global scale. Cargill has also emerged as by far the most politically influential.

In November, 1998, Cargill announced that it was buying the grain handling operations of Continental Grain Co. More than just a significant expansion and consolidation for Cargill, this acquisition marks the end of the period documented by Morgan in which the global grain trade has, to a lesser or greater extent, been controlled by a handful of quite similar companies.

What Continental is left with illustrates the specialisation that has taken place in recent years. The company is to be renamed ContiGroup Companies Inc., consisting of a cattle feeding business (the largest in the US), an integrated pork production business, (the third-largest in the US, including Premium Standard Farms), the sixth-largest poultry company, and animal feed and aquaculture businesses. The fastest-growing segment of Conti's business has been Conti-Financial, its commercial and consumer finance company. Ironically, this is one of the sectors from which Cargill has withdrawn.

As Continental's chairman Paul Fribourg explained the sale, "The evolution of seed genetic engineering, combined with the integration of grain origination, trading and grain processing are two irreversible trends." Seeing no prospects of reaching Cargill's level of integration, Conti has decided to refocus on its specialties.

On the occasion of Cargill's purchase of Conti's grain operations, Cargill executives gave a rare interview in which they said, "We are going to create a much more competitive infrastructure to take grain off the farm and bring it to customers around the world. Producers will get a better price, and consumers will get a better price."²

"With declining grain prices, many farmers fear that further concentration in agribusiness will significantly diminish competition," Cargill spokeswoman Linda Thrane explained, but "this acquisition is going to be very beneficial to farmers. It's going to allow us to take costs out of the system and provide better service at lower costs".³

A monopoly may be able to reduce its costs of doing business and eliminate duplication of facilities and services, but 'taking costs out of the system' is not likely to be 'very beneficial to farmers' unless they are organised well enough to bargain collectively. The Canadian Wheat Board is under

constant attack for this very reason, since it operates in the collective interest of grain farmers.

Seeds

In June, 1998, Cargill sold its international seed operations, except for North America, to Monsanto for \$1.4 billion. A few months later it sold its North American seeds business to AgrEvo, the world's 5th ranking agrochemical corporation, for \$650 million.

Reflecting the turmoil in the seed business caused by consolidation on the one hand and intellectual property claims (and litigation) on the other, shortly after the sale of Cargill's North American seed business to AgrEvo was announced, AgrEvo changed its mind and was said to be offering Cargill \$350 million for the business on the grounds that there was a substantial liability attached to the deal in the form of a lawsuit against Cargill by Pioneer Hi-Bred International. Pioneer claimed that Cargill stole Pioneer seed corn and used it as the basis of its own proprietary seeds. Cargill contended that a deal is a deal.

Cargill's 1998 exit from the seeds business came as a surprise, but was clearly a well thought-through decision made on the basis of what would, in the future, be best for the company. Cargill makes none of the pretentious and misleading statements characteristic of Monsanto. Cargill knows very well it is not in the business of feeding the hungry or saving the environment, though Cargill's environmental record, in fact, is probably superior to a great many other companies. Its grain handling and financial trading are not particularly environmentally harmful in themselves, and if one's perspective is sufficiently long-term, even restoring massive phosphate strip-mine sites in central Florida in an ecologically sound and attractive manner can simply be good business. The remains of open-pit mining are not a hot item on the real estate market.

Cargill, in explaining the divestiture of its seed business – which constituted less than 1 per cent of

its total sales – said that the company lacked the biotechnology expertise to compete in the rapidly changing seed industry and that it intended to focus on its core strengths, commodity trading and food processing.

For its 1997-98 fiscal year, Cargill reported earnings of slightly less than half a billion dollars, down 43 percent from the prior year, while sales fell 8 percent to \$51 billion and cash flow was down 15 percent to \$1.6 billion.

The company nevertheless reported investing \$1.4 billion during the year in expanding key businesses with acquisitions such as oilseeds processing in South America and Europe and broadening the company's global range by building feed mills in Poland and China. Cargill also said it was extending its technological capabilities by developing partnerships with companies like Monsanto. "Our investments leave us well positioned to serve a growing global appetite for more and better food, for our industrial products and for our financial services," the company reported. This is as good a statement of Cargill's global strategy as one can find.

Cargill has taken the opportunity presented by its reduced sales and profits in 1997-8 to make one of its periodic reaffirmations of its historic strengths: collection, transportation, fertiliser, processing and distribution of food and fibre crops, and what happens to the crop after it is harvested. In withdrawing from the seed business it has abandoned what is fast becoming a social and ecological battleground, if not minefield, and a very high-risk financial pursuit in favour of expanding in essential and secure areas largely out of public sight.

A similar move to reposition itself was taken with the severe cut-back in the operations of Cargill Financial after the division suffered losses reported to be roughly \$150 million in 1998 as a result of positions it took in the Russian debt and foreign exchange markets. (During the 1994 Mexican peso

crisis, Cargill traders bet correctly on exchange rates and made millions for the company). Cargill is reported to have cut the total capital at risk through Cargill Financial from \$8 billion to \$3 billion over the past year through such divestitures as selling its sub-prime mortgage and mobile-home lending unit and its truck, machinery and computer leasing company.

The company says that Cargill Financial is now more focussed on the buying and selling of financial instruments that help it manage risks in its international agricultural operations.

APEC

For many years Cargill has quietly sought to position itself so that it could play a significant role in China. The company's offices in Hong Kong, Taiwan and Japan have all been windows into China and staging points for the company's activities in China. At the same time, Cargill has elaborated its food and agriculture policy recommendations for Asian and Pacific food security just as it has for Africa.

"Self-sufficiency ... is not a practical answer to Asia's growing food demand. Expanded trade is necessary to smooth out regional supply swings and harness the productivity of low-cost producers worldwide," wrote Cargill executive Robbin Johnson, presenting Cargill's scenario for APEC.

"Rapid economic growth and urbanisation in populous Asia are posing new challenges to building an efficient, environmentally sound global food system... The Asia Pacific Economic Cooperation (APEC) forum provides a venue for addressing that challenge...."

"An efficient, global food system is a three-dimensional challenge built along three axes: geographical, food products, and the ladder of preferences. The geographical axis of the food system runs from the village through the nation-state to the global market. At the village level, all

that is needed is locally supplied. A food system at the national level is a good deal more complex. Inputs must be brought to producers, and output must be stored, handled, processed and distributed. At the global level, new factors come into play, foreign exchange, seasonal variations, substitution of crops and other variations in tastes, practices and institutions. At the lowest level of the pyramid, the primary threat is food security. Because they have no alternatives, poor countries and poor individuals cannot afford a disruption to their supply of basic foodstuffs. Food security is often mistakenly translated into a demand for food self-sufficiency. It does not have to mean that each country produces all of its own basic foodstuffs. In fact, an open trading system has three incontestable advantages over self-sufficiency."

"First, trade reduces the risks arising from crop shortfalls, since global food production fluctuates much less than local output. A poor crop in India, for example, can be covered by imports from America or Australia."

"Second, trade lowers food costs by giving consumers access to efficient producers... Third, trade raises incomes and improves diets through comparative advantage. China grows faster by exporting labour-intensive goods to pay for grain and oilseed imports.... Rising agricultural productivity frees up people and resources for development of industrial and service sectors in the economy while also building demand for their output. In a word, market-based agricultural systems are powerful engines of economic development...." Perhaps as never before in history, market-based food and open trade policies are needed and needed fast to enable agriculture to do its job. This is APEC's regional challenge and global opportunity."⁴

Not everyone would agree that market-based and open trade policies are the best route to food security, in Asia or anywhere else. To understand

the company, however, and the power it wields, one does need to pay attention to the statements of its own spokespeople as well as its actions in both the economic and political spheres.

United States

If Cargill has recommendations for Asian food policy, it also has recommendations for the US, with which it identifies its corporate interests: "Fast track authority for trade negotiations is vital to U.S. agriculture.... The United States must be able to assert its historic leadership role ... to ensure the development of a comprehensive agenda that advances U.S. interests.... As the low-cost producer of agricultural commodities, U. S. agriculture stands to benefit the most from a more open trading system. And, with an increasingly mature domestic market, U.S. farmers and agribusinesses must continue to look to exports for further growth."

Cargill apparently sees no contradiction between the interests of the US and those of a country like Vietnam. An 'open trading system' will benefit all, though some perhaps more than others. It will also ensure a decrease in self-reliance and self-sufficiency and an increase in dependency.

Speaking at the dedication ceremonies for a Cargill feed mill in Bien Hoa, Vietnam in 1997, Whitney MacMillan, 'Chairman Emeritus' of Cargill, outlined the Cargill philosophy of food security: "About 40 percent of our net worth is invested outside North America. A slightly larger percent of our sales volume is generated by non-U.S. operations. Traditionally, Cargill takes a conservative, long-term approach to making investments. We look to areas in which we can extend the basic skills we have developed in existing businesses to areas in which they are both needed and wanted.

"We take these basic businesses into new countries, first on a small scale as we have done here in Vietnam. The business may be seed research and production, or basic processing, or

feed manufacturing, or others. We use this proven business base to learn about the market and the social, political and economic environment of the new country.

"Linking all our activities and locations is the common overall view that Cargill is involved in the business of serving basic human needs. Our goal is to meet rising world demand for food and related products that are the foundation of economic growth and improved living standards worldwide. If a primary challenge of the 21st century is to achieve a better fed and more prosperous world, the focus must be on trade and markets. Well functioning competitive markets must play the lead role in organising local economic activity, such as we have here in Bien Hoa. Just as important, well functioning competitive markets must also play a role in global trade and investment flows. This must be done in ways that achieve food security and economic development without environmental stress....

"Why is food security an issue? Food is essential to life and politically sensitive. Governments want to ensure that their citizens have enough to eat. If food systems fail and people go hungry, governments may collapse. This makes food a fundamental issue of sovereignty.

"Free trade increases food security, both locally and globally. Consumers with access to global food supplies are less vulnerable to localised shortages caused by drought, disease or civil disorder. A global marketplace also smooths out the price peaks and valleys that agricultural protectionism can accentuate.... An open economic system attracts capital and technology, and it allows the principle of comparative advantage to work. It helps ensure that countries can export what they produce most efficiently and import products grown or manufactured more efficiently by others."

Adhering to its historic strategy of using feed mills to insert itself into domestic agricultural systems

(Japan, Taiwan, Poland, Vietnam...), Cargill is building two feed mills in the Philippines, one in Baliuag, Bulacan, and the other in General Santos City, South Cotabato. The two plants, according to Cargill, will produce a wide range of world class livestock feed products and services tailored to meet the requirements of local Filipino livestock producers. Cargill does not mention that the feed ingredients will be sourced globally. According to the manager of Cargill Philippines, the projects clearly signal Cargill's "commitment to serve the Filipino consumer and to help improve the productivity and efficiency in agriculture, a vital but neglected sector of the Philippine economy." Cargill already employs 320 people in its Philippine businesses, which include copra processing, hybrid seed corn and protein meal distribution.

The rhetoric of food security is relatively new to Cargill. Dedication to "open markets" is not; for the past century the development and utilisation of ports and water routes has been key to Cargill's own form of globalisation and the development of "open markets". Its current development of ports and water routes around the world carries forward this policy of seeking access to every major growing region of the world in order to be able to source, or 'originate', 'product' wherever it can be obtained cheapest at any given time. Thus the grain, oilseeds or meal supplying the Bien Hoa feed mill might come from Punjab, Iowa or the Cerrado of Brazil depending on price and availability. Each region is linked by Cargill's network of ports and the 'free' water routes between them. When Whitney MacMillan or Robbin Johnson talk about food security, they are talking about the security enjoyed by Cargill in being able to source cheap raw materials. What this means for the people and farmers of Vietnam and the Philippines, is, as noted above, dependency.

Continental
Cargill's global trade and transportation strategy is well illustrated not only by its purchase of

Continental's grain division, but also by other port developments around the world.

Continental is particularly attractive to Cargill because of its extensive infrastructure of terminals and barges on the Mississippi, Ohio and Illinois River system in the U.S. (27 storage facilities on the rivers plus 6 export terminals on the lower Mississippi, with a massive barge fleet to move grain downstream). Some experts estimate that if Cargill is able to retain all the facilities, it could not only have 40 per cent of the US grain export business after consolidation, but would also have more grain storage and handling capacity than exists in all of Canada.

In Canada, Cargill bought a half-interest in Alberta Wheat Pool's Vancouver terminal in late 1997. In recent years, Alberta Pool has handled all Cargill grain shipped from the Canadian prairies through Vancouver. Alberta Pool said it had no choice but to make the deal because if it didn't, it would lose all of Cargill's business and doom the Alberta Pool terminal. In 1995, Cargill and Saskatchewan Wheat Pool had announced a joint venture to build a new grain terminal in Vancouver at Roberts Bank. Apparently Cargill decided that it could use that option to force a deal with Alberta Pool at considerably less cost. Cargill comes out of the deal with the best of both worlds: control with a low-cost investment.

At the same time, Cargill is developing port facilities for fertiliser, grains and oilseeds around the world to ensure that it has the infrastructure to take advantage of the 'open markets' it is demanding at the policy level. Having been defeated by Indian activists in its 1993 attempt to establish a deep water port on the west coast of India at Kutch, very close to the Pakistan border, Cargill quietly returned in 1998 to develop, along with local partners, an anchorage-lighterage facility capable of discharging and loading Panamax vessels at the port of Rozy, just south of its earlier efforts. Cargill reported that it

would use the facility to import fertiliser and wheat as well as to export protein meal and other products, clearly an attack on Indian self-sufficiency and food security.

On the other side of the world, in order to tap the productive potential of the Cerrado of Brazil and the Pampas of Argentina, Cargill has been building a fertiliser port facility adjacent to its large oilseed processing complex at Puerto General San Martin, Argentina. The facility is to be the largest, most modern and most efficient fertiliser port on the upper Parana River, says Cargill, able to source "the lowest cost product" from anywhere in the world, including Cargill's phosphate mines in Florida, "and deliver the products and services demanded by farmers through the lowest cost distribution channel."

Cargill had already developed other import-export port facilities on the river both alone and in partnership with Argentinian companies, with fertiliser as the import commodity to be handled and soybeans (or oil and meal) and corn and corn products as the export crops.

Other recent activities illustrate how Cargill is expanding both at home and around the world, both on its own and in partnerships. It is building an export-oriented citric acid plant adjacent to its corn wet milling facility in Uberlandia, Brazil, about 600 km. NW of Sao Paulo (Santos Port). Cargill already has a citric acid plant at its Eddyville, Iowa, corn facility. The new plant will make the company the third-largest global producer of citric acid and be able to utilise either sugar or corn as feedstock for the fermentation process.

Cargill is also building a \$100 million lysine plant in partnership with Degussa AG, of Germany, next to its corn wet milling complex in Blair, Nebraska. The same complex also has a lactic acid plant jointly run with PURAC USA, a subsidiary of CSM n.v. of Amsterdam, and a low-calorie sweetener

(erythritol) plant in partnership with Mitsubishi Chemical of Japan.

In December, 1998, Cargill acquired Grandes Molinos de Venezuela S.A. (Gramoven) from Bunge International. Included in the purchase is a flour mill, a pasta plant and an edible oils plant, all near Caracas. Cargill has been active in Venezuela since 1987.

Like many other food giants, Cargill sought to gain a controlling interest in the Russian food system or the most potentially profitable sectors and enterprises of it, shortly after the collapse of the Soviet Union. The company opened its first Russian office, in Moscow, in 1991, and by 1997 the company had 1300 employees in Russia. The 70 employees in the Moscow office were involved in "the business industry of petroleum, frozen concentrated orange juice, vegetable oil, sugar, dairy and other agricultural products." In the Caucasus, Cargill sales teams went into the fields "to sell hybrid seeds and fertiliser, provide agronomic consulting and buy grain or barter fuel. Cargill corn and sunflower hybrids are now being produced in the Caucasus.... There are better times ahead for Russia's 150 million people. Cargill is in a good position to be part of that future."

As a private company, Cargill does not have to meet the quarterly demands of investors. The company's accumulation of capital over the course of nearly 135 years also enables it to take a long view and devote whatever resources it feels appropriate to position itself as part of everyone's food future. To achieve its goal, Cargill seeks to occupy more and more 'territory', along with the alienation of whole societies from their settlements and their commons.

While the Romans, centuries ago, engaged in a similar project in the world as they knew it, they had to rely on much cruder forms of occupation and control of food. Like many others after them, they had to rely on highly visible, expensive, and

unreliable armies of occupation. Cargill, however, along with other major TNCs, has developed and used more subtle – and more reliable – mechanisms and structures of occupation and control. Building a global food system, and establishing their toll booths along every route that food travels, allows the company, with an army of only 80,000, to be a determinative part of everyone’s food future.

Brewster Kneen is author of “Invisible Giant: Cargill and its Transnational Strategies”.

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Cargill in Zimbabwe

Alistair Smith

Cargill arrived in Zimbabwe in the late 1980s, with a strategic view to using the country as their principal African operational base. Although the company's Africa division is managed from Cargill plc in Surrey, England, Zimbabwe is seen as the most important research location on the continent. By mid-1996, Cargill had "40 trial sites, not including government trials" across Eastern and Southern Africa.

In Zimbabwe, Cargill's multi-pronged entry strategy was seed production and trade (maize, then sunflower), commodity trading infrastructure (set up the new Zimbabwean Agricultural Commodity Exchange ZIMACE, and cotton processing (by buying a chunk of the former state-owned Cotton Company of Zimbabwe's ginning capacity). This was one side of the deal. The other side – the unwritten and less visible side of the deal – involved the controversial question of Zimbabwe's 932,000 tonne strategic food reserve. This is a public physical buffer stock of maize, held by the Zimbabwean government, both for the country's own food security needs in times of drought, as well as on behalf of the 12 countries who make up the South African Development Community (SADC).

In June 1996, an English farmers' group was taken by a senior official of Cargill, Zimbabwe to a large government grain store, run by the government's Grain Marketing Board (GMB), which also handles the strategic reserve. The official jubilantly pointed out that the store was empty. He then harked back to the liberalisation of grain prices in 1995, when "private traders had a field day for a few months".

By 1996, Cargill had an established 'regional trading team' in Harare, and was producing maize trading intelligence and Food Early Warning System reports. The company's had kick-started a fast-growing Commodities Exchange, initially enabling the company to make "huge margins" (10-15 per

cent). The official said that as commodity trading becomes "more sophisticated, there will be more position-based trading. There will be more swings as things get more open and freer."

Although figures are not available, Cargill Zimbabwe remains very active in trading grains and animal feed, especially for Far Eastern and Near Eastern markets out of the port of Beira in Mozambique. As for the GMB, and its strategic food reserve, Cargill would possibly tolerate a non-physical, financial reserve for the region, but was clearly gunning for the Board as it had been until 1995.

Cargill disliked the way that the strategic reserve – equal to half the average annual feedgrain demand in Zimbabwe – was still kept as physical stocks. Most of the storage which Cargill had been acquiring, slowly but surely, is around the commercial farming sector. In the eyes of company "Zimbabwe has no storage or grain production problems, but has a strategic reserve problem", said the official. He felt that SADC should take a minimalist approach, with at most 3-4 months' stocks.

In the summer of 1995, around the time of grain price liberalisation, Harare ran out of maize for 8 days. Malawi maize was trucked in. Clearly, Cargill's vision of food security goes directly against the grain of any efforts towards regional food security based on large local, district or national level physical stocks; especially so, if the vision involves the government, farmers' organisations, or farmers and rural communities themselves in managing stocks.

In a "country driven by people with cash", Cargill knows it has more than a head start in getting what it wants out of the very institutions that it believes are such an impediment to good business: "My gut feeling is that this region is on the way up", said the official, "the less politicians get involved the better".

Alistair Smith is a non-executive director of Farmers Link, UK.

Monsanto: corporate food gamble?

Andy Whitmore

"Guess who's coming to Dinner? Ten billion by 2030."¹ Which United Nations agency or charitable body is once again pricking our consciences over the food security of future generations? The answer is neither of the above, but the transnational corporation, Monsanto, a self-styled "life sciences" company. It views its innovations as the saviour of the starving masses. Monsanto's president Hendrick Verfaillie is quoted as saying genetically altered crops are the only viable solution to the likelihood of the world's population doubling to 10 billion by 2050. "We have to convince the consumer this is good for him".²

Monsanto has placed itself at the very centre of the controversy over whether biotechnology can increase food security. Its campaign to become a world leader in "life sciences" – food ingredients, medicines and agricultural products – began in the mid-1980s, and since 1996 the company has spent over US\$8 billion acquiring seed and agricultural biotechnology companies.³ These include Calgene, Agracetus, Asgrow Seeds, Holden's Foundation Seeds, Dekalb Plant Genetics, Cargill's international seed operations and Plant Breeding International, Cambridge.

In August 1998, Monsanto was estimated to be worth US\$35 billion; a six fold rise in five years.⁴ In September 1997 it spun off its industrial chemicals and other synthetic fabrics divisions as a separate company, called Solutia, in order to pursue its new vision. In terms of chemical/ pharmaceutical companies Monsanto is not huge, as can be seen from market worries over the speed of its growth and its failed merger with the larger American Home Products in October 1998.⁵ In January 1999, Monsanto announced that it would sell its own cotton seed company (Stoneville), in order to satisfy the anti-trust authorities. In terms of ambition, its rhetoric and the acquisitions it has made, however, Monsanto is a giant. Its not dubbed the 'Microsoft of

Microbiology' for nothing.⁶

The company is therefore an excellent case study as to whether its practices live up to its hype. Starting with the history of the company, and looking at particular case studies, gives a good idea of what the biotech century that Monsanto is heralding would be like.

History

The Monsanto Chemical Company was founded in St. Louis, Missouri, in 1901 by John Francis Queeny, initially to manufacture saccharine, the first artificial sweetener. Queeny had brought the technology with him from Germany to the United States. The company has kept a constant interest in pharmaceutical products, some of which have led to controversy.⁷ But in its early years it was primarily a manufacturer of basic industrial chemicals, moving into plastics and synthetic fabrics in the 1940s. It is one of only four companies to be listed among the top ten US chemical companies in every decade since the 1940s.⁸

Monsanto's history is therefore rooted in the petrochemicals industry. It was the world leader in polychlorinated biphenols (PCBs), having purchased the company that developed them (Swann Chemical Company). Their manufacture was banned in the United States in 1976; PCBs had by then been shown to be potent carcinogens and linked to birth defects and mass poisonings. With a high affinity for fatty tissue, PCBs also accumulate in the food chain.⁹

More recently it is the company's development of herbicides that have caused most concern. Internal memos show that the company knew that its workers who made herbicides had become sick from dioxin contamination, but that it kept the evidence hidden. It also hid its links to the US military, who were showing an interest in the military uses of herbicides.¹⁰

The use of the herbicide Agent Orange, a mixture based on the chemicals 2,4,5-T and 2,4-D, by the US military to defoliate the rainforests of Vietnam during the 1960s, is well documented. Monsanto was the key defendant in the law suit brought by Vietnam War veterans in the United States for exposure to Agent Orange produced by the company; of the seven companies involved, it had to pay just under half of the US\$180 million settlement.¹¹

Monsanto was to be accused in many court cases of contaminating workers and the general public with dioxin, and of manipulating reports to cover up the dioxin contamination of a wide range of products. "Monsanto either failed to report contamination, substituted false information purporting to show no contamination or substituted samples to the government for analysis which had been specifically prepared so that dioxin contamination did not exist".¹²

Continuing this theme, it is also latterly famous, or perhaps infamous, as the maker of the world's biggest selling weed-killer, the herbicide, Roundup, (glyphosphate). Herbicides such as Roundup account for at least one sixth of Monsanto's total annual sales and half the company's operating income. According to one stock market analyst "Monsanto lives and dies based on its results for Roundup".¹³ This in itself is an indication of what the company views as "life sciences".

Despite advertising claims that Roundup is safe for humans and animals, and is benign to the environment, it is suspected of causing a variety of serious health problems.¹⁴ This is extremely pertinent given that much of the initial biotech development that Monsanto has conducted is in producing crops that are resistant to glyphosphate, (so called Roundup Ready crops) allowing it to be applied more frequently. It may or

may not be a coincidence that Monsanto is focussing on producing Roundup Ready crops just as it is about to lose the exclusive US patent on producing Roundup itself, so that it will still keep a stranglehold on production based around such an important source of profit.¹⁵

Food Security

It is worth looking at some of Monsanto's major biotech projects, to test the premise that the biotechnology the company is pursuing will increase food security.

The biggest storm over Monsanto concerns the Total Protection System (TPS), which has been dubbed the "Terminator Technology" by the Canada-based ngo, Rural Advancement Foundation International (RAFI). Monsanto acquired this when it took over the cotton-seed enterprise Delta and Pine Land Co. Terminator Technology would produce so called "suicide seeds", that only germinate for one season, preventing farmers from continuing their 12,000 year old tradition of saving seed to breed and plant in the next season.

Terminator Technology is seen as crucial for companies in order to ensure that their expensively developed and patented products are not 'misused' by poor farmers; it is in effect a built-in biological 'patent' enforcer.

Monsanto and Delta and Pine Land defend the technology in two ways. First they claim that it will in reality benefit farmers in developing countries, who they are targeting as a priority market. Dr Harry B Collins of Delta and Pine Land believes: "The centuries old practice of farmer-saved seed is really a gross disadvantage to Third World farmers who inadvertently become locked into obsolete varieties because of their taking the 'easy road' and not planting newer, more productive varieties".¹⁶ Monsanto's second line of defence is that they have

inherited this technology almost by accident, and anyway it is only a 'concept' at present.¹⁷

Both of these defences are rather disingenuous. The first assumes that poor farmers have a choice in whether they can afford to buy seed created by large companies. A representative of Monsanto met a storm of protest when he tried to argue this at a conference in Zimbabwe.¹⁸ The speed with which biotech companies like Monsanto are both buying up seed companies and merging themselves does not bode well for free choice in seed buying. With its recent purchases of companies, Monsanto has a sizeable share of the US cotton seed market, and has obvious designs on markets in the developing world.¹⁹

Between 15 and 20 per cent of the world's food supply is grown by poor farmers who save their seed. They feed at least 1.4 billion people. These people are at risk both directly, in forcing them back to buy company-produced seed, and indirectly as Terminator genes could infect crops which are growing in near-by fields.²⁰

The second defence is spurious. Monsanto may not have purchased Delta and Pine Land specifically for the TPS patent (although it is something of a coincidence that it was purchased only two months after the announcement of the Terminator patent) but it is aggressively promoting and defending the system. As RAFI notes, given exclusive rights, Monsanto executives have indicated they will apply for patents in 87 countries. It is also worth noting that Monsanto holds some extremely broad patents on such basic food items as the brassica food family. It has also been criticised for taking out patents on neem products; neem is used for a variety of purposes by people in the South who understandably feel threatened by this action.²¹

As a Trojan Horse for other bio-engineered traits, the TPS system looks set to become ever more

contentious. The recent ban on the use of Terminator Technology by the Consultative Group on International Agricultural Research (CGIAR), mainly because of fears over its threat to food security, emphasises the concern of the scientific community. In rejecting the technology, CGIAR chair man, Ismail Serageldin, who is also a World Bank vice president, said: "this is a line of research that is clearly motivated by commercial gain".²²

Terminator Technology has also been raised in the Irish parliament, the Dail. The Fine Gael politician Paul Connaughton noted in a recent debate, "I have learned much about Terminator Technology recently and the more I hear about it the more afraid I become...it is likely that similar debates will take place in parliaments around the world over the next few years".²³

Roundup Ready soybeans

Monsanto's flagship bio-engineered product is Roundup Ready (RR) soybeans. World-wide it is estimated that 30 million acres of an estimated total of 70 million acres of soybeans were planted with RR soybeans in 1998, and Monsanto has put heavy pressure on Europe and Brazil to permit the planting of the beans.²⁴ The idea is that herbicide-resistant soybeans will allow farmers to spray Monsanto's Roundup herbicide less frequently, and that farmers will enjoy higher yields with lower costs, despite the "technology fee" which is levied on the seeds to pay for the research and development. This is meant to be a boon to food security. But 80 per cent of soya is used to feed animals; this is a technically poor use of the calories provided by the crop.²⁵

If Monsanto and the agricultural industry as a whole was more concerned with food security, rather than maximising profits, they would seek a way to tackle this chronic waste within the industry.

It is also worth looking at whether less herbicide will be used and whether yields are actually larger when Roundup Ready seeds are used. Monsanto's sales

of glyphosphate have risen as a result of the introduction of genetically engineered RR crops in the United States. This has been aided recently by their lowering the price of the herbicide, while increasing the special "technology fee" on the seeds.²⁶ The RR crops will allow farmers to use Roundup on a much wider and less discriminatory manner. Whereas fields were once sprayed with Roundup in pre-plant weed emergence situations, crop producers will now be able to apply (cheaper) Roundup to the genetically engineered crops all through the growing season. This continuous use of Roundup is going to lead to weed resistance, which is yet another financial boon to Monsanto as it means that farmers will need to increase their use of the chemical as it becomes more ineffective.²⁷

It is also disputed that RR soybeans lead to larger yields. Friends of the Earth has published criticism of Monsanto's interpretation of supposedly independent research, paid for by the company, into RR yields. They note that nearly 50 per cent of farmers surveyed did not notice any improvement in weed control, and that figures given for reduced herbicide use (9 per cent) was less than could be achieved through alternative and safer methods.²⁸ The exploration of safer methods that do not use herbicides that pollute the air and water is vital to the issue of food security. And some people are promoting a very different vision of "sustainable agriculture" than Monsanto's.²⁹

The introduction of RR crops has also allowed Monsanto to exert more direct control over farmers. The farmer has to sign a contract with Monsanto agreeing not to use any of the harvested crop as seed for the next year. The company demands the right to inspect fields for up to three years after planting, and has used private detectives to investigate farmers. It has prosecuted farmers who breach its conditions. It is difficult to see how this level of control will benefit food security, for it denies farmers the freedom to plant and re-plant crops they feel are suited to particular conditions or circumstances.³⁰

Genetically modified cotton and rapeseed
The problems associated with Monsanto's products are well illustrated with some of the other RR crops that have been developed, especially RR cotton. Although cotton is not a food crop, it does have implications for food security, as crop failure will lead to loss of earnings, and therefore to food insecurity.

In 1997, licencees planted more than 5 million acres of RR cotton. But 20 per cent of the first commercial crop suffered deformed bolls dropping off early. Gary Barton, a Monsanto spokesman, told the press "in the first year of any new product it is not uncommon for questions and issues to arise". These issues included class actions (multiple law suits) in Mississippi, Texas and Louisiana, with outraged farmers accusing the company of "misrepresentation and fraud".

The company refused to pay US\$1.94 million to three Mississippi farmers who claimed the seed was defective. They were backed by the Mississippi Seed Arbitration Council who said "it failed to produce or perform as represented by the labels attached to the seeds. Monsanto said the problem was abnormally wet and cold weather, and settled for an estimated US\$5 million with 55 farmers.³¹ Steve Cox, an attorney representing some of the affected farmers, noted: "the bottom line is that virtually everybody who planted this stuff had a problem."³²

Subsequent to the first year failure, Monsanto announced in February 1998 that it was withdrawing five varieties of RR cotton from the market because of sub-standard seed quality.³³ However, with all the money that has been ploughed into research and development, the company is still continuing to market RR cotton.

There have also been notable disasters around the creation of Bt Cotton. Bt (*Bacillus thuringiensis*) is a natural toxin that organic farmers have been spraying on plants since the 1970s. In Bt cotton,

called Bollgard by Monsanto, the cotton is engineered to secrete this natural toxin. In 1996, in the first commercial growing season of Bollgard cotton, the pesticide effect of the engineered Bt was not sufficient to kill off all pests through the season, as the company promised. This failure is attributed by Dr Mae-Wan Ho to changes in the behaviour of the Bt gene.³⁴ Monsanto later admitted that their Bt "Bollgard" cotton failed to repel bollworms on almost half the 1.5 million acres planted with their seeds in 1996.³⁵

There have also been problems with RR rapeseed (aka canola). In April 1997 two varieties of RR rapeseed had to be recalled by Monsanto Canada after quality assurance tests revealed that the seed contained genetic material that had not received full government clearance. The recall amounted to 60,000 bags. Two Alberta farmers who had planted the crop had to plough it up and were compensated by Monsanto.³⁶

In another incident involving RR rapeseed, crops on a Lincolnshire, UK, field had to be destroyed in 1998 after being pollinated by the rapeseed which was growing on a nearby trial site. The UK government prosecuted Monsanto and its British based sub-contractor. Not only was the crop destroyed, all the seeds harvested over the next two years within a 50-metre radius of the site will have to be destroyed.³⁷ Although these problems could be regarded as teething problems with new products, it is an indication of the problems that can arise and would cause serious problems for farmers without the power to press for compensation.

Bovine Growth Hormones

Another important case is the development of recombinant Bovine Growth Hormone (rBGH), which is also known as Bovine Somatotropin (BST) or by the trade name Posilac. This was the company's first commercially available genetically modified product. Cows are injected with a daily dose of rBGH, and the active gene facilitates the

repartitioning of glucose to the mammary gland, which in turn produces more milk.³⁸ The drug increases milk yield by 10-20 per cent, which should be good news for food security. But it is not as simple as that.

Despite intensive lobbying, the product has failed to get approval in any industrialised country other than the US. After 14 years of lobbying the Food and Drug Administration (FDA) declared rBGH officially safe in 1993. The problem is that since the 1950s, American dairies have consistently produced more milk than the nation consumes. The surplus has been purchased by the US federal government to prevent the price from plummeting. In the period 1980-85 the government spent on average US\$2.1 billion every year buying surplus milk. No one in the US needs the extra milk that rBGH is producing. If widespread use of rBGH in any country leads to a significant increase in milk supply, and if the government is unable or unwilling to buy up any surplus, the resulting dramatic fall in prices could drive small farmers out of business – hardly good for their food security.³⁹

The reason that Monsanto is having such trouble getting rBGH licensed for use outside the US is the reputation it has for being a health risk. The label of the product itself lists 21 potential health problems for cows if they are given Posilac. The most serious problem is the increased risk of mastitis, or inflammation of the udder, which produces milk with pus in it. This can be a serious source of lost revenue for any dairy farmer. Farmers can treat the problem with antibiotics, but antibiotic residues in milk are suspected of causing health problems in humans who drink it, as well as contributing to the development of antibiotic resistance amongst bacteria. There have also been studies that link the use of rBGH with cancer, notably through the by-product of increased production of another hormone called Insulin-Like Growth Factor 1.⁴⁰

All this means that uptake and use of rBGH among US farmers has been limited. It is estimated that even in the US it is being injected into fewer than 4 per cent of all US dairy cows every two weeks. The National Farmers Union (US) reported in 1995: "in some areas of the country, farmers are reporting that 60-90 per cent or more of the farms that have tried rBGH have discontinued its use".⁴¹ With Canada deciding not to approve rBGH, there is now real pressure on the US.

Wall Street analysts told Business Week magazine in 1996 that due to farmer and consumer opposition (and the fact that rBGH damages the health of cows), the drug was a total failure and should be taken off the market. The chances of this happening are slim given that Monsanto have invested almost a billion dollars in the drug.⁴²

Monsanto and Governments

Given that the science of genetic engineering is new, and the fact that it concerns something as fundamental as food, one would hope that governments would be keen to regulate the industry in order to protect their citizens. Monsanto, however, has something of a reputation for getting its own way with governments, especially the US federal government, which appears to see its role as one of protecting US companies against foreign competition.

From the start of commercial testing the US government has seen biotechnology as a new force that would allow it to retain its position as the world's agricultural "leader". The 1986 "biotechnology regulatory framework" was founded on the corporate-generated assertion that bio-engineered products did not differ fundamentally from non-engineered organisms. As long as the genes that are used for altering other genetic characteristics come from an approved food source, the US government treats new or altered genes in bio-engineered food as natural, not novel additives.⁴³ The 'special relationship' has even gone so far as to have President Clinton personally

ringing Tony Blair, to allegedly lobby on behalf of Monsanto and the US biotech industry.⁴⁴

Aside from professionally lobbying the government to get its own way, Monsanto also has a habit of sharing staff with government bodies that are attempting to regulate it. During the granting of permission to market rBGH, Monsanto had strong links with the relevant body, the Food and Drug Administration (FDA). FDA deputy commissioner Michael Taylor, Deputy Director of the FDA's Office of New Animal Drugs, Margaret Miller, and the lead reviewer on scientific data on rBGH, Suzanne Sechen all had strong Monsanto connections. The chair of the Congressional Office of Technical Assessment had also been a Monsanto consultant for more than a decade. It is no wonder with these connections that the US is the only industrialised country where rBGH has been approved. Not only was it approved but, according to Dr Michael Hansen of the Consumers Union, the FDA actually wrote promotional pieces about rBGH in the agency's publication, FDA Consumer.⁴⁵

Other notable individuals who have gone through the Monsanto/governmental 'revolving door' include Micky Kantor, former US Trade Representative and US Secretary of Commerce, who recently accepted a position on the Monsanto Board of Directors. There is also Marcia Hale, former assistant to President Clinton for Intergovernmental Relations, who has a new job coordinating public affairs and corporate strategy for Monsanto in Britain.⁴⁶ Bob Shapiro sits on the President's Advisory Committee for Trade Policy and Negotiations and served a term as a member of the White House Domestic Policy Review.⁴⁷

This pattern of cosy relationships is replicated in other countries. In Britain, concern has been expressed about a former special advisor to Jack Cunningham accepting a job with Bell Pottinger, a lobbying firm who have Monsanto as a client.⁴⁸ Lord de Ramsay, head of Britain's Environmental Agency,

the body charged with protecting the environment, is growing experimental RR sugar beet for Monsanto on his land.⁴⁹

The company has also used its power to good effect in the developing countries. It used its connections with the US government to lobby leading figures in the South to sign up to its 1998 "Let the Harvest Begin" campaign, to try to persuade European consumers that Southern leaders backed Monsanto's bio-engineering.⁵⁰ If Monsanto is able to influence large Western governments, then it is certainly capable of similar activities with Southern governments who are desperate to bring in hard revenue to pay off debts.

In Brazil, the company has been lobbying hard to get the country's historic ban on transgenic crops reversed; it expects that up to 20 per cent of the country's giant soybean market will be RR soya within 3 years. While pressing for a decision the company announced investment of at least US\$350 million in Brazil over the next four years, including a glyphosphate factory in the under-developed state of Bahia.⁵¹

Despite all this, however, Monsanto still does not have it all its own way with government regulation, especially with regard to its expansion through mergers. It is under investigation by the US Department of Justice over the purchase of Delta & Pine, and Dekalb Genetics Corporation; it has also been subjected to investigation by the European Union's executive and antitrust authority.⁵²

International Agreements

Through its relationship with the US government, Monsanto can exert pressure about international agreements that affect its business. Board member Micky Kantor was the US Trade Representative for much of the Uruguay Round of GATT. At the August 1998 Montreal meeting of the UN's Ad Hoc Working Group on Biosafety, Monsanto had six "observer" delegates, which was only 4 less than the US, as

many as Britain, and two more than China.⁵³ There is a frequent symmetry in the positions of US delegations and the company at international meetings. In the May 1998 talks of the U.N Codex Alimentarius Commission, which is formulating international labelling requirements for food products, the Monsanto & US delegations were lobbying for genetically modified foods not to be labelled.⁵⁴

Sometimes the connection is almost too obvious. When Monsanto purchased Delta and Pine Land the US delegation at the May 1998 meeting on Biological Diversity, which had not uttered a word even when the US Department of Agriculture was under attack for its involvement with the Terminator Technology, came out fighting for Monsanto.⁵⁵

Monsanto is virtually leading the push for global policy on genetically engineered foods. Company president, Hendrick A. Verfaillie, says that global policy will avoid trade impasses and helps food security.⁵⁶ This is the same company which is becoming increasingly frustrated with the reluctance of European countries to accept the technology. They have urged the US government to take the case to the World Trade Organisation (for "restraint of trade") if the EU introduces a compulsory labelling system for food containing products of GM crops. Primarily the battle is over the Roundup Ready soybean license that so far only allows the beans to be imported and processed, but not grown, within the EU.⁵⁷

General public

The company has spearheaded attempts to persuade the concerned public how safe genetically engineered crops are. This is despite the fact that the company has not always been historically successful at "advertising" its way out of trouble. In November 1996 the New York Attorney General forced the company to stop using such terms as "biodegradable" and "environmentally friendly" in all advertising of glyphosphate-containing products in

New York State. The company had to pay US\$50,000 towards the state's costs of pursuing the case (although the company admitted no liability, claiming it only settled to avoid lengthy litigation).⁵⁸ It also threatened to stop selling rBGH in the state of Vermont if mandatory licensing provisions were implemented by the State, essentially trying to stop attempt by state to enable retailers and consumers to determine which of Vermont's dairy products were genetically altered.⁵⁹

The company has needed to use public relations mainly because of its own mistakes in the way it has introduced products. The majority of opposition to genetically modified crops has come from Europe, and most of this has been in response to the first shipments of RR soybeans that reached Europe in late 1996 being mixed with conventional beans. The company claimed they could not separate the beans at source, yet the segregation issue fell apart when large European supermarkets, such as Tesco's, starting doing 'back-room' deals to get segregated non-genetically engineered soybeans – proving it could be done.⁶⁰ Many people saw it as an attempt by the company to force genetically engineered products on the public without clear labelling, and other biotech companies now blame Monsanto for the negative publicity surrounding the industry.⁶¹

As a spokesperson of Asgrow seed company, a Monsanto subsidiary, candidly admitted to the press several years ago: "Labelling is the key issue. If you put a label on genetically engineered food you might as well put a skull and crossbones on it".⁶²

To try to counter this problem, Monsanto spent £1 million in the summer of 1998 on an advertising campaign in the UK, in which they claim "Monsanto believes you should hear all opinions". If this were true why are there no similar adverts in North America where the company and issue historically has a lower profile? Kenny Bruno in his article in *The Ecologist* points out just how the company has been promoting a classic strategy of 'Greenwash'.

This includes presenting an environmental image through advertising, and promoting voluntary Codes of Conduct that make it appear responsible while staving off governmental regulation through lobbying.⁶³ It is ironic that the company is now promoting products aimed at using less herbicide when it is still a global promoter of those products, and that a chemical company should now spend all of its time preaching about "sustainable agriculture".

Monsanto claims that it wants to "feed the world" through bio-engineering. They have been advised by Burson Marsteller, the world's largest PR firm. In a leaked report, Burson Marsteller advised biotech companies to concentrate on the spread of positive stories and symbols, eliciting a message of "hope, satisfaction, caring and self-esteem". It is easy to see where the company's mission statement of "Food, Health and Hope" comes from. They were also advised to steer clear of the industry's "killing fields" of "public perceptions of issues of environmental and human health risks".⁶⁴ Hence the guilt trip to think of food for future generations. Unfortunately for the company, it has already come under severe fire, from various parties including aid agencies, academics and most importantly interested groups in the South.

At the June 1998 FAO negotiations on genetic resources, 24 African delegates issued a joint statement with NGOs. They objected "strongly that the image of the poor and hungry from our country is being used by giant multinational corporations to push a technology which is neither safe, environmentally friendly, nor economically beneficial to us."⁶⁵

With all its capacity for bad press, Monsanto can however bring pressure to bear on at least some sections of the media. Pressure was allegedly applied to Fox TV executives in the US to alter and eventually suppress a documentary on rBGH. This led to the two reporters involved being dismissed.⁶⁶

In Britain, The Guardian recently described a visit from Monsanto representatives who berated the paper for its coverage of the company. Even more recently the printers of The Ecologist pulped the entire print run of an issue about Monsanto, despite claiming that they had not been directly approached. Having reprinted the issue the two major magazine distributors in the UK refused to stock it, because of fears of litigation from the company.⁶⁷

Monsanto put pressure on the state broadcasting company, RTE, in Ireland over a programme "Safe Harvest" that the company called biased. Irish journalists were flown to Washington by Monsanto and were given access to the Oval Office in the White House, claimed an article in the Post-Dispatch, Washington of 27 December last year. By the end of 1998, however, Monsanto was privately admitting to losing the PR war.

Monsanto and the 'Opposition'

Looking at how Monsanto treats the press gives some indication of how they treat those opposed to what they do, especially non-governmental organisations (ngos). There seems to be a dual policy of attempting to persuade/coopt some groups and then bully other organisations it feels persuasion will not work on (although the policy is often tried on the same group at different times). It has also infiltrated environmental groups to gather information and funds extreme right-wing think tanks in the US who argue that organic agriculture is dangerous and pesticides are good for you.⁶⁸

With groups that are directly competing for publicity with the company, most notably the movement in Europe to uproot genetically engineered test crops, the company has used its power to silence them through the law. In September 1998, five women from the 'Genetix Snowball' campaign who openly destroyed Monsanto test crops were served with an injunction and could face unlimited damages. Interestingly the blanket injunction also included the

press officer for 'Genetix Snowball', Andrew Wood, who had never uprooted a single plant.⁶⁹ Monsanto staff have also tried to brand all opposition as anti-technology. Bob Shapiro sees his company as the main bastion against the next wave of hysterical environmentalism. He believes that "what used to be an anti-nuclear group is now an anti-bio-tech group".⁷⁰ And it showed that it can win fights when it withdrew union rights from British workers.⁷¹

The company is wise enough to make friendly approaches to organisations it believes it can work with, and tends to make enemies only when others make enemies with it. One example of this was its intended plan to work with the Grameen Bank in Bangladesh. This was called off only when other NGOs caused a storm of protest about the powerful position it would give Monsanto in a potentially captive market.⁷² It has also withdrawn in the past, it appears, owing only to public pressure, such as from the proposed field trial in Buttevant, County Cork, Ireland.⁷³ In India, in late 1998, farmers were threatening to "cremate Monsanto" for its testing of Bt cotton; (see box).

Conclusion

Bob Shapiro has done more than anyone to make Monsanto synonymous with the future of biotechnology. He often talks of 'Monsanto's law', which applies Gordon Moore of IBM's law that computing power would double roughly every 18 years. In his version, genetic information will double every year or two, leading to an exponential growth in new products.⁷⁴ He has staked his own, his directors' and his company's future on this gamble. As a group the directors have borrowed US\$28 million from the company since May 1996 to buy stock at just over US\$30 million. If over the next four years the stock fails to outperform 75 per cent of the S&P (Standard & Pore) industrials, the executives will have to pay back the loans.⁷⁵ The Financial Times noted on 23rd November 1998 that Monsanto shares "have lost a third of their value in four weeks."⁷⁶ Having entered the information war, Monsanto is battling for its

survival and with so much at stake the company should not be underestimated.

That it should paint itself as a champion of open debate is not really credible. The history of the company hardly shows a good reputation for full and honest disclosure, nor is it historically famous for its green or altruistic image. In 1995, Monsanto ranked fifth among US corporations in the Environmental Protection Agency's Toxic Release Inventory, having discharged 37 million pounds of toxic chemicals into the air, land and water. Shapiro admits that the company has an image problem, recounting with sympathy the dilemma of many a Monsanto employee whose neighbours' children might wince when they find out where the employee works.⁷⁷

He also believes he can use the issue of food security to his own advantage, despite the fact that the bioengineered products that Monsanto has developed are hardly good examples of products that will help food security. Many, such as the Terminator Technology, are accused of working contrary to it, yet the company likes to quote present and future products that they say will benefit the world.⁷⁸ In their world, profits come first, expensive failures have to be persevered with, and altruism is a by-product, easily by-passed if necessary.

The company has the lobbying power, tough reputation, money and sophisticated PR advice that could push their arguments through. Yet, the fact that they are forced to spend all this money on an information war proves how vulnerable they are to opposition from NGOs in both South and North, and to academics, the press and concerned members of the public. The company is under pressure, taking back much of what it has said in the 'feed the world' adverts. It now says that bio-engineering is just one small way to help feed the planet.⁷⁹

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Officers (where known with Common shares held in the company, direct and indirect, at 31/12/97):

Chairman & Chief Executive: Robert B. Shapiro (1,128,114)

Vice Chairman: Robert Essner

N. L. Reading (297,452)

President: Hendrick A. Verfaillie (196,420)

Senior Vice-President: Arnold Donald

R.U. De Schutter (109,973)

R.W. Reynolds (7,891)

Europe-Africa President: Bernard Auxenfans

European Agricultural Director: Carlos Jolly

UK & Ireland Agricultural Director: Charlotte Walliker

UK Public and Government Affairs Director: Anne Forster

Auditors: Deloitte & Touche Ltd.

Listed on the New York Stock Exchange.

No of staff at year end 1997: 21,900 (23,100 in June 1998) worldwide.

"We are told that only they (the holding companies) know the unlocking mechanism in the seeds so that they can re-germinate. So, now locks has been extended from house to fields! As we see it, there is a deliberate attempt here to minimise the role of farmers to become passive end users who have no business or input in the reproduction of the very seed he/she works with everyday in his/her fields! These agribusiness concerns know that farmers are experimentors by nature, and, if left alone, they can easily find

ways of unlocking and so save seed for the next season. Hence these companies became concerned so much that they established their own security organisations and networks to spy on the contracted farmers' activities. The question for us is, if these corporations are left to have it their own way, what breed of farmers will we have in ten years time?

– Peter Muchambo, Agriculture and Democratisation East and Southern Africa Network, speaking of genetically modified organisms at a conference in India, December 1998.

Monsanto: transgenic cotton in India

Alistair Smith

In November 1998, Monsanto's genetically modified cotton trials hit the headlines across India. Forty test-sites had been planted across different agro-climatic cotton-growing areas – and supposedly authorised by the Department of BioTechnology (DBT) – since the summer.

By autumn 1998, the public debate on genetic engineering of crops in India had not yet begun. Indian farmers were no more than passingly aware of any of the issues which this new technology's arrival in India might entail. This was about to change, with farmers and their organisations effectively kick-starting the necessary process of awareness-raising, which has barely even started in farming communities in Europe or North America, let alone in one of the poorest parts of the world's largest food-insecure nation.

Monsanto had just acquired a 26 per cent stake in India's most respected national seed company, the Bombay-based Mahyco (Maharashtra Hybrid Seed Company). This strategic 'local' partner has 9 per cent of the national seed market. The 'bridge-head' into the potentially vast markets of the sub-continent was to be cotton seed.

"In the next five to seven years, we will need 240 million tonnes of foodgrains for our people. Where will the additional 40 million tonnes come from?" asked Raju Barwale, a Mahyco director. He is convinced the answer lies with Monsanto. The government of India last year allowed the import of 100 grams of transgenic bt cotton seed from Monsanto. Some farmers seemed keen to plant the seed. "I have seen farmers with no footwear coming in to pay 1000 Rupees (about £15) for 100 grams of seed", said Raju Barwale; "if you can establish a cost-benefit ratio with a farmer, you have a customer. But if seed quality declines, you are out."

Many farmers in India have found that hybrid crops do not justify the annual investment in seed. Mahyco sells over 300 varieties of hybrid fruit, vegetable and crop seeds. The company still has to announce the results on the 40 test-sites from the 1998/99 harvest, now completed.

"Both Mahyco and Monsanto believe that this partnership would help bring in leading-edge plant genomics and biotechnology," says Sekhar Natarajan, managing director of Monsanto Chemicals India, which has a Life Sciences Research Centre near Bombay, employing 130 research scientists. "We see this alliance helping Mahyco spearhead the next Green Revolution", he said.

In some parts of India, there were strong protests, however. In Andhra Pradesh, the farmers' movement APRS, followed by the state government, alerted farmers and politicians to the tests via the media and local meetings, uprooted and burned two crop sites, and got the state parliament to ban further field tests of GMO crops, all within two weeks.

In neighbouring Karnataka state, Professor M.D.Nanjundaswamy, leader of the farmers' movement, KRRS, called on the company to reveal the exact locations of its field tests on transgenic 'bt' cotton. The All-India Rural Development Minister, Bere Gowda, also a former KRRS leader himself and Karnatakan farmer, declared to the press that Monsanto should leave the country. Transgenic cotton plants on test site were were uprooted and burned in the farmer's field by KRRS leaders.

Farmers also protested outside an international food conference, IFCON 98, demanding that the scientists and corporate managers talking food security, nutrition and safety inside the building come out and talk to farmers. "IFCON '98", stated

KRRS, "has become an opportunity for companies like Monsanto to promote GMOs and terminator technologies as a viable solution for overcoming the food crisis and alleviating nutritional deficiencies. Monsanto and its allies are hopeful of making India into a willing experimental and dumping ground by denying the participation of farming representatives, IFCON '98 seems to have forgotten that the food industry depends on farmers for survival." ¹

In the eye of this South Indian storm, Monsanto agreed to meet with a farmers group and asked them to define 'food security.' The spontaneous reply was that it was more to do with "self-reliance" than with trading one's way out of food insecurity – the latter definition being a paraphrase of the definition that companies like Feruzzi, Monsanto, Novartis etc had persuaded the World Food Summit negotiators to accept in Rome in November 1996 for the summit's plan of action.

During the meeting, the company revealed that they intended to work on "all 15 of the major cash crops of India", initially just by inserting a BT gene, as with cotton; they believe that chemicals are no longer the appropriate weapon in the war against crop pests and diseases.

If protests do not derail the Bt-cotton field trials and the results are positive, Mahyco may begin selling the transgenic seeds in June 1999 in time for the cropping season. The company claims that DBT guidelines for working with the bt gene are strict. It also claims it will "only bring to India products and technologies which are consistent with what India wants and its laws approve.... Monsanto has not, and will not, bring to India any technology that will adversely affect the environment, current agriculture practices and force farmers to use any technology it provides." ²

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Bananas: The “Green Gold” of the TNCs

Anne Claire Chambron

Bananas are the fifth largest agricultural commodity in world trade after cereals, sugar, coffee and cocoa. They are a major staple food crop for many millions of people in areas of Central, East and West Africa, Latin America and the Caribbean. They grow easily, are cheap sources of energy and vitamins, and can be harvested all year round, thus providing a source of energy during the “hunger gap” between crop harvests.

Six countries (India, Brazil, Ecuador, Philippines, China and Indonesia) account for 55 per cent of total world production. Of the 86 million tonnes of bananas and plantains produced annually, only 14 per cent are traded on the world market. The two biggest banana-producing countries, India and Brazil, are hardly involved in the international banana trade at all. But, for at least 15 Latin America and Caribbean producer countries, they are a crucial source of export income.

Bananas are grown mostly by millions of small-scale farmers in Africa, South Asia and Latin America for household consumption and/or local markets. Most of this production is achieved with few or no external inputs. Once a producer grows for export markets, however, considerable and growing levels of external inputs (chemicals, fertilisers) are required to effectively compete in those markets.

The Banana Chain

The world trade in bananas is dominated by three companies: the largest producer and distributor of bananas is the US company, Chiquita (formerly United Fruit), reputed to have paid bribes in Central America and to have had links with a coup in Guatemala. Chiquita is the brand of United Brands which accounts for almost one third of traded bananas from which it obtains some 60 per cent of its profits. (Chiquita’s prepared foods division, mostly meats and packaged goods, accounts for about half of its sales but less than 10 per cent of profits). Close on its heels is the US company Dole

Food, owned by Castle & Cooke, a property and food group. Dole is the world’s largest producer and distributor of fresh fruit and vegetables. Both these companies own large banana plantations in Central America, and effectively act as price-setters. The third largest transnational company is Del Monte Fresh Produce, owned by Grupo IAT, which also owns Chile’s third-largest fruit exporter.

Chiquita Brands, Dole Food and Del Monte Fresh Produce together produce and control 65-70 per cent of world exports, which allows them to control the market and, to a considerable extent, to set the rules of the game. They are followed by the Ecuadorian company, Noboa, which represents another 10 per cent, and the European company Fyffes, which controls some 6-7 per cent. Fyffes is the UK and Ireland’s main banana distributor. In Latin America, some national growers’ companies are present on the international market, mainly Noboa, but also Sunisa and Banacol in Colombia, and Corbana in Costa Rica.

Ecuador, Costa Rica and Colombia account for around 64 per cent of world exports. Europe, the United States, and Japan together purchase around 80 per cent of all exported bananas. In 1996, world banana imports were valued at over US\$7 billion, the European Union being the largest importer with nearly 32 per cent of all traded bananas. Each of the 350 million EU citizens consumes an average of 10 kg per year.

The EU produces nearly 20 per cent of its needs, and imports the rest from Latin America (the so-called “dollar” bananas), and from the African, Caribbean and Pacific (ACP) group of countries – the latter accounting for 17 per cent of imports in 1997.

The transnationals are generally associated with Latin and Central America where they control 60 per cent of production. They are vertically integrated, which means that they own (or contract)

plantations, own sea transport facilities and distribution networks in consuming countries. The opening up of Eastern Europe and East Asia, the Single European Market and the liberalising thrust of the World Trade Organisation have lifted expectations for a rapid growth of consumption. Companies have expanded their plantations in Latin America, started to buy land in Asia (Philippines and Indonesia), and in Africa (Cameroon, Cote d'Ivoire and Somalia).

A simple comparison between the three largest TNCs and the economies of certain ACP countries gives an idea of the size and power of these companies. Taken as a whole, the export revenue of the ACP countries is only just equal to the total sales of the three TNCs. When considering only the revenue drawn from banana exports, the ACP countries together represent hardly 10 per cent of Chiquita's total sales, and only 4 per cent of the combined sales of the companies. If ACP countries were to cease to export tomorrow, or if their market shares were distributed among the TNCs, the latter would only gain 6.5 per cent share of the international market.

The TNCs involved in the banana trade have succeeded in maintaining extremely high profit margins. According to Solidaridad, a tiny proportion of the retail price is paid to small farmers (5 to 12 per cent) or to plantation workers (1 to 3 per cent). In Latin America, producer price varies between US\$3.80 and \$5.50 per box. Meanwhile, European wholesalers sell bananas to retailers at approximately \$25 per box.²

Banana exports have increased steadily since 1950 and the prices have fallen in real terms. Increased production in producer countries has been achieved both by improving yields and increasing the areas under cultivation. However, at the beginning of the 1980s, it had become virtually impossible to improve yields significantly in Latin America. As a result, the increase in exports from these regions in the past decades or so has been achieved mainly through increasing the amount of input (fertilisers and pesticides) and the cultivated area. For the ACP countries, the guarantee of access to the European market since 1985 has made it possible to double (or even triple in the Caribbean) the quantities grown and exported.

Fig 1: Revenue of the major banana transnationals (US\$million):

	1995	1994	1993
Chiquita	2.566	2.506	2.532
Dole	3.804	3.499	3.108
Del Monte	1.068	992	884
Total	7.438	6.997	6.524
Total banana export revenue of the main ACP countries exporting bananas:^a	262		
	(f.o.b. 1993)		
Total ACP export revenue (all sectors)	6.608		

Sources: UNCTAD Commodity Yearbook 1995, CIA World Factbook 1995

^a Ivory Coast, Cameroon, Suriname, Somalia, Jamaica, St. Lucia, St. Vincent, Dominica, Belize, Cape Verde, Grenada, Madagascar

Fig 2: Cost structure of 1 kg Latin American banana
total price in Dutch Guilders: 3.00

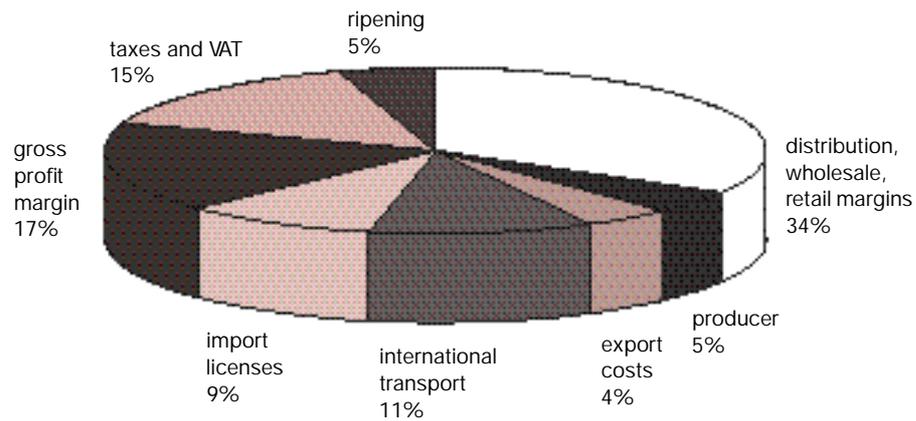


Fig 3: Production costs per box, various estimations in \$US

	FAO	CIRAD	BANDECO		Novotrade	
	farm-gate price 1994	(F.O.B. ¹) 1995*	F.O.B. 1997	farm-gate 1997	F.O.B. 1997	farm-gate 1997
Ecuador	2.95	2.95	3.70	3.29	5.01-5.81	4.70-5.40
Costa Rica	3.25	3.25	5.56	4.78		
Colombia	3.64	3.64				
Honduras					5.22-6.22	4.45-5.25
Ivory Coast	(1995) 3.40	8.53				
Martinique	12.38					
St. Vincente		8.39				
Dominica		9.37				

* Based on CIRAD figures of production costs per MT.

Strong contrasts can be seen between types of production and competitiveness:

- In the Caribbean Islands, the fact that most production is in the hands of small farmers combined with the mountainous terrain means that it is not possible to make substantial economies of scale. Farms are generally smaller than 5 hectares, use numerous family workers and require less inputs than the large plantations.
- By contrast, plantations in Latin America can be as large as 5,000 acres. They require road infrastructure, extremely sophisticated irrigation and drainage systems and cableway for harvesting. The plantations have pumping stations and one or more packing stations. Such facilities require enormous investment, easily attaining \$US 13,000 per ha., without counting the cost of buying the land. Nevertheless, production costs are kept extremely low by means of very low wages, limited workers' rights and precarious job tenure.

Because of the different systems, production costs differ widely and are about 2-3 times higher in ACP countries. (see Fig.3)

These figures show that:

- Production costs in the Caribbean are the highest of the three zones, but Africa has only a slight advantage. The average difference between the Caribbean and Latin America is about US \$4 per box of 18.4 kg, explaining the need for a preferential agreement for the ACP countries. The difference in competitiveness is explained mainly by the economies of scale achieved by the TNCs' vertical integration in Latin America and the externalisation of the social and environmental costs.
- In Latin America, prices are systematically below production costs, and do not take into account the real social and environmental costs of production. CORBANA (Costa Rica) gives total costs for Costa

Rica of \$6.77, including \$1/box financial costs, while the average FOB price for 1996 was \$ 5.67 per box. This resulted in a net loss per box of \$1.10. The official minimum price in Ecuador in 1997 was US \$3.30, which results in a net loss of \$1.50 per box minimum.

- Inside the Latin American group, the main differences are due to variations in labour costs, because of wage differences and labour efficiencies related to different types of holding. Wage costs in Costa Rica, for instance, are higher at \$14.87 per day as against US\$6.42 only per day in Ecuador.

The policy of maintaining low wages has also a negative impact on small independent producers. In order to compete, small farmers are increasingly obliged to adopt methods similar to those used on the big plantations just to meet quality standards in consumer markets. Figures on the cost and price structure of bananas, although notoriously hard to come by, clearly show that plantation workers and smaller independent producers – such as those in the Windward Islands – get a raw deal. Compared to a decade ago, their tiny share of the final consumer price of their fruit has shrunk even further. Even large-scale national producers in a major exporting country like Costa Rica have been receiving prices which barely cover their costs of production.

In the Windward Islands, in 1997, banana over-supply together with demands for higher quality standards, and the instability caused by the WTO condemnation of the European Union banana-import regime, conspired to squeeze the most economically fragile farmers out of the banana market. Almost half the 23,000 registered farmers in the Windward Islands have gone out of production since 1993, unable to maintain profit margins in the face of falling prices and ever-increasing production costs.

Bananas and food security

Banana production and exports play an extremely important role in the employment and the economic activity of at least 15 countries. In Ecuador, the main

exporting country, the banana industry employs over 300,000 people. Bananas are Costa Rica's largest single export, and are a source of employment for at least 150,000 people. In the mid-1970s, in Costa Rica and Honduras bananas represented between 5 per cent and 10 per cent of agricultural employment. In 1993, they represented 22.3 per cent and 25 per cent respectively of foreign exchange from exports.

Over the last decade, TNCs have also developed large-scale plantations in Cameroon and Cote d'Ivoire, and in the Far East following the same model applied in Latin America. Most of the exports of Cameroon for instance are now controlled by Del Monte, whereas Dole has strengthened its position in the Philippines, Somalia and Cote d'Ivoire. In the Windward Islands, the situation is different: the takeover of the British firm Geest by WIBDECO and Fyffes, in 1995, enabled the Caribbean government to put an end to Geest's monopoly and to take production in hand. But transport, ripening, distribution and marketing remains in the hands of Fyffes.

Today, only Ecuador and Colombia have had any success in reducing their dependence on the transnationals, but access to the market remains problematic for smaller or newer players. They are usually entirely dependent on sporadic contracts and low prices fixed by the TNCs often years in advance, and/or have to rent the infrastructure of the big companies. Though the banana industry is a crucial source of revenue for most of these countries, the social and environmental price paid is excessive: deforestation, contamination of soils and water ways, deregulation of existing labour and environmental laws, poisonings, low wages and job insecurity are the norm. Only 12 per cent of the final price stays in the producing countries. The remaining 88 per cent is shared between the transnationals, the ripeners and the retailers.⁴

There are more than 200 varieties of bananas in the world, ranging from the giant Red Makabu to the

tiny yellow Lady Finger (baby banana), and the sturdy quadrilateral "square banana" which tastes like an apple or a pear. Yet, bananas sold in Europe and in the US are almost all one type: the "Dwarf Cavendish" or "Gran Enano". On thousands of plantations, from Guatemala in Central America to Ecuador, the fruit is genetically identical. Because the tropical plants are planted in close proximity and come from the same genetic source, an outbreak of pests, fungi or diseases can quickly wipe out a plantation.

Three historical phases can be identified in the development of the export bananas in Latin America. The first phase covers a period of 90 years from 1870 to 1960, and is characterised by the almost exclusive use of a dominant variety called "Gros Michel". It can be defined as intensive but shifting cultivation with very low productivity (about 20 tonnes per hectare), high levels of deforestation, low consumption of agrochemicals. "Gros Michel" was almost entirely wiped out by an outbreak of Panama disease in the 1960s.

The second phase lasted around 20 years and was characterised by a transformation of the plantation into perennial intensive cultivation, with yields of about 40-50 tonnes per hectare. "Gros Michel" were replaced by "Valery", a plant of greater vigour but low resistance to pests and diseases. In order to conserve the fruit and to improve its appearance, cardboard boxes and plastic bags were introduced.

The third phase is characterised by very high productivity – between 60 and 80 tonnes per hectare. It started in 1980 with the introduction of a new variety called "Gran Enano", very vigorous, but again with low resistance to pests and diseases.

In the case of bananas and plantains, one of the major diseases facing producers is a leaf disease known as "Black Sigatoka". This was first identified in the mid-1960s in the Pacific and has subsequently spread to Latin America, the

Caribbean and, more recently, Africa. The main export variety, Cavendish, is very susceptible to Black Sigatoka. The International Network for the Improvement of Banana and Plantain (INIBAP) estimated in 1996 that controlling the disease cost Latin American producers cost approximately US \$1,400 per hectare per year.⁵

To fight Black Sigatoka and the other diseases which increasingly affect export banana plantations, TNCs use huge amounts of toxic pesticides on their plantations. According to an International Union for the Conservation of Nature (IUCN) report of 1995, the average use of pesticides on banana plantations in the second major banana exporting country in the world, Costa Rica, is as high as 44 kg/ha/year, compared to an average of 2.7 kg/ha/year for most crops in industrialised countries.⁶

Many other varieties, which are of major importance for the survival of millions of small producers all over the world, are also susceptible to the disease. Smallholders often cannot afford the high costs of the pesticides and the pesticide application equipment developed for use by the export banana producers. Additionally, the pesticide application methods used by the large-scale plantations, aerial spraying for example, are not appropriate for small plots.

It was the spread of this disease to Africa, and its potentially devastating consequences, that was one of the factors which sparked the creation of INIBAP, whose main objective is to develop, through plant breeding, resistant varieties which could be grown without resorting to the use of the chemicals to control pests and diseases. Some results have already been achieved, but bananas and plantains remain the least researched of the major food commodities.

Several years ago, the Intergovernmental Group on Bananas of the United Nations Food and Agriculture Organisation (FAO) set up a special committee called the Banana Improvement Project. In a 1995

report, a project official stated that they hoped the major companies would provide the project with money and technical assistance to tackle difficult problems facing banana production, including Black Sigatoka. At the intergovernmental group's meeting in Rome in May 1997, the Banana Improvement Project wrote its own epitaph in the report on the meeting – "the lack of financial support from the banana industry is surprising and extremely disappointing", it read.

Del Monte claimed in a letter to Banana Link dated 19/09/97 that "they keep a constant 'eye open' for new banana lines.....Any potential clone with good taste and disease resistance traits would be immediately subjected to full priority study by their permanent research programme, whilst their technicians keep contact with international breeding institutes". This claim has to be seen alongside the industry's lack of support for the Banana Improvement Project.

Endangering subsistence farming
The colonisation of large tracts of land by banana companies has had a destructive effect on traditional economic sectors, driving people from their land and work. The displaced peasantry is either transformed into plantation workers, and/or an unschooled, underfed, underemployed reserve of cheap rotating labour, desperate to work for meagre sums under appalling conditions.

But bananas are also ecologically demanding species that require abundant humidity levels, high temperatures and a lot of nutrients in the soil. If bananas are cultivated without rotation, the soil fertility sharply declines after the first two years. This is one of the reasons which has pushed companies to continuously expand plantations by deforestation.⁷

The loss of forest and soils, together with high levels of pesticide application, has led to a loss of biological diversity. The internal deficiencies of natural and artificial drainage produce severe water

and erosion, owing to the fragility of the soils and the concentrated flow of water. The ground, moreover, is kept permanently exposed without any types of shielding vegetation, and is also subject to the intense use of herbicides. As a consequence, the soil is effectively degraded into a silt, with the knock-on-effect of increasing sedimentation in adjacent waters.

In some regions, the accumulation of copper and other residues have left soils unfit for cultivation.⁸ In the Pacific zone of Costa Rica, for instance, land abandoned by Chiquita in 1984 is too depleted and contaminated for most kinds of cultivation.⁹ In the Philippines, farmers who settled on land that previously grew bananas lamented that their maize dried up in such a way that one might think the seedlings had come into contact with sulphuric acid.

The pattern of soil depletion and contamination is particularly significant because eventually it makes the plantations unsuitable even for chemical-intensive banana production. It also affects the whole generation because wherever a plantation has been abandoned, the land cannot be used for other type of subsistence farming.

The fear of many in Latin America is that companies will simply leave once the soils are too depleted, leaving them without any alternative for the loss of their main source of revenue and employment. This already happened in the past: banana companies abandoned their plantations in the southern Atlantic zone of Costa Rica when soils became unsuitable for banana plantations, moving production to the Pacific coast. When the soil was exhausted on the Pacific coast, they moved production to the central Atlantic zone.

Many of the plantations in Latin America are now 25 to 30 years old; this is considered the maximum optimal productive life for a conventional plantation. Del Monte and Dole are known to be investigating

the possibility of establishing plantations in hitherto unexploited areas of South America and India.

Water and land contamination

An estimated 11 million litres of fungicide, water and oil emulsion are applied each year to the banana production regions. Fungicides can be applied by aeroplanes by as much as forty times during each cultivation cycle. The EARTH College (Escuela de Agricultura de la Region Tropical Humeda) estimates that 15 per cent of this fungicide is lost to wind drift and falls outside the plantation, 40 per cent ends up on the soil rather than on the plants and approximately 35 per cent is washed off by rain. This results in a 90 per cent loss. Furthermore, for every ton of bananas shipped, two tons of waste is left behind, not least mountains of plastic bags sprayed with herbicides.

In 1992, the second International Tribunal on Water in Amsterdam condemned the Standard Fruit Company (Dole) for seriously polluting Costa Rica's Atlantic region through its banana plantations in the Valle de la Estrella.¹⁰ But companies usually refuse to acknowledge that there are soil and water contamination problems, and scientists complain that they resist independent scientific studies on their plantations. "In order to change a situation, you need to know the situation", says Professor Castillo at the National University's Pesticide Programme, but companies won't let us gather any data because "they basically don't want the public to know".

Yet after many years of massive applications of pesticides, the incidence of pests in banana plantations has not been noticeably reduced. On the contrary, scientists argue that there are more pests today than 50 years ago as insects are becoming increasingly resistant.

Since 1996, there have been small improvements including increased control over the spraying of toxic pesticides. The World Bank, for example, is considering prohibiting the use of paraquat in

projects they are financing, and Chiquita claims that they have discontinued the use of this product in its plantations.

But TNCs have usually adapted by rotating the labour force rather than by improving working conditions or reducing the use of pesticides. They use temporary labour on three or six month contracts for the dangerous tasks. When protective clothing is provided, the design is not comfortable and is practically unusable in a tropical climate.

Flooding

Although not as frequently cited as the other environmental effects of banana expansion, one of the most serious problems created by the banana plantations is flooding. In the Southern Atlantic region of Costa Rica, the indigenous communities have had to change their traditional dwellings from cone-shaped houses to rectangular ones raised on stilts, designed to protect them from the floods induced by deforestation associated with the activity of Chiquita.

While the floods can be attributed in part to deforestation, they are also exacerbated by the drainage systems in the plantations: canals throughout the plantations channel rainwater directly into nearby rivers, decreasing the opportunities for absorption by the soil. Flooding problems have increased dramatically in the past decade in the banana producing regions, and the recent tragedies of Honduras and Nicaragua were aggravated by intensive banana production in this region. The scale of the mud slides and the flooding in both countries was certainly significantly increased by deforestation and sedimentation.

The human cost

Scientists and environmentalists stress that the industry's pesticide problem does not endanger consumers, but does affect workers and the inhabitants of the regions where they are grown. The workers in the field often get sprayed with the

plants, their water supplies get contaminated, and their children play in places that are riddled with harmful chemicals.

Costa Rica is at the top of the list of countries with a high incidence of pesticide poisonings.¹¹ The average consumption of pesticides per capita is 4 kg per person per year – eight times as high as the world average of 0.5 kg and twice as much as the average in Central America.¹² Studies conducted by the National University of Heredia reveal that rates of pesticide poisonings are three times higher in the banana regions than in the rest of the country. According to a 1993 report, banana production rates first for occupational accidents (72 per cent), followed by decorative plant and flower production (7 per cent).¹³ The figure given for occupational poisonings in Costa Rica is 4.5 per cent (i.e. 4.5 per cent of all agricultural workers suffer from some kind of pesticide poisoning each year), well above the World Health Organisation (WHO) estimate of 3 per cent for developing countries.

The banana companies, Dole, Del Monte, and Chiquita, and chemical companies, Dow, Shell and Occidental, are currently facing lawsuits from 24,000 workers, mostly in Costa Rica, over the alleged harmful effects of the highly toxic chemical insecticide Nemagon (DBCP), which include birth defects, damage to the liver and kidneys, and sterility in male workers. This insecticide continued to be used on banana plantations, in some cases up to 1990, after it was banned by the US Environmental Protection Agency (EPA) in 1977, even though the companies were aware of the risks encountered by workers.

Dow Chemical and Dole are presently seeking to settle the long-running legal claims. Dow, who claim that all their products carry appropriate health warnings and that they can not be held responsible if those warnings are overlooked or ignored, have made an out-of-court offer of US \$22 million to workers in a global settlement which works out to

a few hundred dollars per worker. The plaintiffs accepted the offer from Dow, but cases against banana companies are pending. In a statement issued through its lawyers, Chiquita stated it stopped using DBCP in 1977, "two years before the EPA banned DBCP".

Although DBCP has now been banned, such a tragedy could recur. The chemicals the workers are using include at least four that are classified by the WHO as extremely hazardous (the strongest classification) including paraquat and three organophosphates not approved for use in the UK.

Deregulation

Obtaining new lands in Latin America to expand banana production is crucial for the TNCs to maintain their leading position on the international market. In 1990, the Costa Rican government pressured by Chiquita and Banacol started a "Plan of Banana Promotion" which gave great fiscal benefits, favourable exchange rate policies, authorisation to use new lands, deregulation in labour and environmental laws, freedom to eliminate trade unions, etc. Press and educational campaigns were conducted to promote the modernisation of the agricultural sector. Small farmers who refused to turn their land into banana cultivation were subjected to strong pressure to sell their land.¹⁴

But this is not easy in some Latin American countries, like Honduras, as agrarian laws limits foreign ownership of agricultural land. This does not seem to stop TNCs, however. To circumvent existing laws, Chiquita, for instance, has been suspected of having developed a system called "nominee form of ownership". In Honduras, farms seem to have been set up with local nominees as owners, but their shares had no signatory. Not signing shares is the same as writing a blank cheque.

A complicated combination of local and overseas trusts in the Channel Islands and Liechtenstein using local banks as trustees enabled Chiquita to

control the decisions of the local trusts. It appears that the company arranged for a local banana company to handle personnel, cash flow, tax issues and other functions of the supposedly independent farms. This aroused the suspicion of the Honduran authorities that set up an enquiry to determine whether Honduran law had been flouted or not. Such a system combines several advantages for the TNCs: it enables them to hide their assets and to shield themselves from liability for such things as worker lawsuits and child labour violations.

In other countries of Asia and Africa, the plantation lands of TNCs usually date back to colonial times. There was no land reform and lands are then simply leased or sold by the governments or land "barons". In Cote d'Ivoire however, TNCs have been known to pursue the same strategy as in Latin America (i.e. offering relatively high prices to small producers for the sale of their farms which are then regrouped to build large-scale plantations. The ex-peasantry is then enrolled as cheap work force).

Social unrest

The TNCs entered the 1990s with a period of intense competition. In their drive for EU and world-wide market shares, they influenced governments to such an extent that countries from Colombia to Belize had to accept impositions with regard to tariff duties, customs preferences, duty-free exports and imports of their products, and preferential financial treatment in the banking systems of the host countries. They set producer countries to compete with each other so that they obtained the best possible production and export conditions. Thus in 1992, the government of Panama attempted to apply an increase in the minimum wage paid in the plantations but had to step down after threats by Chiquita to terminate contracts with the local growers.

In Honduras in 1994, Chiquita closed four of its plantations after strikes by its workers, whose salaries had fallen from \$8 per day in 1987 to less than \$3 in 1994.¹⁵ They also pressurised Latin

American governments to push through new labour policies directed at the partial or total modification of existing laws.

Taking advantage of the world-wide banana market crisis, the “big four” (Chiquita, Dole, Del Monte, and Fyffes), plus national producer companies such as Noboa in Ecuador and governments in Latin America, are also slowly eliminating many of the workers’ social guarantees. These measures include: refusing to sign collective agreements; reducing salaries; increasing the length of the working day; fuelling anti-union feeling through the means of ‘Solidarismo’ (see below); increasing persecution of trade unionists and abandoning plantations without paying the redundancy benefit.

Environmental regulations

At the end of the 1980s, when the market was still expected to grow significantly, governments in banana producing countries passed (or suppressed) a number of laws in order to attract the TNCs and/or to favour the emergence of competitive national producer groups. For instance, the Costa Rican government passed a law allowing and encouraging the rapid expansion of banana plantations into lands hitherto covered by forest or used for small-scale subsistence agriculture.

In 1992, a presidential decree aimed at creating a new category of pesticides called “consolidated generics” was introduced in Costa Rica to cover pesticides such as captan, diuron, paraquat, chlorothalonil, 2,4-D, and mancozeb. Its objective was to allow registration without presenting new information and research, thus eliminating the need of a letter from the pesticide manufacturer authorising the request for registration of the product in Costa Rica. The decree created a local outcry and was temporarily withdrawn.

Costa Rica also passed a number of laws in an attempt to protect its citizens and the environment. These provide, for instance, for a registration

scheme to register pesticides for use on specific crops, but products are often used in many ways for which they are not registered. And TNCs usually make their own decisions regarding volumes, types and frequency of use of pesticides as they fear that revealing the exact composition might affect their competitiveness on the market.

In the banana sector, TNCs have been actively supporting the replacement of independent trade unions by a labour movement known as Movimiento Solidarista Costarricense or “Solidarismo”. Companies say that Solidarismo is intended to foster a better working relationship between workers and employers through more informal discussions, co-operative planning and implementation of employee job improvement recommendations. Trades unions, however, see it as a deliberate attempt to eliminate and replace fundamental workers’ rights to freedom of association and collective bargaining. With Solidarismo, it is said that strikes and collective bargaining are no longer needed, but replaced by harmonious relationships and the promise of negotiation.

Solidarismo is dangerous, however. Its aim is to convince workers to adopt entrepreneurial values as their own, while selling the false ideas of popular capitalism and class harmony. It therefore often goes together with cheap, cheery mottoes, like “Juntos es mejor” (together it’s better) or “together we grow” in order to convince workers that bananas are their gold too. Entrepreneurial control is obtained by selecting leaders from high ranking management staff. The management representation steals the leading role of the working classes, generating a loss of identification with the activities that have traditionally been their own. The company is the only identity that exists, and the only one which is expressed, men and women as individuals do not exist.

Though some argue that it is a modern, less conflicting form of trade unionism, Solidarismo has

nothing to do with democratic trade unionism. Solidarista associations are partly funded by the companies and partly by a percentage arbitrarily imposed on wages. They provide an attractive range of facilities for the workers including credit facilities, social, cultural and sporting events, and economic dividends, but do not defend workers' rights and do not recognise their right to collective bargaining. Solidarismo officials recognise that they have no power to institute any corporate change, or provide legal or financial assistance to workers who think they have been wrongly fired.

Solidarista associations are strongly backed by the Costa Rican government, which believes that aggressive independent trade unions are the reason why TNCs left the country after the great strike of 1964. The government therefore does very little to defend workers' rights and to maintain a democratic labour relationship between companies and the workers. Today there are over 1,800 solidarista organisations in Costa Rica in all of the Costa Rican productive sectors, with approximately 200,000 members.¹⁶ It is now in danger of being recognised as a form of unionism. The Costa Rican government has tried several times to enact a law which would give the right to solidarista associations to negotiate on behalf of the workers, thereby obtaining the legal status of trade unions though their representatives are not democratically elected. The enactment of these laws has until now been stopped by international pressures from trade union confederations and the International Labour Organisation.

But it is spreading rapidly to other countries: once its efficiency had been proven in Costa Rica, the model was exported to other Central American countries, growing significantly in Guatemala (300 organisations and 50,000 affiliates), Honduras, El Salvador, Nicaragua as well as Colombia, the Dominican Republic and Mexico.

Companies increasingly try to free themselves of direct ownership of plantations, in favour of

guaranteed supply contracts with medium- and large-scale producers in the countries where they operate. It allows the Northern-based company headquarters to shift the responsibility for labour and environmental conditions in the plantations onto local shoulders, saying that these conditions are not under their control and that national legislation is in place to ensure that minimum standards are respected. Trades unions and other NGOs in the region have regularly reported that wages, labour conditions and environmental management practices are generally speaking as bad, if not worse, on these nationally owned plantations than in their transnationally owned neighbours. Adequate labour and environmental legislation often exists, but is rarely enforced until directly challenged in court.

The chief negative impacts of banana monoculture, believe the banana workers, are:

- High level of contamination of rivers and canals which causes the death and destruction of fish and coral reefs.
- Large-scale deforestation (30 per cent of the current banana plantations were covered with forests when they were bought by the banana companies); companies have broken the laws by deforesting the river banks, thus speeding up problems of erosion and sedimentation, and provoking floods.
- Acute, as well as chronic damage to workers' health. Violation of labour union rights and substitution of trade unions by Solidarismo.
- The monotonous landscape of the plantations, the overwhelming use of pesticides, squalid housing and the general low quality of life on the plantations, all contribute to a psychologically asphyxiating environment which leads to self-negation and depression.
- High level of migration, creation of all-male villages, low wages and insecurity of work contribute to acute problems of alcoholism, drug addiction, prostitution, delinquency, violence and family disintegration.
- Endangering of wildlife and indigenous tribes.

In the Caribbean regions of Latin America, important indigenous populations, like the Cabecar and the Bribri peoples, are seriously threatened by the contamination of their rivers, pressure on their lands, as well as the negative effect on their cultural identity when their youth became workers on the plantations.¹⁷

Political influences

In 1993, the European Union introduced a new import regime for bananas, a complex regulation that has had strong repercussions on the structure of the international banana market. By accentuating the differences between EU and US companies, it obliged the operators to redefine their positions and to develop new market strategies. All companies had to adapt and restructure their businesses.

The new regulation tried to combine four main objectives:

- to harmonise the import regimes of each of the member states, to install a Common Organisation of the Market in Bananas (COMB) so that European producers – who are not very competitive on the international market – can benefit from the support mechanisms planned by the CAP (Common Agricultural Policy);
- to guarantee that access to this market for their traditional ACP and European suppliers was not hampered by the foreseen influx of cheap Latin American bananas, as stated by the “Banana Protocol” of the Lome Convention;
- to a lesser extent, to support European companies, often less competitive than their American counterparts;
- to strengthen their market position with a view to greater opening of the frontiers after a 10 year transitory period.

This resulted in a complicated trade mechanism, introduced on 1 July 1993, whereby four categories of suppliers were established, each receiving different treatment:

1. EU producers (mainly the Canary Islands,

Martinique and Guadeloupe) were covered by internal aspects of the common market. For this category, income support for up to 854,000 tonnes is guaranteed when prices fall below the costs of production.

2. Traditional ACP countries (i.e., the 12 ACP banana suppliers in the years preceding the single market) have duty-free access up to a maximum amount of 857,700 tonnes per year.

3. Non-traditional ACP countries (e.g. Dominican Republic, Ghana) and quantities from traditional ACP countries above the ceiling of 857,700 tonnes.

4. Third countries, the so-called ‘dollar’ countries. Together with category 3 producers, they share a tariff quota of 2 million tonnes – duty free for non-traditional ACP countries and with a tariff of 75 ECU per tonne for the Dollar bananas. This quota was to be increased to 2.553 m. tonnes with the accession to the EU of Sweden, Finland and Austria.

The “dollar” allocation was further divided into traditional traders in dollar bananas (66.5 per cent), established operators of Community and/or traditional ACP bananas (30 per cent) and ‘newcomers’ (3.5 per cent). The allocation of dollar quotas to the ACP companies was designed to cross subsidise the expensive ACP bananas with some dollar banana quota rent, and thus strengthen the position of the ACP companies in relation to the dollar companies. At the same time, it led the dollar companies to invest in ACP countries to allow them to establish rights to future dollar quota allocation within this category.

While it was initially thought to make up for the difference in production costs between the ACP and the dollar zones, and to enable ACP producers to remain competitive on the European market, the system soon resulted in an active trade in dollar licences, due to the insufficient level of quota allocation. The value of the licences, depending on demand, have been fluctuating enormously and reaching as high as \$78 per box. The total cash value of the licences is calculated to be over \$1bn. annually.

The international trade dispute
Both inside and outside European Union countries, the system has come under attack from the moment it became effective. Five main Latin American growers (Costa Rica, Venezuela, Colombia, Guatemala and Nicaragua) protested against the system under the rules of the General Agreement on Tariffs and Trade (GATT). The GATT found that the EU import regime contravened its rules, but the EU did not accept the findings; it offered to settle with the named countries in exchange for ending the dispute. All but Guatemala signed a compensatory "Framework Agreement", which was included in the last phase of the GATT Uruguay Round in April 1994. Ecuador and Honduras did not participate, not being members of the GATT.

The Framework Agreement allocated quotas for the countries involved, which meant that national governments were entitled to distribute export licences. The banana companies protested, seeing this as increasing the problems they already had with the system. Chiquita, in particular, decided to actively oppose the system, and pushed hard for the Clinton administration to bring the case to the World Trade Organisation which replaced the GATT in 1995.

The US laid the case before the WTO, and, in 1996, a dispute panel was established. Two earlier GATT dispute settlement panels on EU banana trade policy had threatened sanctions against the Union, as well as Costa Rica and Colombia (using punitive US domestic trade law Section 301). In the final ruling, the WTO dispute settlement panel found that the EU's tariff quota regime for negotiating and allocating quotas acted in a discriminatory way, though the quota system as such was not condemned.

The EU confirmed its intention to fully comply with the dispute ruling and its recommendations. In July 1998 it came up with a new proposal which chose to continue a managed market for the import of bananas, but revised the system for allocating the licences so as to make compatible with WTO trade rules.

Buying influences

The ways in which the banana companies have been adapting to the EU regime, and to the changing world market, have varied. Chiquita adopted a far more formal position than the other companies. Accusations were made that the US action against the EU position was brought by Clinton administration in return for political funding from the giant US fruit exporter. According to an analysis of money donations, the Chiquita president, Karl Lindner, relatives and officers of his companies gave a total of US\$ 3,164,460 in "soft money" donations to Republican and Democratic fundraising committees from 1988 through to 1997.¹⁸ Powerful congressional leaders, who had received donations, sent letters to the White House pressuring the administration to support Chiquita's position, and, following Chiquita's lobby, the US used its muscle to pressurise states like Mexico, which does not export bananas to Europe.

Dole and Del Monte adapted more pragmatically to the new situation. Dole did not file requests with the White House, but proposed a compromise (in 1995) to avert the WTO action; this was turned down. Both companies took advantage of the new system by investing in ACP and European countries to access the "B" licences.

Chiquita claims that "the EU banana regime is illegal and an unfair trade practice". When the EU issued its amendment proposal, the company made it clear that it would not accept anything less than a complete liberalisation of the EU market, and would request the US government to pursue the case at the WTO and take retaliatory sanctions against the EU. Chiquita traces its current financial problems to the creation of the EU banana protections. But the company's market share fell from 25 per cent in 1991 to 18.5 per cent in 1994. Tim Cuniff, Del Monte's director of marketing for North America, thinks that the loss can only be related to unsound business decisions. He points

to the huge capital investments that the company made in the early 1990s in anticipation of an Eastern European market boom that never happened. Much of this money was used to buy and lease ships and expand plantations in Central America in anticipation of a huge growth in European sales.

Chiquita also made mistakes when preparing for the Single European Market, diversifying less into ACP and European countries than Dole and Del Monte. Finally, in 1997, the company encountered serious quality problems with its shipments from Honduras following the breakdown of its quality control operations.

Nevertheless, Chiquita continues to play a major role in formulating US banana trade policy. At the UN's Food and Agriculture Organisation (FAO) banana conference in May 1997, the US delegation consisted of 3 US trade diplomats and 44 advisors: the president of Chiquita Europe, Chiquita's assistant general counsel for Cincinnati, a representative of a law firm which defends Chiquita's views in meetings and the head of a banana trade group that represents the entire industry. A proposed trip to the EU of the Panamanian Foreign Minister, Ricardo Alberto Arias was cancelled, following concerted efforts by Chiquita. In the company's view, the EU tour was too dangerous and could have led to some kind of agreement with the EU ministers.

The WTO banana case has effectively become a fight between two economic powers: the European Union and Chiquita Brands International. As the European representative of the Association of Cameroon Banana Producers, Mbarga Atangana, puts it: "Chiquita is now trying to have banana growers in ACP countries pay for its own mistakes by cutting out European protection". The banana trade dispute, however, concerns far more than market shares and the simple ideologies of free trade versus protectionism; issues like the livelihoods of the

banana farmers, and sometimes the entire national economies of small British former colonies and French departments, like Jamaica, the Windward Islands, Martinique and Guadeloupe are at stake.

Seventy per cent of St Vincent's population, for instance, make their living directly or indirectly from the banana trade; in St Lucia, one person out of three. 60 per cent of the Windward Islands' export earnings come from bananas. Squeezing their shares of the European market, and destroying their economies, inevitably will condemn thousands of people to poverty and hardship.

Changing company strategies

The EU banana regime accentuated the differences between EU and US companies although, in the end, all are involved in the same fight for a good mix between sourcing ACP and dollar bananas to obtain maximal access to dollar licences. The establishment of supplier categories within the EU regulation forced companies working in ACP countries to get involved in Latin America, and induced dollar companies to try to get ACP licences. For established operators of the Euro and/or ACP bananas: the decision to reserve 30 per cent of the dollar licences gave them the opportunity to source imports from the more profitable dollar banana outlets.

Geest decided to invest \$150 million in a new 3,000 ha plantation in Costa Rica. Disease and labour problems made the investment a financial failure, and after the take-over by Fyffes/Wibdeco, the land was sold to a consortium of Latin American businessmen. Fyffes expanded its marketing contracts in Central America and Ecuador, and succeeded in spreading its sources to include ACP, Euro and dollar bananas. But Fyffes's entrance into Honduras (through contracts with independent growers) and Guatemala (production contracts) did not succeed, and now it works mainly through agreements with other traders, including Dole.

Fig 4: Main companies, results and market shares 1992-97

	Sales (\$m.)	Profit/loss (\$m.)	World Share (% of boxes)	EU (% of boxes)	US (% of boxes)
1992			525m.	200m.	165m.
Chiquita Brands	2,723	(284)	34	>30	
Dole Food Company	3,120	16	20	12	
Del Monte Fresh Produce	900	(63)	15	7-8	
Fyffes	890	47	2-3	4-5	
Geest	n.a.	5	3-4	5-6	
1995			610m.	180m.	170m.
Chiquita Brands	2,566	9	>25	19	35
Dole Food Company	3,804	89	22-23	15-16	35
Del Monte Fresh Produce	1,068	(72)	15-16	8	18
Fyffes + Geest	1,700	65	7-8	17-18	1
Noboa	-	-	12		
1997			625m.	210m.	200m.
Dole Food Company	4,336	160	25-26	18-19	
Chiquita Brands	2,434	0	24-25	15-16	
Del Monte Fresh Produce	>1,200	>100	16	10-11	
Fyffes	1,460	54	6-7	16-17	
Noboa	-	-	13		

Sources: Eurofood, Fruchthandel, Reuters, Annual Reports; Solidaridad, Euro PA (1994), ADL (1995), author's estimations.

For US companies, a foothold in the ACP and/or Euro banana countries assured them part of the 30 per cent dollar licences reserved for this category. Indeed, all US companies have invested in Cameroon and/or Ivory Coast, mainly through joint ventures with French companies (e.g. Dole/Compagnie Fruitiere) and tried to get a foothold in the market for Caribbean bananas.

Dole considerably expanded its control in the Ivory Coast via its participation in Compagnie Fruitiere. Del Monte is now present in Cameroon and Somalia and the Philippines, but Chiquita was less lucky. In 1994, Chiquita sent representatives to St. Lucia to make the offer of a joint venture with local growers. Under the deal, Chiquita was to offer technical support and a slightly higher price. Per contra, the company would have got hold of all the European licences and become the exclusive distributor of these islands' bananas. When the governments rejected the offer, Chiquita went directly to growers, and caused a split in the farmer movement. A common fear was that Chiquita's intention in the short term was to get hold of licences, but that in the longer term it would destroy West Indian banana production because it can grow bananas much more cheaply elsewhere.

Winners and losers are clearly shown in the table.^(fig 2) Chiquita is being overtaken by Dole as it lost market share in the EU and elsewhere, in the face of the more aggressive strategies of Dole Food and Del Monte. Dole Food is the world's leading fresh fruit company and, although Chiquita is still mentioned as the banana leader, the differential between them has grown very small.

The introduction of the EU regulation in 1993 made the overcapacity in banana production that was created at the beginning of the nineties evident, and has resulted in a global restructuring of the banana business. All companies involved have been both defining their core activities and reorganising to become more cost effective.

Diversification

All companies have been diversifying into other fruits: Within Dole food operations their banana trade accounts for an estimated 35 per cent of turnover. Other fresh fruit and vegetables and packaged fruits and juices make up for the other 65 per cent. Falling profits have obliged Dole to restructure its business. It decided to sell off the more problematic activities (part of its juice and dried fruits activities), while it invested in the development of its fresh fruit business, in particular melons, pineapples, grapes, kiwis, apples. In 1994, Dole became Chile's leading fruit exporter, accounting for over 12 per cent of Chilean exports.

Chiquita's operations are more concentrated on bananas (about 60 per cent) and expansion in 1990-91 increased its long-term debt. The recent crisis obliged it to invest in the restructuring of banana operations, and restructuring charges and interest charges hugely affected results. Chiquita has been investing in other fresh fruits, but to a lesser extent, and has a packaged-food division for canned vegetables, juices, etc.

Del Monte is the world's leading pineapple producer and a leading melon exporter. It runs the fresh fruit exporter United Trading Company (UTC) in Chile, through which it plans to expand its fresh fruit business to Europe and Asia. Fyffes is also a mixed fruit company, with their banana trade accounting for 25-30 per cent of its total business. Following its rapid expansion into the crop, Fyffes became more dependent on bananas but corrected this to some extent when, in 1994, it also invested in Chile with the take-over of NAFSA, a fresh fruit exporter.

The restrictions in the European markets also led to increased efforts to develop other markets (Near East, South America, Far East), where per capita consumption is still much lower. The Near East had the biggest increase in banana imports in 1992-93 and is increasingly supplied from Latin America. The three southern countries of America (MERCOSUR)

have nearly doubled imports since 1992, and are almost totally supplied by Ecuador. The Former Soviet Union (FSU) market has grown rapidly since 1994, but showed a decline in 1997. More recent are increased imports into China.

In the fight over the Japanese market, Del Monte won access to distribution channels, lowering its prices and giving the other two a hard time. Losses for Chiquita have been such that, for a time, it reduced its banana trade to Japan while maintaining its ripening and distribution facilities. Given the recent decision of the Japanese government to relax limitations on agricultural imports and the rapid increase in Chinese imports, Chiquita, like the other fruit companies, has stepped up activities in the Far East.

Pressure on wages

Changes have also occurred in the control of banana production which were to the disadvantage of Chiquita. In Honduras, Guatemala and Ecuador, Dole has increased its control, while in Costa Rica, Del Monte is expanding; in Asian production, Del Monte and Dole are dominant. Meanwhile, Chiquita has been disposing of 1,200 ha of less productive land in Honduras, using the strike of 1994 as a justification. Moreover, new forms of labour practice are being introduced in the plantations, with "Total Quality Programmes" itemising work and responsibility.

The constant pressure for low-cost production is worsening both primary and secondary labour conditions. Furthermore, all companies are increasingly trying to settle in the Far East, in countries like India and Indonesia. The attraction for the companies is evident: a vast cheap labour pool, nonexistent workers' benefits or occupational protection, the absence or near absence of environmental safety regulations, tax breaks and the opportunity to market products at monopoly prices. Capital is produced by labour. A recent study of the pineapple sector in the Philippines found that a worker in the Philippines gets US \$3.50 a day, while

in Indonesia only \$1.61 is paid. This is to be compared with US \$14.87 per day in Costa Rica or \$6.42 in Ecuador. In India wages are as low as in Indonesia, and the liberalisation process is leading to increasing foreign agricultural investment.

Market orientation

Given the increased concentration in the market and the retail sector, all food companies are obliged to strengthen their market orientation. The increased competition with other brands and private labels has led to a process whereby supply contracts and conditions are increasingly determined by the retail chains – the so-called reversion of the production chain. Efficiencies are no longer sought only within the companies, but also along the whole production chain. Consequently, requirements in the area of dependable supply, technology, marketing and logistics are constantly increasing.

Due to the high investment involved in these developments companies are looking for partnerships through 'preferred suppliers' relations. Dole, for instance, is developing an aggressive strategy in this field, arranging partnerships with retailers, wholesalers, and distributors, in order to set up integrated import, ripening and distribution systems. It states in its 1996 annual report that it has shifted its focus from the supply side to the market side.

At the same time, the increased market orientation makes the banana companies much more sensitive and vulnerable with respect to consumer opinions. This means that actions on the consumers' side, like the fair trade initiative and the UK banana campaign, can have a far-reaching impact. The recent EU study of consumer attitudes in Europe to fair trade bananas found an overwhelming interest (400,000 tonnes based on conservative estimates). Equally, the attention the big fruit companies are paying to the combined banana campaign from the Costa Rican trade union SITRAP, UK Banana

Link/World Development Movement and the International Union for Foodworkers (IUF) shows the growing concern of the companies for their image. Discussions in the UK between the Banana Group of the major fruit companies and the retail sector, through the British Retail Consortium (BRC), concerning a Code of Conduct, and the recent negotiations with Del Monte in Costa Rica (Bandeco) about union rights and social and economic conditions resulted in an agreement between SITRAP, the independent trade union and the company, Bandeco. This is a clear example of what combined consumer/trade union action can achieve.

“Better Banana”

Chiquita has followed a more conservative strategy which concentrates on advertising to strengthen its presence in the wholesale/retail sector and to improve brand awareness. In 1995, the company started the ECO-OK programme (or Better Banana Project) through which it hopes to establish itself as the environmental leader of the banana companies. In Europe, where the ECO-OK certification is not recognised as an eco-label, the campaign is primarily directed at the retail sector. The goal is to convince retailers and consumers that, on top of the premium quality bananas Chiquita prides itself on offering, important changes are being made in their plantations in Costa Rica and elsewhere to improve environmental conditions. Plantations are certified by a US environmental NGO, Rainforest Alliance, which set up the criteria and also monitors their implementation.

According to the NGO, Foro Emaus however, these criteria are unverifiable. Banana plantation owner, Volker Ribniger, has pointed out that it is possible to get certification merely by respecting existing laws. The plantations may not use chemical sprays that are banned by the US Environmental Protection Agency (EPA).

Though recommendations are made, there is no clear ban on “the dirty dozen” or WHO-classified

highly hazardous substances. Improvements seem only to be made when they do not require any further investment from the company. It put efforts, for instance, into collecting plastic bags but there is no composting scheme, and no intention to avoid or phase out pesticides, even in the long term. Independent trade unions in Costa Rica have also testified that on union rights, virtually nothing has changed since 1990.

But the strategy seems to work, at least with German and Danish retailers who have recently backed a large-scale advertising campaign in the German supermarkets for the ECO-OK bananas. Chiquita is the best established firm on the German market and its dominant position enables it to exact an extra premium from wholesalers and retailers who wish to sell “quality” bananas. The blue label has become a guarantee of “quality”, that Chiquita is trying to turn into a guarantee of “sustainability”, with the sole means of a well designed public image campaign.

Dole claims to have been developing and implementing Integrated Pest Management (IPM) techniques in all its farms, that it complies with the quality control and management criteria of the International Organisation for Standardization (ISO). “Independent audit against international, publicly accepted criteria is essential and preferable to private organisations giving their seal of approval to products and production methods” says Dole.¹⁹

The company claims that this “shows that Dole takes seriously its responsibility to build a sustainable environment, in particular for its workers, and produce safe and wholesome food”. They do this, however, not because of any interest in improving the environment or workers’ health but because they need to respect the various standards, and the social, environmental, financial, and economical pressures to remain competitive on the market.²⁰

But the ISO series, 14,000, is a management process – it only certifies that a plantation is trying to reach the objectives; it says nothing about the objectives themselves, let alone whether they have been fulfilled or not. With ISO 14,001, for instance, plantations have to base their application of pesticides on IPM. This is not necessarily a guarantee of lower dosage if there is no statement of targets and no specification of the threshold level. IPM can also be achieved by spraying per plantation or by spraying a whole plantation, when localised spraying would be enough to eradicate the disease.

In Honduras, Dole introduced a “Total Quality” management policy whose objectives are to subscribe to ISO 14,000 criteria. The objectives of the policy clearly differentiates between environment features and issues of health and security at work.²¹ Yet, to motivate its workers, the company explained that if they subscribed to ISO 14,000 this would bring about labour stability, a better working environment together with better ecological practices. To promote this policy, Dole also used a pre existing structure, with a central committee including an equal number of management staff and union representatives, regional committees and local members of Parliament, a structure originally set up to deal with hygiene and security issues.

By using these pre-existing structures, and by planning the meetings during working hours, Dole succeeded in encouraging workers to adopt a policy orientated by the company’s profit motives by getting them to believe that it will induce better labour conditions, and also by leading workers to believe that the management of the “total quality” programme was a joint initiative with trade unions. It also succeeded in weakening the efforts of independent trade unions to improve health and security at work.

Code of conduct

In November 1998, the Banana Group (comprising the main banana companies in Britain) issued a

code of conduct for the banana industry based on social and environmental criteria that refers to various ILO conventions and include recommendations for a better use of pesticides. Companies have put a lot of time and work in the development of this code over the last two years, which they claim has been designed together with retailers. There was however no consultation with the representatives of workers or with NGOs. The unilateral manner in which the code was promulgated is clearly reflected in the number of technical and legal inaccuracies contained by the sections: in the “labour” section for instance, under point 7, the code states that “workers will have the right to join any workers organisation of their choice”. Yet, as the IUF stated, “the history of labour relations in the banana industry has been characterised by incessant conflicts stemming from the refusal of employers to accept the right of workers to join unions and for these trade unions to represent workers in the collective bargaining process, to monitor health and safety conditions and to institute effective grievance procedures. [Therefore] changing situation require an explicit affirmation of trade union rights. Anything less is clearly insufficient and constitutes an implicit recognition of solidarista associations”.²²

Many of the pesticides used in banana plantations, Carbamate for example, are organophosphate and synthetic pyrethroid insecticides of short term persistence but highly toxic to aquatic organisms (or people, and livestock drinking the water). Their impact on the environment cannot be measured by biennial monitoring. Rather the monitoring procedure should rather be determined by the pesticides used, and be much more frequent in the case of products with short-term persistence.

The good news however is that, in the code, there is a statement saying that “the industry is committed to independent impartial verification”. If they want this initiative to be considered as a first step toward more sustainability in the banana sector, UK

companies will have state clearly how and by whom verification procedures will be implemented. At the same time, in order to avoid that the code remains a mere statement of abstract principle, companies will have to reconsider the code and embark on a process of negotiation with trade unions and NGOs representatives for a renegotiation of the criteria.

However, one of the main difficulties raised by the code, in common with all the initiatives described above, is that it requests an increased participation of producers and trade unions in the process of developing social and environmental standards and criteria that essentially benefit companies and consumer organisations in industrialised countries. But it is TNCs who should bear the cost of this. Although there is often sufficient social and ecological legislation in their countries, producer groups and trade unions are expected to travel to meetings all over the world, and to have the staff and the time to design new criteria and monitor their implementation. They find themselves increasingly trapped in situations whereby they either cannot take part to meetings and are accused by companies of obstructing progress, or, if they travel, may have to neglect some of their traditional duties.

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Zeneca: the impact of pesticides on food security

Barbara Dinham (with Marita Wiggerthale)

The health and environmental problems of pesticides in developing countries are a testament to the undesirability of these products where safety is not assured. Three million pesticide poisonings occur each year, according to World Health Organisation estimates, resulting in 20,000 unintentional deaths. Although experience is demonstrating that crop yields can be maintained and profits to small-scale farmers can increase without heavy dependence on pesticides, the agrochemical industry threatens that global food production would collapse without them. Hunger and food insecurity, however, result from poverty and lack of access to food, not global production levels.

The agrochemical industry is a powerful lobby. With a world-wide value of around USD32 billion in 1997, ten companies dominate the market with 80 per cent of all sales. While pesticide use stabilised through the 1980s, aggressive marketing and new strategies have again begun to increase pesticide use in most markets. The UK-based company Zeneca is the third largest agrochemical company with an 8.4 per cent share of all 1997 sales. It is surpassed only by Novartis and Monsanto (*see table 1*).

Zeneca was established in 1993 following a de-merger which split off the pharmaceuticals, agrochemicals and speciality products divisions of the chemical giant ICI (formerly Imperial Chemical Industries). By the end of 1997, Zeneca had increased its pre-tax profits by 145 per cent to GBP1.08 billion.¹

Pharmaceuticals make up the largest part of the company's interests, accounting for 49 per cent of turnover and 72 per cent of profits, while agrochemicals account for 32 per cent of turnover and 20 per cent of profits (*see table 2*). Although seeds form a much smaller, and at present less profitable, proportion of its overall business, Zeneca is among the largest in this area of strategic interest to the top pesticide companies – which are rapidly expanding into genetic engineering in agriculture.

The US, Western Europe and Japan account for about 70 per cent of pesticide sales. There is limited scope for expansion in these markets, and companies vie with each other to win farmers over to their new products. For new markets, companies look mainly to Asia and Latin America. A comparison of the Chinese and Japanese rice markets explains why – China spends USD6.7/ha on pesticides, compared to USD752/ha in Japan. Even so, the Chinese rice yield per ha. is second only to Japan.²

In spite of the competition, the industry is bound by a common interest in promoting agricultural systems dependent on plant protection products, and actively lobby through the Global Crop Protection Federation (GCPF), formerly known as GIFAP. Studies show that Integrated Pest Management (IPM), organic agriculture, low external input and other ecological approaches compete favourably in terms of yields, and frequently improve farmers income.³

Trade liberalisation is the wedge for opening markets in developing countries, and, at the same time, is reinforcing their traditional role as providers of tropical produce to rich markets. Non-traditional exports, such as fresh fruit and vegetables, are being exported at a faster rate. Value-added processing industries, which could accumulate more gains for the South, is not a prominent feature of trade liberalisation.

While this relationship between developing and industrialised countries is not new, the GATT/WTO trade rules provide the latest form of international coercion. The drive to industrialise agriculture is expanding monocultural production. It is having a profound effect on rural areas in many countries, undermining social and cultural structures and destroying locally sustainable economies, including local food security. In the jargon of international negotiations, these elements comprise the 'multifunctional nature of agriculture', but are

Table 1. Top agrochemical corporations 1996 and 1997 (Sales US\$ million)

Company	Base	1996	1997
Novartis	Switzerland	4,068	4,199
Monsanto	US	2,555	3,126
Zeneca	UK	2,630	2,674
DuPont	US	2,472	2,518
AgrEvo	Germany	2,422	2,352
Bayer	Germany	2,343	2,254
Rhone Poulenc	France	2,243	2,202
Dow Agro-Sciences	US	2,010	2,200
Cyanamid (AHP)	US	1,989	2,119
BASF	Germany	1,503	1,855
Total		\$24,235	\$25,499
Sales of top 25		\$30,603	\$31,896
Top 10 as % of all sales		79%	80%

Source: Agrow, August 1998

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Table 2. Zeneca: turnover and profit in agrochemicals and seeds businesses

	Turnover				Profit after tax			
	1997	1996	1995	1994	1997	1996	1995	1994
Agrochemicals	1,631	1,684	1,495	1,374	223	227	192	107
Seeds ¹	-	117	144	147	-	(3)	(48)	(73)
Total	5,194	5,363	4,898	4,480	1,083	1,043	829	659

¹ Since the joint venture with VanderHave in 1996, the turnover and profits have been amalgamated into reports of associated undertakings.

Source: Annual Reports and Accounts

denied recognition in the WTO. On the other hand, benefits accrue to the big agribusiness transnationals. Zeneca says that it operates a global marketing organisation and is well placed to capitalise on the GATT which liberalises international trade.^{4,5}

Genetic engineering, seeds and pesticides
In a revolutionary move to vertically integrate their interests, the pesticide transnationals have invested heavily in genetic engineering, notably into crops resistant to the industry's own products, mainly herbicides, as well as to crops which express the bacterial pesticide *Bacillus thuringiensis* (Bt). In the last five years takeovers and mergers between pesticide companies and the USD23 billion seed industry have escalated. Zeneca has invested in agricultural biotechnology since 1979, convinced that the rapid development of bioscience through molecular biology and cell and tissue culture would have a major impact on future developments in seeds technology.⁶

Although concentration remains less in the seeds industry (in 1997 ten companies had a 21.5 per cent share of the market), the five leading pesticide companies have now bought major interests. Monsanto leads the field, and is followed by Novartis and Zeneca. Dow AgroSciences has bought a 20 per cent share in the largest seed company, Pioneer Hi-Bred (see chart 1).

One industry analyst has observed: "The days of seed companies selling commodity seed products that will be sprayed with pesticides marketed by a separate industry are clearly numbered. Seed companies are now selling seed brands engineered to express pest resistance genes or to be tolerant to specific herbicides".⁷

These trends inevitably lead to further intensification and monoculture production, which increases pest problems and forces farmers to use pesticides. Monoculture reduces the biodiversity which is a

crucial part of small-scale farming systems in developing countries. FAO says that more plant diversity has been lost to industrial agriculture than any other cause. Some scientists have shown how reductions in biodiversity have led to the evolution of aggressive pests and diseases which are more difficult to control than those from which they have been derived.⁸

Control over both seeds and pesticides could offer phenomenal gains for these industries, which project their new image as the "Life Sciences" industry. Some analysts predict that the wave of agricultural biotechnology, herbicide tolerance and insect resistance traits, could take the global crop protection market up to a USD100 billion a year industry.⁹

In Europe, the agrobiotechnology companies lobby the European Commission for favourable decisions to promote these interests through the Senior Advisory Group on Biotechnology. Zeneca has been highly critical of the EU indecision and lack of leadership over biotechnology legislation, saying it is having a negative impact on their business.¹⁰

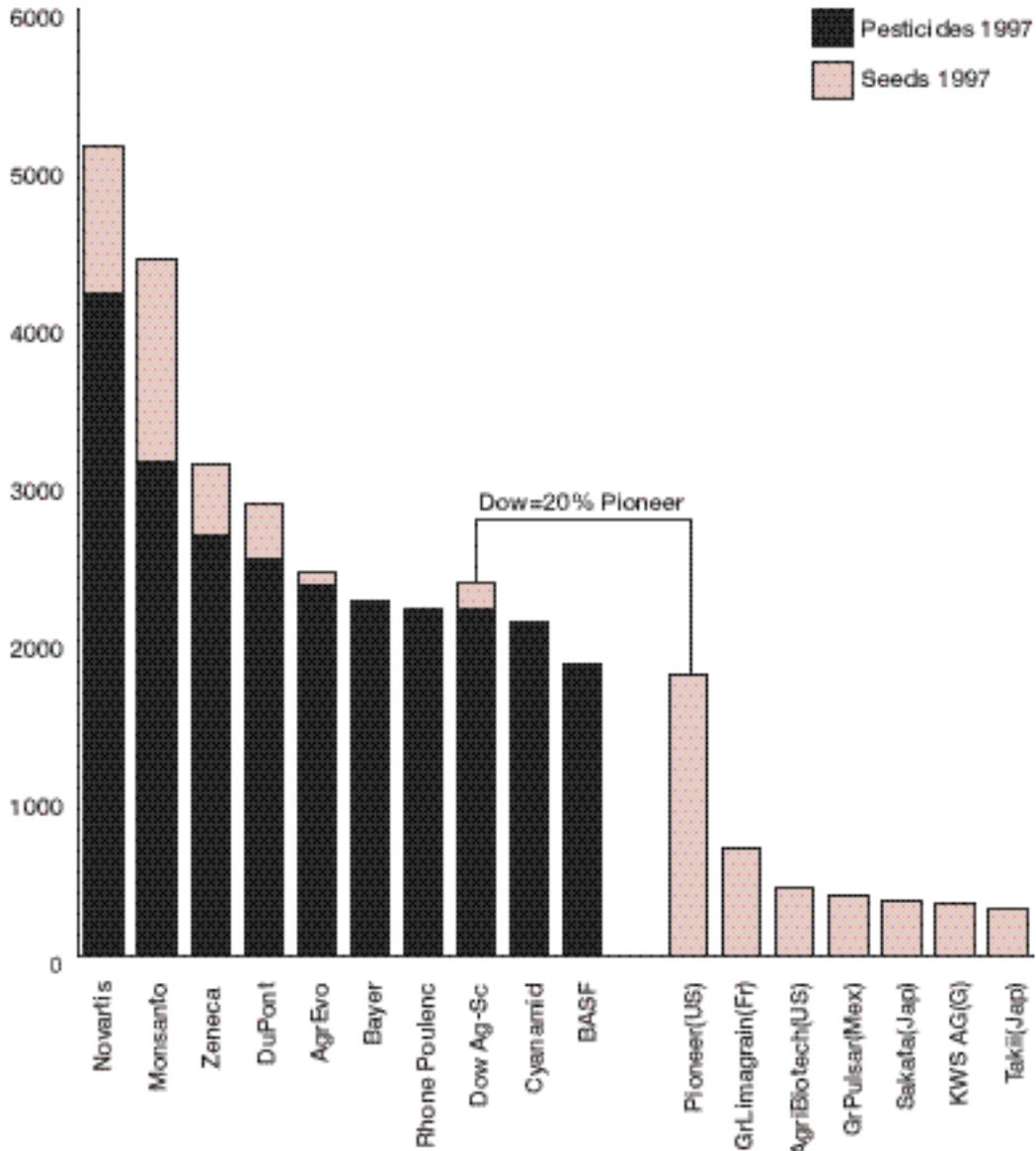
Unless there is greater legal control, nearly all commercial seeds of all major crops could contain one or more bio-engineered traits by 2000.¹¹ At present, legal controls operate entirely in favour of corporations, allowing patents on seeds to protect their interests, even when the seeds have been bred over centuries by farmers.

The markets

Zeneca's pesticide products are sold in 130 countries around the world. The company's main manufacturing plants are in the UK, USA, Belgium, China, India, Japan, Thailand and Brazil (see annex).

The pesticide business brought a profit of GBP223 million in 1997 on sales of GBP1.6 billion. The company's main pesticide products include eight herbicides, five insecticides, five fungicides and two

Top 10 pesticides and seed companies
 market dominance and interlinking shares (\$US million)



Source: Agrow No 311 28 August 1998, RAFI Communique, July/August 1998

rodenticides (see annex). With its big-selling herbicides: paraquat (trade name Gramoxone, and undoubtedly the most controversial product, see below), diquat and glyphosate trimesium (Touchdown), its herbicide portfolio gives Zeneca a leading position in this market; (Monsanto's glyphosate remains the biggest seller worldwide). Zeneca's biggest selling insecticide is lambda-cyhalothrin. In 1997 it added to its insecticide portfolio by buying the US-based global chlorothalonil business of Ishihara Sangyo Kaisha, and launched a highly successful new fungicide.

The herbicide market is the fastest growing sector globally, and will undoubtedly be aided by the heavy concentration of genetic engineering on herbicide-resistant crops. Industry argues that herbicide resistant crops will reduce herbicide use. However, by a sleight of hand, the reference is to herbicide use per hectare: overall trends are seeing dramatic increases in use, primarily in developing countries. If, as some scientists predict, herbicide-resistant crops lead to the creation of super weeds, as genes cross into relative species, this would lead to increased applications of herbicides.

Although Zeneca has fewer herbicide-resistant crops than Monsanto, its hybrid maize promoted through Garst Seeds, a subsidiary, tolerates two different classes of chemical herbicides, and experiments with fungicide-resistant crops are in hand.¹² Zeneca has also developed a novel process for producing a rival to Monsanto's glyphosate (Round-up) glyphosate trimesium (Touchdown); it is suing Monsanto under US anti-trust laws for insisting that farmers sign a contract to use only Round-up with their herbicide-resistant seeds

The top pesticide companies invest heavily in research to maintain their position; in 1997, Zeneca spent GBP163 million on agrochemical research. The company estimates that it typically costs up to GBP60 million (and can cost GBP100 million, including regulatory clearance) and can take up to

ten years to get a new pesticide on the market.¹³ On average only one in every 20,000 molecules screened in the laboratories will make it through to full field trials and evaluation. Biotechnology has now enabled the company to increase screening of compounds for pesticidal activity from 10,000 to 100,000 per year. The research facilities are primarily in the UK and the US, with a global network of field stations for crop testing.

The company established Zeneca Life Science Molecules 1995, to develop, manufacture and supply fine chemical intermediates and biotechnology based products for herbicides and insecticides, and also for health care products. Biotechnology processes are used, for example, to produce agrochemical intermediates. The products are sold to other agrochemical companies, and the company has been assisted by trade missions organised by the Department of Trade & Industry. It is an expanding area which Zeneca is counting on to become a leading supplier in the multi-billion dollar market for agrochemical intermediates.¹⁴

The underlying strategy of agrochemical companies is based on many factors, but key among these are: investment in new products increasingly tied in with genetically engineered crops compatible with agrochemical products; extending market control, for example into developing countries; and the continued sale of older products for which the heavy investment costs have been recouped.

Problem products: paraquat a dirty dozen pesticide

Pesticides are toxic chemicals which are deliberately introduced into the environment. All will have some unintended effects on health, the environment and on the economics of farming, particularly if not used in accordance with good agricultural practice, or with the manufacturers instructions. Conditions of use in developing countries make pesticide application more dangerous. Small-scale farmers and plantation

workers are not trained to use pesticides and low literacy levels make reading complex label instructions difficult; they cannot afford protective clothing or servicing of spray equipment; there is often poor access to washing facilities, and medical facilities are not on hand in case of accidents.

Zeneca's biggest selling product, paraquat, has been in production for over thirty years; it is highly toxic (classified a Class Ib poison, highly hazardous, by the WHO) and has no antidote – as little as one teaspoon is fatal. Thousands of deaths have been caused through accidental ingestion because of its likeness in colour to coffee or Coca Cola. To avoid this, the company introduced a blue dye, a powerful smell, and an emetic into certain formulations. It is one of the Pesticides Action Network (PAN) dirty dozen because of the number of accidental and suicidal deaths it has caused worldwide, and because of its health impact on regular users. But the company vigorously defends the product. Its cheapness continues to make it popular in developing countries.

Paraquat is contact herbicide used to control annual weeds in a wide variety of crops, and is the world's second largest agricultural product (after glyphosate). Characteristically, it binds tightly to clay particles in soil after spraying, not damaging crops planted following weed clearance. The German regulatory authorities, however, are concerned that prolonged use can build up an overload of paraquat in the soil, and have introduced severe restrictions.

Paraquat is widely used to control weeds around the base of plantation tree crops (e.g. coffee and cocoa) in developing countries. Teams of sprayers in plantations apply paraquat on a daily basis, and extensive evidence exists from interviews with workers of the resulting health problems. These include skin rashes, loss of finger- and toe-nails, vomiting, nose bleeds, nausea, general muscle ache, muscular weakness, difficulty breathing, blurred vision, dizziness and headaches.¹⁵

Another controversial product is the organophosphate (OP) insecticide pirimiphos-methyl, widely used in grain storage. Users have reported many of the symptoms associated with OP poisoning, particularly neurological effects. Experienced grain merchants maintain that the treatment is unnecessary, and that good storage design would prevent the mites that the OP is intended to control.¹⁶

Genetic engineering and seeds business
Zeneca first decided to enter into the international seeds business in 1983 when it began to acquire plant breeding businesses and invest in biotechnology research. Ambitious to be the biggest seed company globally by 2000, it is now No 4, behind Pioneer Hi-Bred, Monsanto and Novartis. It describes its interest: "Zeneca is one of the leading companies in agricultural biotechnology. Key to the research strategy is the increasing integration of bioscience activities across Agrochemicals and Seeds. This integrated approach enables Zeneca to offer farmers improved crop quality and yield with better crop protection solutions".¹⁷

Like the other agrochemical companies, business expansion tends to be based on taking over existing companies. Recent acquisitions include a 50/50 joint venture with the giant Dutch seed company Royal VanderHave, which has annual sales of USD450 million, ranking among the world's top five seed companies. The joint venture, agreed in 1996, was named Advanta, bringing together VanderHave, Garst, ICI Seeds, Interstate Payco, Olds Seeds, Michigan State Seeds, Advanta Seed West, Shamrock Seed, Zenco, Mogen, Sharpes International. The new group is designed to enhance the agrochemical and seed related interests to be derived from genetic engineering technology.

In 1997, Zeneca took over Mogen International NV, a Dutch plant biotechnology company, for USD74 million;¹⁸ in December 1997 the company acquired 20 per cent equity in the integrated grain technology

company, Exceed Genetics LLC in the US, acquiring the leading starch modification technology for application in maize, wheat and rice.¹⁹

The breeding programmes are sometimes contracted out: for example, Zeneca has a joint venture with the Indian Tobacco Company contracting Indian farmers to breed the seeds for cereal crops and oil seeds.²⁰

Zeneca Plant Science (ZPS) is the business unit within Zeneca Agrochemicals which researches, develops and delivers genetically modified crops. The company's view is that agricultural methods will increasingly involve biotechnology: "The application of successful biotechnology has important potential for the agriculture industry, with the ability to develop crop resistance to pests and diseases – vital if we are to secure the food supply need for a growing population. Herbicide tolerance can also be bred into crops, thus offering farmers a complementary method of treatment of Crops."²¹ The aim is "to improve the quality of the crops, or make them less susceptible to attack from pests and diseases."²²

In 1996 Zeneca became the first company to market a genetically modified food in Europe, the genetically engineered FlavrSavr tomato, with properties which benefit processing industries. It is now sold in both the US and Europe for processing into tomato puree. The expanding programmes for genetically engineering other crops comprise its herbicide-resistant maize, a range of fruit and vegetables, starch crops including potatoes all the major cereals, bananas and tomatoes, that incorporate disease and fungicide resistance; corn (maize) and cotton that include an insect resistant gene to replace Bt.²³

Bt has been a useful bacterial pesticide, approved for use in organic agriculture. Widespread incorporation into GE crops is certainly going to induce insect resistance and render it less

effective.²⁴ Furthermore, Bt only provides partial control, and, according to Zeneca, resists only four of the 11 main pests on cotton.²⁵ Zeneca is thus benefiting from the expansion of genetically engineered Bt cotton, repositioning to concentrate on products that work in conjunction with Bt crops, for example it has established its insecticide 'Karate' (lambdacyhalothrin) as the insecticide of choice on genetically modified cotton.²⁶

In its 1998 Annual Report, the company points out that the impact and contribution from biotechnology will increase and that Zeneca is well positioned capitalise on future market opportunities.

Zeneca has joined Monsanto in identifying a process for developing sterile crops. The technology acts by preventing the expression of genes crucial to normal plant development. Dubbed the "Verminator" by critics, because the gene is taken from mice, the GE seed would not germinate unless exposed to Zeneca's private chemical trigger. The technology is specifically aimed at crops that would be marketed in developing countries where the company considers it would be difficult to enforce their intellectual property rights under patents. The company has indicated it will seek patents in more than fifty countries for this improved plant germplasm invention.²⁷ Alternatively, plants in the field could be genetically programmed to become stunted, not properly reproduce, or not resist diseases unless sprayed with Zeneca's chemical formula.²⁸

The public image, the corporate strategy Agrochemical companies suffer from a poor image, triggered by the 1962 publication of Rachel Carson's 'The Silent Spring' and sustained by the work of the Pesticides Action Network (PAN). Some progress was made in 1985, with the adoption of the FAO's International Code of Conduct on the Distribution and Use of Pesticides in 1985. The code established technical, labelling, marketing, distributing, advertising and trading standards.

After a four-year struggle by NGOs and developing countries, the Code was amended in 1989 to include the principle of Prior Informed Consent (PIC), giving importing countries the possibility of prohibiting imports of certain banned or severely restricted pesticides. In 1998, negotiations were completed to develop PIC into an international legally binding instrument, the Rotterdam Convention. Fierce lobbying by Zeneca has kept paraquat out of the pesticides included in PIC to date.

The Code places obligations on both governments and industry to address pesticide problems, and the industry association, GCPF (then GIFAP), made compliance with the Code a condition of membership. Companies adopted product stewardship policies to mirror their obligations, and Zeneca is acknowledged by other companies as a leader in developing this approach. Nevertheless, no mechanisms exist for monitoring or enforcing standards, and companies draw the line for their obligations at distributor, not field, level.

The Code became important for companies, both in avoiding regulation and helping them build a favourable image. Demands by those concerned with pesticide problems in developing countries for application of the precautionary principle, and for life-long responsibility for products, plus greater use of economic instruments such as pesticide taxes and subsidies for ecological agriculture are heavily resisted.

Through the 1990s, companies have begun to adopt a range of more aggressive strategies to improve their image and sell their products, projecting a corporate position that:

- pesticides are essential in feeding the world;
- 'safe use' of pesticides can be achieved in developing countries through training to reduce pesticide problems;
- pesticides are an essential part of integrated pest management (IPM) programmes.

Zeneca feeding the world?

One public relations strategy aims at winning hearts and minds by arguing that pesticides are essential in the battle to feed the 'world's relentlessly increasing population'. In the public relations onslaught, companies seek to gain the moral high ground, convincing the public and decision makers that pesticides are needed because only by use of high input agriculture will a population of 8 billion (estimated global population in 2020) be fed.

"The feed the world" argument was eloquently expressed in a recent article in *Chemistry in Britain*, written partly by the chemistry team leader of Zeneca Agrochemicals: "Without higher yields, the world would undoubtedly lose the wild forests and grasslands that still cover more than a third of the Earth's surface, because lower yield agriculture would require vastly more land. The demand will therefore be for more intensive agriculture and more crop protection, rather than less, embracing genetically modified crops, biological and behavioural control, and effective and environmentally-friendly pesticides".²⁹

Undoubtedly there would be no easy switch away from pesticide-dependent agriculture, particularly in industrialised countries. But it remains open to doubt whether pesticides promote food security in developing countries. The history of the food industry indicates that the most sought after characteristics in genetic engineering would be those for rich markets: genes which would extend shelf life, improve appearance, have desirable processing characteristics.

Equally undoubtedly, product sales and increased profits and not altruism drive the agrochemical companies. Any regulation proposed by governments to introduce tighter regulation on pesticides is firmly resisted by the industry. A speaker from AgrEvo at a British Crop Protection Council conference noted that data requirements on environmental fate and ecotoxicology (toxic effects

in the environment) have increased, particularly in Europe, and that industry is collecting data to lobby for a relaxation of the criteria.³⁰ Companies lobby for a fast track for registration of new pesticide products, and Zeneca has set up internal structures to enable it to get products to market and registered quickly in a wider range of countries.³¹

Two strategies used by companies to gain acceptability for products in developing countries, as part of their drive to expand markets, are the promotion of 'safe use' programmes, and pesticides as part of 'integrated pest management'.

Safe use

Industry recognises that pesticides have caused health and environmental problems in developing countries. Safe use campaigns aim to address the problem while improving their image. GCPF launched three safe use projects in 1991, in Kenya, Guatemala and Thailand. In Thailand Zeneca has been carrying out a safe-use project in conjunction with the Department of Agricultural Extension, training over 2,000 farmers between 1995 and 1997.³²

These projects promote standard good health and safety practice which are in fact the basic essentials when using pesticides: awareness of protective clothing; pre-harvest intervals; mixing and spraying practices; understanding label precautions; products to be sold by trained distributors; essential regulations; good formulation standards. Some awareness will be raised among farmers exposed to the training, but most pesticide problems in developing countries are caused by poverty, and this cannot be addressed by a lecture on pesticide safety. Furthermore, while better practices in handling pesticides are essential, these programmes promote pesticide use more effectively than advertising. As one company spokesman said: "If we teach farmers to use pesticides correctly, there will be no lack of customers for our products; indeed there might well be an increased demand for the safer and more sophisticated products which

we are now making". (David McDonald – Novartis, Ciba Plant Protection Farmer Support Team established in 1991).

The approach helps companies to target future farmers. Zeneca's Farmer Education and Training Team has developed cartoon comic papers for distribution in schools, under the title of the Adventures of the Grow Safely Team. Children learn to link pesticides and agriculture and are unlikely to receive balanced material on participatory-IPM, organic and other ecological approaches. Radio programmes rather than advertising promote safe use messages without cost to the companies.

By targeting agricultural extension workers and other trainers, pesticide use can be reinforced at public expense. Government or development agency funds are sought to support safe use programmes, in direct competition with funding for sustainable alternatives. Some examples of how this happened recently in Africa include:

- The government of Cote d'Ivoire allocated USD100,000 for a smallholder safe use training programme to be run by extension service and local agrochemical association. Industry expects further funding from the European Union.
- The trade association in Zimbabwe has included safe use messages in the school syllabus and is sponsoring competitions and prizes. The Ministry of Education is supporting and assisting the initiative.
- In South Africa, the local pesticide association has helped draft new occupational health and safety act. The government plans to provide training to over 500,000 novice smallholders; local pesticide associations will help prepare the course.³³

The point is not that industry should not pursue safe use programmes – which should in any case be standard marketing practice – but that the real cost of pesticide use should be reflected in the products, and should not compete with the potential to train farmers in IPM alternatives which will reduce or eliminate pesticide use.

IPM compatible

Integrated pest management (IPM) attracts as many definitions as there are agricultural practitioners. It broadly means using the best mix of methods to manage pest problems. For many, IPM means using pesticides only as a last resort, or eliminating use altogether. Increasingly it has been found that working with farmers in a participatory way, through farmer field schools, has helped farmers to dramatically reduce their pesticide use while maintaining, or increasing yields. Successes achieved by FAO using field schools with rice farmers in Asia are now being transferred to other crops and other continents. Many other ecological approaches achieve equal success.

Industry now promotes its products in an IPM context, under the GCPF slogan "Striving for sustainable agriculture worldwide".³⁴ However, the industry approach to IPM is based on management of pesticides, mainly to reduce pest resistance products. Some companies, notably Novartis and Zeneca, have developed flagship IPM projects. These have generally been in areas where profound problems have been identified as a result of over-use of pesticides.

Zeneca has set up Farmer Education and Training (FEAT) teams to "support the safe, effective and appropriate use of crop protection products through the development and delivery of targeted education and training programmes."³⁵ It works with extension workers, health workers, rural schools, women's groups and others who will spread information.

In practice there are only two specific Zeneca IPM projects, in India and Pakistan, aimed at areas where levels of pesticide use were creating unacceptable problems. In Andhra Pradesh, India, over 400 farmers have tragically committed suicide because of economic hardship caused by the complete collapse of their cotton crops, partly brought about by over-use of pesticides. The more advanced of Zeneca's IPM projects is in Pakistan,

where again dramatic falls in crop yields had followed over-use of pesticides and insect resistant. Zeneca described its project:

"The programme promotes an integrated approach to pest management, including cultural, biological and varietal techniques as well as the appropriate use of agrochemicals. The first phase involved establishing a network of local Master Instructors, who could then carry the training forward to others. ... local instructors implemented their own farmer training sessions ... topics included cotton pest identification and management, scouting [to count insects] techniques, safe handling of pesticides, effective spraying techniques and sprayer maintenance. In parallel, FEAT has trained senior crop protection specialists in the Pakistan government extension services in the same cotton IPM techniques."

The project is designed to help farmers sustain their use of pesticides and to hand on to agricultural extension services the responsibility for continuing to promote the products.

By contrast, an IPM farmer field school project in Pakistan in 1997 built up farmers ability to conduct field exercises and experiments on the main crops, to assess the crops ability to compensate for pest damage inflicted early in the season, and to understand the effects of pesticides on natural enemies and livestock. Two of the ten groups of 25 farmers each reached the end of the season without a single pesticide application, and seven of the ten groups achieved higher yields.³⁶

Farmer education and training and product stewardship opens business opportunities. Among the Zeneca projects have been: a joint study with the Ministry of Agriculture in China on farmer training needs; collaboration with the Malaysian Department of Health, in preparing a farmer training programme; involvement in training senior officials from agricultural extension in Thailand; training part of the Sri Lankan Vector Control Unit.

Zeneca has promoted some of its products directly as being IPM compatible. An argument arose over its contention that lambda-cyhalothrin use in rice does not effect the ratio between pests and predators at the crucial time of the crop growing season. Danish research revealed that Zeneca tests had been carried out on fields previously exposed to pesticides, where pests outnumbered predators by two to one. Documentation on untreated fields by other researchers shows that natural enemies generally outnumber pests by two to one, and sometimes as much as ten to one.³⁷

In another instance, a Zeneca spokesman said their insecticides in the Philippines "are targeted primarily at Green leaf hopper and leaf feeding, Lepidoptera, pests for which many varieties, including the rice variety IR64, have little or no resistance". However an International Rice Research Institute scientist contracted the company, pointing out that IR64 has good resistance to pests, and was concerned at chemical companies appear to have persuaded farmers to believe otherwise.³⁸

Liberalisation

Trade liberalisation is important in helping transnationals to open up developing country markets so as to expand sales. With 73 per cent of the world's agricultural population in South-East Asia, the region is a major focus for all agrochemical companies, including Zeneca, which has indicated that the economic downturn in Asia will not deter its long term confidence in the region.

China has maintained some success in food security, and in spite of its population growth, and low use of pesticides per hectare, food production has kept pace with population growth, and met policy objectives of maintaining reserves of 17 per cent of a year's food needs. For Zeneca, China is a target: the company achieved quite a coup in 1997, signing a memorandum of understanding with the Ministry of Agriculture's National Agro-Technical Extension Services Centre to provide farmer training

in pesticide use.³⁹ A 1995 market development programme had increased sales of paraquat and lambda-cyhalothrin by more than 50 per cent,⁴⁰ and further increases in herbicide sales are targeted.⁴¹ A long-planned paraquat plant at Nantong, costing USD85 million, received final approval in 1998 and should be operating by the end of 2000. The original production size was doubled to 6,000 tonnes to meet projected demand.⁴² Zeneca is also establishing a research centre in Nantong to become part of its international field testing network.

In 1992, Indonesia changed its laws to allow companies to be 100 per cent-owned by foreign concerns, encouraging greater agrochemical investment and growth, in spite of its early success in rice IPM which reduced pesticide use. Zeneca is one of the main players in the pesticide market.⁴³ A new rice herbicide plans to capture further sales in both Japan and other rice growing countries.⁴⁴

Zeneca Agro Asiatic is the leading company in the Thai agrochemical market; expansion continues with four or five new products introduced in 1997, on top of its sales of paraquat, glyphosate and lambda-cyhalothrin.⁴⁵ The smaller Malaysian market is nevertheless dominated by Zeneca products, licensed through a local company CCMBioscience. Paraquat has a 50 per cent share of the herbicide market, primarily in the plantation sector, 20 per cent higher than its rival glyphosate.⁴⁶

In South Asia, India is the tenth largest market in the world for pesticides but even so spending averages USD3/ha, compared with USD28/ha in the US and USD135/ha in Germany. India has always been an important source of sales for Zeneca, and it is now targeting a three-fold increase in sales over the next five years.⁴⁷ One of the company's few paraquat and cypermethrin production plants is located at Ennore, near Madras. The company is planning to start production of lambda-cyhalothrin, pirimiphos-methyl and brodifacoum at a plant to be constructed in Tamil Nadu.⁴⁸

After the ICI-Zeneca demerger, the Indian business had remained as ICI India, but in 1998 the companies rejoined forces as Zeneca ICI Agrochemicals Ltd in order to offer newer products and better technology to the service of the farming community, benefiting farmers, distributors and the local community, for higher yields, better quality of life and a greener tomorrow, ushering the second 'Green Revolution' in India.⁴⁹

Latin America offers the same lucrative returns as Asia. Sales grew by 15 per cent in 1997, mainly because of growth in Brazil and Argentina.⁵⁰ The company has more limited interests in the African market. Although most low income food deficit countries in the FAO definition are in Africa, the limited disposable income of farmers narrows the interest of agrochemical companies. Zeneca has active sales outlets in all the bigger countries.

Strategies for a sustainable future

In the last 50 years, agrochemicals have become an integral part of many crop production systems. In areas where pesticide-dependence has caused pest resistance and crop failures with devastating effects on farmers incomes, the companies themselves have recognised that more training is required before farmers are able to effectively use pesticides. In small-scale farming systems, participatory IPM training can help farmers increase yields and reduce chemical inputs. But the thrust of trade liberalisation is to open new markets and draw more farmers into pesticide use.

Genetic engineering in agriculture aims to further lock farmers into pesticide use, and the linkages between pesticide and seed companies is reinforcing the new technology of agriculture. In the corporate pressure to promote the perspective of increasing production for food security, consideration of more fundamental issues is overlooked – that lack of access to food is more significant than production, that good farm prices, access to markets, farmers ability to save seeds and breed locally appropriate varieties, and a thriving rural economy, may be more significant than pesticide use.

The danger of good corporate public relations is that it obscures the on-going problems of escalating pesticide use. Some corporate behaviour has been mediated by the development of regulations and Codes. But there is no sign that the shape of agriculture, effective rural development and livelihoods of millions of farmers is being helped by unelected transnational corporations.

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Annex

Zeneca Agrochemicals: Manufacturing and product base

Manufacturing

Zeneca Agrochemicals operates 24 manufacturing sites worldwide, covering active ingredient production, formulation and packing. The policy is to ensure that all manufacturing sites are built to the same standards. The locations of active ingredient manufacture (AI) and formulation (F) plants are:

UK	Grangemouth (AI), Huddersfield (AI), Yalding (F)
Belgium	Seneffe (AI and F)
Greece	Enofyta (F)
Spain	Porrino (F)
USA	Perry (AI), Richmond (AI and F), Mt Pleasant (AI), Bayport (AI and F), St Gabriel (AI and F), Cold Creek (AI), Omaha (F), N Little Rock (F)
China	Nantong (AI)
India	Ennore (AI and F)
Indonesia	Gunung Putri (F)
Japan	Mihara (AI)
Thailand	Bangpoo (AI and F)
Argentina	Fighiera (F)
Brazil	Paulinia (AI and F)
Guatemala	Guatemala City (F)
Mexico	San Luis Potosi (F)

Principle active ingredients (Trade name)

Herbicides

Fomesafen:	A post-emergence herbicide for the control of broad-leaved weeds in soya.
Esprocarb:	A rice post-emergence herbicide sold predominantly in Japan.
Fluazifop-P-Butyl:	control of weeds in over 60 broad-leaved crops.
*Paraquat:	for weeds in a wide variety of crops. Paraquat is the worlds second largest agricultural product, and a controversial product because of its high toxicity and lack of antidote.
Sulcotrione:	A new post- and pre-emergence herbicide for weeds in maize.
*Diquat:	A desiccant to facilitate harvesting and control water weeds.

Acetochlor: A pre-emergence herbicide for weeds in maize.

*Glyphosate trimesium,
also known as sulfosate: for weeds in a wide range of crops.

Insecticides

Pirimicarb: an aphicide harmless to many beneficial insects. Promoted for use in IPM.

*Cypermethrin: A pyrethroid.

Tefluthrin: Active across a broad range of soil pests (an alternative to OPs).

*Lambda-cyhalothrin: the world's leading agricultural pyrethroid insecticide.

Pirimiphos-methyl: an organophosphate used in grain storage

Fungicides

Azoxystrobin: ('Amistar') A new fungicide used on a wide range of crops.

Chlorothalonil: newly acquired to strengthen its fungicide business.

Hexaconazole: A systemic fungicide.

Flutriafol: diseases of wheat and barley.

Fluazinam: crops such as flower bulbs, vines and potatoes.

Non-agricultural pesticides:

*Lambda-cyhalothrin
(pyrethroid): for the control of insect malaria, Chagas, filariasis and vectors of several arboviruses. Also for use in homes.

*Cypermethrin
(pyrethroid). against termites in buildings, also to control flying and crawling insects.

*Brodifacoum
(rodenticide): for the control of rodents.

Difenacoum
(rodenticide): common house mouse and brown rat.

* the biggest sellers.

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British American Tobacco: the smokescreen

John Madeley

"In India, Benson & Hedges has now been successfully rolled out in 23 key cities"

BAT Quarterly Report, Nine months to 30 September 1998.

Faced with increasing awareness about the health risks of smoking and declining sales in Western countries, the international tobacco companies have looked to the developing world and to Eastern Europe to maintain their profits. As they boast about their expansions in some of the world's poorest countries, the irony is that it is poor countries who will be the key to the future of the wealthy tobacco industry. But for both health and food security, the expansion of tobacco has serious consequences.

Five transnational corporations, Philip Morris, British American Tobacco, (BAT), RJR Nabisco (formerly R.J. Reynolds), Rothmans and Japan Tobacco are responsible for around 70 per cent of global tobacco production. Of all these companies, BAT "has long been the most international in outlook of all the tobacco multinationals".¹ Specifically, BAT has the biggest involvement in developing countries.

BAT is the world's second largest transnational cigarette firm and Britain's 12th largest company. Based in London, it has subsidiaries in 65 countries, manufacturing and processing operations in over 50 countries, while its cigarettes are available in some 180 countries. It controls around 13 per cent of the global cigarette market, manufacturing more than half the cigarettes produced in Asia, Australia and Latin America. Brands include Lucky Strike, John Player, Kent, Silk Cut, Benson & Hedges, Embassy and State Express 555. BAT lists its "principal associated company" as Imasco, which owns Imperial Tobacco, Canada's largest cigarette manufacturer.

In 1997, BAT's international tobacco operations made a profit of \$2 billion on sales of \$24 billion. The company has intensified its strategy of

"acquiring and building production capacity around the world", says Ross Hammond.² "Our objective is to be the world's no 1 tobacco company", said chief executive Martin Broughton in the company's 1997 annual review. He reported "good performances" from Latin America, Europe, Amesca (South and Central Asia and Africa) and Canada.³ In Latin America, BAT's profits were 15 per cent up "mainly due to strong results in Brazil and Venezuela".⁴ Elsewhere in the developing world there were "strong performances in Bangladesh, Central Asia and some of the African operations". Bangladesh is one of the world's poorest countries; 48 per cent of its 120 million people live below the poverty line⁵.

In September 1998, BAT Industries, as it was then called, hived off the financial services companies it owned and reverted to its original name of British American Tobacco. It is now solely a tobacco company.

Tobacco is the world's most widely grown commercial non-food plant, occupying over 4 million hectares of land. It grows in around 80 developing countries who between them produce over four-fifths of the global crop – 5.18 million tonnes in 1996, out of a total of 6.41 million tonnes. China is the biggest producer, (2.32 million tonnes in 1996). Most of the tobacco produced in developing countries is used domestically, but 43 of them export tobacco. Nine countries – Argentina, Brazil, Turkey, Thailand, India, China, Indonesia, Malawi and Zimbabwe – earn over 90 per cent of the South's foreign earnings.⁶

BAT tends to dominate in less profitable markets. In a number of small to medium-sized developing countries, its subsidiaries have a monopoly over

production, and sufficient clout with government to keep out competitors. A major player in Africa, Latin America and Eastern Europe, BAT does not do as much business in the United States and Western Europe as most of its rivals. Of the 712 billion cigarettes that BAT sold in 1997, 479 million were sold in Latin America, Asia-Pacific, and Africa and the Middle East – about 70 per cent of total sales. By contrast of the 946 billion cigarettes sold by Philip Morris, 426 million went to these developing regions – well under half of total sales. Although it manufactures fewer cigarettes, BAT has more production facilities in developing countries than Philip Morris.

The countries of Eastern Europe and the former Soviet Union have now become a major growth market for BAT. Along with other tobacco companies, it has purchased and modernised formerly state-owned cigarette factories in the region. Since 1992, BAT, Philip Morris and RJ Reynolds have spent over \$1 billion rehabilitating manufacturing plants in Russia and building new ones. They have also spent more than \$3 billion in the region over this time on seductive advertising campaigns. By setting up plants inside Russia, the companies have avoided Russia's stiff taxes on imported cigarettes. And they have taken advantage of two bountiful resources in Russia – cheap labour and cheap factories.

While cigarette sales dropped by 4.5 per cent in the United States and Canada between 1990 and 1995, they increased by 5.6 per cent in Eastern Europe and the former Soviet Union. The key factor in the rise in smoking has been the scale of the involvement by tobacco companies. BAT sees the markets in Central Asia and the Commonwealth of Independent States as being vital for its future profits.

In January 1999, BAT purchased a controlling interest in Tekel, the Turkish state cigarette monopoly. The purchase gives the company a quarter of the world's ninth largest cigarette market

– Turks consume nearly 100 billion cigarettes a year. BAT will invest \$145.6 million in return for a 52 per cent share of Tekel, which will eventually have the capacity to produce 25 billion cigarettes a year. BAT also acquired a 49-year exclusive license to sell Tekel's popular Samsun and Yeni Harman cigarette brands.

Latin America

Latin America is one of BAT's most important markets. Over 60 per cent of the cigarettes sold on the continent are BAT brands, (almost double that of Philip Morris). BAT is the market leader in every country apart from Argentina, and is especially strong in the major markets of Brazil and Mexico. The company has manufacturing facilities in Argentina, Brazil, Chile, Costa Rica, El Salvador, Guatemala, Guyana, Honduras, Nicaragua, Panama, Surinam and Venezuela. In 1996 BAT made a profit of \$410 million in the region. Its sales in Latin America increased by 7 per cent by 1997.

Also in 1997, BAT further strengthened its position in Mexico by purchasing Cigarrera La Moderna (CLM), Mexico's biggest cigarette maker, for \$1.7 billion. This was one of the largest foreign investments ever made in Mexico and BAT's most expensive purchase ever, and will consolidate its dominance of the Latin American market. CLM controls 55 per cent of the Mexican cigarette market, manufacturing Mexican cigarettes and international brands such as Camel, Winston, Dunhill and Salem. It produces 40 billion cigarettes annually, but could increase that by 15 billion with existing plants and equipment. "This acquisition offers us the rare opportunity to buy a sizeable and very profitable player in a growth market," says Martin Broughton.

With the opening of the Mexican economy to foreign investment, BAT has now captured the world's fifteenth largest cigarette market, where 13 million smokers – 39 per cent of men and 19 per cent of women – consume 60 billion cigarettes a year. Aside

from increasing cigarette sales to Mexicans, the acquisitions are aimed at making Mexico an important cigarette exporter to other developing countries, particularly in Asia.

BAT sees "considerable opportunities" to export tobacco leaf from Mexico, "particularly because the country is outside the U.S. import quota," says a Reuters report, quoted by Hammond.⁷ CLM already sells its cigarettes in Burma, Cambodia, Hong Kong and Laos and will soon sell to China. It also manufactures Montanas in Vietnam through a joint-venture with the government, and exports to the Persian Gulf and Russia.⁸

A major reason why BAT (like Philip Morris) has invested so heavily in Mexico is because the country has a large supply of inexpensive, high-quality tobacco leaf, says Hammond.⁹ BAT and Philip Morris were also attracted by Mexico's low-cost labour, cheap supply of tobacco and special trade privileges with the United States. Former Surgeon General C. Everett Koop believes that the purchases may be part of company preparations to flood the United States with black market cigarettes should cigarette taxes in the United States rise dramatically.

"The complete takeover of the Mexican cigarette industry by Philip Morris and BAT will likely lead to more aggressive advertising targeting children and other non-smoking populations, further corrupt the political system, and increase death and disease. It also gives these companies a base from which to expand exports while evading U.S. regulations", says Hammond.¹⁰

Asia

BAT exports cigarettes to this region from the UK, primarily to China, Japan, Indonesia and Malaysia. It has subsidiary companies in Australia, Bangladesh, China, Fiji, Hong Kong, India, Indonesia, Malaysia, Pakistan, Papua New Guinea, Singapore, Solomon Islands, Sri Lanka, Surinam and Vietnam. BAT's 31.5 per cent owned associate in India, ITC, is the

dominant producer of white cigarettes in the country, while BAT's subsidiaries are strong in Pakistan.

Asia's poorer countries are not neglected, In 1996, the company spent \$25 million to upgrade its "Liberation Factory" in Cambodia in order to boost production for both the domestic and export markets.

Vietnam makes an interesting case study. Here the 555 brand is produced by the Saigon Cigarette factory on behalf of BAT. "It's hard to overlook BAT's '555' sales carts. The shiny blue trolleys have become something of a leitmotif in Ho Chi Minh City, competing for attention with the red-and-yellow banners that advertise the virtues of socialism on every other street corner", said an article in Tobacco Reporter.¹¹ Vendors receive the carts free of charge, and the tobacco company has employees who periodically clean them and make sure the packs are arranged neatly.

The Vietnamese government promotes tobacco production because it sees it as an important contributor to the national economy in terms of employment and revenue generation, although only .042 per cent of the agricultural labour force is involved in tobacco cultivation and the tobacco taxes contribute only around 3 per cent of government revenues.

In recent years, the government has invested heavily in tobacco leaf production in an effort to reduce its dependence on imported tobacco. Currently, the country produces approximately 40,000 tonnes of leaf per year. Vinataba hopes to increase that figure to 60,000 tonnes by 2001. "We want to be self-sufficient, and then begin exporting," says General Director Nguyen Thai Sinh.¹² Vietnam's tobacco exports are negligible, although the country has set its sights on Russia where it used to export a significant amount of cigarettes and where U.S. cigarette companies have been spending hundreds of millions of dollars to establish a strong presence.

In 1997 and 1998, BAT's profits from the region declined, mainly because of lower exports to China.

Africa

Most Sub-Saharan African countries grow tobacco, some in relatively small amounts for local consumption only. BAT has affiliates in Angola, Cameroon, Congo, Ghana, Kenya, Malawi, Mauritius, Nigeria, Sierra Leone, South Africa, Uganda and Zimbabwe.

BAT does not usually grow tobacco itself, but rather contracts-out the growing to smallholders; they will typically be asked to grow the crop on half a hectare of land. The company provides technical advice, seeds, etc, and the farmer has to grow and "cure" the tobacco – make it fit for cigarette production. BAT then buys the cured tobacco, at a price it decides, and turns it into cigarettes at a central factory.

Relatively small countries such as Kenya and Uganda each have over 10,000 farmers under contract to BAT subsidiaries. In Sierra Leone, the world's sixth poorest country, nearly 16,000 farmers were under contract to a BAT subsidiary. "The contracting system caused many farmers to devote more of their labour and land to tobacco, undermining local levels of food production" says an Action Aid report.¹³

Farmers who grow tobacco have to build their own curing barn – a thatched hut with horizontal poles to hang the leaf – with a furnace for the wood. Curing can take from between seven to ten days, during which time the barn has to be kept at a constant temperature, around 35 degrees Celsius. This involves wood being fed regularly into the barn's furnaces, in what is a 24-hour operation. It is not uncommon for families to sleep around their barns at curing time.

The price that farmers receive for their tobacco leaf is entirely dependent on the company's evaluation

of its quality. There are usually no independent assessors. The farmers are powerless to do anything about the price the company offers; they have no option but to take it or leave it. BAT often has a nationwide monopoly on tobacco, which means that growers cannot take their leaf elsewhere.

Returns are generally low. John Angiepado, a resource-poor farmer in Arua, in the West Nile region of Uganda, is probably typical of many farmers who grow tobacco. He sold 200 kgs of tobacco in 1990 for 100,000 Ugandan Shillings (about \$100) from three acres of land. For this, he and his family worked hard over the nine-month tobacco preparation and growing season. The earnings he regarded as a pittance. 'I don't know what to tell my children and wife who worked so hard to produce the tobacco'.¹⁴ Yet this level of earnings seems about average.

Many African countries do not require health warnings on cigarette packets, and BAT vigorously promotes its products to people who are mostly unaware of the risks. It claims that it must advertise to gain more of the market from competitors, rather than recruit new smokers such as young people to its ranks. But this claim hardly stands up, especially when BAT appoints marketing managers in countries such as Ethiopia where it has a monopoly.¹⁵ Its promotion to children (*see below*) again blows the claim skyhigh.

But more countries are now restricting tobacco advertising and insisting on health warnings on cigarette packets. South Africa is an example. BAT has long been established in South Africa, manufacturing its own brands like Benson & Hedges. Controlling about 10 per cent of the South African market, it has a licensing agreement with RJ Reynolds to produce Winston, Aspen and Camel brands. In November 1998, to the consternation of the companies, the government of South Africa announced tough new legislation to curb tobacco smoking.¹⁶

Why tobacco threatens food security

1. It grows on land which could grow food
About 4.3 million hectares of arable land are under tobacco in developing countries, land which could grow food. For example, according to the FAO, Malawi has 4.3 per cent of its land under tobacco, and Zimbabwe 2 per cent. While these percentages are small on the national scale, they can rise dramatically in specific areas where peasant farmers have been persuaded to put a sizeable part of their land under tobacco. Mexican land under tobacco rose by 20 per cent in only two years, from 1995 to 1997.¹⁷

Dr. Judith MacKay director of the Asian Consultancy on Tobacco Control in Hong Kong claims that tobacco's use of land denies 10 to 20 million people of food. 'Where food has to be imported because rich farmland is being diverted to tobacco production, the government will have to bear the cost of food imports', she points out.¹⁸

Smallholders in a country like Kenya generally have less than four hectares of land. If she or he plants tobacco, that might take up half a hectare and the trees a further hectare. Land for food and other purposes is squeezed. But tobacco means less food, for reasons other than the land it occupies.

2. Tobacco damages the environment, causing a further threat to land,
Tobacco growing affects the environment in a number of ways. Most tobacco in developing countries is grown in semi-arid areas where trees are sparse. The disappearance of yet more trees can remove the land's natural protection and turn food-growing land into a barren waste. About half the South's output of tobacco leaves is cured with wood. This curing causes a serious loss of trees, putting an additional strain on tropical forests. An Economist Intelligence Unit report points out:

"one of the major consequences of tobacco production in the Third World results from the considerable energy requirements of the flue-curing and fire-curing processes...as such, tobacco is a contributory factor in some countries to the problems of deforestation now being encountered. The clearing of forest land opens the way to erosion of the soil and other environmental repercussions which ultimately reduce the productivity of adjacent agricultural land".¹⁹

Tobacco demands the axing of trees that are needed to protect food-growing land in some of the world's hungriest countries. "The most striking effect of tobacco-growing (in Uganda) is the near depletion of both natural and planted forests".²⁰ In the country's West Nile region, the area worst affected by deforestation is Maracha which is in danger of becoming a desert. Wells and streams in the area are drying up, forcing people to walk further in their search for fuel. Women, already working long hours, have shouldered most of this extra burden. As trees have been axed, so soil has less cover and is more likely to be washed away in heavy rains. Farmers complain of falling soil fertility and reduced crop yields. BAT claims that trees are being replanted in Uganda and that it is improving the efficiency of barn furnaces to reduce wood consumption.

In Kenya, BAT says that farmers can only become tobacco farmers if they agree to plant 1000 eucalyptus trees a year on their land. But enforcement of this policy is another matter. A former senior employee of BAT Kenya has alleged:

'the company is shouting about massive tree planting but this I'm afraid is nothing less than an outrageous attempt to veil the whole problem. There can be no argument that trees in the tobacco producing areas are being felled willy-nilly and that in the not too distant (future), there won't be any left at all. The trouble is that BAT, as well as the farmer, can get away with it and they do'.²¹

Even fast growing trees can take five years to grow and many farmers are not interested in planting trees today that will not be ready to cut for five years. They have rather more pressing problems – such as growing enough food to make sure that their families survive today. Furthermore, many farmers prefer to use trees like eucalyptus for building purposes and they continue to cut native forest for tobacco curing. Also, the newly planted trees do not always survive. BAT Kenya claim however that their contracted farmers do have enough wood and that 40 million trees, planted by these farmers, are surviving.²²

Eucalyptus, the tobacco's industry favourite tree, is highly controversial. It grows quickly, even in dry areas, by drawing on underground water. But its fast growth can be at the expense of the water table. If a lower water table results, then the ability of land to grow food can be damaged.

In the Bombali district in the north of Sierra Leone "the adverse effects of tobacco cultivation are clearly seen", warns the Action Aid report; "the area was once forested...but now it is bare and rocky and incapable of supporting crops...Extensive use of agrochemicals has also polluted the water table".²³

Tobacco deforestation is serious in parts of Brazil, the developing world's second largest tobacco producer and sixth largest cigarette maker. Santa Cruz do Sul is the centre of the tobacco industry in Brazil, where most tobacco is grown on small family-run farms – there are about 130 000 tobacco farmers in all. A BAT subsidiary, Souza Cruz controls around 84 per cent of Brazil's cigarette market. The country's tobacco farmers need the wood of 60 million trees a year. The industry claims that 24.7 million trees were used for tobacco curing in Brazil but that 217.5 million new trees were planted. But it does not say how many survived.²⁴

Rt. Revd. Luiz Prado, Bishop of Pelotas, which includes the tobacco-growing region, says that

"tobacco is a powerful economic temptation to our peasants.....people have traditionally produced fruit, vegetables and milk, on a subsistence basis, on 5,10 sometimes 18 hectares. The government doesn't give them economic support. The tobacco companies attack these small farmers, offering them an alternative cash crop. They say it's possible for them to have cash in their pockets, a TV set, running water and sanitation in your house, etc.".²⁵

"That's the power of the companies to attract peasants, but it affects our community life, our economy. When farmers opt to grow tobacco they do it fully – turn all their land over to it. The result is monoculture. Farmers become dependent on tobacco. We are seeing soil erosion, contamination of water and soils, and deforestation. The poorest regions we see today – in terms of loss of trees – are the regions where tobacco grows, because the curing process is so demanding of wood."²⁶

This highlights a further environment factor – tobacco production depletes soil nutrients "at a much faster rate than many other crops, thus rapidly decreasing the life of the soil".²⁷ In some countries, Malawi, Sri Lanka, Zambia and Zimbabwe, for example, tobacco often grows on hilly land and this speeds up soil erosion. "Soil loss from tobacco growing is often extremely serious"²⁸ Loss of soil inevitably affects its ability to grow crops, including food. When the soil has depleted and the trees have gone from a tobacco growing area, the company moves on to a new area.

Tobacco also needs heavy applications of pesticides. An instruction leaflet given to tobacco farmers in Kenya lists BAT's recommended seedbed programme for the crop (preparing seeds for planting). From making the seedbed to transplanting the seed in the field takes about 3 months. During that times, 16 applications of pesticide are recommended.

Some of the world's most dangerous chemicals are available to the tobacco sector in Kenya, and hence to the farmers, including Aldrin and Dieldrin, (which Britain phased out in 1969), DDT, Ambush and Drinox. Besides being hazardous to users, these chemicals can contaminate water supplies. But figures are not usually published on poisonings that occur because pesticide has run off tobacco fields into water courses and local supplies.

3. It distorts family spending patterns

Tobacco production imposes both economic and health burdens on families. It is women who carry the heaviest burden of smallholder tobacco growing; in addition to carrying out farming-related tasks, they have to collect wood for the barns as well as for domestic use. Meals become irregular and sparse during the busiest months. Vegetable gardens and markets are often neglected.

Tobacco growing often makes use of child labour and this has serious consequences for education. Attendance by children at school can become more erratic. 'Tobacco growing in West Nile (Uganda) is a family undertaking', says Aliro, 'children are needed at all stages of cultivation and curing, particularly for tasks such as weeding, watering, stringing and sewing sheaths of tobacco leaves together for hanging along flue-pipes in a barn'.²⁹

Fewer children of tobacco growers attend school, Aliro points out, compared with children from non-tobacco growing families, and they start primary school at an older age. Even when school fees have been paid, children are kept at home in periods of peak activity in the tobacco fields. While child labour is not unique to tobacco, the crop's longer growing season and the curing process cause particular strains.

Farmers who receive less than they expected for their tobacco crop either get into debt or see their family go hungry. This appears to be a common problem. "Growers are always having trouble with

the price of their product", says Bishop Prado.³⁰ Debt could explain why many farmers continue to grow tobacco, because they owe money to companies.

Heavy advertising of tobacco by companies, like BAT, can convince the poor to smoke more, and to use money they might have spent on food or health care, to buy cigarettes instead. According to Dr D. Fami-Pearse of the University of Lagos, people in Bangladesh on low incomes who had been persuaded to smoke five cigarettes a day, had to cut food purchases by 15 per cent, which reduced their daily calorific intake by 300 from an already low 2000.³¹

Non-smoking women are one of the industry's chief targets. The World Health Organisation warns that it is highly probable that aggressive marketing of cigarettes to women 'will be intensified'.³² There has been a marked proliferation of 'women's brands' in recent years. Tobacco advertisements for these brands tend to portray smoking as a glamorous, fun-loving activity enjoyed by independent women. It is urgent, says the WHO, to counteract the 'deceitful advertising' that links smoking 'to images of seduction, slimness, elegance, physical fitness and emancipation'.³³

When women especially are persuaded to smoke, there is likely to be less food on the family table. And the health, and even the life, of mothers is endangered. Health workers take the view that smoking is worse for women because of gender-related diseases such as cervical cancer and osteoporosis.

In South Africa, where smoking by black women of child-bearing age is culturally frowned on, the tobacco companies appear to be targeting women and youths in increasing numbers. Benson & Hedges – a BAT brand – has an ad. campaign featuring young black women. One ad. features a young black woman in aerobics gear smoking a cigarette with a young black male. In another, a

black woman wearing traditional headgear is sitting with a black man and is shown accepting a cigarette from a white man. The slogan reads: 'Share the feeling, share the taste', echoing the African cultural value of communalism.

Despite what the industry claims, young people are a prime target of the tobacco companies. "The industry concentrates almost exclusively on children and young people to recruit new smokers", warns the WHO.³⁴ The advertising pays off. Every day, at least another 4000 young people start smoking.

An article in the December 1991 issue of the Journal of American Medical Association points out that very young children see, understand and remember advertising. It says that some cartoon-style advertisements were far more successful in marketing cigarettes to children than to adults. Another pernicious form of advertising is that of depicting cigarettes or their logos on toys. The industry also promotes itself through sponsorship of sporting events that are popular with children; it has an on-going and pressing need to recruit people as smokers to replace the ones that are dying because they use its products. The earlier in their life the industry recruits them, the sooner they can contribute to company profits.

In Sri Lanka, where a BAT subsidiary, the Ceylon Tobacco Company, has a monopoly, a tobacco-sponsored disco had corporate logos, like Benson & Hedges, displayed on the walls by a laser light show. Girls are admitted free. A young researcher who visited the disco said that she was approached "within a minute" by a girl holding out a box of Benson & Hedges, who said to her "go ahead – I want to see you smoke it now".³⁵

Medical associations and the WHO have recommended that cigarette advertisements be withdrawn from the mass media. China has banned television advertising of tobacco. In Kenya the

industry agreed to withdraw radio and television adverts – although a BAT weekly programme went on. And subtle ways of getting round advertising bans are now being employed.

Faced with falling sales and a ban on tobacco advertising, BAT in Malaysia opened a "Benson & Hedges Bistro" in 1995 in the capital Kuala Lumpur, and advertised this extensively. Cigarette sales stabilised and the company is now "developing a range of coffee products that carry the B&H logo; this may be extended to other countries. The shop's manager reported: "of course this all about keeping the Benson & Hedges brand name to the front. We advertise the Benson & Hedges Bistro on television and in the newspapers. The idea is to be smoker-friendly. Smokers associate a coffee with a cigarette. They are both drugs of a type".³⁶

Alternatives

There are alternatives to tobacco. Many crops can grow on land that is now under tobacco – they include the majority of grain crops and vegetables, such as paprika and chillies, fruits such as citrus, kiwi, avocados and mangoes, nuts, including macadamia, pecan and cashew, and horticulture.

But alternatives need the encouragement of governments. "Tobacco would not be so attractive for our farmers if our government had agricultural policies that gave them some support", says Bishop Luiz Prado, "agricultural life is not protected by the government and people in the rural areas are in despair. Community action and organisation is the alternative for farmers. Once they take the tobacco approach, people leave behind their communities and go their individual way. In the church we do everything we can to support people who are trying to resist the tobacco's industry's propaganda – with tools, seeds, cows, etc, helping people in cooperatives who are growing fruit and vegetables and producing milk. Community halls have been built in some villages so that people could have a place to meet and combine against the impact of

the industry It's a matter of resistance. The companies have vast resources, agronomists and cars and visit farmers once a week. We have our priests, community leaders, women and young people trying to defend ideals".³⁷

The best alternative crops for small-scale growers are those which can be sun dried, stored and sold for export at the end of the season. Dr Bernard Chidzero, Zimbabwe's Senior Minister for Finance, told farmers that 'more mixed farming and less land under tobacco is needed'.³⁸ Horticulture could be a more sustainable crop in the long term and is a large employer of labour and foreign currency earner, said a Zimbabwe Minister of Agriculture.³⁹ "Diversification into horticulture has been undertaken by the wiser Zimbabwean tobacco farmers for many years"⁴⁰

The net economic costs of tobacco are profoundly negative. The cost of treatment, disability and death exceeds the economic benefits to producers by at least \$200 billion annually, 'with one-third of this loss being incurred by developing countries'.⁴¹ The precise cost of tobacco in terms of its impact on food security remains to be measured, but is likely to be high.

Postscript

In January 1999, BAT announced that it proposed to take over Rothman's, the world's fourth largest tobacco company. BAT's shares leapt, but the deal amounts to a further concentration of power, and people in the developing world can hardly have been leaping. "The deal furthers BAT's chief ambition, shared by Philip Morris", said a leading article in the Financial Times, "of exploiting growing markets in the developing world. Tobacco is a morally dubious business at the best of times. Is not targeting the world's poor more dubious again?"⁴²

John Madeley is a writer on development issues.

Author's note: I am indebted to Ross Hammond of San Francisco Tobacco Free Coalition/Essential Action, especially for his work on BAT in Latin America.

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Company information

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 London WC2R 2PG
 Tel: (44) 171 845 1000
 Fax: (44) 171 240 0555

Chairman: The Rt. Hon. The Earl Cairns
 Chief Executive: Martin Broughton
 Secretary: P L Clarke
 No of staff at year end 1996 (BAT Industries):
 81,039

Revenue and operating profit (9 months to September 30th 1998, Emillion)

Region	Revenue	Operating profit
America-Pacific	2,243	257
Asia-Pacific	1,428	208
Latin America	3,602	321
Europe	3,311	170
Amesca	1,219	96
Imasco	1,365	199
BAT Industries group head office		(30)
Totals	13,168	1,221

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International Institute for Environment and
Development
Intermediate Technology
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Overseas Development Institute
Oxfam GB
Panos Institute
Pesticides Trust
Quaker Peace and Service
Susila Dharma International Association
Tear Fund
Women's Environmental Network
World Development Movement
Worldwide Fund for Nature

The UK Food Group plans to continue researching into TNCs and would like to hear from non-governmental organisations in developing countries who are experiencing the impact of TNCs on food security in their area. We plan to produce a second volume based on these experiences.

The views expressed in this report do not necessarily represent those of every member of the UK Food Group

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