Corporate Crimes

The need for an international instrument on corporate accountability and liability

GREENPEACE

Chapter 1 Introduction

At the Johannesburg Earth Summit, Greenpeace is calling upon Governments to endorse the Bhopal Principles on Corporate Responsibility (see Chapter 2). Experience in the post-Rio Decade has shown that the adoption of these ten Principles is urgently needed They form a comprehensive set of measures that would ensure that corporations act in a manner that is consistent with Principles 13 (Liability), 14 (Double Standards), 15 (Precautionary Principle) and 16 (Polluter Pays Principle) of the Rio Declaration.

States are ultimately responsible for public welfare, and they must not abdicate this responsibility to the private sector. Unfortunately states are increasingly doing just this, by relying on voluntary agreements, and by failing to develop international instruments to prevent transnational corporations from slipping through holes in the net of national legislation. The few voluntary initiatives with which some corporations are willing to comply, such as the Global Reporting Initiative, the OECD guidelines, and the UN Global Compact, are just not enough.

Corporations benefit from a global market for the development of their business but are not held globally accountable. Therefore, current moves to ensure sustainability require an international instrument of corporate responsibility, accountability and liability. Now is the time for an international instrument that ensures rights and duties, reporting, monitoring, and verification of consistent responsible corporate behaviour. Such an instrument should encompass, *inter alia*, compensation for damages, remediation, right to know, and respect for human and community rights.

Corporate accountability is a subject of concern for a wide range of groups campaigning on issues including human rights, environment, development and labour. Corporate crimes committed on all continents across a range of industrial activities in various sectors (e.g. chemicals, forestry, oil, mining, genetic engineering, nuclear, military, fishing, etc.) clearly point towards the need for greater control, monitoring and accountability of corporate activity in a globalised economy.

Resistance from governments or industry to an international instrument on corporate accountability would only increase the public's perception of increasing corporate control of governments and create public suspicion regarding the real intentions of any corporate social and environmental programme.

Chapter 2 The Ten Bhopal Principles on Corporate Accountability

1. **Implement Rio Principle 13.** States must as a matter of priority enter into negotiations for a legal international instrument, and adopt national laws to operationalise and implement Principle 13 of the Rio Declaration, to address liability and compensation for the victims of pollution and other environmental damage.

2. **Extend Corporate Liability.** Corporations must be held strictly liable without requirement of fault for any and all damage arising from any of their activities that cause environmental or property damage or personal injury, including site remediation. Parent companies as well as subsidiaries and affiliated local corporations must be held liable for compensation and restitution. Corporations must bear cradle to grave responsibility for manufactured products. States must implement individual liability for directors and officers for actions or omissions of the corporation, including for those of subsidiaries.

3. **Ensure Corporate Liability for Damage beyond National Jurisdictions.** States must ensure that corporations are liable for injury to persons and damage to property, biological diversity and the environment beyond the limits of national jurisdiction, and to the global commons such as atmosphere and oceans. Liability must include responsibility for environmental cleanup and restoration.

4. **Protect Human rights.** Economic activity must not infringe upon basic human and social rights. States have the responsibility to safeguard the basic human and social rights of citizens, in particular the right to life; the right to safe and healthy working conditions; the right to a safe and healthy environment; the right to medical treatment and to compensation for injury and damage; the right to information and the right of access to justice by individuals and by groups promoting these rights. Corporations must respect and uphold these rights. States must ensure effective compliance by all corporations of these rights and provide for legal implementation and enforcement.

5. **Provide for Public Participation and the Right to Know.** States must require companies routinely to disclose to the public all information concerning releases to the environment from their respective facilities as well as product composition. Commercial confidentiality must not outweigh the interest of the public to know the dangers and liabilities associated with corporate outputs, whether in the form of pollution by-products or the product itself. Once a product enters the public domain there should be no restrictions on public access to information relevant to environment and health on the basis of commercial secrecy. Corporate responsibility and accountability must be promoted through environmental management accounting and environmental reporting which gives a clear, comprehensive and public report of environmental and social impacts of corporate activities.

6. **Adhere to the Highest Standards.** States must ensure that corporations adhere to the highest standards for protecting basic human and social rights including health and the environment. Consistent with Rio Declaration Principle 14, States must not permit multinational corporations to deliberately apply lower standards of operation and safety in places where health and environmental protection regimes, or their implementation, are weaker.

7. **Avoid Excessive Corporate Influence over Governance.** States must co-operate to combat bribery in all its forms, promote transparent political financing mechanisms and eliminate corporate influence on public policy through election campaign contributions, and/or non-transparent corporate-led lobby practices.

8. **Protect Food Sovereignty over Corporations.** States must ensure that individual States and their people maintain sovereignty over their own food supply, including through laws and measures to prevent genetic pollution of agricultural biological diversity by genetically engineered organisms and to prevent the patenting of genetic resources by corporations.

9. **Implement the Precautionary Principle and Require Environmental Impact Assessments.** States must fully implement the Precautionary Principle in national and international law. Accordingly, States must require corporations to take preventative action before environmental damage or heath effects are incurred, when there is a threat of serious or irreversible harm to the environment or health from an activity, a practice or a product. The existence of scientific debate or uncertainty must not deter the adoption of safer alternatives where they are known to be available. Governments must require companies to undertake environmental impact assessments with public participation for activities that may cause significant adverse environmental impacts.

10. **Promote Clean and Sustainable Development.** States must promote clean and sustainable development, and must establish national legislation to phase out the use, discharge and emission of hazardous substances and greenhouse gases, and other sources of pollution, to use their resources in a sustainable manner, and to conserve their biological diversity.

2.2 Why the Bhopal principles?

The Bhopal Principles address concerns about corporate accountability across a wide range of issues. We have chosen to call them the 'Bhopal' Principles because this disaster, more than any other, highlights the current failure of governments to protect public welfare and the failure of corporations to observe basic standards e.g. the avoidance of liability by parent corporations, and the avoidance of responsibility for compensation and environmental cleanup.

On 3 December, 1984, the world witnessed the worst chemical disaster ever when a gas leak in the Union Carbide plant in Bhopal, India, killed at least 8,000 workers and residents in the first three days after the disaster and caused permanent and debilitating injuries to more than 150,000. The tragedy, caused by the leakage of a cocktail of methyl isocyanate and other lethal chemicals into the area surrounding the plant was caused mainly by insufficient safety systems and cost-cutting measures by Union Carbide.

Eighteen years after this tragic disaster, the legacy of poisoning continues. Even today chronically ill survivors remain in desperate need of medical attention. Thousands of survivors and the children born since the disaster continue to suffer debilitating health problems. Many are unable to work. The now abandoned chemical plant is a toxic hotspot, strewn with toxic wastes and materials that have been either dumped or haphazardly stored in rotting sacks and barrels. There is evidence that the residual contaminants have migrated off-site, creating new problems, including contamination of groundwater used by families living near the site for their daily drinking and washing needs.

By deflecting responsibility for the disaster to the Indian government, Union Carbide managed to escape its obligations. By constantly downplaying the damage to limit its liability, Union Carbide has shown its ethical and moral bankruptcy. Recently, Union Carbide merged with Dow Chemicals, resulting in the creation of the world's biggest chemical company. Dow shows no sign of taking responsibility for the Bhopal legacy. Justice remains more elusive than ever for the victims of this disaster.

The lessons of Bhopal have still to be learned. With increasing regularity, similar scenarios continue to be played out around the world[1]. Environmental disasters—both chronic and immediate—caused by irresponsible corporate practices are becoming more frequent. Transnational corporations have learned to downplay damage, and to focus attention and liability on the local company in order to elude criminal and/or civil liability.

To curb these abuses, governments must act globally to ensure that both transnational and national corporations are held liable for their actions, particularly in developing countries and countries with economies in transition where companies operate in less regulated environments.

At the Johannesburg Earth Summit, Governments will be looking at what has and has not been done to implement the Rio commitments. The Bhopal case shows that it is important to hold corporations liable and to provide compensation for victims of pollution and other environmental damage, that responsibility for liability and cleanup should be enforceable not only against the local corporate entity, but also against the multinational parent.

[1] See chapter 3

Chapter 3 Cases of corporate crime

3.1 Introduction

This report compiles 48 cases from various industrial sectors, including chemical, forest, mining, genetic engineering, nuclear energy and oil industries in different parts of the world. They illustrate the urgent need for governments to force corporations to uphold the law and become more accountable to the public.

These cases show that irresponsible corporate behaviour continues to severely affect both the environment and people's health, and that the companies who are responsible fail to respond in an adequate manner. They show how companies routinely fail to compensate and/or assist impacted communities, how they evade obligations to clean up or remediate damaged environments, and, by and large, how they violate human and community rights by failing to monitor, report and provide essential information concerning their products and processes. Such behaviour is no less than criminal, and it is becoming increasingly difficult - sometimes impossible- to seek justice, and to hold these companies accountable and liable for their crimes.

As this report goes to press, British Nuclear Fuels Limited (BNFL) is shipping enough plutonium to make 50 nuclear weapons from Japan to the UK. The material concerned is being returned from Japan after an earlier scandal. In 1999, BNFL shipped its first ever consignment of plutonium MOX fuel around the globe from Sellafield to Japan. During the transit, it was revealed that BNFL had deliberately falsified critical quality control data during the production of the fuel. BNFL ultimately was forced to admit the falsification, and its Japanese clients demanded the material be returned. If the fuel had been loaded into a Japanese reactor, the potential risk for accident could have been significantly increased. The shipment itself is also of concern because in the event of an attack or accident, this shipment could put at risk dozens of coastal nations on its 30,000 kilometre voyage back from Japan. The failure of the UK and Japan to provide an adequate liability arrangements is of major concern to en-route states

The cases below provide information on the relevant companies, the type of incident, the effect on people and the environment, the outcome of legal procedures, the amount of damage and the conclusion regarding the (ir)responsibility of the company. The cases are divided into industry sectors. The report starts with a cluster of cases on Dow Chemicals due to its intolerable lack of action to help the Bhopal victims. Not surprisingly, this corporation is also involved in several other cases of corporate crime around the world.

An important aspect in many of the cases is the apparent difference in behaviour of a company in a rich "western" country which has relatively strict rules protecting people and the environment, and the disappointing behaviour of the same company in "poor" countries where the laws are lax and hardly enforced. The cases show that the global markets make it possible for corporations to practise double standards, misusing lax standards in poorer countries to save on costs and to maximise profits. For example, asbestos can be handled more cheaply in industrialising countries in Asia without the stringent rules protecting workers that exist in the USA or Europe.

It is not only global companies that act in an irresponsible manner. National, state-owned or even employee-owned companies can also fail to act in an acceptable way. In countries such as the Czech Republic, Russia or India where the state occupies a very strong position in the companies concerned, the situation can be even worse. A global international instrument is also needed to address these particular circumstances.

The cases listed here are not exhaustive or final. The intention was neither to cover all categories of industry nor to present only the most important cases. These cases should simply be seen as a preliminary register of corporate crimes with huge and very long lasting impacts on people and the environment—positive proof of the need for urgent international action.

3.2 List of cases

The cases

DOW Cases

Dow (formerly Union Carbide) (Bhopal, India)[1]

Company details	Union Carbide India Limited, Bhopal, India. Main products: Pesticides, Battery cells, Bulk Chemical Intermediaries. At the time of the disaster Warren Andersen was CEO of the corporation. Today the company is merged with DOW and Ravi Muthukrishnan is the CEO. The Indian operations mainly supply chemicals to industry and make only a few end consumer products. After the merger with Union Carbide, DOW emerged as the largest chemical corporation in the world. The group headquarters of DOW is in Midland-Michigan, USA.
Location of damage	Bhopal, India
Company Activity	Chemical production. Primarily methyl isocyanate production for pesticide manufacture
Type of incident	Accident that led to leak of gases, chiefly methyl isocyanate (MIC), mono methylamine, carbon monoxide and possibly 20 other chemicals. Date: December 3rd 1984.
Type of damage	Loss of life. More than 8,000 people died in the first three days. 520,000 people were exposed to poisonous gases. 150,000 victims are still chronically ill, with even now one person dying every two days.
Range of damage, amount of loss	Conservative figures are at least 20,000 thousand dead. The gas leak killed many thousands instantly. Of the affected people who survived the initial leak, many died over the years due lack of proper care. Improper diagnosis led to ineffective medical treatment. The improper diagnosis was due to refusal by Union Carbide India Limited (UCIL) to disclose all the details regarding the leaked gases. Misinformation and lying by the company[2] led to confusion, making treatment difficult. The delay in providing timely medical aid made the situation of the victims even worse. Late and inadequate compensation compounded the situation and more lives were lost. Today the survivors suffer from lung fibrosis, impaired vision, bronchial asthma, tuberculosis, breathlessness, loss of appetite, severe body pains, painful and irregular menstrual cycles, recurrent fever, persistent cough, neurological disorders, fatigue, weakness, anxiety and depression. Tens of thousands of children born after the disaster suffer from growth problems and far too many teenage women suffer from menstrual disorders. In the years following the disaster, the stillbirth rate was three times, perinatal mortality was two times and neonatal mortality was one and a half times more than the comparative national figures. Tuberculosis is several times more prevalent in the gas-affected population and cancer cases are on the rise. Chromosomal aberrations in the exposed population indicate a strong likelihood of congenital malformations in the generations to come. Some of this is already apparent. A third generation of victims is emerging. These are the children born to parents born after the gas leak and they are suffering from various abnormalities.
Who is responsible	The storage of huge volumes of MIC in a densely inhabited area was itself in contravention of company policies strictly practised in its other plants. A total of 67 tons were stored in Bhopal against a permissible maximum in Europe of only 0.5 tons. The company ignored protests and built large tanks in a crowded community. MIC is required to be stored at extremely low temperatures, but the safety measures were reduced to cut operating costs. The air conditioning plant was 'expensive' to run and cost-cutting measures (saving USD 50 per day) led to less than optimal conditions in this critical area. The company cut down the size of the preventive maintenance staff to save money and then provided insufficient training

[1] Source: Factsheet on the Union Carbide Disaster in Bhopal, Greenpeace, 2002

[2] Union Carbide's doctor of Health, Safety and Environmental Affairs, Jackson B. Browning, described the gas a few days after the disaster as "nothing more than a potent tear gas".

	even to this reduced few. Safety training was slashed to two weeks as against the standard 24 weeks. Routine maintenance was neglected and critical equipment, which should have been replaced every six months, was often replaced only after two years. Scrubber systems were inadequate. The company never created Disaster Management Plans for the community who lived around the factory. State authorities are also culpable for failing to implement the law. The proposition to store large volumes of MIC on site caused a public outcry, but the company 'managed' the government and got it built. Pollution control measures and mandatory safety measures were not met as many departments of the governments failed in their duties.
Legal and/or public action taken	The Supreme Court of India directed Union Carbide Corporation (UCC) and UCIL to pay a total of USD470 million in full settlement of all claims arising from the tragedy. The government, UCC and UCIL agreed and the two companies paid in full on February 24, 1989. Public action has included court cases, health surveys, protests at government establishments and the parliament, targeted campaigns against company officials and government bodies, rallies, international showcasing etc.
Subsequent behaviour of company	Initially the company attempted to conceal the nature of the damage, by saying that gas was just potent tear gas, and refused to release data on the gas mixture, thereby preventing proper diagnosis and treatment. After the Bhopal leak the company went against the advice of experts and reopened operations to use the 15 tons of MIC left in one tank. Around 400,000 people left town and many stayed away for a month due to this dangerous action.
Legal outcome	Because of government's friendly attitude towards industry, the legal processes have been only marginally effective. That the company made deals with government is known but remains difficult to prove. Judgement was made without meaningful participation from the affected people who were not party to the negotiated settlement between the government and the company. Later the Supreme Court, strangely, also issued an opinion explaining why the settlement was adequate, even though the obvious reality was starkly contradictory. Although the court allowed the criminal case to be reopened and directed the Government to purchase medical insurance for the 100,000 presently asymptomatic persons who may later develop symptoms, very little has been actually implemented on the ground. The courts passed pious orders that the government ignored.
Final Greenpeace statement	The Bhopal accident led to some changes in the way large corporations operate. In Europe and the US laws were promulgated to prevent such disasters. India too passed some laws. But in practice nothing changed. The company was allowed to sell and leave, and the final merger with Dow is almost a final break. It continues to evade responsibility and even today denies access to the gas leak data, on the grounds that it would be an infringement of corporate secrets. The most basic principles of justice have been denied. Misinformation and lying has been the norm. Profits are pursued irrespective of the costs to humans and environment. Today there is a move to remedy this gross injustice. A recent victory in the US Second Circuit Court Of Appeals in a decision that affirms the environmental damage claims of the survivors is likely to have far reaching consequences for Dow.

Dow Brazil S.A. (Brazil)

Company details	Dow Chemicals CEO Michael D. Parker 2030 Dow Center, Midland, MI 48674, USA **CEO** José Eduardo Senise **Facility involved in this case**: Guarujá Complex Av. Santos Dumont, 4.444 Conceiçãozinha – CEP 11460-003 Guarujá - SP – Brasil **Other Facilities:** Dow Chemicals owns plants and industrial complexes in the Brazilian states of Bahia (in Candeias), Pernambuco and São Paulo (in Jundiaí). **Administrative Unit** Rua Alexandre Dumas, 1671 Chácara Santo Antônio CEP 04717-903 São Paulo – SP **Revenues in Brazil**: USD 180 million in 2000.
Company activity	The first Dow chemical plant in Brazil was established in 1971, in the city of Guarujá, in the coastal area of São Paulo. The complex produces polystyrene, latex, and polyols for the manufacture of polyurethane foams and epoxy resins, among others. The plant's production capacity was expanded from 120,000 tons to 200,000 tons a year in 2001[1]. It also has a sea terminal, through which moves approximately 70% of Dow's products in Brazil.
Type of incident	In 1999, Dow incorporated the rival company Union Carbide, which in Brazil owns part of Petroquímica União, located in Santo André, in the state of São Paulo[2]. One of the properties owned by the company in Guarujá is contaminated by carbon tetrachloride, a chemical that Dow has not used since the 1980's. According to the company, this issue has been under discussion with CETESB (the Brazilian state environmental agency), since 1994. Approximately 350 tons of sediment considered of low contamination, which were stored inside the plant, have been removed and sent to cement kilns for disposal[3].
Type of damage	From April to August 1998, Greenpeace collected three sediment samples in the vicinity, one of them in the river Santo Amaro, as well as one effluent sample. The material was analysed by Greenpeace's Laboratory at the University of Exeter, in the UK. All samples showed a range of organic compounds, such as tetrachloromethane, chloroform, and other volatile organochlorines. Heavy metals were also present in river sediments, as well as in the effluents[4].
Legal and/or public	The Federal Public Prosecutor opened an investigation into the case in

[1] Gazeta Mercantil, 20/11/2001
[2] Gazeta Mercantil, 5/8/1999
[3] Gazeta Mercantil, 26/6/2000
[4] Greenpeace - *Identificação e significado ambiental de poluentes orgânicos e metais pesados encontrados nos efluentes industriais e nos sedimentos do rio relacionados com a Companhia Dow Química,* Guarujá, Brasil, 1998.
[5] Gazeta Mercantil, 26/6/2000

action taken	January 2000. They are still collecting information and monitoring CETESB decisions.
Legal outcome	CETESB states that it has not yet decided whether the contaminated area of 500 metres needs remediation or not. In 2000, CETESB concluded that only one of the various monitoring points showed inadequate levels of potability[5]. The company avoids commenting on the issue.
Final Greenpeace statement	Since the case came to public attention, very little has been done to remediate the contaminated area. The company must take full responsibility for the damage it caused.

Dow Chemicals (India)

Company details	Dow Agrosciences, Zionsville, IN (Primary Manufacturer of Raw Chemical) CEO in India: Mr. Ravi Muthukrishnan Dow Chemicals India, Corporate Office, Eastern Express Highway, Chembur, Mumbai.
Location of damage	India
Company Activity	Dow produced chlorpyriphos and marketed Dursban (chlorpyriphos) in Asia for insect control despite stringent restrictions for use of the chemical in the USA. "Dursban" is the popular name of chlorpyriphos also sold as "Lorsban" for agricultural use by Dow Chemicals Ltd. The chemical name is 0,0-diethyl-0-(3,5,6-trichloro-2-pyridyl) phosphorothioate. Chlorpyriphos is an organophosphate pesticide, a neurotoxin that kills animals by attacking the nervous system.
Type of incident	Poisoning and contamination of people and the environment
Type of damage	Accidental poisoning and permanent pollution: There have been many cases of accidental poisoning. In the US Poison Control Centres alone report more than 7,000 cases—in 1996 alone—of accidental exposures to Dursban[1]. Most susceptible are children playing at home and in the garden[2]. There are no data on poisoning in India and other countries. Dursban was declared as unfit for almost all home/garden uses by the US Environmental Protection Agency (US EPA) in 2000. However, Dow is still selling it to consumers in poorer countries for the same uses[3]. There have been several cases of accidental poisoning of workers in India.
Range of damage, amount of loss	Quantification of Damage: A US government study done in 1994 found over 80% of Americans with detectable levels of TCP (greater than 1 microgram /litre) and 31% with over 5 micrograms/litre: a six-fold increase between 1974 and 1994[4]. Research to assess damage has not begun in India[5]. Chlorpyriphos was first marketed in the USA in 1965 by the Dow Chemical Company and is now one of the top five insecticides with annual sales over USD 2 billion. Prior to being restricted, the chemical caused more than 1,000 cases of poisoning and 7,000 cases of accidental exposure per year in the US alone[6].

[1] Environment Working Group's website: http://www.bandursban.org/epa/poisonings.shtml
[2] ibid: http://www.bandursban.org/science/
[3] Interview of field investigator S.Usha, Thanal Conservation Action and Information Network, Kerala, India.
[4] Fact sheet compiled by Albert Donnay*, Dursban Information Group, c/o MCS Referral & Resources, 508 Westgate Road, Baltimore*
[5] Interview with Pesticides researcher, Thanal Conservation and Action Network .
[6] op cit: Environmental Working Group: http://www.bandursban.org/epa/poisonings.shtml

Who is responsible?	Dow Chemicals is responsible for marketing a chemical, known to them as a neurotoxin and unfit for use by the US population, in poorer countries such as India. State authorities share responsibility because they have not restricted use of this chemical in India. Indian Companies who actively propagate the use of this chemical in their formulations without considering the established adverse health effects are also accountable
Legal outcome/ Public action	US victims filed more than 270 lawsuits against Dow in the 1990s. The US EPA fined Dow USD 732,000 in 1995 for failing to disclose reports of adverse effects associated with use of or exposure to Dursban[7]. In January 1997, the US EPA announced a voluntary agreement with DowElanco to discontinue many uses of chlorpyriphos (including all broadcast sprays and foggers) and to require changes in the education of both applicators and the general public. On 8 June 2000, EPA banned all uses of Dursban in residential and commercial buildings. The EPA also instituted major restrictions of the use of chlorpyriphos, the active ingredient in Dursban, in food crops[8]. Public action: over the last two decades many NGOs in the US have run Anti-Dursban campaigns.
Subsequent behaviour of company	The company has not withdrawn Dursban from Indian markets even after the adverse health effects of the chemical has been proven in the US, despite its "Responsible Care" rhetoric. Dow has not warned other chemical manufacturers against serious health effect of chlorpyriphos and the need to stop production (or formulation) and sales of chlorpyriphos due to these risks. Instead, Dow continues its sales with statements like: "Used as directed, chlorpyriphos products are safe for use around adults and children."[10]
Legal outcome	In India environmental laws and regulations are now catching up with the developments in the US. The precedent set by the US EPA banning the chemical will help the campaign to raise awareness and concerns about the dangerous properties of the chemical and the need to ban it from the Indian market.
Final statement	Dow Chemicals should follow their own claims of "responsible care" and stop using double standards in the production and distribution of its products.

[7]ibid: http://www.bandursban.org/dow/
[8] ibid: http://www.bandursban.org/latest/
[10] Dow Agrosciences Website Q&A page: http://www.dowagro.com/about/issues/qa.htm
[11] ibid: http://www.dowagro.com/chlorp/rpa/about.htm

Dow Agrosciences (NZ) Ltd, (New Zealand)

Company details	Dow Agrosciences (NZ) Ltd, fully owned subsidiary of DowElanco[1]. Registered Office: 89 Paritutu Road, New Plymouth General Manager: Peter Dryden Formerly Ivon Watkins Dow. Located in urban Paritutu, suburb of New Plymouth , New Zealand
Location of damage	The primary location of damage is New Plymouth, however IWD products containing 2,4,5-T were sprayed extensively around New Zealand's agricultural and forestry land to control weeds. A working party report states that at least 3.4 kg of dioxin was sprayed over New Zealand agricultural and forestry land in such products[2].
Company Activity	Ivon Watkins Dow (IWD), commenced producing 2,4,5-T in New Plymouth in 1948. In 1969, the company moved its plant into the urban area of Paritutu. IWD imported trichlorophenol (TCP) from the USA and Germany until 1969, when they started manufacturing TCP in New Plymouth[3]. In 1987, this plant was the last in the world still producing 2,4,5-T. 2,4,5-T was one of the ingredients in the infamous chemical substances, agent orange, which was used as a defoliant in the Vietnam war. 2,4,5-T was contaminated with dioxin and thus the use of the chemical contaminated people and the environment with dioxin.
Type of incident(s)	- IWD buried waste that subsequently leached. - There was an explosion at the plant in 1972. - An equipment failure in the TCP plant in April 1985 released up to 735 mg of dioxin[4]. - The company incinerated dioxin contaminated waste in an urban area. - IWD produced dioxin-contaminated products. Between 1975 and 1979, the company incinerated 6 kg of dioxin in liquid wastes[5]. A total of 85 tonnes of sludges was incinerated between 1986 to 1990[6]. Phenoxy sludge was buried in drums at two separate sites. The majority of the drums[7] have been recovered from one of these sites. The other site, Waireka farm, situated in a gully near the coast, was found to be leaching waste. The drums were recovered in 1985 and reburied a few hundred metres inland in a lined landfill[8]. The old Waireka site was recently discovered to be leaching 2,4,5-T. In 1985 the company was reported as saying that in no instance has it been proven that dioxin is responsible for any permanent damage either to people or the environment[9]. Ironically according to a 1965 internal memo written by Dow's toxicology director, Dr. V.K. Rowe: "As you well know, we had a serious situation in our operating plants because of contamination with 2,4,5-trichlorophenol with impurities, the most active of which is 2,3,7,8-tetrachlorodibenzo-p-dioxin. The material is exceptionally toxic; it has tremendous potential for producing chloracne and systemic injury." Furthermore, according to a recent Reuters report, the US Air Force has found strong links between adult onset diabetes and Agent Orange. Vietnam veterans stated that they hoped that this would be added to the other nine diseases veterans were eligible for compensation for, including a range of cancers and chloracne.

[1] The sole shareholder is DOWELANCO BV Aert Van Nesstraat, 3012 Ca Rotterdam, The Netherlands. Dowelanco is subsidiary of Dow Chemicals.
[2] A Report by a Working Party to the Environmental Council, Commission for the Environment for the Environmental Council, 1986, p25. This is based on the dioxin contamination was one part per million from 1948 to 1972 as derived from Dow information provided to the Working Party (p27).
[3] Ibid., p11.
[4] Ibid., 17. Samples taken after this event showed soil levels of 310 ppt – Department of Scientific and Industrial Research 18 April 1986, released under the Official Information Act 1982 on 20 May 1999.

Type of damage	Dioxin contamination to air, land and water.
Range of damage, amount of loss	There has been no acknowledgement or quantification of health effects on the community and workers who were in the area at the time of the 2,4,5-T manufacture. Two investigations took place in the 1980s, but some sectors of the community have not been satisfied with the outcome. The Minister of Health stated that officials "acknowledge that the analysis of 2,4,5-T, rather than dioxin (2,3,7,8-TCDD), that was carried out as part of the Ministerial Inquiry in 1986-87 was less than ideal and makes the outcome, from a modern perspective, of somewhat limited value"[10]. A number of residents and former residents of the area are alleging health effects from the presence of the factory and its activities. Some people have told stories of multiple cancers in the family, skin disorders and other health problems. A recent claim of serious birth defects in the area from the time when IWD manufactured 2,4,5-T has also arisen in a recent publication. The New Zealand government is currently scoping an investigation into the health effects on residents. The scoping paper is expected to be finalised in or around May 2002.
Who is responsible	1. IWD, now Dow Agrosciences (NZ) Ltd. 2. Local authorities for the siting of a chemical factory in a residential area.
Legal and/or public action taken	The local community has undertaken a lot of public actions, which has resulted in the government proposing a blood serum study. The community is demanding that the study focus on key exposure groups, many of whom have since moved away. The community wants an independent in-depth epidemiological study with an appropriate testing regime and is calling for international peer review.
Subsequent behaviour of company	The company has not acknowledged that there are negative health effects from the production of 2,4,5-T.
Legal outcome	Not applicable
Final Greenpeace statement	There is no safe dose of dioxin, yet dioxin was released into the environment through waste disposal, the production and in the product itself from the IWD plant in a residential area. This case shows that there is a need for producers to prove that their products and processes are safe before being released to the market or production beginning. If a product or process subsequently is shown to be unsafe a liability instrument must exist so that exposed people can be acknowledged and assisted.

[5] Ibid, p25.
[6] Ibid.
[7] Approximately 30 drums of 230 were recovered from Omata. Ibid., p 17.
[8] Ibid., p17.
[9] "Official dioxin testing begins". The Dominion, Tuesday March 5, 1985.
[10] Letter to community member from Hon. Annette King, Minister of Health, 29 August 2000.

Dow Chemicals (USA) (Plaquemine, Louisiana)

Company Details	Dow Chemical Co. Louisiana Div. [1] Hwy. 1 S. Plaquemine, LA 707650150 P.O. BOX 150 Plaquemine, LA 70765-0150 USA
Location of Damage	Louisiana, United States
Company Activity	Petrochemical facility. Primarily producing chlorine, vinyl chloride monomer[2].
Type of incident	Poisoning and contamination of people and the environment.
Type of Damage	Known groundwater and soil contamination[3].
Range of damage, amount of loss	Former Dow supervisor Glynn Smith, and employees Herbie Walker and Edward Dominique testified in front of a grand jury in June 2002 that Dow Chemical, as standard procedure, routinely dumped thousands of gallons of vinyl chloride directly from rail cars next to the rail tracks in and near Plaquemine, Louisiana. Smith said the dumping of vinyl chloride occurred when workers cleaned tank cars and was routine practice for over three decades, stopping only in 1992, when Dow began fully to contain the vinyl chloride[4]. Vinyl chloride, an organochlorine, will remain in groundwater for decades to come. Scientific studies reveal that vinyl chloride is linked to severe and wide-spread health problems[5].
Who is responsible	Smith claims that Dow knew that anywhere from 300 to 1600 pounds (136 to 726 kg) of vinyl chloride were emptied directly into the Plaquemine soil on a daily basis; in fact, public advocates have obtained Dow safety literature that recommends this modus operandi[6]. Vinyl chloride contaminates water when found at 2 ppb. Smith estimates that 11,000 lbs (5000 kg) of vinyl chloride were dumped each month for thirty years. The grand jury in Plaquemine is looking into these developments as the primary cause of vinyl chloride contamination in the drinking water below the Myrtle Grove trailer park, located just over one mile from Dow's Plaquemine facility.
Legal Outcome/public action	Besides the grand jury investigation, Louisiana governor Mike Foster has ordered a multi-agency investigation into this matter, which is being led by Dale Given, the head of the Louisiana Department of Environmental Quality. The United States Federal Environmental Protection Agency (EPA) is also beginning a full investigation. The EPA has warned that "based on the potential net groundwater flow direction, wells used by the City of Plaquemine for water supply may be at future risk"[7].
Subsequent behaviour of company	Dow has denied all charges, though the company has settled personal claims out of court (see below), but has said it will cooperate with full state and federal investigations. Dow has since subpoenaed the WBRZ TV reporter's notes and Interviews that broke the story[8].
Legal Outcomes	Because of his exposure to vinyl chloride, Dow supervisor Glynn Smith walks with a limp because the bones in his ankles have

[1] http://www.rtk.net
[2] http://www.dow.com
[3] http://www.wbrz.com/stories/080402/inv_dow.shtml
[4] Ibid.
[5] Dr. Patricia Williams, toxicologist, quoted in http://www.wbrz.com/stories/080402/inv_dowten1.shtml
[6] http://www.wbrz.com/stories/080402/inv_dowten1.shtml
[7] Letter from Steven Acree and John Wilson, US EPA National Risk Management Research Laboratory, Subsurface Protection and Remediation Division, Office of Research and Development to Tim Knight Administrator, Environmental Technology Division, Office of Environmental Assessment, Louisiana Department of Environmental Quality, July 26, 2001
[8] http://www.wbrz.com/stories/080402/inv_dow_ad.shtml

	fused together. He cannot bend his wrists for the same reason. He won a $2.5 million judgement against Dow Chemical in 1991[9]. A judge ruled "that Smith's employers and supervisors knew the exposure limits, required plaintiff to work under conditions guaranteed to exceed those limits and deliberately and negligently failed to take any action to protect the plaintiff."[10] Dow appealed the decision but eventually settled the case out of court.
Final Statement	With the dumping of vinyl chloride in Plaquemine, Louisiana, Dow Chemical has again poisoned the environment and endangered public health in an area already saturated with industrial pollution. With overwhelming evidence and a personal court case settlement as a portentous precedent, the long-term consequences of this new information could become a huge liability for Dow. No true safe exposure level to vinyl chloride exists. This horrific case behoves Dow to begin to switch to cleaner and safer production immediately.

[9] http://www.wbrz.com/stories/080402/inv_dowten1.shtml
[10] ibid

Chemical cases

AZF (Toulouse, France)

Company details	**AZF – GRANDE PAROISSE** 143 route d'Espagne 31507 TOULOUSE Cedex 1 France (Address no longer exists) Head Office 12 place de l'Iris 92062 Paris - La Défense France Subsidiary of ATOFINA Head office: Cours Michelet 92091 Paris La Défense Cedex France Subsidiary of TOTAL FINA ELF SA 2 Place de la Coupole 92400 COURBEVOIE France Tel: +33-1-4744-4546 Chairman of the board: Thierry Desmarest 2001 Annual profit : EUR 7.5 thousand million (USD 6.5 thousand)
Location of damage	The AZF[1] complex was located three kilometres from the centre of Toulouse (pop. 400,000) in Southwest France, lying under an aircraft flight path and bordered in the north by the Toulouse bypass. Within one kilometre of the site are the Mirail University, a household appliances warehouse, a psychiatric hospital, social housing, offices, schools, colleges and a nightclub. The neighbourhood included four other chemical plants, SNPE and subsidiaries TOLOCHIMIE and ISOCHEM, all involved in phosgene and phosgene-based chemistry (and also production of hydrazine for ARIANESPACE) and RAISIO FRANCE[2].
Company Activity	Chemical production: - nitrogenous substances: ammonia, nitric acid, urea and ammonitrates as fertilisers and as raw material to produce explosives; - synthetic resins, cyanuric acid and chlorinated derivatives. Chemical use: - natural gas, methanol, chlorine and phenols Storage: - up to 6,000 tons ammonia; - two wagonloads of 56 tons chlorine; - Up to 15,000 tons NO_3NH_4 in bulk, another 15,000 tons in bags, and 1,200 tons in solution.
Type of incident	Accident (Explosion)

[1] AZF was under the Seveso Directive as of major concern, under ISO 9001 and 14001 standards and member of the French "Responsible Care"("Engagement de progrès de l'industrie chimique française").
[2] INFO CHIMIE Magazine, Spécial Usines Chimiques France 2001, #430 July-August, 2001

Type of damage	The explosion took place in a storage area of NO_3NH_4 destined for reprocessing. Between 300 and 400 tons of the chemicals were in storage and it is estimated that the explosion was generated by 40 to 80 tonnes of the stored matter. The explosion, which occurred around 10 a.m., left a 7m deep and 40m wide crater, smashing windows in a radius of several kilometres[3]. The explosion destroyed the alarm and gas detection systems. Fortunately there was no domino effect. The causes are still unknown but different scenarios have been studied. Possible scenarios included terrorist attack (this scenario was quickly abandoned); decay of ammonitrates due to bad storage conditions (chemists are doubtful about this possibility); presence of misplaced chemicals (chlorinated wastes suspected); or an electrical accident or underground pipeline leakage. The latest official statement blamed "an individual mistake".
Range of damage, amount of loss	Damage: The explosion totally destroyed the AZF plant and significantly damaged the other companies in the area. Public housing, public infrastructures and private buildings, including 118 schools and 27,000 flats, were either partially or totally destroyed. In all, more than 1500 companies were affected. Due to the subsequent slow insurance process hundreds of families went without windows during the winter. Thirty-one people lost their lives including 22 workers. Around 2,500 people were injured; tens of whom suffered serious injuries. Toxic releases: The amount of toxic pollution remains unknown. Clouds of NO_x and ammonia moved across Toulouse. Nitric acid and NO_3 leaked into the Garonne. Nine tonnes of ammonia (and possibly other chemicals) were intentionally released into the river during the clean up of the site, and there was an unknown amount of "controlled" degassing. Material damage is provisionally estimated at between EUR 1.5 and 2.3 billion (in February 2002, total compensation requests reached EUR 1.8 billion). There were 100,000 demands for compensation including 55,000 from private individuals, 6,000 from private companies and 5,000 from co-owners. Additional expenses include EUR 4 million a month for loss in trade.
Who is responsible?	Company: Totalfina, not being satisfied with the financial results from AZF Grande Paroisse, made few investments in the company. Management of the site was poor and there was a fast turnover of workers and subcontractors. The reprocessed ammonitrates storage building, in particular, was left in a bad condition. Local authorities: From 1924, until the early 1990s, local authorities were unable to prevent the city from spreading into the industrial area[4]. Building permits were given until only recently. In the late nineties, INERIS, the French agency for risk assessment, defined safety areas around the plants, but these were totally unsatisfactory and displayed a total incompatibility between the industrial area and the city. No process to increase safety or to consider the future and sustainability of the area took place. Removal of the site was called for but economic reasons (costs, loss of income for Toulouse) made it impossible.

[3] Daily Toulouse Metropole, 26/27 September, 2001
Weekly TOUT TOULOUSE, #47 (26 September-2 October, 2001
[4] Le Monde 10 February, 2001 - "La croissance urbaine de Toulouse a négligé la protection industrielle" by Benoit Hopquin

	National authorities: The DRIREs (Regional Directorates for Industry, Research and Environment) are in charge at a regional level for regulating industry. DRIREs depend on both the Industry and the Environment Ministries and have traditionally accommodated local industries. Up until the 1980s, AZF was a public company providing the army with explosives and ammunitions. The entire Toulouse site lies on a 107 ha industrial wasteland "sheltering" tens of thousands of tons of gunpowder production residues from the First and Second World Wars. No cleanup was ever called for. In addition, AZF was known by the people of southern Toulouse as a harmful plant that continuously released odorous gasses.
Legal and/or public action taken	Court cases: Investigations were made, but the case has not yet reached the court. Political action The government organised public debates in every French region and at a national level to stop the growing public concern. The debates ended up resembling a public relations campaign by the industry. Electoral concerns prevented the government from taking any decisions on the future of the site. The only proposal was to create public information tools. A parliamentary investigation committee held hearings with all stakeholders including NGOs. EU Parliament: A resolution on Toulouse accident called for a risk removal approach. Groups campaigning on the corporation: A citizen collective named "Plus Jamais ça!" was created to oppose the reopening of the site, also including the other plants. Workers: Major unions are opposed to the closure of the site due to job loss.
Subsequent behaviour of company	Totalfina has promised compensation. Of the total EUR 1.8 billion in damage, 850 million will be covered by insurance companies and 950 million will be charged to Grande Paroisse (net cost for TFE: EUR 600 million). Minor shareholders (holding 19.5% of Grande Paroisse capital) have contested this latest decision, stating that TFE could have advanced the amount to its subsidiary. Totalfina shareholders eventually decided in mid-April not to re-open the destroyed AZF[5]. The other plants, which are state property, are supposed to re-open with some changes, producing and using the phosgene in a just-in-time process instead of storing it.
Legal outcome	Awaiting judgement
Final Greenpeace Statement	This case is a miracle! Nothing but luck prevented a domino effect, which, in the case of an explosion within the chlorine or phosgene store, could have meant tens of thousands of deaths in Toulouse. This case is also a scandal where both corporate and public authorities (at municipal, regional and national levels) for years perpetuated an irresponsible situation until the final tragedy occurred. The Toulouse disaster mandates new policies on high-risk industry regulation, for public participation, land-use planning and independence of controlling bodies. It also mandates a real step forward towards sustainability through clean production. We further see through this example that this movement has to be led by mandatory regulations because neither ISO 14000 standards nor voluntary commitments (Engagement de Progrès) have dealt adequately with the reality of a poorly managed, high-risk, chemical plant.

[5] Le Monde - 5 February, 2002 "TotalfinaElf fait payer sa filiale Grande Paroisse"

Bayer S.A. (Brazil)

Company details	Bayer AG Werkleverkusen 51368 Leverkusen Germany Tel: +49-214-301 Chairman of the Board of Management: Werner Wenning Bayer S.A. (Brazil) CEO: Ian Paterson[1] Facility involved in this case: Belford Roxo Estrada da Boa Esperança, 650 26110-100 – Belford Roxo – RJ Tel.: +55-21-2762-5700 Other facilities: Porto Feliz Rodovia Marechal Rondon, km 139 18540-000 – Porto Feliz – SP Tel.: +55-15-262-3699 Porto Alegre Rua Edu Chaves, 360 90240-620 – Porto Alegre – RS Tel.: +55-51-342-2777[2] Revenue in Brazil: USD 180 million in 2000
Company activity	The company currently manufactures polyurethane, varnishes, veterinary products and pesticide formulations[3]. The Belford Roxo plant has a hazardous waste incinerator and an industrial landfill.
Type of incident	Contamination of soil and water
Type of damage	In January 2001, Greenpeace released a report accusing Bayer of contaminating the Sarapuí river with PCBs and heavy metals, such as lead and mercury. The chemicals were released as a result of the incineration of chemical pollutants in its Belford Roxo plant. The samples analysed included solid wastes from the industrial landfill, industrial wastewater, and also sediments from the Sarapuí river, collected upstream and downstream of the facility. The analyses were performed by Greenpeace Research Laboratories, in the Department of Biological Sciences at the University of Exeter, UK. The effluent sample contained compounds such as halogenated benzenamine, benzene and benzamide. The sediment sample contained compounds such as chlorinated benzene, PCBs and DDT derivatives. A sediment sample from the industrial landfill was highly contaminated by heavy metals and contained a wide range of organic pollutants, such as PCBs, chlorinated benzenes and halogenated benzenamines. Another sample showed high levels of mercury[4].

[1] Gazeta Mercantil, March 13th, 2002
[2] www.bayer.com.br
[3] Greenpeace – Bayer General Information
[4] Greenpeace – Metal and organic pollution associated with the Bayer facility in Belford Roxo, Rio de Janeiro, Brazil, December 2000
[5] Letter IDC 61/01 from Feema and Greenpeace – Small Inventory of POPs in Brazil

	Four years before, in 1997, FEEMA, the state environmental agency, had already detected mercury in sediment samples collected in the Sarapuí river, downstream from the facility. This analysis showed that mercury was present at 30 micrograms per gram of sediment, compared to 22 micrograms per gram detected by Greenpeace[5].
Legal and/or public action taken	On 22 January, 2001, Greenpeace carried out a direct action at Bayer's facility in Belford Roxo. The state Public Prosecutor opened a public investigation about the claims against the company[6]. In the second half of 2001, he sent a delegation of technicians from the state environmental agency (FEEMA) to audit the Belford Roxo facility[7]. The results have yet to be released.
Subsequent behaviour of company	In response to Greenpeace's direct action, Bayer released a statement calling the allegations of contamination in the effluent unfounded and asserted that all their facilities in Brazil operate within "the current state and federal regulations"[8]. According to Bayer, the company carried out three series of effluent analysis in 2001 and 2002, after Greenpeace released the report. These analyses indicated contamination that was less than the legal limits for PCBs and heavy metals. They were carried out by Bayer's own laboratory and also by two independent laboratories, Tecma and Analytical Solutions. "As to PCBs, for example, the legislation allows up to 50 ppb in effluents and the test results showed only 0,1 ppb". Bayer also stated that the lead levels detected were five times below legal limits. For mercury, the levels found were 11 times below legal limits[9]. The company also questioned the methodology used by Greenpeace's laboratory[10]. It is important to note that Bayer's analyses were limited to effluents, disregarding sediment contamination. The contaminants that Greenpeace found in sediments are toxic, persistent and bioaccumulative. Thus they require further attention and must be linked to their source.
Legal outcome	The results of the analyses required by the Public Prosecutor have yet to be released.
Final Greenpeace statement	Bayer could not explain the source of the contamination. The company denies damage to the environment and does not accept responsibility for clean up and compensation. The Bayer incinerator is still operating and burning wastes from other companies.

[6] Greenpeace – Letter to the Federal Police, March 2001
[7] Information provided by Bayer's Press Officer
[8] Gazeta Mercantil, January 23rd and 24th, 2001
[9] Information provided by Bayer's Press Officer
[10] Letter sent by Bayer to the Public Prosecutor of Rio de Janeiro, April, 10th 2001

Ebara Corporation (Japan)

Company details	Ebara Corporation[1] (Japanese company) Environmental Engineering Enterprise (producing incinerators but also water pumps, sewage systems, etc.) (Headquartered in Japan) 11-1, Haneda Asahi-cho, Ohta-ku, Tokyo 144-8510, Japan Phone: 81-3-3743-6111 Fax: 81-3-3745-3356 Chairman and Representative Director: Hiroyuki Fujimura Paid-in Capital JPY 33,788 million Number of Employees 4,993 (Pollution Site) Fujisawa Plant: 4-2-1 Hon-fujisawa Fujisawa City Kanagawa Prefecture Phone: +81-466-83-8110
Location of Damage	Hikiji River, Fujisawa City, Kanagawa Prefecture, Japan Kanagawa Prefecture is located south of Tokyo, facing the Pacific to the southeast. Fujisawa city, which has about 400,000 people, is one of the major cities in Kanagawa Prefecture. Hikiji river runs through the city from the north to the south, and the Ebara plant is located 5km from the mouth of the river on the Pacific Ocean.
Company activity	Incineration of Ebara Corporation's self generated industrial waste.
Type of incident	Dioxin contamination of the Hikiji river and surrounding area caused by discharges of dioxin-containing sludge over an eight-year period from a drainage pipe that is connected to the air pollution control system of the Ebara waste incineration facility[2].
Type of damage	River pollution, marine pollution
Range of damage, amount of loss	Dioxin contamination in the river water has been measured at levels of 3,000 to 8,000 times the environmental standard of 1 picogram per litre (pg/l) set by the Japanese government[3]. The contamination of the waste water, soot and sludge from the incinerator was found to range between 13,000 pg/l and 300,000 pg/l[4]. The total quantity of dioxins released to the river is estimated to be 3.0g-TEQ , and the estimated release to the air from the incinerator is 1.4g-TEQ[5].
Who is responsible?	Ebara Corporation for dumping dioxin to the Hikiji river and delayed action for recovery. State authorities for not immediately informing the public of the situation.
Legal and/or public action taken	No legal action has been taken against the Ebara Corporation by the government as the government has insisted that the levels of dioxin pollution do not present a risk to human health. Local activist groups have been monitoring the dioxin levels.

[1] Ebara Corporation Web Site http://www.ebara.co.jp/en/profile/index.html
[2] Press releases about the accidents by Ebara Corporation http://www.ebara.co.jp/dioxin/index.html
[3] "Survey of the dioxin levels in Hikiji River" Environmental Agency, Kanagawa Prefecture, and Fujisawa City, 2000 http://www.city.fujisawa.kanagawa.jp/kankyouk/hikiti.gif
[4] "Survey of the dioxin levels in Ebara Fujisawa Plant" Kanagawa Prefecture and Fujisawa City, 2000 http://www.city.fujisawa.kanagawa.jp/kankyouk/zu20-03.jpg
[5] "About the accident of dioxin contamination of Hikiji river" Fujisawa City, 2000 http://www.city.fujisawa.kanagawa.jp/kankyouk/toppage20-2.htm

Subsequent behaviour of company	Ebara Corporation shut down the incinerator responsible for the dioxin pollution and has rebuilt its facilities at the site which were contaminated as a result of the operation of the incinerator. The company has not demolished the incinerator, nor has Ebara conducted a clean up the river or the surrounding area. The government has not required Ebara to remediate the contamination and has continued to maintain that the levels of dioxin pollution in the river pose no risk to human health. Ebara Corporation continues to manufacture and sell its incinerators in Japan and to export them to other countries. The company insists that these incinerators are improved and safer than the incinerator that caused the extensive dioxin pollution of the Hikiji river.
Legal outcome	No legal action has taken place.
Final Greenpeace statement	Ebara corporation has not taken any action to clean up the river and marine environment. The mismanagement of Ebara corporation's own incineration facility demonstrates the environmental hazards of continued manufacture, use and export of incineration technology by Japan.

Genco (General Environmental Conservation Co, Ltd.) (Thailand)

Company details	GENCO (the General Environmental Conservation Co, Ltd.) Map Ta Put Industrial Estate, Rayong, Thailand GENCO website: http://www.genco.co.th GENCO is a registered Thai public company operating waste treatment and disposal facilities. GENCO's major shareholders : Private sector 76.43% (including the General Asia Group of Industry and Deutsche Bank AG Singapore.) Industrial Estate Authority of Thailand 2.14% Ministry of Industry, Thailand 21.43% Waste Management International PLC.(WMI), the international arm of WMX Technologies Inc.(USA), has been providing technology transfer to GENCO. Address of Waste Management International ; 1550 Balmer Road Model City, NY 14107 USA Phone: (716) 754-8231 Fax: (716) 754 0211 http://www.cwmmodelcity.com
Location of Damage	Map Ta Put area, Rayong Province, Thailand Map Ta Put Industrial Estate is the biggest petrochemical complex in Thailand. It is part of the Eastern Seaboard Development Project which covers the eastern part of the inner Gulf of Thailand. The project was launched in 1981 to be the industrial hub of the country. Increased pollution, especially air pollution, in this area appears to be one of the factors having an impact on the health of local people.
Company activity	Integrated Hazardous Waste Treatment including secure landfill and fuel blending, transportation of synthetic waste fuel for cement kiln. Proposing to build hazardous waste incinerator
Type of incident	Accident: in August 2000 there was a fire on site caused by chemical reactions during the neutralisation stage of the waste stabilisation process. Groundwater contamination. Human health problems.
Type of damage	There have been persistent foul smells blowing from the GENCO site Groundwater contamination has been reported from GENCO's secure landfill.
Range of damage, amount of loss[1]	The foul smell and dust of the GENCO operation have had an impact on residents, Buddhist monks and schoolchildren from at least three local communities as well as staff and patients of the local hospital. Health problems in local communities living around the site include nausea, dizziness and headaches, tight-chestedness, itchy skin and occasional vomiting. The monetary value of the damage is unknown.
Who is responsible?	GENCO Industrial Estate Authority of Thailand Ministry of Industry

[1] Campaign for Alternative Industry Network (CAIN) "Mucky Business : Industrial Waste Management in Thailand's Eastern Seaboard", July 2001.

Legal and/or public action taken	In May 1998 local people petitioned the local authority about the persistent smells and entered the plant to protest about the accumulation of waste and continuing odours. In May 1999 local people opposed the GENCO plan to develop phase 2 of the waste disposal facility in Map Ta Put industrial estate. In October 1999 local people protested in front of a warehouse where GENCO were storing 50,000 drums of waste chemicals and called for the drums to be removed from the area immediately. This followed GENCO's repeated failure to meet promises to treat the waste. In November 1999 the Industry Minister's subcommittee on the management of the Eastern Seaboard industrial environment ordered GENCO to clean up its operations. In March 2000 local people petitioned the local authority asking for an end to odours from GENCO and that it refuse to grant the company permission to open a second landfill. As a result of this petition, the manager of the Map Ta Put Industrial Estate ordered the temporary closure of the GENCO site until an action plan to solve the odour problems had been implemented. In April 2000, the House of Representatives Environmental Commission investigated the GENCO odour problems and finally in July/August 2000 people living and working near GENCO plant were given blood tests to check for solvents.
Subsequent behaviour of company	In September 1999 GENCO announced the cancellation of the phase 2 waste disposal facility and agreed to pay for the blood tests as "a friendly gesture".
Final Greenpeace statement	The Thai Government sees GENCO as an environmentally responsible company that provides a much-needed service to dispose of industrial waste safely but the company has itself caused major pollution problems as well as abusing the rights and interests of the local population. GENCO should be forced to act in a responsible way. Moreover, there is an urgent need for the Thai Government to promote clean production within the industry because the current approach to industrial waste management in Thailand, which mostly relies upon back-end solutions, has already proven to be failing to protect the environment and human health.

Haifa Chemicals Ltd (Israel)

Company details	Haifa Chemicals Ltd, Haifa Owned by Trance Resource Inc (A US corporate owning other polluting industries like Vicksburg Chemical Company in Mississippi) Address of TRI: 375 Park Avenue, New York, NY 10152 9 West 57th Street, New York, NY 10019 Chairman of the Board of TRI: Arie Genger Chairman of the Board of Haifa Chemicals: Avi D. Pelossof Managing Director of Haifa Chemicals: Gabi Politzer Revenue of Haifa Chemicals: USD 280 million (as of 2000)
Location of damage	Kishon River and Haifa Bay, Israel
Company activity	Production of Chemical Fertilisers
Type of incident	Toxic contamination of soil and water due to toxic sludge dumping
Type of damage	- Pollution of Haifa Bay - Pollution of Kishon River and the soil below and around it - On-going pollution
Range of damage, amount of loss	Between 1986, and 1999, Haifa Chemical dumped an estimated 1,200,000 tons of toxic sludge in Haifa Bay. Between 1967 and 2001, the company discharged approximately 66 million m^3 of toxic effluents into the Kishon. The Kishon river has been a dead river for close to 40 years. The cancer rate among affected communities is very high. Kishon fisherman, marine commandos who carried out diving training exercises in the river, and the workers who handled the toxic sludge are most affected[1]. The fisherman have a cancer rate of close to 20% (39 ill or dead out of 200 fisherman). Cancer rates among the commandos are not established yet, since there are many types of training (some spent a few days in the Kishon, while others spent a few weeks, or a few years). But an expert opinion written by Dr. Benny Malenky in 2000[2] determined that the high rates of cancer found in the commandos were not random but linked to their diving. On this basis, Israel has set up a state committee to determine if there is a connection. The committee was due to give its conclusions in 2002. In Haifa the cancer rate is higher than the national average of 0.285%. For Haifa women it is 0.345% and for men it is 0.321%[3]
Who is responsible?	Haifa Chemicals managers have known that they were releasing toxic chemicals into the environment since they began operating in 1966. Yet still they do not take responsibility for the damage they cause or initiate any steps for eliminating the on-going pollution. State authorities are also responsible because they give the company dumping permits and legalise the pollution.
Legal and/or public action taken	There are several court cases against Haifa Chemicals: three from the Kishon fishermen, one from the Rowing Club, one from IUED (an environmental law NGO). Greenpeace and other environmental organisations have been campaigning against the factory for six years
Subsequent behaviour of company	The first lawsuit of IUED was settled out of court, with small amounts of compensation (USD 50,000 to boat owners) and an obligation to gradually reduce the toxic effluents. Other lawsuits are still in court. Due to the court

[1] personal communication S. Shemesh-Roz, expert opinion Dr. Benny Malenky
[2] Health Effects of Diving in the Kishon, Dr Benny Malenky, 2000
[3] Israel Ministry of Health - 1998 Official Statistic Report

	agreement and to MOE pressure, some treatment facilities were installed and the amounts of effluents reduced from January 2002. As a result of public pressure to stop the river pollution, it is now proposed that the rest of the effluent will be discharged directly into Haifa Bay via a pipe that would by-pass the river. After a Greenpeace campaign the sludge already in Haifa Bay was reduced to 10% of its former volume, and has now been taken for burial.
Legal outcome	Lawsuits have been successful to some extent, as described above, but only in reducing the pollution, not solving the problem at source. The damages paid so far are minimal – only USD50,000 to boat owners. No damages have been paid for health effects, loss of income, and no money allocated for the cleanup of the river.
Final Greenpeace statement:	Haifa Chemicals is an example of a company who consistently does all it can to shake off its responsibility for the ongoing damage its facilities have caused to the communities and the surrounding environment. It is part of a corporation that owns similar companies against which local communities are struggling to protect themselves. Such corporations should be singled out and made accountable for their actions.

ICI Argentina S.A.I.C. (Buenos Aires, Argentina)

Company details	ICI Argentina S.A.I.C. Av. Paseo Colón 221 5º piso C1063ACC Buenos Aires Argentina Tel: 54 11 4343 2010/24 Location of the plant: ICI Argentina S.A.I.C. Ruta 11 Km 25 San Lorenzo 2200 Pcia. De Santa Fe Argentina Tel: 54 3476 422005/7 Fax: 54 3476 425332 Headquarters: Imperial Chemical Industries PLC 20 Manchester Square London W1U 3AN United Kingdom Tel: 44 (0) 20 7009 5000 Fax: 44 (0) 20 7009 5001
Location of damage	Estación Argentina, Santiago del Estero Province, Argentina.
Company activity	The company has several chemical manufacturing plants in Argentina. The plant in San Lorenzo currently produces sulphuric acid, sulphur derivatives, polyethylene, phthalic anhidride.
Type of incident	Around 30 tons of toxic waste were buried in a very isolated and poor area of Santiago del Estero province called Estación Argentina. The wastes were buried there in 1990 and discovered by an environmental NGO in 1994. Since then, the wastes have remained buried with no isolation from the environment where people transit, children play or animals feed.
Type of damage	Soil, ground water and drinking water pollution.
Range of damage, amount of loss	Thirty tons of toxic waste were reported to have been buried, but little is known about the degree of pollution of the soil and the groundwater in the area. These wastes had been transported by train to the area and are now buried by the railroad of an almost abandoned train station. The invoice described the shipment as containing gammexane. Analyses done by several agencies and organisations show the presence of mainly gamma-HCH and other HCH isomers. Other chemicals in the dump include DDT, DDD, cis and trans chlordane, dieldrin, pentachlorobenzene, metoxichlor, heptachlor, aldrin, etc. The analyses show that the toxic chemicals are in the soil nearby the dump as well as in the groundwater. However, there has been no economic quantification of damage done until now.
Who is responsible	Ever since the general public learned about the dump, ICI has not taken any action to clean up the site, and several levels of government have rejected responsibility for cleaning up the site. In all the samples taken the main chemical present is γHCH, which was produced at the time of the burial by the company ICI Duperial. However, there are other chemicals that might have been produced by other big chemical companies so Greenpeace has urged the Chemical Industry association (Cámara de la Industria Química y Petroquímica) to take responsibility of the removal of the wastes, clean-up of the site and compensation for the local community. In response, an agreement was

	signed in July 2002 between the Chemical Industry association and the Secretary of Environment to remove the wastes and export them for treatment in Europe. Hopefully removal and cleaning operations will start before the end of the year.
Legal, public action by those concerned	The community and several NGOs have publicly campaigned for a toxic waste removal and clean up of the site. Although several legal actions have been put forward since 1994, there has been little progress in the legal investigation. However, finally in 2000 the judge decided to take a few testimonies from ICI former and current representatives. At last, in July 2002, the Chemical Industry association committed to removing the wastes.
Subsequent behaviour of company	The company has been saying that everything was still under investigation and tried to deny their responsibility, arguing that the former ICI businesses involved in agrochemicals in the 1980s were spun off from ICI into Zeneca in 1993.
Legal outcome	The legal actions are with the Federal Court of Santiago del Estero and the legal process has not yet finished.
Final statement:	This case clearly demonstrates that a global liability regime is needed because it would force a company quickly to remediate the damage even if the company's direct physical responsibility in burying the toxics is not yet proven. To prove this responsibility is usually difficult but this problem is overcome if the original producers of the chemical remain liable for it throughout its life-cycle.

For more information, see Greenpeace report: "Argentina no es un basurero tóxico". "Argentina is not a toxic waste dump". www.greenpeace.org.ar

Novartis, Ciba Speciality Chemicals, Syngenta (Switzerland)

Company details	**Novartis AG** CH-4002 Basel T: +41 61 324 22 00 F: +41 61 324 33 00 www.novartis.com Chairman and CEO: Dr. Daniel Vasella 2001 annual profit: CHF 7,024 million **Ciba Speciality Chemicals AG** Klybeckstr. 141 4002 Basel T: +41 61 636 11 11 F: +41 61 636 12 12 www.cibasc.com Chairman and CEO: Dr. Armin Meyer 2001 annual profit: CHF 382 million **Syngenta AG** Schwarzwaldallee 215 CH-4058 Basel T: +41 61 323 11 11 F: +41 61 323 12 12 www.syngenta.com Chairman: Heinz Imhof CEO: Michael Pragnell 2001 annual profit: USD 34
Location of damage	Region of Basel (Switzerland, France, Germany)
Activity	Production of chemicals (Novartis: pharmaceuticals, Ciba SC: dyes, Syngenta: pesticides)
Failure category	Abandoned toxic waste sites
Type of damage	Pollution of ground- and surface-water, soil, air
Range of damage, amount of loss	A. There are at least twelve dumpsites in the region of Basel with mixed, poorly documented, chemical waste products from the former pharmaceutical, agrochemical and dye production of the late 1940's to 1960's[1]. Damage to the environment and human health is unknown. Quantities of dumped waste have been documented or calculated as follows (minimum figures)[2]: • Feldreben, Muttenz (CH): 13,000t • Margelacker, Muttenz (CH): 1,200t • Spinnler-Meyer, Muttenz (CH): 300t • Letten, Hagenthal-le-Bas (F): 3,200t • Roemisloch, Neuwiller (F): 1,600t • Hitzmatte, Neuwiller (F): ? • Gravière Nord, St. Louis (F): 8,500t • Brugner, St. Louis (F): 400t • Lipps, Weil am Rhein (D): 4,000t

[1] Novartis, Ciba 1999, Historie der Entsorgung von Chemierückständen der ehemaligen Ciba-, Geigy, Sandoz- und Durand&Huguenin-Werke vor 1961.
[2] Forter 2000, Farbenspiel – ein Jahrhundert Umweltnutzung durch die Basler chemische Industrie.

	• Hirschacker, Grenzach (D): 3,000t • Kessler, Grenzach (D): ? • Kiesgrube Weil am Rhein (D): ? • Probably more The costs to clean up these sites have been estimated at CHF 100 million[3]. B. Dumpsites where the companies agreed to clean up: • SMD Bonfol, Jura (CH): 114,000t Estimated costs for clean-up: CHF 300 million[4] • Toms River, New Jersey (USA): 30-35,000 55-gallon drums, 150m3 of waste[5] Estimated costs for clean-up: CHF 500 million[6]
Who is responsible	A. **Novartis, Ciba SC, Syngenta** (merged from the former polluters Geigy AG, Ciba AG, Sandoz AG, Durand&Huguenin AG), as well as other companies of the IG DRB[7]: Clariant Schweiz AG, F.Hoffmann-LaRoche AG, Rohner AG, SF-Chem AG. B (Bonfol). **Novartis, Ciba SC, Syngenta** (merged from the former polluters Geigy AG, Ciba AG, Sandoz AG, Durand&Huguenin AG), as well as other companies of the BCI[8]: Clariant, Henkel, Roche, Rohner, Säurefabrik. B (Toms River). **Ciba SC**
Legal, public action by those concerned	A. Public and private campaigning by communities has included historical investigations[9] and formation of project groups[10]. Politicians[11] and local groups[12] have worked on the issue. Greenpeace activities have included sampling and analysis of water from the site, a direct action at the Novartis AGM 2002, press conferences and other media-work, and direct dialogue with the companies[13]. B (Bonfol). Public and private campaigns have been run by regional Government[14], communities and local groups[15]. Greenpeace activities have included sampling and analysis of water from the site, an occupation of the dumpsite at Bonfol, media-work and direct dialogue with the companies[16].
Subsequent behaviour of company	A. From the companies, we have seen years of inaction. Typically, the political and public response to campaigns has included denial of responsibility, inadequate investigation (use of inadequate sampling points and analytical methods), denial of the environmental impacts and the urgency of clean-up, and refusal to accept Greenpeace's chemical analyses[17]. B. The companies have promised clean-up and remediation at Toms River[18] and Bonfol[19], but—particularly in the Bonfol case—the clean-up process needs to be improved substantially with respect to the way that the project is organised and controlled, and the speed and quality of the investigations).

[3] www.greenpeace.ch, PR March 21st 2002 and March 22nd 2002.
[4] BMG Engeneering AG 2001, Variantenstudie Totalsanierung Bonfol.
[5] New York Times, www.nytimes.com/2001/12/18/nyregion/18TOMS.html
[6] WorkAktuell, February 8th 2002, Giftige Erbschaft
7 Interessengemeinschaft Deponiesicherheit Regio Basel (IG DRB): association with coordinating among the responsible companies in the region of Basel. See PR September 24th 2001, www.bci-info.ch/sub_medien_mitteil.cfm
[8] Basler Chemische Industrie (BCI): association with coordination duties among the companies responsible for the dumpsites Bonfol (JU), Kölliken (AG), Teuftal (BE). See PR September 24th 2001, www.bci-info.ch
[9] Gemeinde Allschwil 2002, Wurde auf der Hitzmatte Chemiemüll abgelagert?
[10] www.muttenz.ch, PR April 8th 2002
[11] www.baselland.ch, Interpellation Halder, January 10th 2002
[12] Aktionskomitee „Chemiemüll weg!", PR December 20th 2001
[13] www.greenpeace.ch, PR July 17th 2001, March 4th 2002, PR June 12th 2002
[14] http://www.jura.ch/bonfol/accord-cadre.htm
[15] http://www.jura.ch/ci-bonfol/
[16] www.greenpeace.ch, PR Mai 13th, 19th, 26th, July 5th, 7th 2000
[17] Novartis, Ciba, Syngenta, PR December 20th 2001, March 13th 2002, June 20th 2002
[18] http://www.cibasc.com/view.asp?id=1294
[19] http://www.bci-info.ch/sub_vorstellen_grunds.cfm
[20] Novartis, Protokoll AGM 2002: „Novartis ist bestrebt, alle Altlasten innert eines Zeithorizontes von 25 Jahren zu bereinigen."

	In response to a question from Greenpeace at the 2002 Novartis AGM in Basel, CEO Daniel Vasella committed the company "to purge all contaminated sites within the next 25 years" (see footnote for original statement in German)[20].
Legal outcome	In 1998, the Swiss federal law for contaminated sites entered into force[21]. This law requires historical research and a risk assessment as first steps of the decision-making procedure, and regulates the clean-up measures (eg. for excavation of all dumped waste). It is a law with many gaps. The historical research is seldom likely to yield detailed results and the methodologies are not yet well developed. Quantified limits exist for only certain lead-based chemicals, so the law does not address the whole range of dumped hazardous substances nor the harmful synergistic effects on the environment and on human health of a cocktail of such substances. After a long political battle, this law was applied to Bonfol: the first time for such a big dumpsite. However, the law's application still needs substantial improvement. At Bonfol, the quality of the whole clean-up process is inadequate and must be improved, especially as there is new evidence of a much wider pollution of the regional groundwater. At Feldrebengrube (Basel) the chemicals lie right in the groundwater of the water protection zone and in range of the nearby drinking water supply. Even though the maximum values for contamination in drinking water have been exceeded, no decision has yet been taken to clean up the site. At Hitzmatte (France), where Greenpeace found industrial chemicals in the leachate from the dumpsite, the companies still deny any responsibility. For the other dumpsites on the French border with proven leakage into the environment, the French and Swiss authorities have not yet agreed on measures to solve the problem.
Final statement:	This case is scandalous! Even though the companies must have known already in the late 1950's that their chemical waste was poisonous and dangerous to human health and the environment, they systematically disposed of their waste in old gravel pits, and in sites in the woods, etc. on both sides of the borders. They simply chose the cheapest way to get rid of their chemical wastes. And even though authorities must have known that those disposals were not being carried out according to the best available technology and best environmental practice of the time, they accepted this environmentally unsound behaviour for years. These are the "sins of the past". But considering that these "sins of the past" are today publicly known, admitted by the corporations (in general terms!) and officially recognised, and considering that the mentioned chemical dumpsites are leaking and releasing hazardous substances into the environment every day, the following corporate and governmental failures must be named as "sins of the present": 1. Existing regulation in Switzerland is not adequate or is inadequately used to resolve the problem. 2. Companies are able to hide behind the trans-border aspect of the problem as it reduces the ability of either government to force the companies to clean up their contaminated sites. 3. It seems that the companies involved are not really interested in removing the sins of the past by excavating their own dangerous, dumped chemical waste. Their apparent strategy is to win time by slowing down the process and to save money by externalising the costs. Their obvious tactic is pseudo-activity.

[21] Verordnung über die Sanierung von belasteten Standorten (Altlastenverordnung, AltlV 814.680), 26.8.1998.

Orica Botany (formerly ICI) (Australia)

Company details	Formerly ICI, now Orica Botany : Botany, Sydney, Australia Orica is a publicly-owned Australian chemical company employing around 9,000 staff across approximately 35 countries and with revenue of AUD 4 billion annually. Orica has controlled entities in Argentina, Australia, Brazil, Canada, Chile, China, Dominican Republic, Estonia, Fiji, France, Germany, Guyana, Hong Kong, Indonesia, Ireland, Kazakhstan, Malaysia, Mexico, New Zealand, Peru, the Philippines, Papua New Guinea, Puerto Rico, Singapore, Spain, Thailand, Turkey, the United Kingdom, the USA and Venezuela. Orica also has a presence in India and the United Arab Emirates through investments in associates. Managing Director and CEO: Malcolm Broomhead Address: ORICA 1 Nicholson Street, Melbourne, 3000, Australia
Company activity	Chemical production: ICI began manufacturing chlorine in 1944. The site was further expanded in the 1960s, 70s and 80s to become a major petrochemical operation. The core activities of the site since the 1950s have included the production of chlorine and the intermediaries for polyvinyl chloride (PVC) plastic, ethylene dichloride (EDC) and vinyl chloride monomer (VCM). Currently produces chlorine, sodium hydroxide, polyethylene and polypropylene.
Type of incident	For over 50 years a range of extremely hazardous and toxic chlorinated chemicals (including substances that have now been banned) have been manufactured at the ICI/Orica Botany site. This has led to some serious long-term waste and pollution problems, which can be divided into three categories: Waste stockpiles: - 8,300 tonnes of hexachlorobenzene (HCB) crystalline solid waste from solvent manufacture in 200 steel drums held above ground in on-site dry storage facilities; - 1,000 tonnes of HCB contaminated waste derived from EDC manufacture is stored in 25m3 concrete tanks in what is referred to as the vinyl factory. Contaminated soil and groundwater[1]: - 45,000m3 of soil, ash and peat contaminated with HCB, carbon tetrachloride and chlorinated hydrocarbons is stored in a plastic-lined disposal cell under the ICI car park. Environmental contamination of Botany Bay.

[1] In 1989, at the direction of the then NSW State Pollution Control Commission (now the EPA), ICI carried out the Botany Groundwater Survey Stage 1. The final report was released in May 1990.

Type of damage	For many years, ICI dumped their waste, in 200-litre metal drums, into the South Pacific Ocean, near Sydney. Many of the dumped materials will eventually find their way into the environment. A 1990 report for ICI identified widespread soil contamination on the site and said that some pollution—in some instances above the recommended environmental standards—was moving offsite via aquatic life in Botany Bay[2].
Range of damage, amount of loss	Soil contamination: The highest level of mercury was detected near the solvent plant and near the heavy ends drum store. Chlorinated hydrocarbons were also detected in four other general locations. Shallow water contamination: Chlorinated hydrocarbons (CHC) contamination is entering the environment around the ICI Botany site due to the discharge of contaminated groundwater that has been taking place for many years. Deep water contamination: Sampling of deep groundwater (10-25 metres) found that it is contaminated with chlorinated hydrocarbons, mostly trichloroethylene and an intermediate of PVC manufacture, ethylene dichloride. Aquatic animals (biota) in Penrhyn Estuary: The aquatic life in Springvale Drain appears to be severely affected by contaminated seepage from the Southland area. Mercury was detected in biological samples in December 1989, at levels that exceeded the recommended National Health and Medical Research Council (NHMRC) guidelines for shellfish for human consumption. Samples of crab taken in December 1989 exceeded the NHMRC guidelines for hexachlorobenzene in seafood for human consumption[3]. Dioxin contamination: In 1990 a study was undertaken on dioxin and furan contamination. The levels were relatively low, however there were some relatively high concentrations of 2,3,7,8 TCDF in sediment and some evidence of accumulation in biota[4].
Who is responsible?	ICI Australia and Orica.
Legal and/or public action taken	Presently, there is a Commission of Inquiry into a proposal by Orica to use Geomelt technology to treat about 10,000 tonnes of HCB. The Commission of Inquiry is a function of NSW Planning legislation. In this case the Minister for Planning called for a Commission of Inquiry into the HCB destruction proposal.
Subsequent behaviour of company	ICI Australia set aside about AUD 70- AUD 80 million for a cleanup. (Approx. USD 30 million).
Legal outcome	No results yet
Final Greenpeace statement	Orica budgeted about AUD 70 million to destroy a huge stockpile of HCB on their property. This amount will not be enough to complete the task safely. There are additional contaminants on site.

[2] AG Environmental Engineers (1990): ICI Botany Environmental Survey: Stage 1 Preliminary Investigations. A report for the NSW State Pollution Control Commission, May 1990.
[3] AG Environmental Engineers (1990): see ref. 2, p xvii
[4] Ibid.

Rhodia S.A. (Brazil)

Company details	Rhodia S.A. Facility involved in this case: Cubatão Unit Estrada Dom Domênico Rangoni Km 4 s/n – Bairro Industrial CEP 11.500-000 Cubatão SP Brazil CEO Walter Cirillo Since Rhône-Poulenc (former owner of Rhodia) merged with Hoechst Marion Roussel, the facility now belongs to Aventis. **Aventis Crop Science** Aventis SA 16 avenue de l'Europe 67300 Strasbourg France Tel +33-3-88-99-11-00 Fax +33-3-88-99-11-01 Other Facilities: Rhodia Group have facilities in three different Brazilian states: São Paulo (in Santo André, São Bernardo do Campo, Jacareí, Paulínia and Indaiatuba); Minas Gerais (in Poços de Caldas); and Pernambuco (in Cabo do Santo Agostinho). Administrative Unit: Centro Empresarial Av. Maria Coelho Aguiar, 215, Bloco B, 1. andar, Jardim São Luiz - CEP 05804-902 São Paulo – SP Revenues in Latin America: USD 1.15 billion in 2000 Revenues in Brazil: USD 226 million in the first semester of 2001
Company activity	Rhodia (Cubatão City) manufactured chemicals used for wood treatment, such as pentachlorophenol, sodium pentachlorophenate, tetrachloroethylene and carbon tetrachloride. The principal chemical waste compounds from the manufacture of these chemicals were hexachlorobenzene, hexachloroethene and hexachlorobutadiene.
Type of incident	- Failure to remediate existing toxic waste and toxic waste dumping. - Use of inadequate destruction technology for disposal of wastes.
Type of damage	In 1976, when Rhodia bought Clorogil, a company that manufactured chemicals used for wood treatment, they inherited one of the greatest environmental liabilities ever in Brazil[1]. In 1984, it was reported that the company had 11 illegal waste dumps that contained organochlorine wastes discharged by the plant. Inside the plant, which was part of the Pólo Industrial de Cubatão, in São Paulo, there were also illegal deposits of industrial toxic waste[2]. In January 1999, Greenpeace released the results of analyses of environmental samples collected near the Cubatão plant. The Greenpeace

[1] Gazeta Mercantil, 24/2/00
[2] Depoimento de João Carlos Gomes, diretor de Comunicação da ACPO
3 Greenpeace- casos de contaminação Brasil-Resumo
[4] www.rhodia.com.br

	laboratory at the University of Exeter in the UK carried out the analyses. The results showed that chemicals stored in the plant were contaminating the Cubatão and Perequê rivers and were also detected in nearby vegetation[3].
Range of damage, amount of loss	In 1986, the company built an incinerator to destroy contaminated wastes and soils, and started operations in December 1987. According to the company, 67,000 tons of material were burned in this incinerator over the following seven years[4]. According to the Associação de Consciência à Prevenção Ocupacional (ACPO, Movement for the Awareness for Occupational Prevention), a group of at least 150 employees who worked at the Cubatão plant until its closure in 1993 were contaminated by hexachlorobenzene, a highly carcinogenic substance. There is at least one confirmed case of thyroid cancer, as well as cases of neurobehavioural dysfunction, liver and kidney failure, infertility and immunological depression[5]. One of these cases is the worker Paulo Sérgio Thomaz, aged 44, who has 9.8 μg of HCB/dL blood. A production assistant at Rhodia since 1976, he developed constant headaches, insomnia and irritation[6]. There are also indications that children who eat fish from the city have incorporated organochlorines and heavy metals into their bodies. In 1993, a team co-ordinated by the physician Eládio Santos Filho investigated the contamination suffered by children as old as 10 years, who lived by the rivers in Cubatão. An average concentration of 9.08 μg Hg/L blood was found in 224 out of 251 children evaluated. At least one organochlorine pesticide – DDT, HCH or HCB – was found in the blood of 242 children. The investigators noted that contamination increased with fish consumption[7].
Legal and/or public action taken	In 1993, the Public Prosecutor obtained an injunction that forced the company to halt their activities at the Cubatão facility and shut down their industrial incinerator. Action was taken due to the contamination of soil and groundwater with the organochlorines pentachlorophenol and hexachlorobenze (HCB). Most of the company's illegal landfills are located near populated areas, rivers and mangrove forests. On 5 April 2002, a Public Hearing at Santo Vicente's City Council was held to discuss the company's liability in the contamination case. At the hearing were representatives from the Public Prosecutor's office, the executive office, the Movimento Metropolitano Contra Resíduos Tóxicos (MMRT, Metropolitan Movement Against Toxic Waste) and the communities from the Baixada Santista region[8].
Subsequent behaviour of company	The company still maintains that the levels of HCB found in the blood of the workers do not pose risks and that there is no clinical evidence showing that the irregular organochlorine deposits have caused any harm to the workers. According to Rhodia, the levels of HCB found in fish in the region are not high enough to prevent human consumption.

5 www.webagua.com.br e Depoimento de João Carlos Gomes, diretor de Comunicação da ACPO
6 revista Veja, 5/6/1996
7 Concentrações sanguíneas de metais pesados e praguicidas organoclorados em crianças de 1 a 10 anos, Eladio Santos Filho et al., Revista de Saúde Pública, 27(1), 1993
8 Gazeta Mercantil, 5/4/2002

Legal outcome	In 1993, the company, the Public Prosecutor and the workers made a deal that guaranteed that the workers would have job stability for an initial period of four years and that they would have lifelong health care[9]. The company was also forced to treat their groundwater and monitor the illegal landfills. These actions have cost Rhodia 20 million USD[10]. Only two workers from Rhodia have been compensated after filing legal suits, both for having been contaminated in the 1970's, when the company still worked with pentachlorophenol. In one of the cases, the compensation has been paid to the widow in the last five years[11]. Four legal suits were filed against Rhodia in the Baixada Santista region, one of them in Itanhaém, another in São Vicente and the other two in Cubatão[12]. To this date, there is still activity on the legal front.
Final Greenpeace statement	The company has shown a complete lack of responsibility towards the community, workers and environment. Rhodia has not been made liable for a great part of the damage caused to the environment and to the people. The company has not offered any compensation or health assistance to the community. There are people still living in some of the contaminated areas.

[9] Greenpeace- casos de contaminação Brasil-Resumo
[10] Depoimento de Plínio Carvalho, consultor e porta-voz da Rhodia
[11] Depoimento de João Carlos Gomes, diretor de Comunicação da ACPO
[12] Ibid.

Shell Brasil S.A. (Paulínia, Brazil)

Company details	Royal Dutch Shell Group (Dutch-Anglo TNC) Chairman of the Committee of Managing Directors: Philip Watts Carel van Bylandtlaan 30 2596 The Hague The Netherlands Tel: +31-70-377-9111 Shell Centre York Road London WE1 7NA United Kingdom Tel: +44-207-934-1234 Shell Brasil S.A. Central Office Avenida das Nações Unidas, 17.891 – 3º andar 04795-100 São Paulo – SP Tel: +55-11-5514-8600 Fax: +55-11-5514-8700 Paulínia Facility Avenida Roberto Simonsen, 1500, Paulínia 13140-000 Tel: +55-19-874-7200 Facility in São Paulo Av. Presidente Wilson Vila Carioca São Paulo – SP Revenue in 1998: BRL 80.5 million[1]
Company activity	Shell Chemicals manufactured pesticides in Paulínia, rural São Paulo, from 1975 to 1993.
Type of incident (description of the case)	- Contamination of soil and groundwater - Failure to take the necessary measures to protect human health and the environment
Type of damage	While in operation the plant contaminated groundwater near the Atibaia river with the organochlorines aldrin, endrin and dieldrin. Three leakages of these compounds were officially reported during the period of manufacture[2]. The sale of these pesticides was stopped in Brazil in 1985, by means of the Ministry of Agriculture Administrative Rule No. 329 (2 September 1985), while ant and termite baits made of aldrin for use in reforestation were still allowed. However, the manufacture for export continued until 1990. Today, the "drins" are also banned by the United Nations (UN) because they are associated with the incidence of cancer and reproductive,

[1] Guia da Indústria Química Brasileira – Abiquim – 1999/2000
[2] Greenpeace Cyber Shell – texto apoio

	endocrine and immune system dysfunctions. Shell was required to evaluate its environmental liability in the area when selling the plant to Cyanamid Chemicals in 1995[3]. This evaluation discovered a crack in a hazardous waste pool that had resulted in contamination of the groundwater. The company filed a self-indictment at the Public Prosecutor's Office, which led to a Conduct Adjustment Term. As a result, Shell was forced to build a treatment station to process all the groundwater below the plant[4]. However, Shell refused to acknowledge the contamination with "drins" and the leakages outside their property. In December 2001, the new owner of the facility, Cyanamid, sold the plant to the German chemical company BASF. It was only much later that Shell, forced by authorities and pressured by the local community, started to act on the problem. In 1996, Shell ordered two technical reports on the contamination of the groundwater outside the company's property, which were carried out by the Adolfo Lutz Institute from São Paulo, and by the Lancaster Laboratory from the United States. The Brazilian laboratory did not detect the presence of contaminants, whereas the American laboratory confirmed that "drins" were present in the water. Shell kept Lancaster's results secrets until March 2000, claiming the results were "false-positive". At the time, the state environmental agency, CETESB, collected, for the first time, samples from wells and cisterns from the neighbourhood, which were analysed by CETESB's own laboratory, paid for by Shell; and also by the laboratory Tasqa, paid for by Paulínia's city government. The results showed that dieldrin was present in the water. In December 2000, new samples were collected by CETESB, the Adolfo Lutz Institute and the laboratory Ceimic. The analyses showed contamination in the well water with levels of up to 11 times above those allowed by Brazilian legislation. Confronted with these results, Shell admitted for the first time being the source of contamination of the nearby farms[5].
Range of damage, amount of loss	Members of the community in the vicinity of the plant underwent a series of medical examinations. Paulínia's city government requested that the Universidade Estadual Paulista (Unesp) carry out blood tests. The results, released in August 2001, revealed that 156 people (86% of the population in the neighbourhood) had at least one type of toxic chemical in their body. Of these, 88 had chronic contamination, 59 had liver and thyroid tumours and 72 were contaminated with "drins". From the 50 children under the age of 15 who were evaluated, 27 showed chronic contamination. The company disagreed with the results, claiming they were inconsistent and incomplete[6]. A second report, ordered by Shell, concluded that there were no contamination cases in the neighbourhood. The company also denied that they had manipulated heavy metals in Paulínia's plant[7].
Legal and/or public action taken	In February 2001, approximately 100 community members carried out a vigil in front of the plant that lasted for several days[8]. In April, the Chamber of Deputies promoted a public hearing in Brasília to discuss the issue and created a committee to follow the case. At the same time, a former worker from the company confirmed the existence of four illegal landfills inside the factory, where Shell had stored the ashes of the incinerator and industrial wastes[9]. CETESB admitted they were wrong in not requiring an evaluation

[3] Greenpeace Cyber Shell – texto apoio
[4] Gazeta Mercantil 26/6/2000
5 Greenpeace, linha do tempo ii
6 EPTV (1ª edição), 02/01/2002, GloboNews.com, 08/11/2001 e Reuters, 20/12/2001
7 Agência Estado, 20/12/2001
8 Greenpeace Cyber Shell – revisado
9 Greenpeace, linha do tempo ii
[10] Folha de S. Paulo, 12/4/2001

	of the soil and water conditions in the Recanto dos Pássaros neighbourhood[10]. Paulínia's city government, the Public Prosecutor and the association of the people who live in the neighbourhood are suing the company and CETESB[11].
Subsequent behaviour of company	Shell is suing the physicians responsible for the medical exam in the Regional Medical Council (Conselho Regional de Medicina, CRM)[12]. In September 2001, Greenpeace sent a report on the case to the directors of FTSE4Good, an index series for socially responsible investment, which lists companies with an ethical behaviour. Soon after this Shell began to buy properties of those members of the community who were willing to sell their land. The company has already bought 32 of the 66 ranches. A total of 166 people have already left the neighbourhood, including people who lived in the houses and those who took care of them. According to the company, Shell bought the ranches only because their administration decided to do so, since there was no environmental study showing the need to remove the families[13]. Maria Lúcia Braz Pinheiro, vice-president of Shell Chemicals for Latin America, stated in December 2001, that the company still believed that "the [city government's] report cannot serve as a basis for anything, since it lacks basic parts and information" [14].
Legal outcome	In December 2001, Paulínia's Justice department demanded that Shell remove the population who lived in the 66 ranches from the Recanto dos Pássaros neighbourhood. Shell was also forced to provide the necessary medical treatments. Shell appealed the justice decision in March 2002, but the Judge maintained the initial demand.
Final Greenpeace statement	The case shows that transnational corporations such as Shell should be accountable and liable for the cleanup and compensation of the victims of contamination caused by their pollution. The refusal of Shell Brazil to negotiate a solution with the local community and authorities is a clear indication that justice needs to be sought also at the corporation's headquarters in UK/The Netherlands.

[11] Jornal do Comércio, 01/01/2002 e Reuters, 20/12/2001
[12] Agência Estado, 14/9/2001
[13] Informação prestada por Mônica Baldani, da Assessoria de Imprensa da Divisão Química da Shell Brasil - Divisão Química
[14] Reuters, 20/12/2001

Solvay Indupa do Brazil (Santo André, Brazil)

Company details	Solvay S.A. Corporate headquarters 33 Rue du Prince Albert B-1050 Brussels Belgium Tel: +32-2-509-6111 Fax: +32-2-509-6617 Chairman of the board of directors Baron Daniel Janssen Solvay Indupa do Brasil Administrative Unit Rua Urussuí, 300, Itaim Bibi CEP: 04542-903 São Paulo – SP Brazil Tel: +55-11-3046.5000 Facility in Santo André Estrada de Ferro Santos Jundiaí Km 38 s/n - Vila Elclor CEP: 09211-970 Santo André – SP Brazil Revenues in Brazil: USD 500 million
Company activity	Production of chlorine, caustic soda, hydrochloric acid, iron chloride, PVC plastic, compounds made of PVC and polyethylene
Type of incident	- Failure to treat dioxin-contaminated waste - Knowingly selling contaminated cattle feed and food products world-wide
Type of damage	The Belgian multinational Solvay has over one million tons of lime that are contaminated by dioxins at its Santo André facility, located in the Greater São Paulo area. This contaminated lime is one of the greatest concentrations of persistent organic pollutants in Latin America and was the by-product of PVC manufacture, an operation now discontinued by the plant. The contamination came to public attention after Greenpeace denounced the company in March 1999, and was immediately confirmed by the Brazilian Department of Agriculture. The lime, discharged by Solvay in Santo André, had been marketed since 1986 by a broker, Carbotex Ind e Com de Cal Ltda. The contaminated lime was used for making citrus pulp pellets, which were exported to Germany and other European countries where they served as cattle feed.
Range of damage, amount of loss	In March 1998, high levels of dioxin were found in the milk produced in the German state of Baden-Wurttemberg, resulting in its removal from the market. After the discovery, German authorities investigated the source of contamination and concluded that cattle feed was tainted with high levels of dioxins. Six components of the feed were analysed separately and the citrus pulp pellets from Brazil were isolated as being the source. In April 1998, after Germany stopped the use of Brazilian citrus pulp pellets, the European Economic Community banned the import of the Brazilian product. In order to evaluate the loss that this ban caused to Brazil, one should

	remember that in 1997 alone over 1.3 million tons of citrus pulp were shipped from the Santos Harbour. At the time of the ban, there were 94,900 tons of citrus pulp and 11,000 tons of feed containing Brazilian pellets in Europe[1]. Because of the ban, Brazilian producers lost at least BRL 100 million (USD 100 million at the exchange rates applicable at the time), according to the Brazilian Association of Citrus Exporters (Abecitrus, Associação Brasileira de Exportadores de Cítricos). They weren't the only ones who suffered an economic loss—40,000 tons of contaminated pulp stored in the Netherlands were destroyed at a cost of USD 6 million.
Legal and/or public action taken	In 1998, as it reconsidered importing Brazilian pulp, the European Commission required a complete investigation on the origin of the contamination and a guarantee that such contamination would be eliminated. The investigation, carried out by the Department of Agriculture, Abecitrus and European scientists, indicated Solvay's storage site in Santo André as the origin of the contamination. Four months before the lime deposit was discovered, Greenpeace had criticised the same Solvay facility for containing organochlorines. In December 1998, Greenpeace said there were mercury and organochlorines in the Rio Grande river, which crosses the Santo André facility. This accusation, which was rejected by CETESB (State Environmental Agency), is being investigated by the Public Prosecutor[2]. The 3rd Consumers Police Department of São Paulo has opened a criminal investigation of the two cases. There has been no investigation into the possibility that other areas in Brazil are contaminated by the dioxin-tainted lime marketed by Carbotex and by Minercal, another company that collected wastes from the Santo André storage site[3]. In April 2002, over 200 local community members and students from the ABC Paulista region participated in a parade against the contamination by the company.
Subsequent behaviour of company	When Greenpeace brought the case to public attention, Solvay stated that they would do everything required by CETESB as soon as they were notified of the contamination, and that they had already suspended the sales of their lime in the middle of 1998. Rogério Fragale, industrial director of Solvay, also stated that there was no proof that the pulp exported to Europe had been contaminated by Solvay's lime. In July 1999, the company signed an agreement with CETESB and the São Paulo Public Prosecutor, agreeing to share the necessary information in order to clarify the reasons for the contamination of the lime deposit. The company admits that dioxins are present in 10% of the deposit, but denies the presence of 2,3,7,8-TCDD (type of dioxin associated with cancer in rats). Greenpeace disagrees with this claim[4]. In December 1999, Solvay signed an agreement with the Public Prosecutor, CETESB and Greenpeace, in which they agreed to decontaminate the Rio Grande riverbed and their lime deposit within two years. They also committed to building an emergency barrier to contain the leakage of toxic material into the environment. The possibility of incinerating the material was rejected due to the volume of accumulated material. Solvay also

[1] Greenpeace, Solvay/Brasil
[2] Gazeta Mercantil, 26/3/1999
[3] Greenpeace – Solvay/Brasil
[4] Gazeta Mercantil, 13/7/1999

	agreed that they would not market or distribute lime from their storage site[5]. In 2000 the company presented a study proposing to build only a barrier for hydraulic confinement of the wastes, a technology that was criticised by Greenpeace. The matter is still being discussed in São Paulo's Public Prosecutor's Office[6]. After more than two years of discussions Solvay has not agreed to implement destruction technologies to clean up the contaminated area.
Legal outcome	Solvay has not fulfilled the agreement amongst the parties to contain the contaminated site and decontaminate the critical areas. Nor has Solvay been further investigated for selling contaminated lime.
Final Greenpeace statement	Solvay is avoiding responsibility for clean up and compensation. Governments should ensure that Solvay is held liable in Brazil as well as at its headquarters in Europe.

[5] Gazeta Mercantil, 23/12/1999
[6] Greenpeace (informação dada pela Karen)

Spolana (Neratovice, Czech Republic)

Company details	SPOLANA a.s. Neratovice ul. Práce 657 CZ - 277 11 Neratovice Czech Republic tel.: +420.206.661111 fax: +420.206.682821 e-mail: spolana@spolana.cz internet: www.spolana.cz/english/index_en.htm CEO: Ing. Radomír Věk tel.: +420.206.662209, +420.206.662942 fax: +420.206.665001 e-mail: rvek@spolana.cz Current owner: UNIPETROL UNIPETROL owned by: Fond Narodniho Majetku (FNM) – National Property Fund of the Czech Republic (Czech State). After change of ownership: Agrofert Holding a.s. Rohacova 1101/89, 130 00 Praha 3, Czech Republic tel.: +420 - 2 - 721 921 11 fax: +420 - 2 - 227 206 27 e-mail: agrofert@agrofert.cz internet (updated to 31.12.2001): www.agrofert.cz Agrofert is half owned by its president – Ing. Andrej Babis, and half by Ameropa A.G., Switzerland. (www.ameropa.com). Agrofert is Ameropa's representative in the Czech Republic.
Company activity	Chemical production including: - PVC (production monopoly in the Czech Republic) - basic chemicals (chlorine, sodium hydroxide, ammonium sulphate, etc.) - Caprolactam - linear alfa olefins - pharmaceutical products
Type of incident	Abandoned site of 2,4,5-T production for Agent Orange (1966 – 1968)
Type of damage	Dioxin pollution. Production waste contains up to 24,000 ng TEQ of dioxins/g. Dioxin concentrations in the air around the buildings are up to 51.9 pg/m3. In 1998, one of the buildings was emptied of chemicals and put into a concrete sarcophagus. There are no further plans for long-term maintenance of this site. Two other buildings are still open and fenced off. Inside these buildings are production wastes, machinery and high dioxin concentrations in dust, air and groundwater. They are awaiting further decontamination[1]. 2,4,5-T production at this location was stopped because of the severe health effects suffered by around 80 Czech employees, 14 of whom still

[1] Aquatest: Spolana a.s. Neratovice - *Contamination of the objects A 1420 and A 1030 with dioxins – Risk analysis – final report*, January 2001 (Kontaminace objekti A 1420 a A 1030 dioxiny - Analyza rizika - zaverecna zprava)

	survive. Besides these are an unknown number of Bulgarian and Angolan victims[2], and the actual number of victims related to Spolana's 2,4,5-T is unknown. The number of victims that had been in contact with the polluted site (work, air, and water) is also unknown. No epidemiological data is available. The buildings are situated in an area that can be flooded by the Elbe. One building was protected by a barrier after pressure by Greenpeace. The buildings continue to emit dioxins into the surrounding atmosphere[3]. Other pollution: There is extensive pollution of ground water, soil and air from mercury[4] and the vinyl chloride monomer production. Ground water and soil have been reported to be polluted with DDT, DDE, endrin, diendrin, lindane, benzene, 2,4,5-T, heptachlor, chloroform, HCB, HCH, etc. There is runoff into a local brook, and into ground water. Ground water flows towards a nature preserve. At least one village draws drinking water from an area at risk. Surface and ground water flow into the Elbe River.
Range of damage, amount of loss	Dioxin pollution: approximately 80 Czech employees have been poisoned by 2,4,5-T production, of which 56 have been followed medically. Fourteen of the eighty still survive. Financial compensation in the early 1970s was in the magnitude of several hundreds to thousands of Czech crowns per person (i.e. between ten and a few hundred USD at currency exchange rates valid at the time). An unknown amount of Bulgarian and Angolan employees have also been reported to be contaminated and repatriated without financial compensation. There is no epidemiological estimation of other victims among employees and surrounding inhabitants, or of second and further generation damages. Costs for dioxin decontamination are estimated from one to a few billions of Czech crowns [i.e. around 300 million USD][5].
Who is responsible?	First of all the State is responsible because most of the damage took place before 1989, when the company was state owned. The National Property Fund has reserved CZK 4.5 Billion (EUR 150 million) in total for decontamination operations in Spolana. This seems to be the liability limit that the state is willing to accept[6,7]. Agrofert is partly legally responsible for the company after the change of ownership.
Legal and/or public action taken	Victims of the Agent Orange affair are in the process of setting up their own civil initiative, which is planned to begin in early May 2002[8]. Greenpeace is following the proposals for decontamination critically and is urging immediate action on acute risks, but with only moderate success.
Subsequent behaviour of company	Until the beginning of 2002, the company completely denied the existing problems, stating that the plan for the decontamination of dioxins was in its start-up phase and that money was in place. Spolana avoided any comment on other issues, except for making soothing statements within the EIA procedure on mercury contamination. Liability was never

[2] Oral information from Czech victims – partly on video recordings in possession of Greenpeace in the Czech Republic
[3] Aquatest: Spolana a.s. Neratovice - *Contamination of the objects A 1420 and A 1030 with dioxins – Risk analysis – final report*, January 2001 (Kontaminace objekti A 1420 a A 1030 dioxiny - Analyza rizika - zaverecna zprava)
[4] Ekosystem: *Documentation on the assessment of building activities on the environment (EIA), Building activities – decontamination of the old amalgam electrolysis structures*, Prague, April 2001 (Ekosystem: Dokumentace o hodnoceni vlivu stavby na zivotni prostredi (EIA), Stavba - sanace stare amalgamove elektrolyzy)
[5] Oral information from Czech victims – partly on video recordings in possession of Greenpeace in the Czech Republic
[6] Czech press on 8.4.2002 to 16.4.2002 – for instance Pravo (stredni Cechy) 14.4.02 page 17; CTK press agency 8.4.02, Na jare 2003 zacne ve Spolane likvidace objektu zamorenych rtuti
[7] SOURCE: amongst many others: Cesky denik, stredni cechy, 4.4.2002, page 7 – BBC Ceska redakce, 13.3.2002, 07:00 Dobré ráno s BBC)
[8] Oral information from Czech victims – partly on video recordings in possession of Greenpeace in the Czech Republic

	addressed, not even towards the 2,4,5-T victims. The company tried to address the problem of flooding by commissioning a new dynamic flooding model to disprove any danger. In February/March 2002 the main director was moved to the board of the firm and of Agrofert and a new general director was installed. The press spokesperson was also replaced. The new strategy is one of mock-openness; sudden press conferences have been called on the dioxin and mercury decontamination and the firm has decided to build a flood barrier. The reason for this change is that Greenpeace had drawn the attention of Czech, Saxony and German environmental ministers to the issue. Additionally, a direct friend of Spolana management, the regional government leader Mr. Bendl of the ODS opposition party, changed his view on the acute problems that Spolana faces. His strategy was to divert attention from Spolana management to the government-led (Christian Social Democrats) National Property Fund.
Legal outcome	No courts have been involved to date. The legal system in the Czech Republic is extremely slow, especially in liability cases.
Final Greenpeace statement	The company, including the state and private owners, has so far avoided addressing the question of liability towards direct and indirect victims, as well as a holistic approach to contamination of the Spolana premises. There is not even a clear picture of who the victims are of the operations of this plant. The present management and owners are continuing to avoid the issue at the expense of current victims.

Thor Chemical Holdings (United Kingdom/South Africa)

Company details	Thor Chemicals SA (Pty) Ltd. (established 1963) Now called: Guernica SA (one section sold to Metallica Chemicals Pty Ltd.) Address: Old Main Road, Cato Ridge, South Africa Thor SA was a subsidiary of the Thor Group originally controlled by Thor Chemical Holdings (TCH) (UK). The Euro Trust was the controlling shareholder of TCH. In March 1997 all but three subsidiaries were transferred to the recently established Tato Holdings Ltd. Address Tato Holdings: c/o Thor Group Management Ltd, Ramsgate Road, Margate, Kent, CT9 4JY, UK. Tel: 1614861051 Turnover 2000: £152.95 m[1] Management responsible at the time of the incident: Chair of Thor Holdings: Desmond Cowley. MD of Thor SA: Steve van der Vyver Manager of Thor SA: Gavin Daniels Chief Supervisor: William Smith
Location of damage	Cato Ridge in KwaZulu-Natal in South Africa (SA) where a mercury processing plant was established in the late 1970s. In 1987 TCH relocated its UK mercury recycling operation to Cato Ridge.
Company activity	Production of a range of mercury-based products. Mercury recovery (recycling) operation[2]. Importation of mercury waste to recover mercury.
Type of incident	Ongoing emissions of mercury to the environment; Poisoning of workers; Contamination of local ground and surface water supplies; Incineration of mercury without a license; Atmospheric emissions exceeding regulations.
Type of damage	Occupational and environmental exposure to mercury can lead to mercury poisoning. The symptoms of mercury poisoning vary, depending on the level of exposure. As a neurotoxin mercury will affect the central nervous system causing symptoms "such as trembling, loss of muscle control, headaches, mental confusion, nausea and hair loss"[3]. As exposure levels increase affected individuals will suffer from mental difficulties, impaired motor skills, tremors, coma and ultimately death[4]. Since mercury is a metal, it does not degrade to simpler compounds and as a result will always be present in the environment in one form or another. It also has the potential to accumulate in living tissue. [5] The disposal of mercury by incineration was abandoned in most countries by the late 1980s[6].

1 http://www.kentonline.co.uk/business/top2001/company_view.asp?recid=130&region=0
2 This was claimed by Thor yet never proved. Activists claim that Thor merely incinerated all waste and purchased new mercury for its products (Mark Colvin, personal communication, 31 July 2002).
[3] Earthlife Africa. 'Thor Chemicals'. (http://www.earthlife.org.za/campaigns/toxics/thor.htm
[4] 'Environmental Justice Case Study: Thor Chemicals and Mercury Exposure in Cato Ridge, South Africa' http://www.umich.edu/~snre492/Jones/thorchem.htm#Background
[5] Ibid.
[6] Ibid.

Range of damage, amount of loss	In 1988 mercury levels in the Umgeni River, 15 km downstream, were reported to be 1 000 times higher than WHO standards for drinking water[7]. In 1989 it was reported that mercury levels in water samples, taken from the Mngeweni River behind Thor were 1500 times higher than the US limit for "sediment to be declared toxic"[8]. In 1990 samples taken by Greenpeace and local activists revealed equally high levels of mercury. In 1990 Earthlife Africa received reports of workers 'going mad' at Thor[9]. A doctor from the Industrial Health Unit (IHU) diagnosed mercury poisoning in four workers. Further investigation by the IHU into 80 existing medical records revealed that 87% of workers had mercury levels that were above the safe limit[10]. A 1992 IHU report stated that 28% of workers were in danger of permanent health damage due to mercury poisoning. A 1992 government report revealed that 29 workers had suffered mercury poisoning[11]. The first workers were hospitalised in early 1992. A year later the first death related to mercury poisoning was reported. In 1998 it was shown that workers had been exposed to mercury levels up to 12 times higher than WHO regulations[12]. Throughout the period the plant operated, the company disregarded company urinary monitoring results that repeatedly indicated excessive levels of mercury, and neglected to inform workers adequately on the occupational health hazards associated with exposure to mercury[13]. Most of those employed by the company were casual and untrained workers who were laid off or redeployed once they became ill. To date at least four workers[14] have died, allegedly from the effects of their jobs, and an unknown number are 'mentally and physically impaired'[15]. A total of 41 former workers were involved in claims against TCH and its chairman Desmond Cowley.
Who is responsible	TCH had been aware of the occupational health and environmental concerns over its mercury operations since 1978. In 1987 TCH closed its UK operations when issued with an ultimatum by UK authorities to clean up or face court action[16]. TCH continued its mercury processing operations in SA. The apartheid state, as well as provincial and local authorities, is also responsible. State health and safety, and environmental regulations were poorly enforced by the state with little coordination between

[7] Butler, M (1997) 'Lessons from Thor Chemicals' in Bethlehem, L. and Goldblatt, M. (eds) The Bottom Line: Industry and the Environment in South Africa.
[8] 'Environmental Justice Case Study: Thor Chemicals and Mercury Exposure in Cato Ridge, South Africa' http://www.umich.edu/~snre492/Jones/thorchem.htm#Background
[9] Earthlife Africa. 'Thor Chemicals'. (http://www.earthlife.org.za/campaigns/toxics/thor.htm
[10] Butler, M (1997) 'Lessons from Thor Chemicals' in Bethlehem, L. and Goldblatt, M. (eds) The Bottom Line: Industry and the Environment in South Africa and Mark Colvin, personal communication, 31 July 2002.
[11] Ibid.
[12] 'Environmental Justice Case Study: Thor Chemicals and Mercury Exposure in Cato Ridge, South Africa' http://www.umich.edu/~snre492/Jones/thorchem.htm#Background
[13] Mark Colvin, Medical Research Council. Pers. Comm. 31 July, 2002.
[14] These workers are: Peter Cele, Felix Mhlanga, T.F. Shange and Engelbrecht Ngcobo
[15] Lukey, P. (2002) 'Workplace Environmental Justice' in McDonald, D.A. (ed) Environmental Justice in South Africa.
[16] Butler, M (1997) 'Lessons from Thor Chemicals' in Bethlehem, L. and Goldblatt, M. (eds) The Bottom Line: Industry and the Environment in South Africa.
[17] Ibid.
[18] 'U.S. Company About to Escape Prosecution for Illegally Shipping Toxic Waste to South Africa' http://www.greenpeaceusa.org/media/press_releases/99_1_22text.htm

	relevant departments. The state failed to take immediate action once it became aware of specific problems at the site. Despite announcing a ban on the importation of toxic waste in 1990 the state granted Thor a qualified exemption[17]. The state permitted Thor to continue importing hazardous waste even after evidence of gross negligence had been revealed. The state also declined to prosecute Thor for breaching laws over and above those contained in the 1993 charge sheet. The state refused to release information pertaining to Thor that was in the interest of the general public. The 1995 Commission of Inquiry failed to report on the 'second phase' of the inquiry. American Cyanamid, Borden Chemicals and the Calgon Corporation who exported mercury waste to SA. Borden shipped over 2,500 drums of mercury waste to SA between 1991 and 1994. It also failed to notify the EPA in the US of these exports, as required under the Resource Conservation Recovery Act[18].
Legal and/or public action taken	In 1990 Thor's mercury-related operations were temporarily suspended by the state. The state also bans the importation of hazardous waste. In 1992 the question of Thor was raised at the International Water Tribunal in Amsterdam. In 1992 there was an inquiry by the South African Department of Manpower into mercury contamination at the plant. In 1992 US criminal investigators pursued a case of possible illegal exports of mercury waste by a US based chemical company to Thor. In 1994 the Department of National Health closed Thor's recovery plant and incinerator. The production of mercury catalysts continued. In 1995 a Commission of Inquiry into Thor was appointed. The final report was tabled in 1997 and proposed that waste should be disposed of through a thermal process (incineration or roasting). Costs would be shared with the SA government bearing the technical costs of waste disposal, and Thor bearing the cost for the cleanup and disposal. This option was rejected. The SA government has subsequently introduced a follow-up to the Commission of Inquiry that will continue to explore means through which it can dispose of the hazardous waste and to determine who should be financially accountable for the rehabilitation and waste disposal. Much of this is being facilitated through the recently introduced environmental legislation. A public announcement is due in the latter half of 2002. Criminal prosecution followed in 1993 when Thor and three of its top managers were charged with culpable homicide and 42 other charges. In October 1994 civil proceedings were brought against TCH and its chairman Desmond Cowley. Writs were issued on behalf of three former workers who were soon joined by an additional 17 former workers. The claimants sued for compensation for mercury poisoning. It was argued that the parent company was liable as it had been familiar with the design and operation of the plant in the UK and had not taken adequate measures to protect workers in SA. In February 1998 a third set of writs were issued when legal action was taken against TCH on behalf of 21 workers for illnesses resulting from mercury poisoning due to unsafe production methods.

Subsequent behaviour of company	In 1992 the mercuric acetate plant was closed. In the same year Thor stated that it would close its SA plant effective from 1996[19]. In 1994 Thor announced that it would halt the importation of toxic waste although it continued to handle domestic toxic waste. During the 1993 criminal case Thor (UK) argued that it was not liable for incidents at its subsidiaries and the case was heard in SA. Thor management argued that the three chronic cases in the criminal case were due to sabotage, resulting in acute (not chronic) exposure and that contamination of water supplies had resulted from mercury-contaminated drums that had been stolen and then washed out in the stream"[20]. At the 1994 civil proceedings Thor (UK) argued at length over the jurisdiction yet failed to convince the UK courts that the case should be tried in SA. In 1997 Thor shifted its assets to a newly formed company called Tato Holdings. This transfer reduced Thor's net assets from about £19 m to £2.5 m[21]. All but three subsidiaries, including the Thor interests at Cato Ridge remained under the umbrella of TCH. This demerger may have been motivated by concerns over future legal claims[22]. Thor was forced to deposit £400,000 with the court. During the 1998 proceedings TCH again argued over the jurisdiction and once again failed to convince the UK courts that the case should be tried in SA. The plant at Cato Ridge has been transferred to Guernica, another UK based industry. It is uncertain as to what linkages Thor has or had with Guernica. More than 3,500 tons of mercury-containing waste is still housed at the plant, posing a threat to workers who work in close proximity to the waste. Contaminated soil and the potential leaks from storage drums also threaten the well-being of nearby communities and the local environment.
Legal outcome	In the criminal case brought to trial in SA an ineffective prosecution resulted in the withdrawal of 19 charges and a 'plea bargain deal' in 1995. Thor admitted to limited grounds of negligence and paid a small fine (R13 500). All remaining charges, including those of culpable homicide, were dropped. The civil proceedings that were first lodged in 1994 in the UK were settled out of court in April 1997. Settlement was £1.3 m (R9.4 m). In October 2000, an out of court settlement was also reached with the second set of civil proceedings when TCH agreed to pay the claimants about £240,000 (R2.7 m). Defendants never accepted liability in either of the civil proceedings. No liability was accepted for damage to the environment nor has the question of who is financially responsible for the rehabilitation of the site been adequately addressed.
Final Greenpeace statement	The upcoming public announcement of the SA government's follow-up to the Commission of Inquiry should be closely monitored and

[19] 'Environmental Justice Case Study: Thor Chemicals and Mercury Exposure in Cato Ridge, South Africa' http://www.umich.edu/~snre492/Jones/thorchem.htm#Background
[20] Ibid.
[21] Dropkin, G. 'UK Judges Block Thor Chemicals Manoeuvre'. 2 October 2000. http://www.labournet.net/world/0010/thor1.html
[22] Ibid.

	appropriately supported. In the meanwhile, the SA government must ensure that this follow-up process is transparent. Greenpeace supports SA organisations in their campaign to achieve a "return to sender" situation whereby the remaining mercury waste stored on site is shipped back to the companies originally responsible for exporting the waste to SA. Furthermore, as the recipient company in SA at the time, Thor must be held fully accountable for the cleanup and safe disposal using best technology. To this end, a comprehensive audit should be initiated to determine the extent of Thor's responsibility. Since historical and more recent data indicate high mercury levels some distance downstream of Cato Ridge, this audit needs to include the wider surrounding area in order to determine the broader impacts of long-term mercury releases.

Unilever (Kodaikanal, India)

Company details	Hindustan Lever Ltd M.S. Banga Backbay Reclamation Mumbai India Unilever PLC London Unilever House Blackfriars London EC4P 4BQ United Kingdom Tel: +44-207-822-5252 Fax: +44-207-822-5951 Unilever NV Rotterdam Weena 455 3013 AL Rotterdam The Netherlands Tel: +31-10-217-4000 Fax: +31-10-217-4798 **Revenue**: Hindustan Lever Limited (HLL) registered a Profit Before Tax (PBT) of INR 1,665 crores[1] and Profit After Tax (PAT) of INR 1,310 crores for 2000, a growth of 20% and 22.4% respectively. Net sales for the year were INR 10,604 crores registering a growth of 4.5%[2].
Location of damage	Kodaikanal, Tamilnadu, India
Company activity	Production of mercury thermometers
Type of incident	- Toxic emissions (vapour and effluent) Not cleaning waste before shipment for recycling
Type of damage	The company exported 100 tons of mercury-bearing waste glass to unsuspecting recycling merchants across south India, resulting in emissions of 20-40 tons of mercury as vapour and in effluent[3]. Kodaikanal, at 2,000m altitude and with a sensitive, high-altitude, forest sanctuary on one side of the factory and Kodaikanal lake on the other, has been permanently polluted. Around 1,000 workers and contract workers and an unknown number of townspeople were exposed to mercury. The mercury in the soil outside the factory building is up to 600 times permissible limits[4]. Preliminary examination of some workers indicates symptoms of mercury damage (bleeding gums, tooth loss, renal problems, skin patches, tremors, fatigue etc)[5].
Range of damage, amount of loss	There is contaminated soil and water runoff into the forest and river. The extent of damage to the forest and river has not been evaluated. The contamination of Kodaikanal lake makes the lake unusable for the town's future water supply and affects downstream villages who depend on river water. Workers have not been compensated for health, loss of quality of life or remediation. Environmental damage has not been adequately assessed.

[1] One hundred *lakhs* i.e. 10,000,000
[2] Unilever annual report (2000-01)
[3] Summary Report Environmental Site Assessment and Preliminary Risk Assessment for Mercury, Kodaikanal Thermometer Factory, Timal Nadu, URS Environmental and Engineering Professional Services, prepared for Hindustan Lever, 24 May 2001
[4] Summary Report Environmental Site Assessment and Preliminary Risk Assessment for Mercury, Kodaikanal Thermometer Factory, Timal Nadu, URS Environmental and Engineering Professional Services, prepared for Hindustan Lever, 24 May 2001.
[5] Dr Praveen and Dr Mohan Isaac, Preliminary assessment of persons exposed to mercury in Kodaikanal, Community Health Cell, Bangalore. September 2001.

Who is responsible?	Unilever, the majority stake-holder of the Indian company, Hindustan Lever Ltd., is first responsible. The state relies on the integrity of the company to report correctly on emissions. This has not been the case.
Legal and/or public action taken	No legal action yet.
Subsequent behaviour of company	First Hindustan Lever lied and denied that waste had left the factory. Then it fabricated figures of the amount of contaminated waste sent out. It has refused to conduct an independent health or environmental survey. The company has refused to give ex-workers health records that are in its possession and that would enable affected people to seek remediation. The factory has cleaned up the dumpsite but has not made the contamination data of the factory site available.
Legal outcome	No court action has yet been sought.
Final Greenpeace statement	Multinationals acquire the image and semblance of responsible governance through initiatives like the Global Compact for ethical business, but this case proves that they exercise none of their obligations. Affected communities need to have the scientific, technical, legal and social rights established to pursue discovery, cleanup and remediation liabilities from corporate entities.

Pesticide cases

Agricultura Nacional S.A. de C.V. (Mexico)

Company details	AGRICULTURA NACIONAL S.A. de C.V State de Mexico, MEXICO Agricultura Nacional is national and private investment. Agricultura Nacional S.A. de C.V. had a subsidiary plant in Cordoba, Veracruz named Anaversa (Agricultura Nacional de Veracruz S.A. de C.V.). Main office: Blvd. Aldofo Ruiz Cortines # 7, Lomas de Atizapán, Atizapán de Zaragoza, Edo. de México**.** Tel.: +11-52-55-5824-32 44 Fax: +11-52-55-5824-3624. Internet: www.dragon.com.mx
Location of damage	Cordoba, Veracruz (in the Gulf of Mexico), Mexico The plant was located in an urban zone, near schools and other public places.
Company activity	Agricultura Nacional S.A. de C.V. is a company that formulates pesticides in two plants both in Izucar de Matamoros, state of Puebla.
Type of incident	Accident (fire and explosions) On 3 May 1991, in the city of Córdoba, Veracruz, Anaversa suffered a fire and three explosions. This accident is considered the third biggest of its kind in the world.
Type of damage	The accident released and spread 38,000 litres of hazardous substances, 18,000 litres of methyl parathion, 8,000 litres of paraquat, 3,000 litres of 2,4 dichlorofenoxyacid, 1 500 litres of pentachlorophenol, and considerable amounts of malathion, lindane fosfuro de zinc and hexachlorobenzene into the environment. Also found, though not included in the official reports, were Diazinon, endrin, forato, and disulfuton[1]. The authorities did not take adequate decontamination measures to protect people and the environment. Several thousands of people went back home the next day even though the area had not been cleaned. Residues were handled as nonhazardous. Authorities also declared that the only poisoning was from organic phosphate. Firemen tried to control the fire with water, which only spread the toxic substances further, sending them into drains and sewers that flow into the Rio Blanco river, and in La Sidra, Tepahcero and Las Conchitas streams. Gasses let off during the fire and the explosion affected a large part of the city, and ashes were spread throughout the area. Authorities shut down the plant in 1991, and the Anaversa site is now abandoned. The company's clean-up efforts were ineffectual and there is still hazardous waste in the area.
Range of damage, amount of loss	Poisoning: more than 1500 people were poisoned, 221 were hospitalised, 2,000 families were evacuated and 400 were sent to emergency shelters. Seventy-eight per cent of the population showed signs of acute poisoning,

[1] CASTAÑEDA, Jorge, "Anaversa Historia de una Impunidad"

	affecting the nervous system of 236 patients, the respiratory system of 118, and the dermatological system of 282, among others[2]. The same study shows that 33 per cent of the symptomatic population presented chronic intoxication, and 59 of them presented neurotoxi logical effects with delayed neuropathy and some other behavioural effects. In a follow up study on 20 pregnant woman (first three months of pregnancy), Dr. De Leon found four cases of genetic deformations (the national rate of genetic deformation is 2.5 out of every 1,000 births). Since the accident, there has been an alarming increase in cancer among Cordoba's children, teenagers and adults[3]. Unofficial research indicates that nine years after the accident there had been more than 170 deaths related to this accident. Many of the 1500 people who initially survived the have since died[4]. Eleven years after the accident there are still new cases of people affected by cancer, genetic problems, respiratory problems, and others[5]. **Well Water Contamination**: Official data shows that in 77 per cent of samples taken in wells there is presence of malathion, and 33.34 per cent of the samples showed the presence of methyl parathion (17.7 mg/l- May 10, 1991[6]). **Soil Contamination**: methyl parathion: 25.86 mg/kg- May 10, 1991. Sample 1: 26.0 mg/kg- July 30, 1991. Sample 2: 44.0 mg/kg- July 30, 1991. A 1994 study in the Cordoba area showed the presence of dioxins and other substances like malathion and methyl parathion[7].
Who is responsible?	The company was responsible for locating its plant within an urban zone, for maintaining bad conditions, and for failing to inform workers and citizens about its dangerous substances and what to do in the event of an accident. The environmental and health authorities were also responsible for authorising the establishment location of the company.
Legal and/or public action taken	In May 1991, the Attorney General initiated a legal process against the Production Coordinator of the company, Production Assistant and Quality Coordinator. No charges were made. In June 1991, a legal case was presented by NGOs and victims to the National Humans Right Commission (CNDH), which made some recommendations. But in December 1998, the CNDH considered that the recommendations were fully implemented and also said that the accident in Anaversa did not have any dangerous effects or repercussions to the environment or people's health. On the other hand, in June 1991, the Environment Minister found a number of violations of environmental regulations, fined Anaversa MXP 238,000 (USD 39,000 at the time) and ordered the definitive closure of the plant. This sanction did not come anywhere near the value of repairing the environmental damage.

[2] DE LEON, Jorge Arturo, Pastrana Ruiz, Juárez Hernández, Páez de la Luz, Hernández Cervantes, Poceros Elizabeth; "Plaguicidas y Salud. El Caso de Anaversa", Mexico.
[3] DE LEON, Jorge Arturo; personal interview, Mexico, D.F., may 2002.
[4] http://cueyatl.uam.mx/uam/publicaciones/boletines/tips/may00/cinco.html
[5] "Emisiones LaNeta", webpage: http://www.laneta.apc.org/emis/carpeta/veracruz/anaversa.htm.
[6] Samples taken by the Instituto Nacional de Ecología (Mexican Government), May 1991.
[7] Official Recommendation from the National Human Rights Watch to the Health Mexican Ministry, October 1991, page.27.

	In 1993, the Anaversa case was discussed in the Deputies Chamber (at state level but also at federal level). It was decided that the Environmental, Humans Rights and Health Commissions would study the case. However this never happened because the Ministries of Environment and Health did not send the case information and documents to the respective Commissions. In May 1995, the Special Fiscal Authority initiated a process against a number of public servants (involved in the authorisation of the plant and other issues) for the crime of incorrect management and fraudulent use of public funds. But the resolution was negative: they were found not guilty. In July 1996, a complaint was presented to the Inter-American Human Rights Commission (CIDH) but it was not followed up because the national legal remedy was not exhausted. The Commission sent the information to the Mexican government, who in a preliminary report, denied that any relationship between the illnesses of the people in Cordoba and the Anaversa accident existed. In October 1997, the Mexican government sent comments to the CIDH saying that actions taken would depend on the results of dioxin risk level studies. In May 1999 the CIDH announced that since the reasons that gave origin to the petition no longer existed, the records had been closed.
Subsequent behaviour of company	Anaversa never took responsibility for the environmental damages and health damages caused to the population and to its own workers. The company lost the land because of pressure by the citizens and not because of any government action.
Legal outcome	The authorities have rejected all attempts to bring legal proceedings against the company. Currently non-governmental groups are working on a new lawsuit against the company and the Mexican government.
Final Greenpeace statement	This is a very clear example of how dirty industries fail to find the right balance between health and the environment. This case shows the disorganisation and lack of information within the community, the fault of the company for not providing the necessary information and of the government for not making it compulsory for the company to provide it. The people affected by these types of accidents are usually poor people, economically, socially and politically disadvantaged, who typically cannot afford health care. Industries take advantage of this, because they know they are stronger. In Anaversa the people are still suffering whilst no measures have been taken against the government or the company. On the contrary, Anaversa is still working in other locations across the country. The accident occurred over 11 years ago and Anaversa and the Mexican government have not been made responsible for their actions.

Bayer AG (Peru)

Company details	Bayer AG (Bayer Crop Protection) (Corporate Communications Division) represented by the Management Board: Dr. Manfred Schneider, Dr. Attila Molnar, Dr. Frank Morich, Dr. Udo Oels, Werner Spinner, Werner Wenning Address: 51368 Leverkusen Germany District Court: Leverkusen HRB 1122 Identification number for turnover tax: DE 123659859
Location of damage	Remote Andean village of Tauccamarca in the province of Paucartambo (3 hours from the historic town of Cusco).
Company activity	Bayer is the principle importer and manufacturer of the insecticide methyl parathion, also known under its commercial name "Folidol". Methyl parathion is classified as extremely hazardous (Class 1a) by the World Health Organisation (WHO). The pesticide was marketed specifically for use on Andean crops[1].
Failure category	The pesticide, a white powder, was packaged in small plastic bags without sufficient information about the danger of the product to human health and the environment. The given information was written in Spanish, which cannot be understood by the farmers who mostly speak Quechua. The bags carry drawings of healthy carrots and potatoes but no pictograms indicating danger or toxicity[2]. In October 1999, a white powdered milk substitute became accidentally contaminated with Folidol in the local school of Tauccamarca, Peru, which had been participating for years in the government's free milk program. The milk had probably been prepared in previously contaminated containers[3].
Type of damage	Poisoning
Range of damage, amount of loss	A total of 25 children (4 to 14 years old) died and 18 were severely poisoned after the above-mentioned, government-donated, communal breakfast. The survivors suffered health damage that possibly will last for the rest of their lives as organophosphate compounds like methyl parathion heavily affect the nervous system.
Who is responsible?	Responsible parties include: 1. Agrochemical companies who imported and sold the product in Peru did not take any steps to prevent the foreseeable misuse of this extremely toxic product. 2. Responsible authorities, mainly the Ministry of Agriculture for failing to enforce the necessary regulations.
Legal and/or public action taken	In 2001, the families of the poisoned children filed a lawsuit against Bayer on the grounds that the company had not taken any steps to prevent the misuse of their product despite awareness of its extreme danger and of the socio-economic conditions in the Peruvian countryside[4]. The suit also named the Peruvian Ministry of Agriculture for failure to enforce the pesticide regulations.
Legal outcome	Current on-going case
Final statement:	The negligence that caused the death of these children is just the "tip of

[1] Coalition against Bayer Dangers (2001): Bayer Sued for Pesticide deaths in Peru. www.cbgnetwork.org
[2] Ibid.
[3] Paliza, Juan (1999): 26 children die after ingesting cereal laced with insecticide. www.getipm.com/articles/peru.htm
[4] Coalition against Bayer Dangers (2001):op. cit.

	the iceberg" and is primarily visible due to its tragic dimension**.** The intense use of agrotoxics causes damage world-wide and every day. Millions of tons circulate continuously around the planet and are supposed to be handled by well-trained users with medical care, phone and insurance at their disposal. In reality 80 percent of the workers using pesticides lack these facilities.

Delta & Pine Land Company (Paraguay)

Company details	DELTA & PINE LAND COMPANY (D&PL) Corporate Offices: P.O. Box 157 One Cotton Row Scott, MS 38772, USA Tel: +1-662-742-4000
Location of damage	Rincon'í, a rural and poor community, 120 km away from the capital city of Asunción, Paraguay
Company activity	The world's largest cotton seed producer, also focused on soybean production, exporting cotton seed to Paraguay.
Type of incident	Hazardous waste trade, abandoned dangerous goods (toxic cotton seeds), abandoned toxic waste site.
Type of damage	In November 1998 Delta & Pine Paraguay dumped 660 tons of cotton seeds that had been treated with several toxic compounds in the area of Rincon'í. The disposal site, where the 30,000 sacks, each containing 22 kilograms, were emptied and disseminated onto the wide-open field, later buried and covered with only a thin layer of soil, is on private land and covers an area of 1.5 hectares. It is only 170 meters away from a local school with more than 260 students. Around 3,000 people live in the surrounding rural area[1]. The 30,000 sacks were part of a total of 84,000 sacks of cotton seeds authorised for import by the Paraguayan Ministry of Agriculture in 1997. There is no information about the location of the remaining seeds[2] and no information as to why the government agreed to import such a large quantity of seeds. The pesticides used for treating the cotton-seed included the WHO classified organophosphates acephate (insecticide) and chlorpyriphos (insecticide) and the fungicide Metalaxyl. Many of the breakdown substances are themselves toxic. For example the primary metabolite of acephate is metamidophos, a highly hazardous WHO class 1b insecticide[3]. Metamidophos was recently banned in the U.S. and submitted as part of the U.S. PIC programme[4]. Field trials of at least seven of the company's genetically modified cotton seed varieties were conducted in Paraguay. It is not known whether the toxic seed dump contained genetically modified cotton varieties[5]. No precautions were taken in the handling of the materials (toxicity labels were in English); in the protection of the subsoil; or in the protection of the inhabitants (e.g. the lot was not even fenced off).
Range of damage, amount of loss	Fifteen men, women and children were recruited from the community to perform the operation and worked with their bare hands and bare feet. Medical testing of 70 residents has shown acute pesticide poisoning in several cases[6].

[1] Pesticide Action Network: IUF calls on Delta & Pine Land to clean up toxic disaster in Paraguay www.pan-uk.org/press/paraguay.htm 15.06.1999
[2] Pesticide Action Network: pesticide disaster in Paraguay. www.global-reality.com/biotech/articles/othernews016.htm 21.06.1999
[3] Timmons Roberts, J.: response to Delta & Pine Land Co./Paraguay. http://csf.colorado.edu/elan/may99/msg00427.html 23.07.1999
[4] Available at www.fao.org/waicent/FaiInfo/Agricult/AGP/AGPP/Pesticid/PIC/piclist.htm
[5] Pesticide Action Network: pesticide disaster in Paraguay. www.global-reality.com/biotech/articles/othernews016.htm 21.06.1999
[6] Timmons Roberts, J.: response to Delta & Pine Land Co./Paraguay. http://csf.colorado.edu/elan/may99/msg00427.html 23.07.1999

	There are calculations indicating that more than 600 people could be affected. In December 1998 there was one fatality. Agustín Ruiz Aranda, thirty years old and survived by a wife and four children, died with unmistakable symptoms of acute poisoning, according to the death certificate signed by Dr. Filártiga[7]. Wells and pumps were producing toxic sludge instead of water[8]. Disposal of the toxic cotton seeds would cost approximately USD 140,800 (EPA, 1998). There is no authorised facility in the U.S. for incineration of treated cotton seeds.
Who is responsible?	Following a Paraguayan court ruling on the issue, Delta & Pine has admitted responsibility for the toxic dumping, though they have not recognised the extreme toxicity of the site. The Ministries of Agriculture and of Public Health have acknowledged the results of the medical tests but have not taken any action. The Ministry of Education has refused to provide support for the school that needed to be evacuated.
Legal and/or public action taken	There was widespread protest and national media coverage. Among those involved in activities against Delta & Pine were: IUF (International Union of Food and Agricultural Workers) (an international trade union federation composed of 329 trade unions in 118 countries and based in Switzerland (Geneva)); SOBREVIVENCIA (Friends of the Earth Paraguay); and Alter Vida (NGO in Asunción, Paraguay).
Subsequent behaviour of company	Delta & Pine's reaction to an official letter sent to their representative in Paraguay, US citizen Eric Lorenz, and written during a meeting with local authorities on 13 January, 1999, was to claim in a newspaper interview that removing the materials from the site was economically unfeasible[9]. The company has failed to clean up the site or to pay any compensation to victims. According to the Paraguayan press if the company did act they would rather offer compensation than clean up the site[10].
Legal outcome	Until now Paraguayan authorities have resisted taking any concrete action to bring any semblance of justice to the affected people. On 26 January 1999, Judge Ocampos ordered Delta & Pine to remove the seeds from the site within 48 hours – Delta & Pine did not react[11]. On 5 February 1999, Judge Ocampos stated that 48 hours was an

[7] "Seeds of Death" in Rincon'í, Paraguay: a case study of uncontrolled toxic exports and unpunished crimes – Pedro Cuesta, 22 April, 2002
[8] Pesticide Action Network: IUF calls on Delta & Pine Land to clean up toxic disaster in Paraguay www.pan-uk.org/press/paraguay.htm 15.06.1999
[9] "Seeds of Death" in Rincon'í, Paraguay: a case study of uncontrolled toxic exports and unpunished crimes – Pedro Cuesta, 22 April, 2002
[10] Pesticide Action Network: pesticide disaster in Paraguay. www.global-reality.com/biotech/articles/othernews016.htm 21.06.1999

	insufficient amount of time to remove the seeds and therefore they should be covered with a layer of topsoil to eliminate any bad smell.
Final statement	This case clearly demonstrates that domestic authorities are not in a position to hold a US company accountable for its failure.

[11] Amorin, supra note 17, at 53. The order must be interpreted to mean as removal and ship back to place of origin for proper elimination that, according to the U.S. EPS, should be done by incineration in specialized facilities. No such facilities exist in South America.

Hindustan Insecticides Ltd (India)

Company details	Hindustan Insecticides Ltd (HIL) Eloor Udyogamandal Kerala India. Fully owned by the Government of India. Has three factories producing insecticides – DDT, Endosulfan, Dicofol etc. Address: SCOPE Complex Core-6 Lodhi Road New Delhi 110003 Phone: +91-11-4362165/4364549/4362116 Email: hilhq@nde.vsnl.net.in Date of Incorporation: 1 March, 1954 Managing Director is the CEO and is appointed by Government of India. Paid up capital (31.3.00) INR 507.5 million GoI shareholding (31.3.00) INR 507.5 million(100%) Net worth (31.3.00) INR 144.6 million Net Loss (31.3.00) INR 140.8 million Accumulated Loss INR 213.1 million[1]
Location of damage	Eloor, Ernakulam District, Kerala State, India.
Company activity	Pesticide Production: The plant produces DDT, Dicofol and Endosulfan and also hydrochloric acid/sulphuric acid as by products.
Type of incident	The plant has caused permanent contamination and emits pollutants. HIL releases effluents contaminated with DDT and metabolites, Endosulfan and derivatives, BHC and other chemicals including highly toxic organochlorines into a public stream[2]. Sulphur dioxide, carbon monoxide, HCl acid mist and chlorine are emitted from the stacks[3].
Type of damage	According to a Greenpeace investigation/sampling in 1999, the effluent stream shared by this factory with Fertilisers And Chemicals Travancore (FACT) and Merchem Ltd, two neighbouring plants, contains 111 toxic chemicals of which 39 are organochlorines. The contaminants have been linked to the releases from the HIL[4]. The primary effluent reaches the River Periyar, which is the drinking water source for the entire city of Cochin and Aluva and the source of livelihood for thousands of fisher-folk. Deformation has been noticed in certain plants growing by the effluent stream. The community has also noticed a serious decline in the population of frogs, fishes, benthic species and some insects[5]. Higher incidences of cancer and decrease in lifespan have been recorded in the areas of immediate contamination[6]. Preliminary observations suggest that there is a large incidence of various types of cancer, miscarriage, congenital defects, tympanum membrane bursts in children, menstrual problems, skin diseases and respiratory problems in the local population[7]. Around 80% of the people are suffering from respiratory diseases according to a local university study[8].

[1] Government of India, Dept of Disinvestment, New Delhi. http://divest.nic.in/psu-returned/hinduinsecticides.htm)
[2] Toxic Hotspots: An Investigation on Hindustan Insecticides Limited, Udyogamandal : A Greenpeace Report, 1999
[3] Source: Kerala State Pollution Control Board, Ernakulam Regional Office.
[4] Toxic Hotspots: An Investigation on Hindustan Insecticides Limited, Udyogamandal: A Greenpeace Report, 1999
[5] Ibid.

Range of damage, amount of loss	A population of about 20,000 people is directly affected by the contaminated stream as it flows into a river that is used for drinking-water. The stream also contaminates wetlands, vegetation, domestic animals etc. A population of at least 100,000 people is potentially exposed to these persistent organic pollutants and another one million indirectly from pollutants migrating into water, soil and through eating fish. The air and the water of the community are potentially permanently contaminated[9].
Who is responsible	Hindustan Insecticides Ltd. is responsible for its dangerous products, highly inadequate treatment, and emissions and discharge into public utility water bodies, which are causing injury to the surrounding communities and environment. HIL has violated people's right to clean air, water and life. The company also violated the community's Right to Information and refuses to comply with standards stipulated by Indian law. Kerala State Pollution Control Board shares responsibility for allowing the factory to continue operation, despite the fact that its independent analysis has detected contamination in the effluent.
Legal and/or public action taken	Letters demanding information on process, operation, raw materials used, contaminants etc were sent by public but the company refused to share information. The local community performed a direct action on 20 January 2002, and closed the outlet point where the effluent reaches the public stream. Women, men and children risked contamination in the protest. The company continues to release the effluents, which have filled up the adjoining areas and the public roads and drains, possibly affecting a larger area hitherto unaffected. A 'clean-up' has been proposed by the local administration, sponsored by the three companies involved. This is just a 'scoop and dump' operation and is being challenged by the local people in the state High Court. The media played a very active role in bringing the issue to the attention of the public and government. Exhibitions, films, slide shows, road-side talks, education booklets, banners, posters and protest actions were used by local groups, Thanal, Greenpeace India and others, in addition to campaign visits and sit-ins.
Subsequent behaviour of company	After the direct action the company offered to fund part of the cleanup of the effluent stream. This is in the company's interest as they only intend to dredge the stream so they can continue to dump toxins into it and dump the dredged toxic sediment into another open dump without any regard for people living around the new dump.
Legal outcome	Awaiting response.
Final Greenpeace statement	Hindustan Insecticides Ltd produces chemicals such as DDT, which are slated for a global ban by the Stockholm Convention of, 2001. Such companies must be taken to task by governments to clean up their past acts and change their product line in its entirety.

[6] Study by Ms. Preethi, preliminary survey – Study yet to be published
[7] Testimonies of local residents gathered by Greenpeace with support from VJ Jose, 2002.
[8] Health Survey Report – Department of Economics, The University College, Alwaye.
[9] Toxic Hotspots,1999 *op cit*

Plantation Corporation of Kerala (India)

Company details	Plantation Corporation of Kerala (PCK) Kottayam Kerala India Fully owned Public Sector Undertaking of the Government of Kerala. CEO : Managing Director (appointed by the Government of Kerala)
Location of damage	Kasaragod District, Kerala State, India.
Company activity	Pesticide Application: The method used for application has been aerial spraying. Spraying was done more than twice a year in recommended concentrations without following the basic precaution of covering all drinking water sources of the local population, a total violation of the conditions of licensing. A Government-appointed committee also observed that the PCK followed neither the recommendations nor the precautionary measures.
Type of incident	Aerial spraying of the persistent toxic chemical Endosulfan, intended only for agricultural uses over a densely populated area.
Type of damage	Surface water sources such as tanks, streams and ponds and soil have been continuously poisoned with Endosulfan. Very high residues of pesticide have been reported to be found in the drinking water sources and soil. None of the drinking water sources, including wells, were protected, contrary to the conditions of licensing. Cashew, non-target vegetables, leaves and other crops were also contaminated. High residues were reported in cashew, vegetables and pepper[1]. Death of bees, foxes, cows and buffalo and congenital deformation in domestic cattle, have been observed. The community has also noticed serious declines in populations of frogs, bees, some insects and birds[2]. Very high residues were reported in butter, cow's milk, cow fat, and live frogs[3]. No safety measures were enforced amongst the workforce and workers were not given protective clothing. They suffered violations of human and workers rights, and were forced into silence by disciplinary action and harassment[4]. The community was exposed to the pesticides and breathing difficulties and eye afflictions were reported. Children reported vomiting, dizziness at school. Effects continued from three days to months[5]. Chronic illnesses such as cancer, congenital anomalies, gynaecological problems, nervous system diseases, endocrine disruptions, weakening of immune systems have been reported in all villages[6]. In a village called Padre, every single family living by the main stream has multiple health impaired cases. Extremely high residues of the pesticide have been detected in human blood and milk[7].
Range of damage, amount of loss	The spray affects 15 villages exposing at least 200,000 people. No assessment has been made as to how many have been affected. The manifestation of the problems varies from house to house. Villages and houses are scattered over a wide area and a comprehensive assessment of the loss could not be done so far. Expenditure of families on treatment—especially for the chronic cases—is staggeringly high, with many cases

[1] Pesticide Residue Monitoring Study, Pollution Monitoring Laboratory, Centre for Science and Environment: CSE, January 2001.
[2] Long Term Monitoring – LMIPPE Part II Report, Thanal Conservation Action & Information Network), February 2002.
[3] Op cit, CSE, January 2001.
[4] Op cit, Thanal,February 2002.
[5] Testimonies by the Endosulfan affected community, ESPAC, Kasargod, 2002.
[6] Report of the Fact-finding team, Pesticide Action Network – Asia Pacific, 2002
[7] Op cit CSE January 2001.

	being treated for more than a decade. The villages have no facilities to handle cases such as these. Expenditure can be expected to recur and increase for the remainder of their lives. Capacity to continue normal life and work in the village has been severely affected.
Who is responsible	Plantation Corporation of Kerala is responsible for the aerial spraying of an extremely hazardous[8] chemical for more than two decades and violating recommendations and safety measures in the process. The Department of Agriculture as the parent department is also responsible for failing to intervene despite complaints since the 1980s and public protests since 1995. The Central Insecticides Board of India is responsible for its failure to implement an important shared recommendation of two Government-appointed committees to stop the use of Endosulfan near water-bodies. The Kerala State Pollution Control Board is responsible for failing to take measures to protect water bodies and the public. The National Research Centre for Cashew and the Kerala Agriculture University is responsible too because they still advocate the use of Endosulfan in crops in Kerala, callously ignoring clear signs of damage.
Legal and/or public action taken	Three court cases were filed in the Munsiff Court (lower court) of Hosdurg and Kasargod. Five cases were filed in the High Court of Kerala; two have to come to trial since December 1999. The National Human Rights Commission initiated a Suo-moto case. Formal complaints were submitted by Endosulfan Spray Protest Action Committee (ESPAC) to the District, State and National Administration. ESPAC demanded that they, other public groups, research institutes and regulatory bodies provide information to prove the need for the use of Endosulfan along with the studies on which they have based their recommendations. There have been meetings of the affected community (ESPAC) with political parties to work out a permanent ban on the application of Endosulfan in the area. The media played a very active role in bringing the issue to public and governments attention.
Subsequent behaviour of company	There have been no efforts to compensate those affected. PCK has rejected outright the claim that its spraying of Endosulfan has caused damage or that the area and people have been contaminated. The company is in a bad financial state, and it uses this as an excuse for continuing to spray Endosulfan. The PCK commissioned a study and the analysis report showed that Endosulfan was not present. The company spent nearly INR 1 million on the study, then passed this report to the Pesticide Manufacturers and Formulators Association of India (PMFAI) to launch a campaign to protect the chemical. The company put continuous pressure on political parties and government arguing that export earnings from cashew were in jeopardy. They used press conferences and a misinformation campaign to defend their use of Endosulfan. This study was erroneous as most of the people apparently sampled by the study do not exist in the village. The local self-governing body, the Panchayat, later denounced the study as flawed.

[8] *Toxicity Data Handbook- VolumeIII,* Industrial Toxicological Research Center, Lucknow, India, 1989.

	In fact, PCK has been indifferent to the communities and the environment, violating the Insecticides Act, The EPA, and labour laws. Legal counter-action by the company has included lies and attempts to misguide the court and the government prosecutors. This has delayed court proceedings[9].
Legal outcome	The lower courts (Munsiff Courts) have temporarily stopped aerial spraying and use of Endosulfan. The High Court hearing of the case has yet to begin. While the legal moves have exposed many hidden violations before the court and the public, the proceedings of the court have been generally slow.
Final Greenpeace statement	This case clearly establishes the fact that not only privately owned multinational corporations but also State owned ones like the Plantation Corporation of Kerala require to be made liable and accountable to the public.

[9] Interview with THANAL/ ESPAC researchers.

Shell Brazil S.A. (Vila Carioca, São Paulo, Brazil)

Company details	Royal Dutch Shell Group Carel Van Bylandtlaan 30 The Hague, 2596 – Netherlands Shell Brasil S.A. Central Office: Avenida das Nações Unidas, 17.891 3º andar 04795-100 São Paulo – SP Tel: +55-11-5514-8600 Fax: +55-11-5514-8700 Facility in Vila Carioca: Av. Presidente Wilson Vila Carioca São Paulo – SP Paulínia Facility Avenida Roberto Simonsen, 1.500 Paulínia – 13140-000 Tel: +55-19-874-7200 Revenue in 1998 – USD 35 million[1].
Company activity	The facilities involved in this case stored fuels and pesticides.
Type of incident	Groundwater and soil contamination.
Type of damage	Shell owns two facilities, known as Operational Base I and Operational Base II, covering an 180,000 square meter area of Vila Carioca, in the City of São Paulo. Fuels and pesticides are stored at these sites. Beginning in 1993, soil samples of the location found high concentrations of lead. Between 1993 and 1994, samples found high levels of lead, heavy metals, as well as hydrocarbons and organochlorides. In March 2002, CETESB (Brazilian state environmental agency) confirmed that the groundwater of the region was contaminated by benzene, toluene, xylene, ethylbenzene, lead and other heavy metals and the organochlorines aldrin, dieldrin and isodrin. In the area where fuels were stored, the Institute for Technological Research detected concentrations of lead as high as 220 miligrams per kilogram of soil. In April 2002, tests of artisian wells, used by 400 people for drinking water, found concentrations of dieldrin ten times higher than the maximum allowable limit for human consumption.
Range of damage, amount of loss	In March 2002, the Public Prosecutor started a public legal case, in which the defendants are Shell and CETESB. A report written by engineer Élio Lopes dos Santos, expert from the Public Prosecutor's Office in São Paulo, estimates that 30,000 people who live within 1 kilometre could have been affected or may be affected in the future by the pollution generated there[2].
Legal and/or public action taken	Sinpetrol (Union of Minerals and Oil Derivatives Trade Workers) and Greenpeace filed a complaint against the pollution generated by Shell in the area.

[1] Guia da Indústria Química Brasileira – Abiquim – 1999/2000
[2] Folha de S. Paulo, 20/4/2002

Subsequent behaviour of company	Beginning in 2000, according to documents from CETESB and the State of Parana State Secretary of Environment and Hydraulic Resources, Shell has removed and incinerated tons of contaminated soil and fuel sludge in an attempt to remediate the area. In 2002, Shell applied for and received authorisation from the State of Parana State Secretary of Environment and Hydraulic Resources to transport 2,000 tons of earth contaminated with fuel sludge and agrochemicals to the Itambe Cement Company, in the City of Balsa Nova. The contaminated earth is to be incinerated in a cement kiln, as part of a co-processing program that is now in its third year. Resolution Number 006/2001 of the State Environment Council of Parana (CEMA) prohibits in the State of Parana the co-processing of agrotoxins in cement kilns generated in other states of the union, as well as from other nations. In late April, the company committed to decontaminating an area measuring 180,000 square metre by 2003, which will include removing and burning parts of the soil and installing hydraulic barriers in the groundwater. Shell will also have to pay CETESB a USD 33,000 fine[3]. However, Shell did not acknowledge the contamination by "drins" in the area, claiming that the contamination could have come from other sources. The company refutes the possibility that it has contaminated workers and the local community. They claim that they have already invested over USD 9 million a year to identify contamination problems in their facilities in Brazil.
Legal outcome	In March 2002, the Public Prosecutor started a public legal case, in which the defendants are Shell and CETESB (state environmental agency).
Final Greenpeace statement	The case shows that transnational corporations such as Shell need to be held accountable and liable for the cleanup and compensation of contamination victims. The refusal of Shell Brazil to negotiate any solutions with the local community, the workers union or the authorities is a clear indication of the need to seek justice at its headquarters in UK/The Netherlands.

[3] Folha de S. Paulo, 22/4/2002

Shell (Global)

Company details	Royal Dutch Shell Group Chairman of the Committee of Managing Directors Philip Watts President of Royal Dutch Petroleum Company Vice Chairman of the Committee of Managing Directors J. van der Veer Carel Van Bylandtlaan 30 The Hague, 2596 The Netherlands Tel: +31-70-377-9111 Shell Centre York Road London SE1 7NA United Kingdom Tel: +44-20-7934-1234
Company activity	Shell Chemicals started production of the "drins" (endrin, dieldrin and aldrin) in 1952, and finished completely in 1990. During this time Shell was almost the only producer in the world.
Type of incident	- Dumping of waste and emissions of drins during production - Exposure of people to drins through agricultural use and contaminated food - Exposure to drins as result of stockpiles of obsolete pesticides
Type of damage	As a result of drin production in Pernis, the Netherlands, river sediments, residential areas and several dumpsites were severely polluted[1]. The production of drins by Shell in the US at the Rocky Mountain Arsenal has also led to a huge pollution scandal. Leaking basins and pipes have contaminated 70 square kilometres of land[2]. The pollution caused by the Shell drins-producing plant in La Paulínia, Brazil, is described in separately in this report[3]. Exposure of people to drins has led to many poisonings and deaths. Many incidents have been reported, for example the consumption of bread made from endrin-contaminated flour that affected at least 936 people and caused 26 deaths[4]. Large quantities of expired, prohibited and unwanted drins are in storage world-wide[5]. In many cases the storage facilities are inadequate and packaging of the drins is in very bad condition. Exposure of workers, local communities and the environment to these very toxic pesticides cannot be excluded and accidents with these old pesticides can easily happen.

[1] Verboden drins maken nog steeds slachtoffers, Rene Didde, Volkskrant, 27 oktober 1990
[2] http://www.pmrma-www.army.mil/htdocs/cleanup/clnfrm.html
[3] Contamination in Paulinia by aldrin, dieldrin, endrin and other toxic chemicals produced and disposed of by Shell Chemicals of Brazil, Karen Suassuna, Greenpeace Brazil, 2001
[4] Chlorine and the environment, Ruth Stringer and Paul Johnston, Greenpeace Research Laboratories, University of Exeter, UK, Kluwer Academic Publishers, Dordrecht 2001
[5] Food and Agricultural Organisation (FAO) (1999): "Obsolete Pesticides - Problems, Prevention and Disposal" and "POPs in Africa", Andreas Bernstorff and Kevin Stairs, Greenpeace Germany, 2001

Range of damage, amount of loss	The range of damage as result of the production of drins in the Netherlands[6] and the US[7] has been very high. Costly remedial measures have been going on for 20 years. The amount of loss for other effects of drins (contamination in Brazil, intoxication and exposure of and cleanup of stockpiles) has not been clearly identified.
Legal and/or public action taken	Shell has been held liable for clean up during the 1980s in both the US and the Netherlands. In the Netherlands Shell successfully defended itself against a liability claim by the Dutch government. Removal of contamination has been largely paid for by the Dutch government[8]. In the Rocky Mountain Arsenal case Shell had to pay a part of the costs for clean up[9]. No known legal actions have been taken after the exposure of people to drins. The cases of safe removal of existing stockpiles of drins in industrialising countries have not been brought to court.
Subsequent behaviour of company	Although the use of drins has been virtually banned in the USA and the Netherlands since the late 1970s due to known toxic effects, Shell continued the production and sales to industrialising countries up until 1992. Today, the drins are also banned by the United Nations (UN) because they are associated with the incidence of cancer and reproductive, endocrine and immune system dysfunctions. Ironically these persistent pesticides also tend to disperse globally and return to the countries of production as well. The existence of stockpiles of these banned and obsolete pesticides, in deteriorating condition, is known to Shell and other pesticide producing companies[10]. Shell has removed some of the drin stockpiles and drin waste from several African countries. But the pesticide companies including Shell refuse to take full responsibility for the complete removal of stockpiles. Several known stockpiles, including drins, have not been treated and continue to put local communities and environment at great risk.
Legal outcome	Only in the US and partly in the Netherlands has Shell had to pay a share of the costs. As far as is known, Shell has not been held liable for poisoning or for the costs of removal of obsolete pesticide stockpiles.
Final Greenpeace statement	This case shows that Shell continued the production and sales of drin pesticides long after the company knew the product was very toxic and affected peoples' health. However, it seems almost impossible now to hold Shell liable for the negative impacts of the product. There is no global instrument available to make Shell accountable to the removal of banned and obsolete pesticides stockpiles including drins. Pesticides companies should be obliged to take full responsibility for the removal and safe destruction of the obsolete pesticides in industrialising countries.

[6] The Dutch state had claimed for example NLG 150 million for cleanup of the dumpsite in Gouderak
[7] Total costs for cleanup Rocky Mountain Arsenal estimated at USD 1.8 billion in 1989
[8] Verboden drins maken nog steeds slachtoffers, Rene Didde, Volkskrant, 27 oktober 1990
[9] http://www.pmrma-www.army.mil/htdocs/cleanup/clnfrm.html
[10] Bayer and Shell in Nepal, obsolete pesticides in the Himalayas, obsolete pesticides – a global problem, Andreas Bernstorff and Eco Matser, Greenpeace 2002

Nuclear cases

British Nuclear Fuels Ltd (United Kingdom)

Company details	Sellafield Site[1] British Nuclear Fuels Ltd Head Office: Hinton House Risley Warrington, Cheshire WA3 6AS United Kingdom Chief Executive Officer: Norman Askew Telephone: +44-1925- 832000 Fax: +44-1925- 822711 Email: enquiries@bnfl.com In financial year 2000 BNFL made a loss of 337 million UK pounds before tax. BNFL estimated their total undiscounted nuclear liabilities at 27.1 billion pounds[2].
Location of damage	On site, across European waters (Irish Sea, North Sea, into Arctic waters and as far east as the German Bight) and atmosphere, coastal nations globally.
Company activity	Reprocessing spent nuclear fuel to obtain plutonium Producing plutonium MOX fuel Shipping weapons-usable plutonium around the globe
Type of incident	Accidents (fire and explosion) Permanent pollution from discharges.
Type of damage	Fire: In 1957 three tonnes of uranium caught fire in one of the site's two plutonium production facilities ("piles"), releasing radiation into the atmosphere. There were two main releases, firstly as a direct result of the fire, secondly when the core was sprayed with water, which flashed into highly contaminated steam. The main radioactive cloud from the Windscale fire travelled south-east across most of England and on over Europe. Explosion: The first reprocessing plant at Sellafield (B-204) began operating in 1951 and produced plutonium for the United Kingdom's nuclear weapons programme. It was shut in 1964 and converted to a "pre-handling" facility for the new, larger reprocessing plant (B-205) and operated in this mode between 1969 and 1972. In 1972 B-204 was temporarily closed while repairs were been conducted on B-205. On the restart of B-204 in 1973, a chemical reaction occurred followed by an explosion releasing a cloud of radioactive gas. Discharge: Between 1952 and 1995, Sellafield dumped an estimated 182 kilograms of plutonium (alpha) into the Irish Sea. This amounts to 717 tera becquerels (TBq) of radioactivity—about half the fallout of plutonium in the entire North Atlantic from 520 atmospheric bomb tests in the 1960s. The first discharges were a direct result of the United Kingdom's nuclear weapons programme, and exact information concerning the nature and quantity of these first discharges remains unknown. Beginning in 1952, the United Kingdom began deliberate discharges of large quantities of radioactivity into the Irish Sea from the Sellafield site as

[1] Formerly known as "Windscale" and operated by the United Kingdom Atomic Energy Authority (UKAEA), following a series of problems the name was changed to Sellafield as a public relations exercise.
[2] Source: BNFL at a glance – Greenpeace UK, Canonbury Villas, London N1 2PN, 2001

	an experiment. The levels of discharges were increased in 1956 partly to dispose of unwanted waste, partly to yield better experimental data[3]. In the 1960s and 1970s discharges from Sellafield increased dramatically, largely as the result of increased alpha-emitting radionuclides discharged from B-205, but also from discharges of water from the spent fuel storage tanks. In the mid-1970s discharges peaked – in the five-year period between 1974 and 1978 the amount of plutonium released to the Irish Sea was more than twice that released in the Chernobyl disaster a decade later. In general discharges declined in the 1980s, although an accident in 1983 resulted in an uncontrolled discharge of radioactivity. More than 20 kilometres of beaches were closed because of the high levels of contamination found there. Current discharges come primarily from B-205 and from the THORP reprocessing plant, which started operation in 1994. In addition, there are sources of releases from the site due to decommissioning work, operation of Magnox reactors and from the spent fuel storage facilities.
Range of damage	Following the Windscale fire, radiation dose rates within the site and in the surrounding area greatly exceeded dose limits yet the operator (then the UKAEA) decided against evacuation. Both piles were closed and the undamaged fuel removed. Pile No.1 still contains around 22 tonnes of melted and partly-burned nuclear fuel. The decommissioning of both piles began in 1987 and continues today. Workers on site were exposed to up to 150 times the maximum permissible level of radioactivity and local people received 10 times the maximum permitted lifetime dose. The UK Atomic Energy Authority knew this but decided not to evacuate the area. Two days after the fire, when it was clear that local milk supplies had been contaminated by the radio-isotope iodine-131 which affects human thyroid glands, the government confiscated two million litres of milk from the cows grazing in an area of more than 500 sq km around the plant. Twenty years after the fire, in 1982, a report by the UK National Radiation Protection Board stated that the effects of the 41 isotopes released at the time of the 1957 Windscale Fire had caused 260 cancer cases, 13 of them fatal. However, other scientists dispute these figures, saying the NRPB underestimated fatalities. These scientists say more than 1000 deaths resulted from the Windscale accident. Significantly elevated levels of childhood leukaemia and Down's syndrome in children are blamed on the Windscale fire. The 1973 Sellafield explosion contaminated the entire B-204 plant and it was permanently closed as a result. Marine pollution Plutonium discharged from Sellafield since the 1950s was expected to stay permanently locked within the sediments at the bottom of the Irish Sea. However, recent research suggests that it is blowing back onto the coast of Cumbria and South-west Scotland in sea spray, contaminating seafood such as mussels, and moving northwards into the North Sea and beyond to the Norwegian Coast, the west coast of Denmark and all surface sea water as far north as Greenland and the Arctic. There has been a worrying accumulation of Tc-99 and other radionuclides

[3] Dr. John Dunster, UKAEA, to delegates at the 2nd United Nations Conference concerning the Peaceful Uses of Atomic Energy, 1958, quoted in F. Berkhout, Radioactive Waste – Politics and Technology, Routledge, 1991.

	in marine life. Shellfish regularly breach the Community Food Intervention Level of 80Bq per kilogram for plutonium-241 in the Sellafield coastal area and the Cumbrian coast. BNFL currently has authorisation to discharge 90 Tera Becquerels/year (TBq/yr) of Technitium99 into the Irish Sea until 2006. Tc-99 has been found in marine life as far away as Norway and Denmark. Scientists believe that official estimates of the collective doses received from Tc-99 may have been underestimated by as much as 1,000 times.
Legal, public action by those concerned	OSPAR: The member states of the Oslo-Paris Convention resolved in the 1998 "Sintra Agreement" that the "significant and progressive" reductions in the marine discharges of artificial radionuclides were required to ensure concentrations "close to zero". Ireland has taken the UK to the Convention's arbitration process because of the UK's failure to consult prior to approving the Sellafield MOX Plant opening in December 2001. International Tribunal for the Law of the Sea - Ireland has taken the UK to ITLOS to challenge its approval of the Sellafield MOX Plant and the resulting transports of nuclear material this will give rise to. Ireland failed to get an immediate injunction preventing opening of the plant, but the Court agreed the UK had failed to consult adequately. The Irish Government is considering further legal action as a result of the upcoming return MOX shipment. The case is proceeding. Children of women who were at a boarding school near Dundalk, on the Irish Sea, in 1957 have been found to suffer from a high incidence of Downs Syndrome. Four Dundalk litigants are suing BNFL for the harmful effects of Sellafield within Ireland. Ireland and the Attorney General are also being sued for failing to protect the plaintiffs and Irish citizens from the hazards of THORP by not taking appropriate steps to prevent its operation. (see www.stad.ie) The British safety regulator, the Nuclear Installations Inspectorate (NII), has described safety at Sellafield as "only just tolerable". In 2000, the NII fined BNFL 40,000 pounds for a release of concentrated nitric acid at Sellafield that left two workers with burns; and 24 thousand pounds for a failure to keep proper control over around 3500 highly radioactive sources at Sellafield (including losing some). In 1999/2000 BNFL received 15 non-compliance with legislation and six enforcement notices from the UK Environment Agency, for example, for failing to report discharges of radioactive gases from Sellafield. Public action: Sellafield has sparked public demonstrations of concern for many years. In the past year, there have been large demonstrations in Ireland and Norway, seabased protests from Norwegian non-governmental groups, and a one-million signature petition from Ireland delivered to Tony Blair by Ali Hewison, the wife of lead singer Bono of the Irish band U2.
Subsequent behaviour of company	Declaring bankruptcy: An announcement by the UK Government on 28th November 2001 that ownership of Sellafield will be transferred from BNFL to a Liabilities Management Authority (LMA) amounted to a tacit admission that activities at Sellafield are now regarded by the Government as uneconomic. Poor throughputs have plagued the THORP reprocessing plant, and are causing a growing disquiet amongst BNFL's overseas reprocessing customers. There is now serious doubt over the profit projections originally used to justify THORP. Political, public defence activities

	BNFL has dealt aggressively with peaceful protest against its activities. In 1999, in response to peaceful demonstrations by Greenpeace's vessel MV Greenpeace as a cargo of plutonium fuel was due to depart for Japan, BNFL sought an injunction against Greenpeace UK, Greenpeace International and other Greenpeace entities. This was one of more than a dozen injunctions sought by BNFL against Greenpeace in the last 15 years. BNFL also went to the Dutch courts to freeze Greenpeace International's bank account.
Legal outcome	Greenpeace successfully argued against the freezing of its bank account. The injunctions against Greenpeace remain in force.
Who is responsible	BNFL is wholly owned by the British Government. Indirect responsibility for BNFL's polluting practices also lies with client states of BNFL that have had spent fuel reprocessed at Sellafield (in addition to the United Kingdom, other countries including Germany, Japan, Switzerland, Netherlands, Sweden have and/or continue to have spent fuel reprocessed at Sellafield). Neither BNFL nor the British Government has admitted liability for the Windscale fire, nor for the "legalised pollution" that Sellafield routinely creates through its reprocessing operations. On the contrary, BNFL would like to use funds already accumulated for decommissioning and waste management to offset its unprofitable reprocessing operations.
Final Greenpeace statement:	The saga of Sellafield clearly demonstrates that existing nuclear liability regimes are woefully inadequate to address the full range and scale of the health and environmental threats posed by reprocessing and transport of spent nuclear fuel. Urgent and fundamental reform is needed to provide even a modicum of protection for potential victims for as long as these practices continue.

JCO co. Ltd. (Japan)

Company details	JCO Co. Ltd, a wholly-owned subsidiary of Sumitomo Metal Mining Co. (SMM), which is one of the many companies operated by the Sumitomo Corporation. Sumitomo Corporation 8-11, Harumi 1-chrome, Chuo-ku, Tokyo 104-8610 Japan Phone: (03) 5166-5000
Location of damage	Tokai-mura, Naka-gun, Ibaraki Prefecture, Japan, 30 September 1999[1].
Activity	Nuclear fuel-fabrication related activities.
Failure category	Criticality accident during conversion of enriched uranium.
Type of damage	Primarily neutron irradiation of directly exposed people, including JCO employees, government officials and local residents. In addition there was some radioactive contamination of the local environment and nearby properties[2].
Range of damage, amount of loss	The accident was rated at Level 4 on the International Nuclear Event Scale (INES) and the state of criticality continued on and off for approximately 20 hours following the initial event. Three workers directly exposed to the radiation suffered acute radiation sickness and two died in the subsequent months[3]. In addition 24 employees engaged in direct and planned mitigation activities to halt the criticality accident were exposed, and a further 145 employees, 60 government officials and over 600 local residents received various levels of radiation exposure. Fifty households were evacuated within 350 metres of the plant[4]. Officials recommended that people living within a radius of 10 kilometres should remain indoors - totalling approximately 300,000 people[5]. Private companies, transportation facilities, schools and other public facilities were closed temporarily and the harvesting of crops and vegetables was suspended[6].
Who is responsible	This accident clearly shows that company practice was negligent and regulatory oversight of activities at JCO were insufficient. In addition, the nuclear industry as a whole must take a share of the blame because of the unhealthy safety culture industry-wide.
Legal, public action by those concerned	On 4 October 1999, JCO opened up a contact point to facilitate the consultation of victims. Victims were asked to submit an application form with detailed information on the nature of the damage suffered. After the initial emergency had subsided, the local Government took measures to provide free medical check-ups for people living within a 350-metre radius of the accident site[7]. By 12 October 1999, examinations to detect radioactive contamination had been conducted for 74,633 local residents. On 22 October 1999 a Dispute Reconciliation Committee for Nuclear Damage Compensation was established by Government Ordinance[8]. At the

[1] The information presented here is drawn largely from the following source: "*Tokai-mura accident, Japan. Third party liability and compensation aspects*", Note by the Secretariat, Organisation for Economic Co-operation and Development, Nuclear Energy Agency, Room Document No. 1, 19 October 2000.
[2] Radioactive noble gases and iodine were dispersed over a considerable area and some environmental samples showed the presence of radioactive isotopes of strontium (Sr-91), caesium (Cs-138), sodium (Na-24) and manganese (Mn-56) as a result of neutron activation.
[3] The first death occurred on 21 December 1999 and the second on 27 April 2000.
[4] This effected 161 persons and was maintained until the evening of 2 October 1999.
[5] This was maintained until the afternoon of 1 October 1999.
[6] The recommendation suspending harvesting was maintained until the evening of 2 October 1999.
[7] This decision was taken on 3 October 1999.
[8] Pursuant to Section 18 of the Law on Compensation for Nuclear Damage.

	same time a Nuclear Damage Investigation Study Group was established to analyse the accident, damage and case studies, and to establish criteria to determine which nuclear damage should be compensated. Compensation amounts were to be assessed in consultation with the nuclear insurance pool. By 30 September 2000, a total of 7025 claims had been made, related to personal injuries, medical costs, evacuation expenses, contaminated properties, loss of income to individuals, economic loss to businesses and mental suffering. After mediation between JCO and victims, JCO committed to pay approximately half of the claimed amounts to victims as a form of provisional payment before the end of the year; to settle outstanding claims as early as possible in 2000; and not to apply any predefined restrictions in terms of limitation periods for submission of claims and geographical scope. JCO's provisional payments amounted to 5400 million yen by the end of December 1999. A Special Consultation Centre was set up in the Ibaraki Prefecture Office from 31 January to 25 February 2000 to pursue negotiations with victims on the introduced claims.
Subsequent behaviour of company	JCO had its manufacturing license revoked in March 2000 and is dealing with the criminal charges and compensation claims.
Legal outcome	Nearly 13 billion yen (approximately USD 124 million) in compensation was awarded by 30 September 2000 (totalling about 98% of the claims made thus far). Over 40% of the compensation was expended in providing compensation to those engaged in agriculture, fisheries and manufacture of foodstuffs; 16% went to compensation for tourism-related losses; and around 20% into reimbursing losses in the wholesale/retail and catering sectors. The Government was required to pay compensation for medical expenses and loss of earnings to the surviving worker, as well as funeral expenses and a compensation pension to the families of the two workers who died[9]. It is estimated that approximately 20 million yen were paid out to households within a 350 metre radius of the site as "consolation" payments. Such payments would not appear to be based on JCO's legal obligations under the nuclear accident compensation legislation, but on traditional Japanese practice whereby discretionary payments are offered to victims by the persons responsible for the suffering caused. A number of the residents have considered these payments to be insufficient and placed compensation claims to cover additional costs, including those related to evacuation and medical examinations. The minimum financial security required for a facility such as JCO's plant at Tokai-mura was raised from 1 billion to 12 billion yen (approximately USD 114.4 million).
Final Greenpeace statement:	The mandatory financial security required was clearly inadequate to cover the actual losses, and the fact that JCO's estimated assets came to less than a third of the total compensation claims further highlights the inadequacies of the existing arrangements. The principles of strict, exclusive and unlimited liability become next to meaningless if the operator has neither the assets nor the insurance

[9] On 14 January 2000, the Ministry of Labour stated that it would examine the possibility of exercising a right of recourse against JCO and SMM for all or part of the compensation to be awarded to the exposed workers or their families. The Workers' Accident Compensation Insurance Law provides for such a policy if the accident was caused through the companies negligence, intentional acts or omissions.

	arrangements to cover the full potential consequences of accidents at facilities. While some changes to the nuclear regulations in Japan were implemented after the Tokai-mura accident, the more than ten-fold increase in this sum subsequently enacted would not have been sufficient to compensate all the claims that arose from the accident which prompted the changes. This reinforces the impression that the nuclear sector is still being given special treatment and that potential victims are inadequately protected from future accidents.

Genetic engineering cases

Aventis SA (USA)

Company details	**Aventis SA**[1] 16 avenue de l'Europe 67300 Strasbourg France Tel +33 3 88 99 11 00 Fax +33 3 88 99 11 01 **Aventis Crop Science** sales in 2000: € 4,034 million[2] Aventis was created in December 1999, through the merger of Hoechst and Rhône-Poulenc. Only in April 2002 did the European Commission approve Bayer's EUR 7.25 billion (USD 6.38 billion) purchase of Aventis CropScience (ACS), on the condition that Bayer divest a number of businesses[3].
Company activity (products, plants)	The core business of Aventis is the manufacturing and sale of pharmaceutical products. Besides the corporate headquarters in Strasbourg, France, other major sites are Bridgewater (New Jersey, USA), Paris (France), Frankfurt (Germany) and Tokyo (Japan). Aventis CropScience produces and markets herbicides, fungicides and insecticides as well as genetically engineered (GE) crops. No. 3 agrochemical company in 2000, No. 10 seed company in the world[4]
Type of incident	Contamination of food chain with illegal GE maize.
Type of damage	On 18 September 2000, a coalition of environmental organisations announced that they had found an unapproved GE maize variety in a product sold in US supermarkets. The Kraft Foods Taco Bell brand taco shells they had analysed tested positive for GE maize variety 'StarLink' developed by Aventis CropScience. This GE maize entered human food products in violation of its registered use: in the US, StarLink has not been approved for human consumption by the Environmental Protection Agency (EPA), because the Bt (*Bacillus Thuringiensis*) Cry9C gene it contains could trigger allergic reactions in consumers[5]. The EPA only allowed StarLink to be grown and used in technical processes or in animal feed. The StarLink contamination illustrates the difficulty of keeping GE and conventional grains separate. The reasons include cross-pollination, contaminated machinery and commingling during processing.

[1] Aventis Executive Committee :
Jürgen Dormann (Chairman of the Management Board), Jean-René Fourtou (Vice-Chairman of the Management Board), Igor Landau (Member of the Management Board), Patrick Langlois (Chief Financial Officer), Richard J. Markham (CEO of Aventis Pharma), Bertrand Meheut (Chairman and CEO of Aventis CropScience), René Penisson (Chief Human Resources Officer)
Subsidiaries :
Aventis CropScience (crop protection and crop production, 76% owned by Aventis, 24% owned by Schering AG), Aventis Pharma (prescription drugs), Aventis Pasteur (human vaccines), Aventis Behring (therapeutic proteins), Merial (animal health, 50% owned by Aventis, 50% owned by Merck & Co), Aventis Animal Nutrition
Only in April 2002 the European Commission approved Bayer's 7.25 billion euro (USD6.38 billion) purchase of Aventis CropScience (ACS), on the condition that Bayer divests a number of businesses.
(http://www.press.bayer.com/news/news.nsf/id/F89ECA1217B6ADE5C1256B9E0039C310?Open&ccm=001001000&l=EN)
www.aventis.com

[2] www.cropscience.aventis.com/about/facts.htm

[3] http://www.press.bayer.com/news/news.nsf/id/F89ECA1217B6ADE5C1256B9E0039C310?Open&ccm=001001000&l=EN

[4] ETC – Action Group on Erosion, Technology and Concentration (2001) Globalization, Inc. – Concentration in Corporate Power: The unmentioned agenda. Communique, based on data provided by Allan Woodburn Associates cited in Agrow

[5] The US EPA has two stated reasons for worrying about potential allergenicity of cry9C : stability to heat denaturation and resistance to enzymatic digestion; characteristics that are not common to the other Cry proteins used to date. Moreover, because cry9C is not one of the Bts that's been commonly used as topical insecticides for the last two decades, there is no circumstantial evidence of safety.

	Besides the possibility that StarLink might cause allergies to humans, scientists and environmentalists have pointed out that engineering Bt into maize, cotton and other crops and releasing them into the environment could lead to insects developing a resistance to Bt, impacts on populations of non-target organisms and the creation of superweeds. The StarLink case created chaos in the US food and grain industry and hurt American farm exports.
Range of damage, amount of loss	A few days after the contamination was made public, tens of millions of Taco Bell taco shells were voluntarily recalled by their manufacturer, Kraft Foods. StarLink maize was subsequently discovered in Safeway and Western Family brands taco shells and Kellogg's Morningstar brand corn dogs, prompting more recalls from grocery stores. Altogether, 300 kinds of taco and tostada shells, tortillas and chips have been recalled from US grocery stores and restaurants because of StarLink contamination. Several companies temporarily halted milling operations after StarLink was found in their facilities. Kellogg's, for instance, was forced to shut down production at one of its US cereal plants. Even though StarLink was grown on less than one percent of US maize fields, the harvested maize was mixed with vast quantities of other maize and millions of bushels were commingled into the food chain. The maize also turned up in Japan – the top foreign buyer of US maize - where this GE maize has no approval for use as food or animal feed. Costs of US maize exports to Japan increased due to the additional testing and handling costs. In 2001, Japanese imports of US maize fell by about 1.3 million metric tons due to the StarLink issue[6]. The recall of StarLink GE maize cost companies all along the food chain – from grain elevators and food processors to grocery stores – hundreds of millions of US dollars as they attempted to find, retrieve and replace products that contained the maize[7]. Aventis estimated that it would spend from USD 100 million to USD one billion on the 25 cents-per-bushel 'service fee' to buy the StarLink crop back from farmers in 2000 and channel it into non-food uses. Aventis has admitted it will take four years for StarLink to work its way through the US food supply, while some industry analysts believe it will take many more years before every kernel of StarLink maize grown during three seasons is cleared from the US system.
Who is responsible	In order to get limited approval of its StarLink maize, Aventis was required by the EPA to act to ensure the maize did not get into the food supply. Aventis failed to do so. The company admitted that some of the 3,000 farmers who grew StarLink might not have been told about restrictions on the maize's use. Some grain elevators handling StarLink were apparently also unaware of the restriction of its use. It seems highly probable that this GE maize has also contaminated maize seed, maize food ingredients and maize products such as animal feed, which are exported from the US. Both Aventis and the US authorities failed to ensure that the GE maize –

[6] USDA, Japan Grain and Feed Annual report, 29 March 2002.
[7] Maize-recall cost could reach into the hundreds of millions, Wall Street Journal, 3 November 2000.

	only approved for technical processes and animal feed – did not contaminate food products.
Legal and/or public action taken	Consumers claiming allergic reactions to the maize filed lawsuits against major food companies. Commodities companies such as Cargill and ADM said they were going to be holding Aventis responsible and send it bills for their StarLink-related expenses. Farmers in some states – backed by State legal officials – have brought claims against Aventis after their maize lost value because of concerns over StarLink.
Subsequent behaviour of company and US authorities	Initially, Aventis attempted to deny the problem and to debate claims that StarLink had contaminated Taco Bell taco shells. When US government test lab results confirmed the contamination of the taco shells, Aventis fought back. In a bid to win approval for StarLink biotech maize as a safe ingredient for human food, the company submitted what it claimed was new scientific data to US regulators, maintaining that StarLink maize was no different from other types of GE varieties that had been approved for human food. Aventis also asked American regulators to grant a four-year grace period of "tolerance" to allow the existing supply of commingled maize to work its way through the food chain. US regulators ruled out any immediate, temporary approval to allow StarLink in human food. The EPA appointed a panel of scientists to review the data submitted by Aventis and the US food and biotech industry. In December 2000, unimpressed with Aventis' 'new data', the EPA Scientific Advisory Panel refused to recommend that EPA grant the company's request. The scientists found that the Cry9C protein in StarLink poses a "medium likelihood" of being an allergen. Food producers also unsuccessfully lobbied the US Food and Drug Administration (FDA), which shares responsibility for gene-spliced foods, to declare StarLink an "unavoidable contaminant" in the human food supply because it has apparently been mixed with so much other maize[8]. Aventis announced that it was halting sales of StarLink maize hybrids for 2001[9], but it is unclear how Aventis handled farmers who had already ordered or had 2001 contracts that involved StarLink seed. In March 2001, the USDA said that StarLink contamination had been detected in non-StarLink seed intended for sale in 2001. US maize and maize products are traded globally and shipped to countries in Asia, Latin America, Africa and Europe. The majority of countries receiving or importing US maize had – and still have – no means or capacity to test for the presence of StarLink contamination in US shipments. The US did not take any measures to ensure its maize exports were free of StarLink contamination. Such a system was only set up for very few countries, such as Japan. On 27 October 2000, the US government lifted restrictions on the export of StarLink maize. In a notice to US exporters, the USDA, the FDA and the EPA said StarLink could be exported as long as it was specified to be used for feed and industrial uses only. Aventis agreed to stop growing StarLink maize in the US in the future by cancelling its EPA registration for the maize. Despite the buy-back and the

[8] Biotech maize found in another brand of taco shells-groups, Reuters, 25 October 2000.
[9] Aventis statement, 26 September 2000.
[10] StarLink maize was grown in other countries, Reuters, 31 October 2000.

	recall of food products in the United States, Aventis said it still had big plans to develop StarLink in other maize-growing countries[10].
Legal outcome	In March 2002, a federal judge said he would approve a USD 9 million settlement of a class- action lawsuit filed by consumers against several major food companies that sold products containing StarLink maize. The lawsuit also includes Aventis and Garst Seed, which sold seed contaminated with StarLink maize. A settlement in this class-action lawsuit has Aventis apparently paying the full amount of USD 9 million. Aventis said that while it denies any liability for the claims made in the suit, it believes the settlement is the best possible way to move forward[11]. Further legal wrangling is expected over responsibility for unauthorised uses of StarLink maize. Government officials said Aventis failed to make sure that the maize was grown with buffers that would prevent cross-pollination and other restrictions that were conditions of StarLink's approval. Aventis officials insisted that seed companies licensed to incorporate the maize into their own products were responsible for notifying farmers about the restrictions. It's not clear how costs will be divided between Aventis, the seed companies who licensed the StarLink technology and insurers for everybody involved. In October 2001, Aventis announced plans to divest its CropScience Division and to sell it to Bayer. The deal was approved by the European Commission in April 2002[12].
Final Greenpeace Statement	Companies, farmers and consumers outside the USA have not been compensated. It is impossible now for non-OECD countries (e.g. in Africa or Asia) to make Aventis liable for any harm caused by the StarLink maize.

[11] Supermarket News, 18 March 2002.
[12] http://www.press.bayer.com/news/news.nsf/id/F89ECA1217B6ADE5C1256B9E0039C310?Open&ccm=001001000&l=EN

Monsanto Company and Aventis Crop Science (Canada)

Company details	**Monsanto Company** 800 North Lindbergh BLVD St. Louis, MO 63167 USA Phone: +1-314-6941000 Monsanto Company is a wholly owned subsidiary of **Pharmacia**[1]. **Board of Directors**:[2] Frank V. Atlee III – Chairman of the Board of Monsanto. Hendrik A. Verfaillie – President and CEO of Monsanto. **Monsanto gross profit 2001**: USD 2.645 million[3] **Aventis Crop Science** Aventis SA 16 avenue de l'Europe 67300 Strasbourg France Tel +33-3-8899-1100 Fax +33-3-8899-1101 **Aventis Executive Committee** : Jürgen Dormann (Chairman of the Management Board), Jean-René Fourtou (Vice-Chairman of the Management Board), Igor Landau (Member of the Management Board), Patrick Langlois (Chief Financial Officer), Richard J. Markham (CEO of Aventis Pharma), Bertrand Meheut (Chairman and CEO of Aventis CropScience), René Penisson (Chief Human Resources Officer) **Subsidiaries** : Aventis CropScience (crop protection and crop production, 76% owned by Aventis, 24% owned by Schering AG), Aventis Pharma (prescription drugs), Aventis Pasteur (human vaccines), Aventis Behring (therapeutic proteins), Merial (animal health, 50% owned by Aventis, 50% owned by Merck & Co), Aventis Animal Nutrition **Aventis Crop Science** sales in 2000: EUR 4,034 million[4]. Aventis was created in December 1999, through the merger of Hoechst and Rhône-Poulenc. Only in April 2002, did the European Commission approve Bayer's EUR 7.25 billion (USD 6.38 billion) purchase of Aventis CropScience (ACS), on the condition that Bayer divests a number of businesses[5].

[1] Monsanto Officers and Executives
Hendrik A. Verfaillie - President and Chief Executive Officer
Dr. Robert T. Fraley - Executive Vice President and Chief Technology Officer
Charles W. Burson - Executive Vice President, Secretary and General Counsel
Gerald A. Steiner - Vice President, Global Strategy
Hugh Grant - Executive Vice President and Chief Operating Officer
Terrell K. Crews - Executive Vice President and Chief Financial Officer
Sarah S. Hull - Senior Vice President, Public Affairs
Steven L. Engelberg - Senior Vice President, Government Affairs
[2] www.monsanto.com
[3] http://www.monsanto.com/monsanto/investors/financial_reports/2001-financial_statements.pdf)
[4] www.cropscience.aventis.com/about/facts.htm
[5] http://www.press.bayer.com/news/news.nsf/id/F89ECA1217B6ADE5C1256B9E0039C310?Open&ccm=001001000&l=EN

Company activity	**Monsanto**: Multinational agro-chemical company. Monsanto is the second biggest seed company in the world[6] and biggest GE seed supplier. The corporation almost exclusively dominates the commercial GMO market. In 2001, Monsanto products alone accounted for 91% of the area sown to GMOs world-wide[7]. **Aventis:** The core business of Aventis is the manufacturing and sale of pharmaceutical products. Besides its corporate headquarters in Strasbourg, France, Aventis has other major locations in Bridgewater (New Jersey, USA), Paris (France), Frankfurt (Germany) and Tokyo (Japan). Aventis CropScience produces and markets herbicides, fungicides and insecticides as well as genetically engineered (GE) crops. No. 3 agrochemical company, No. 10 seed company world-wide[8]
Type of incident	- Genetic pollution of nature and food crops - Loss of rights (farmers unable to grow GE free & consumers unable to eat GE Free). - Contamination exported internationally via contaminated seeds.
Type of damage	Experiences with GE oilseed rape (canola) in Canada are showing that 'super-weeds' are already emerging. A recent study by "English Nature"[9] revealed the widespread emergence of multiple herbicide resistant volunteer oilseed rape plants following the growing of GE oilseed rape in the Canadian prairies. As a result, known toxic chemicals such as 2,4-D are being used to control the new weeds. The use of GE crops is also leading to the genetic contamination of seed production by GE varieties. In 2000, non-GE oilseed rape imported to Europe from Canada by ADVANTA was found to be contaminated by GE oilseed rape[10]. Many fields planted with this contaminated seed in Europe had to be destroyed. These contamination cases are driving seed production out of the prairies to other parts of North America. In some cases it is being driven out of Canada altogether. Canadian canola farmers have found that their crops have become contaminated by the GE canola against their wishes. This contamination demonstrates the manner in which GE crops spread uncontrollably once released into the environment. Canola farmers who want to stay GE free can no longer sell their produce as non-GE – it is increasingly becoming a GE crop by default.
Range of damage, amount of loss	Damages include: - Loss of EU as major export market for canola because there is no segregation. - Farmers no longer able to sell produce as non-GE. - GE Free seed industry required to re-locate Advanta Seeds is reported to have announced plans to relocate its seed production facilities away from Western Canada to New Zealand, the Eastern Canadian province of New Brunswick (where oilseed rape is not usually planted), or Montana[11].

[6] ETC – Action Group on Erosion, Technology and Concentration (2001) Globalization, Inc. – Concentration in Corporate Power: The unmentioned agenda. Communiqué, based on data provided by Allan Woodburn Associates cited in Agrow
[7] Monsanto claims that the number of acres planted with its biotechnology traits amounted to 118 million acres in 2001 (Monsanto's Fourth-Quarter 2001 Earnings Per Share, 5 February 2002, www.monsanto.com), which makes 91% of the 130 million acres planted with GMOs according to ISAAA (ISAAA, Global Review of Commercialized Transgenic Crops 2001).
[8] ETC (2001) op cit
[9] Orson, J. (2002) Gene stacking in herbicide tolerant oilseed rape: lessons from the North American experience. English Nature Research Report No. 443. English Nature: Peterborough.
[10] Written submission from Advanta Seeds UK to the House of Commons Agriculture Select Committee, 10th July 2000.
[11] http://www.agjournal.com/story.cfm?story_id=894 and http://www.cropchoice.com/leadstry.asp?recid=123

Who is responsible	The companies who produce and market GE seeds are responsible – in this case primarily Monsanto and Aventis. Their GE crops do not only cause damage in Canada, they also contaminate seed supplies in other countries. The Canadian authorities have approved the commercialisation of GE canola in Canada without applying measures to prevent GE contamination.
Legal and/or public action taken	Saskatchewan Organic Directorate (SOD), an umbrella organisation representing Saskatchewan's certified organic farmers, announced the launch of a class action suit on behalf of all certified organic grain farmers in Saskatchewan against Monsanto and Aventis. The suit sought compensation for damages caused by genetically engineered (GE) canola and to obtain an injunction to prevent Monsanto from introducing GE wheat in Saskatchewan. Linked to GE canola in Canada are the growing number of cases in which Monsanto is suing farmers when GE canola is discovered growing on their fields. Many farmers claim that they never planted GE seeds and that the GE Canola came to them via cross-pollination and other methods of gene-flow. So, instead of being liable for the contamination the GE companies are using the contamination as a reason to sue the farmers who don't buy their products.
Subsequent behaviour of company	The companies have still not taken responsibility for the contamination.
Legal outcome	Ongoing
Final Greenpeace Statement	There is no system in place yet to protect farmers or the public from the damage that could be caused by these GE plants. GE companies should be hold liable for any harm and financial loss caused by GMO contamination of seeds and fields.

Mining cases

Bolidén Apirsa, S.L. (Aznalcollar, Sevilla, Spain)

Company details	Bolidén Apirsa, S.L, the Spanish subsidiary of Bolidén Limited. Crta. De Gerena s/n. Aznalcóllar (Sevilla), Spain Director: Anders Bülow Bolidén Limited 145 King Street West Suite 1000 Toronto, Ontario M5H 1J8 Canada
Location of damage	Bolidén's Los Frailes mine, Aznalcóllar (Sevilla), 50 km from the Doñana National Park
Company activity	Mining: Los Frailes mine had a design capacity of 125,000 tonnes/year of zinc, 48,000 tonnes/year of lead, 4700 tonnes/year of copper and 90.8 tonnes/year of silver.
Type of incident	Accident. On 25 April 1998, a failure of the dam wall of the waste pond at Los Frailes mine, released toxic waste into Doñana National Park and surroundings.
Type of damage	The failure released 5 million cubic meters of toxic tailings slurries and liquid into nearby Río Agrio, a tributary to Río Guadiamar. Approximately 3.000 hectares of farmland were covered with tailings along a 40 km stretch of river channels, and the wastewater entered the Doñana National Park, a UN World Heritage Site. Waste analysis: The first analysis carried out by the Junta de Andalucía (Autonomous Government of Andalusia) detected only a few substances. In May 1998, Greenpeace asked the University of Barcelona to carry out a new analysis[1]. Results showed high concentrations of several heavy metals, both in the water and in the sediments. Thallium, a highly toxic substance, found in areas with Pyrite ash, was also detected. Later analysis by the Spanish Scientific Research Institute (CSIC) also showed the presence of such substances. The tailings sludge contained: zinc 8,000 g/tonne, lead 8,000 g/tonne, arsenic 5,000 g/tonne, copper 2,000 g/tonne, cobalt 90 g/tonne, thallium 55 g/tonne, bismuth 70 g/tonne, cadmium 28 g/tonne , mercury 15 g/tonne. Pyrite content in the sludge was 68-78%[2]
Range of damage, amount of loss	Direct impacts of the disaster included: - The death of 37.4 tonnes of fish and 96 ground vertebrates; [3] - High contamination of soils and water; - Impact on the food chain (high levels of heavy metals in bird tissues); - Threat of contamination of the Doñana National Park; - Economic impact on the agriculture industry, the fishing industry, the mining community in Aznalcóllar and the tourist industry in the region; - Discrediting of the environmental authorities (Ministry of the Environment and Consejería de Medio Ambiente), the mining authorities (Consejería de Industria) and the water authorities (Confederación Hidrográfica del Guadalquivir). These agencies are considered partly responsible for the disaster, as they lacked an emergency plan, and their response was

[1] Greenpeace's 1998 analysis of water and sediments and the Doñana Greenpeace Reports are available at: http://www.greenpeace.es/toxicos/donana/

[2] 3º Report of „Grupo de Expertos del CSIC (Comité Superior de Investigaciones Científicas, Spanish Scientific Research Institute (CSIC) y otros Organismos Colaboradores sobre la Emergencia Ecológica de Aznalcollar del Río Guadiamar" May, 1998.

[3] Report of Departamento de Conservación de la Naturaleza de la Consejería de Medioambiente de la Junta de Andalucía en relación a la fauna afectada. 5 June 1998.

	uncoordinated; - Discrediting of the existing environmental legislation of the mining industry and the complex system of permitting and authorisations that are required for one operation. Costs: As of May 2002, the total cost of the disaster is EUR 377,7 million. The figure includes: EUR 96 million that Bolidén spent cleaning up the spill, and the cessation of mining activity during 1998; EUR 145 million spent by the Junta de Andalucia (local government) for the clean-up and for the purchase of polluted grounds; and EUR 136,7 million spent by the Environment Ministry for clean-up and river restoration.[4]
Who is responsible	The Company is responsible for the accident, but government officials failed to properly monitor the safety standards of the project and mismanaged the emergency response. Some years before this accident, former workers of Aznalcóllar mines together with employees of the former Environmental Agency of the Andalusian Government and ecologists reported the worrying condition of Aznalcóllar waste dam. Since 1994, different Departments of the Andalusian Government, the Spanish Government and the European Union were informed and a complaint was made to the prosecuting authorities of the Sevillian Court and to the Court of San Lucar la Mayor (Province of Seville). However, neither the Spanish Authorities nor the European Community took steps to deal with the problem.
Legal and/or public action taken	On 25 April 1998 an accident inquiry was opened at the Court of San Lucar la Mayor (Sevilla). Several people were accused: six employees of Bolidén Apirsa, twelve technicians of GEOCISA, two civil servants of the Andalusian Government and one employee of the Geological and Mining Institute (IGME). The choice of jurisdiction was criticised by the claimants, Greenpeace and other NGOs. Greenpeace believed that the magistrates' court at San Lucar la Mayor lacked the human and other resources to tackle such an investigation. On 13 May 1998, Greenpeace asked the General Council of the Judiciary for an assistant judge to open an inquiry on the toxic waste in Doñana. However, the case was given to magistrate Ms. Celia Belhadj-Ben Gómez, former magistrate of the Court of San Lucar la Mayor and, from 13 October 1998 onwards, circuit judge of the magistrates' court in Dos Hermanas (Seville). The main national environmental groups (Ecologistas en Acción, Bird life, WWF and Greenpeace) have worked together since the accident first occurred denouncing the situation after the spill, asking for the remediation of the area and demanding the closure of the mine.
Subsequent behaviour of company	The president and chief executive officer for Bolidén AB stated that: "We maintain that Bolidén has not been negligent in any way. However, as owner of the mine, Bolidén will honour its responsibilities." In the same press release he went on to say that Bolidén had comprehensive property damage and business interruption insurance with a limit of approximately USD 66 million and third party liability insurance with a limit of approximately USD 13 million. The reality was quite different to this declaration, and the company didn't

[4] Report „Minería en Doñana. Lecciones Aprendidas". WWF, April 2002

	assume any responsibility. Bolidén has spent in all EUR 96 million for the cleanup of the spill, but has received several EU grants valued at EUR 37.7 million[5]. In April 2002, Bolidén announced the start of legal procedures to recover the money that it has spent. In 29 June, 1999 Bolidén announced that it had recommenced mining activities at Los Frailes open pit mine. In October 2000, Bolidén Apirsa was insolvent and the company declared it would not continue the development of the Los Frailes mine after October 2001. In September 2001, Bolidén closed the Los Frailes mine and 425 employees were dismissed.
Legal outcome	In December 2000, two and a half years after the accident and with thousands of pages of legal proceedings, the Judge Celia Belhadj-Ben Gomez from the court of San Lucar la Mayor ruled that there were no indications of penal responsibility in the tailings dam failure and the case was filed. In November 2001, the Regional Court of Sevilla confirmed this decision. Following civil liability proceedings, Bolidén Apirsa S.L. was fined EUR 45 million by the Spanish Government for its responsibility in the ecological catastrophe (environmental impact, damages and ecosystem restoration costs). Along the same lines, the Andalusian Regional Government is preparing another civil liability action to fine Bolidén Apirsa EUR 86 million.
Final Greenpeace statement	This case clearly demonstrates deficiencies in Spanish national laws that allow companies to be acquitted for environmental crimes.

[5] Report „Minería en Doñana. Lecciones Aprendidas". WWF, April 2002

Cape plc. (South Africa)

Company details	Cape plc. (Cape Industries plc) Uxbridge, Iver Lane, Middlesex, UB8 2JQ, United Kingdom Operated as Cape Asbestos Company Limited (1893-1948) and Cape Asbestos SA (Pty) Ltd (1948-1979) - controlled shares in Cape Blue Mines, Egnep and Amosa. In 1979 Cape's South African interests were sold to the Griqualand Exploration and Finance Company (GEFCO). Cape plc. taken over by Montpellier in November 2001. Current Chairman of Montpellier: Peter Gyllenhammar Current subsidiaries: Cape Calsil and Cape Industrial Services Division Current Chairman of Cape plc.: Paul Sellars (formerly MD of Montpellier) Group turnover in year ending 31 December 2000: £235.9 m [preliminary group turnover in year ending 31 December 2001: £263m (£236m)][1]. Operating profit in year ending 31 December 2000: £2.5 m[2]. Net assets £54 m[3].
Location of damage	Numerous operations in South Africa (SA) between 1893 and 1989 although total disinvestment had taken place in 1979.
Company activity	Mining and milling of all three types of commercial asbestos. Cape was considered the world's largest producer of asbestos in its time.
Type of incident	Exposure of workers and communities to asbestos fibres. Environmental degradation and contamination by asbestos.
Type of damage	Occupational and environmental exposure to the asbestos fibre may result in various asbestos-related diseases (ARDs). These include mesothelioma, lung cancer, asbestosis, cancers of the larynx and gastro-intestinal tract, pleural plaques and asbestos corns. All ARDs are irreversible and untreatable[4] while the fatal nature of mesothelioma led to asbestos fibres being referred to as 'killer dust'. The International Agency for Research on Cancer classifies asbestos as a Class 1 carcinogen[5]. Cape plc. neglected to adequately inform communities surrounding its mine operations about the environmental health hazards associated with even slight exposure to asbestos fibres. It also failed to adhere to SA recommended fibre levels – themselves already about four times higher than levels set in the UK. (Dust levels at some mines were up to 30 times higher than those permitted in Britain[6]). The lower standards in SA were set by the SA Asbestos Producers Advisory Committee, of which Cape was a key member[7]. As an active member of the committee, Cape was able to suppress data about the health risks associated with asbestos[8]. There has been no rehabilitation or decontamination of derelict mine shafts, asbestos dumps, industrial sites and tailing dumps.

[1] http://www.capeplc.com/cape_plc/plclegal.htm and http://www.hemscott.co.uk/equities/company/cd00173.htm
[2] http://www.capeplc.com/cape_plc/plclegal.htm
[3] Kazan-Allen, L. 'House Of Lords' Victory For Human Rights'. http://www.btinternet.com/~ibas/lka_lords.htm
[4] Roberts, J. (2000) 'What is the Price of 80 kgs' MA Thesis. UND.

Range of damage, amount of loss	The extensive human, social and economic costs to families and communities associated with asbestos mining as well as the broader environmental costs of contaminated mines and asbestos dumps have not been considered or quantified nor have they been borne by mining companies. SA has been described as the global epicentre of ARDs[9] yet due to general neglect, racially-skewed surveillance, failure to diagnose correctly, the migrant labour system and large-scale under-reporting the prevalence rates of ARDs among South Africans is difficult to quantify yet number in the tens of thousands. (E.g. between 1977 and 1998, 10,520 cases were compensated (probably many more were certified) and between 1996 and 2000, 9,917 people were certified as having an ARD.)[10] Quantification of ARDs is made more difficult as asbestosis may take between 10-20 years to create symptoms while mesothelioma that results from even minimal or short-term exposure (inhalation or ingestion) to asbestos fibre can take up to 40 years to develop. Reported cases of ARDs will probably increase in future. The impact of ARDs is/was aggravated by poor health infrastructure and a lack of medical expertise in the areas where mineworkers live. There were 7,500 plaintiffs in the Cape plc. case.
Who is responsible	Cape managers would have known of the health hazards associated with exposure to asbestos since the 1920s[11]. By the early 1930s a regulatory environment was already in place in the UK (Workmen's Compensation [Silicosis and Asbestosis] Act of 1930 and the Asbestos Industry Regulations of 1931). In 1954 Cape's UK workers received £30m in compensation for ARDs[12]. Despite a growing body of research over the following decades that documented the risks associated with occupational and environmental exposure to asbestos Cape did little to promote safer work conditions for its South African employees, nor did it inform its SA workers on the occupational health hazards associated with exposure to asbestos fibres. Instead as medical evidence grew on the lethal nature of asbestos fibres, the mining and use of asbestos escalated. When Cape left SA in 1979 it left no structures in place for compensation, medical care or rehabilitation**.** Other mining conglomerates such as Anglo America had profited substantially from the activities of Cape[13] yet have been absolved of responsibility. From 1965, companies within the Anglo American Corporation of South Africa group, which included Minorco, had held about 36 per cent of Charter Consolidated's share capital. Charter acquired 63% of Cape's common stock in 1969[14].

[5] Ibid.
[6] Steele, J. 'Miners put Multinationals in the Dock'. The Guardian 21 May 2001. http://www.guardian.co.uk/international/story/0,3604,493751,00.html
[7] Weekes, A. COSATU Labour News (26 June 2001) http://gate.cosatu.org.za/pipermail/news/2001-June/000123.html
[8] Ibid.
[9] White, N. (1997) Occupational lung diseases in ex-mineworkers – misinformed critique. South African Medical Journal. Vol. 87: 468.
[10] Roberts, J. (2000) 'What is the Price of 80 kgs' MA Thesis. UND.
[11] Ibid.
[12] 'Trade for Life: Making Trade Work for Poor People' http://www.christian-aid.org.uk/indepth/0111trbk/05_Chapter5.pdf
[13] Temkin, S. 'Asbestos Victims' Lawyers Call for Anglo's Contribution'. Business Day 13 March 2002
[14] http://www.charterplc.com/charter/ch_history/

	The general neglect of companies was compounded by the discriminatory health and safety laws of the apartheid state, and its associated homeland policy. State determined racial segmentation of the labour force would also have ensured that black miners were more likely to be exposed to worse working conditions than whites. Local state regulations were inadequate, lagged far behind international norms and were poorly enforced. The Cape case once again emphasised the shortcomings of SA's existing compensation system and also highlighted the failure of the Legal Aid Board in SA[15].
Legal and/or public action taken	The action was lodged in the High Court in England in February 1997. The first writs against Cape plc. were issued on behalf of five claimants claiming both occupational and environmental exposure to asbestos. The claims were based on the parent company's negligent control of its subsidiaries. Additional writs were subsequently added. Cape was held liable for what it did not do as the parent company of the Cape Asbestos Company and that there had been negligent control over its subsidiary operations. Cape was held liable for failing to introduce occupational safety measures and to adequately warn workers and surrounding communities of the potential risks. Additional court cases against other asbestos mining and processing companies are currently pending To date much of the economic cost of rehabilitation and compensation has been borne by the South African government and thereby South African citizens. Accurate statistics are difficult to come by. Some sources claim that SA had 134 asbestos mines and 400 dump complexes[16]. Of the mines, 75 were only partially rehabilitated or not at all. Another source states that by 2000, 112 mines had been rehabilitated, 14 had been partially rehabilitated and 109 had not been touched[17]. The risk of environmental exposure to asbestos thus still remains. Expenditure on rehabilitation: R19 578 302 (SA government) and R24 523 967 (other). An estimated R51 m is still required for further rehabilitation[18]. Another estimate puts the cost of rehabilitating all dumps at over R360 m[19]. As asbestos fibre is 'indestructible' it is uncertain how successful existing rehabilitation efforts have been. Many sites appear to be merely fenced off. It is also uncertain as to whether rehabilitated sites have been labelled.
Subsequent behaviour of company	After the first writs were issued in 1997, Cape plc. tried unsuccessfully for three years to have the case tried in SA claiming that local management had been responsible for the day-to-day running of local operations and that it had discontinued its local operations in 1979. Cape plc. also argued that other South African based companies might

[15] Roberts, J. Personal Communication, 26 July 2002.
[16] Environmental Affairs And Tourism Portfolio Committee (12 October 2001) Report Back On Research Following Asbestos Summit: Recommendations. http://www.contacttrust.org.za/parl/PCEnviro/011012pcenviro.rtf and MMSD (April 2002) 'Mining for the Future: Appendix C' http://www.iied.org/mmsd/mmsd_pdfs/draft_paper_am.pdf
[17] 'Asbestos Prioritization Report', (2000) Institute for Ecological Rehabilitation, University of Potchefstroom.
[18] Ibid.
[19] Environmental Affairs And Tourism Portfolio Committee (12 October 2001) Report Back On Research Following Asbestos Summit: Recommendations. http://www.contacttrust.org.za/parl/PCEnviro/011012pcenviro.rtf and MMSD (April 2002) 'Mining for the Future: Appendix C' http://www.iied.org/mmsd/mmsd_pdfs/draft_paper_am.pdf

	have contributed to claimant's injuries. Cape plc. also disputed the shift from individual action to group action as the case evolved. Legal debate over jurisdiction continued until July 2000 when the House of Lords voted unanimously that the case should be heard in the UK. The trial was eventually scheduled to begin in April 2002. Cape finally settled out of court in December 2001 claiming that excessive compensatory payments would cripple the company and force it into liquidation. Settlement was at a level that 'Cape could afford' and represented 20 per cent of what had originally been demanded[20]. Cape plc. was initially sued for damages of about R1-billion[21]. During the time it took to reach the settlement, 300 of the claimants died[22].
Legal outcome	On 21 December 2001 a £21 m (R350 m) settlement was reached - £20m from Cape and £1m from General Accident SA. Funds were to be paid into a trust over a total period of 10 years. Benefits were for those who can verify that they suffer from ARDs due to 'working at, or living in the vicinity' of Cape's mining, milling or manufacturing operations[23]. Several conditions and obligations were attached to the settlement and 'Waiver Agreement'. The SA government had to sign a waiver that they would not sue Cape for any environmental rehabilitation. According to a separate waiver all 7500 claimants sign away their right to sue other asbestos companies they worked for after Cape left in 1979. Individual awards may vary, as they are dependent on numerous factors. For pleural asbestosis there is an initial probable payment of £400 (R6 000) and a possible maximum payment of £700 (R10 500) over a 10-year period. For mesothelioma there is an initial probable payment of £1 250 (R18 750) and a possible maximum payment of £5 250 (R78 750) over a 10-year period. The settlement amounts are generally far lower than that offered by SA's own compensatory regulations and do not consider lost wages, medical costs, and pain and suffering[24]. It is uncertain whether all 7,500 claimants will be compensated. The Legal Services Commission UK accepted estimates of those who will not succeed in their claims as being approximately 37.5%[25]. It is also unlikely that affected migrant workers residing outside SA will benefit from the settlement. Furthermore, as of 5 August 2002, Cape plc. was still in default of its June 30 payment deadline to the Hendrik Afrika asbestos victims' trust.
Final Greenpeace statement	The Cape Plc. case is extraordinary, as it is one of the first cases in history to make a multi-national corporation accountable and therefore liable for the actions of its subsidiary companies. In the Cape case liability focussed on the various acts and omissions of the parent company rather than direct responsibility for its subsidiaries, or the acts and omissions of such subsidiaries. This should not detract from the fact that Cape's subsidiaries in SA exploited the lax regulatory system and the discriminatory working conditions under apartheid to the full.

[20] samaYende, S. and Arenstein, J. 'Lion's share for Lawyers'. Mail & Guardian May 24 to 30 2002.
[21] Streek, B. 'The Dust hasn't Settled' Mail and Guardian 17 March 2002 http://www.labournet.net/world/0201/cape4.html
[22] SAPA 'Victory for Asbestos Claimants' December 21, 2001 http://allafrica.com/stories/200112210509.html
[23] 'Justice at last for Asbestos victims as epic London legal battle ends: The Settlement'. http://www.leighday.co.uk/currarch.html#London
[24] samaYende, S. and Arenstein, J. 'Lion's share for Lawyers'. Mail & Guardian May 24 to 30 2002.
[25] Roberts, J. Personal Communication. 26 July 2002.

	There should be an audit of all mining operations and more specifically of asbestos mine dumps and surrounding areas, as South African organisations are demanding. Such an audit should include an audit of rehabilitated mines, as it is questionable whether such rehabilitation is sufficient and durable. It should also consider the impact of the continuing use of asbestos in, for example, housing. As Cape has been absolved from all responsibility for the rehabilitation of its mining operations the question of who pays still needs to be resolved.

Ok Tedi Mining Limited

Company details	Ok Tedi Mining Limited PO Box 1 Tabubil, Western Province Papua New Guinea Shareholders: • Inmet Mining Corporation (18 per cent) PO Box 19, T-D Centre Toronto, Ontario Canada CEO Mr Richard Ross • Sustainable Development Program Company (SDPCo) (52 per cent) This was BHP Billiton's share of the company and was transferred in December 2001 to SDPCo, a Singapore based holding company. BHP Billiton is the largest mining and minerals company in the world and is listed on the UK and Australian stock exchanges with significant US investment. BHP built, owned, operated and was responsible for the operating decisions under which this mine commenced dumping its waste directly into the river system. BHP Billiton 600 Bourke St Melbourne Victoria 3000 Australia CEO: Brian Gilbertson Papua New Guinea (PNG) Government (30 per cent). This holding comprises shares owned directly by the PNG Government (15 per cent), those held on behalf of the Western Province (12.5 per cent) and those held on behalf of landowners from the immediate mine site area (2.5 per cent). PNG Prime Minister: Sir Michael Somare
Location of damage	Ok Tedi River, Papua New Guinea
Company activity	Copper and gold mining. Started operations in 1984. The mine was at one point of the largest copper mine in the world. Today it is the fourth largest.
Type of incident	Pollution generated by routine mining operations, causing: Forest destruction Habitat destruction Contamination Acid mine drainage Fishery collapse Social problems Environmental refugees
Type of damage	When BHP opened the mine in 1984 it was given permission to dump 80,000 tons of waste directly into the Ok Tedi River every day. With the disposal of tailings into the river and the additional disposal of the waste rock overburden, approximately another 50,000 tons a day finds its way into the river. The waste then flows into PNG's second largest river, the Fly River.

Range of damage, amount of loss	The environmental damage from the Ok Tedi mine is highly significant and in terms of damage done by a single operation rivals any in the world today. It also has a major impact on communities and society along the river. Along the Fly River, many of the 40,000 villagers still rely on subsistence gardening, fishing and hunting for food. The waste is smothering their river gardens and will kill the sago trees along at least half of the Fly river. Sago is the staple food for the villagers and eaten with nearly every meal. The damage will force villagers to hunt and fish over larger distances and so make it difficult for them to get enough food to eat. The Ok Tedi mining company's reports state that these expected food shortages will probably lead to protein deficiencies. The company acknowledges that at least half of the Fly river is affected – as far south as the Everill junction at which point it is joined by the Strickland River. Villagers report impacts below this point in the lower Fly river and express concerns for the ocean and reef systems into which the Fly drains. The company acknowledges that the waste will kill over two thousand square kilometres of forest along the Fly/Ok Tedi and will possibly cause a total collapse of the fishery, in addition to the 70 to 90% of fish in the Ok Tedi river that are already dead as a result of two decades of the mine waste dumping in the river. Even if the mine were to shut tomorrow, the damage would continue to get worse. This is due to the ongoing impact of the waste which will continue to move down the river. The recent Ok Tedi scientific report from 1999 predicts that the impacts are expected to last for 60 years and does not detail the extent of the recovery.
Who is responsible	BHP Billiton was the majority shareholder until December 2001. The company built and operated the mine and is responsible for dumping the waste directly into the river.
Legal and/or public action taken	There is ongoing legal action by the affected people along the Fly river. In 1996, these people settled a two-year court case. Under the terms of the settlement BHP agreed to pay compensation for the damage and stop putting waste into the river (implement feasible tailings disposal) This has not happened and the villagers took BHP back to court in April 2000, to enforce the terms of the 1996 agreement.
Subsequent behaviour of company	In December 2001, with legislation presented to the PNG parliament and passed on the same day, PNG sacrificed its sovereign right to protect its citizens through its legal system and passed the power to resolve disputes directly to Ok Tedi Mining. The legislation deprives PNG people of their rights to choose their own representatives and allows people, who could be handpicked by Ok Tedi Mining, to make decisions on behalf of everyone, whether or not the individuals, villages, clans or communities have agreed to this. The PNG government at the same time granted BHP full legal indemnity from any future government or government agency action for all the damage created both past and future. BHP withdrew from direct ownership of Ok Tedi, handing its share of the mine into a Singapore trust fund expressly created to manage the BHP share. This fund is to be "allocated to current sustainable development projects" and a "long-term fund for expenditure on programs and projects for up to 40 years following the end of mine life" The trust is controlled by

	BHP Billiton and PNG government appointed directors. The legislation that enabled these moves in PNG is now being challenged in the PNG constitutional court.
Legal outcome	The Victorian Supreme court in Australia heard the first legal challenge (1994-96). The case did not set a precedent as it was settled out of court. The villagers are now back in the Victorian Supreme court. There is a constitutional challenge in PNG.
Final Greenpeace statement	Ok Tedi is a massive and sustained environmental and social crime. The case illustrates the devastating impact that largely unregulated major development can have. The case also highlights the legacy of such impacts the costs of which will be borne by poor communities and the environment for many decades after the mine is shut. A global liability instrument would help to protect communities and the environment.

Omai Gold Mine Ltd. (Omai, Guyana)

Company details	Omai Gold Mine Ltd. (Guyana) controlled and operated by Cambior Inc. (Canada, Montreal) (65%) Cambior Inc. 1111 St. Charles Street West Suite 750 East Tower Longueuil QU J4k5 Canada Chairman Guy Dufresne Golden Star Resources (merged by Golden Star and South American Minefields) (Colorado, Denver) (30%) Golden Star Resources Ltd.[1,2] 10579 Bradford Road Littleton Colorado 80127-4242 USA Chairman Robert Stone Government of Guyana (5%)
Location of damage	Omai Gold Mine is situated in a remote area 160 kms south of Georgetown (capital of Guyana). The mine is one of the two largest gold mines in South America.
Company activity	Gold mining Omai is an open pit mine that uses sodium cyanide for gold extraction. It commenced full gold production in 1993, and produced 252,000 ounces of gold in 1994[3,4]. After removing the gold chemically, the cyanide-laced tailings are diluted and dumped into ponds with clay-lined dams.
Type of incident	Accident (cyanide spill)
Type of damage	Pollution of: - river system - drinking water - livestock - wildlife In August 1995, a tailing dam burst due to a construction failure and released 3.5 million cubic meters (60,000 cubic meters an hour) of cyanide-laced waste (28ppm cyanide concentration), copper and other heavy metals into the Omai River, a tributary of the 600 miles long Essequibo[5,6]. The

[1] Golden Star Resources: Golden Star Appoints New President. www.gsr.com/pr030199.html
[2] Golden Star Resources: Corporate Profile. www.gsr.com/corporate_profile.html
[3] Saxakali Magazine: Cyanide Disaster - The Omai Spill Continues. www.saxakali.com/saxakali-magazine/saxmag31e3.htm
[4] Kissoon Joda, Desiree: Courting Disaster in Guyana. In: The Multinational Monitor, South America Issue, Nov. 1995 www.hartford-hwp.com/archives/42/014.html
[5] Saxakali Magazine, op.cit.
[6] Kissoon Joda, op.cit.
[7] Friends of the Earth: Plundering the Planet - World Bank Support of oil, gas and mining. www.foe.org/international/omg/casestudies.html
[8] Welters, Michael: The battle to stop corporate harm: Corporate use of the Canadian legal system. www.hartford-hwp.com/archives/44/119.html
[9] Friends of the Earth, op.cit.
[10] Kissoon Joda, op.cit.
[11] www.cambior.com/communique/2002/anglais/05_2002e.htm
[12] Canadian Institute for Business and the Environment: Canadian Mine Spill in Spain. www.peter.unmack.net/archive/acn/acnlmay98/0004.html
[13] UNEP Mineral Resource Forum: Mining Accidents - Omai Mine - tailingsdam failure, Guyana, August 1995. www.mineralresourcesforum.org/accidents/omai.htm

	Essequibo is Guyana's main river and provides drinking water to many people, livestock and wild animals, and is also an important fishing area. It was the largest spill of four that had already occurred in 1995. The mine was closed down by an act of parliament after the disaster, but Cambior won permission to reopen again in February 1996[7,8]. The spill killed aquatic life and three cases of cyanide poisoning needed to be treated in hospital[9,10]. Over 50% of the local residents reported some type of health effect and 33% of households showed affected food supplies[11]. In addition 20,000 residents along the river were asked by the government of Guyana not use the water for drinking and cooking anymore. Guyana's president declared 80 kms of the Essequibo river an environmental disaster zone[12,13].
Range of damage, amount of loss	The cleanup costs: G$ 426 million (government share G$ 314 million)[14]. The company estimated that the spill will cost it around USD 30 million. "Its long-term environmental and social impact can only be guessed at"[15].
Who is responsible	The spill occurred due to a construction failure. The Vancouver-based construction Company Night Piesold argued that they were not responsible for the failure, as Omai had built that part itself[16]. According to Kissoon Joda the accident was predictable as the output of ore was increased but no other tailings dam was built by the companies.
Legal and/or public action taken	There have been lawsuits and a letter campaign against Cambior. Before the August spill there was intense lobbying by different environmental groups for a review of the Omai contract due to three earlier spills and an attempt by Cambior to release cyanide waste into the river system[17]. Recherches Internationales Quebec (RIQ) was established to represent 23,000 Guyana citizens (and victims of the spill) at the court in Canada in 1997, by the National Committee for Defence against Omai, which is a grassroots organisation in Guyana. The suit was filed to order the compensation of all environmental damage that resulted from the spill, as well as 3000$ in damages for each of the class members for a total of $ 69 million[18]. A member of RIQ sent letters to different banks that were considering loans to Cambior to develop the La Granja gold mine in Peru. These letters criticised Cambior for its environmental record (12 environmental violations at Valdez Creek Gold Mine in Alaska, lowest possible rating by the USEPA for a proposed mine in Arizona, violations of Quebec's environmental laws and the situation in Guyana). The letter asked for a boycott of any financial institution that supported Cambior unless the situation in Guyana was rectified[19]. Letters were also sent to the shareholders, criticising Cambior's financial and environmental activities.
Subsequent behaviour of company	After the spill Cambior supplied uncontaminated drinking water for ten days and granted 150 Canadian Dollars to some of the local residents[20]. Eleven days after the disaster Omai apologised for the accident in a newspaper campaign and claimed to take full responsibility for what happened[21]. But

[14] www.cambior.com/communique/2002/anglais/05_2002e.htm
[15] Saxakali Magazine, op.cit.
[16] Welters, op.cit.
[17] Kissoon Joda, op.cit.
[18] UNEP Mineral Resource Forum, op.cit.
[19] Ibid.
[20] Ibid.
[21] Kissoon Joda, op.cit.

	the affected area was never cleaned up[22]. Golden Star Resources even stated that incidents like this one "are one of the many risks of doing business". Cambior denied that the spill constituted a major environmental disaster[23]. Two years after the spill Cambior has filed an interlocutory injunction in response to RIQ's letter campaign (against Travis Dermod who sent the letters). Cambior called the campaign an "unlawful interference in economic activities"[24]. The trial in this Strategic Lawsuit against public participation has, according to sources, not yet occurred.
Legal outcome	In February 2002, the USD 100 million class action proceedings in connection with the spill were dismissed because of repeated failure by the plaintiffs to file an affidavit[25].
Final Greenpeace statement	This case demonstrates that whenever victims are not in a position to perform their function as plaintiffs there should be third parties authorised to act on behalf of them.

[22] UNEP Mineral Resource Forum, op.cit.
[23] Welters, op.cit.
[24] UNEP Mineral Resource Forum, op.cit.
[25] www.cambior.com/communique/2002/anglais/05_2002e.htm

Esmeralda / Aurul (Romania/Australia)

Company details	Esmeralda, Perth, Australia Aurul, Baia Mare, Romania Now: Canadian- Romanian Transgold SA
Location of damage	Baia Mare, Romania, Tisa river, Danube river, Hungary. February, 2000
Company activity	Extracting gold out of tailings from former gold mining activities using the sodium cyanide leaching process.
Type of incident	Rupture of dam containing toxic sludge from reexploited tailings on January 31, 2000
Type of damage	Massive pollution of rivers with cyanide and heavy metals such as cadmium, lead, and arsenic
Range of damage, amount of loss	Over 100,000 tons of sludge containing approximately 100 tons of cyanide (plus heavy metals) immediately killed all life in the rivers Lapus and Tisa in a stretch of over 700 kms, mainly in Hungary. Over 1,000 tonnes of dead fish were collected by the Hungarian authorities. Beavers, otters, herons, bald eagles and other wildlife, as well as sheep, goats, cows were killed.
Who is responsible?	Esmeralda, Perth, Australia as main holder (51%) of Aurul, the operating company. Aurul who was owned 44% by the Romanian state, and 5% by private shareholders Romanian State and regional authorities The dam had been built in 1999, out of "too light a material" against the warnings of local mining experts[1].
Legal and/or public action taken	The Hungarian government sued the successor of Esmeralda / Aurul, Transgold SA, in order to compensate Hungary with 28 billion Forint (USD 105 million) for the loss in fishery alone. The next session in the Hungarian Supreme Court is 16 June, 2002. Romania's government filed a case against Transgold. On 14 April, 2002, the court in Cluj Napoca; Romania, ruled that the accident was caused by "force majeure". Heavy rainfalls had in fact had taken place prior to the event, as they do every year. On the other hand, an expert produced for the court case stated that the dam had been planned and built in disregard of the regional weather conditions. No appeal to the court ruling is possible. On its homepage the Hungarian government called for better international regulation of such transboundary pollution.
Subsequent behaviour of company	Esmeralda declared itself bankrupt. A new company, Transgold SA, Australia – Romania, stepped in and took up the same activity in spite of the fact that Romanian authorities had not yet issued a final permit[2]. Instead of starting to clean up the polluted land near the facility, the company bought the land and surrounded it with a second dam claiming that this would prevent a similar accident in the future[3].

[1] For a full report on the accident, local conditions and background, see: Bernstorff, Andreas and Judit Kanthak: The Real Face of the Kangaroo, Greenpeace 2000;
[2] European Union Baia Mare Task Force
[3] MIT (Hungarian Press Agency)

Legal outcome	Victims abroad have no access to Australian courts. Australian courts cannot punish environmental crimes committed by Australian citizens in foreign countries. As of Spring 2002, it is still unclear if the case in Hungary should be treated under Hungarian or Romanian law. Transgold's lawyers use this as an excuse for not handing over the relevant files to the court. Romanian law does not allow appeal to the court ruling in the Romanian case.
Final Statement	All facts mentioned above demonstrate the need for an international instrument on corporate accountability and liability.

Placer Dome (Philippines)

Company details	Placer Dome[1]/Marcopper Mining Corporation[2] Vancouver, Canada Has interests in 14 mines employing 11,100 people Had a market capitalisation of USD 3.6 billion year-end 2001 Produced 2.75 million ounces of gold, 417 million pounds of copper and 6.6 million ounces of silver in 2001 Formed in Vancouver, Canada in 1987 by the amalgamation of Placer Development Limited of Vancouver, and Dome Mines Limited and Campbell Red Lake Mines Limited of Toronto.
Disaster Site:	Marinduque Island (65 km Southeast of Manila) Philippines[3]
Company activity	Mining
Type of incident	Accidental Spill: On March 24, 1996, three to four million tons of copper mine tailings escaped from a drainage tunnel at the mine and spilled into the Boac and Makulapnit rivers. Permanent Pollution: Between 1975 and 1988, an estimated 84 metric tons of mine tailings were discharged into the Calancan Bay. An estimated 200 million metric tons of mine tailings were also dumped into the Tapian Pit, an open-cut mine site in Mt. Tapian. Concern was raised recently over the imminent possibility of another breach in the pit.
Type of damage	Among other things, a Joint UNEP/OCHA Assessment Mission report[4] states that: ▪ The Makulapnit and Boac River system has been so significantly degraded as to be considered an environmental disaster; ▪ The aquatic life, productivity and beneficial use of the rivers for domestic and agricultural purposes are totally lost as a result of the physical process of sedimentation; ▪ The coastal bottom communities adjacent to the mouth of the Boac River are also significantly degraded as a direct result of smothering by the mine tailings; ▪ There is no evidence of acute poisoning in the exposed population due to the mine tailings; ▪ There is an increased health and safety risk due to immersion and flooding as a result of the very large volume and physical properties of the mine tailings, should they be mobilised during the wet season; and, ▪ Concentrations of trace metals in the mine tailings were not sufficiently high to represent an immediate toxicological threat.
Range of damage, amount of loss	In 1998, a study[5] estimated the financial damage from the disaster at PHP 162 million or EUR 3.5 million under the "with long-term rehabilitation" scenario and PHP 180 million or EUR 3.9 under the "with short-term rehabilitation" scenario as the value of the estimated total damages over a 10-year period, in terms of river and coastal water usage affected by the

[1] www.placerdome.com/about/index.asp
[2] Coumans, Catherine, PhD. Backgrounder on Placer Dome in the Philippines, January 16, 2002. www.miningwatch.ca/publications/Marinduque_bacgnd.html
[3] Mallari, Delfin T., Jr. Same stories remain 5 years after Marinduque mine spill. www.inq7.net/reg/2001/nov/11/text/reg_2-1p.html
[4] Report of the Assessment Mission Conducted by the Joint UNEP/OCHA Environment Unit. www.reliefweb.int/ocha_ol/programs/response/unep/unep4.html
[5] Bennagen, Ma. Eugenia, Estimation of the environmental damages from mining pollution: The Marinduque Island mining accident. EEPASEA Research Report Series 1, 1-46 www.twnside.org.sg/title/toxic-ch.html

	tailings spill. Foregone income in 1996 is estimated at PHP 50.1 million or EUR 1.2 million, which was slightly more than 50% of the total provincial income of PHP 95.0 million or EUR 2.1 million, and was more than twice the total municipal income of Boac of PHP 21 million or EUR 465,000 in 1996. N.B. The estimated damage costs in the study are regarded by some local groups as on the conservative side.
Who is responsible?	The case has all the ingredients for a classical recipe for disaster: a resource-rich but impoverished community, a corporation with the right connections and a bureaucracy that is hesitant about implementing the law[6]. The Marcopper-Placer Dome Mine Disaster was in the making since 1975. At that time, the Marcos government gave blanket authority for the mine to dump its tailings into Calancan Bay with very few environmental safeguards. This is perhaps mainly due to the fact that Marcos' cronies owned 49% of the mines then. The succeeding administrations fell into the same predicament. Dr. Delfin Ganapin, Undersecretary for Environment and Research of the Department of Environment and Natural Resources claims that the corporation withheld vital information regarding the Tapian drainage tunnel. The Mines and Geosciences Bureau of the Environment Department likewise did not mention the existence of the tunnel. Yet long-term residents claim that they had been aware of the existence of the tunnel for almost 20 years. Even after the spill in August 1995, the Bureau did not make a report on the "engineering failure" that caused the spillage for the mine waste into the river in March 1966.
Legal and/or public action taken	Legal and public actions on the case are all geared towards getting Placer Dome-Marcopper to clean up the river and compensate the affected communities for actual damages to their livelihood. The Legal Rights and Natural Resources- Friends of the Earth (LRC-KSK-FoE) Luzon Office assists communities in Mogpog, which was affected by the spill in 1995. The Philippine Rural Reconstruction Movement is involved in Boac and Makulapnit and the Tanggol Kalikasan (TK) is working in the Sta. Cruz-Calancan Bay area. Together with local groups, a multi-sectoral coalition was recently formed called BUKLOD.
Subsequent behaviour of company	Since the spill in 1996, Placer Dome- Marcopper through the Placer Dome Technical Services Philippines Inc. (PDTS) has led efforts to begin the initially clean-up of the affected rivers and has taken remedial measures to prevent the dam from bursting again[7]. The drainage has been plugged to avoid further spillage at a cost to the company USD 6.1 million. Around 2400 people have been compensated for crops and lost revenues from fishing and laundry services and other social programs. The company has built 113 relocation houses, 15 evacuation houses and seven evacuation centres. It has also supported 22 clean water projects costing USD 22,000, extended support to build multi-purpose camp facilities for the Girl Guides of

[6] Tauli-Corpuz, Victoria,The Marcopper Toxic Mine Disaster-Philippines biggest industrial accident.
www.twnside.org.sg/title/toxic-ch.html
[7] Marcopper Spill Update#6
www.placerdome/sustainability/content/sites/articles/marcopper6.html

	Marinduque worth USD 17,000, and donated two tractors to the municipality of Boac worth USD 10,000. The company likewise funded a flood risk assessment for Boac worth USD 40,000. This is on top of the Boac Electrification Project in 1997 worth USD 500,000.
Legal outcome	Legal actions are still pending in the courts.
Final Greenpeace statement	While it may appear that Placer Dome is taking action to compensate the affected communities and remediate the affected areas, these actions were taken only after the eco-social impacts were exposed by community organisations and environmental advocates. National standards to protect public health and the environment are often held hostage by the need to entice foreign investments. As in this case, double standards become the order of the day.

Forest cases

Concord Pacific (Papua New Guinea)

Company details	Concord Pacific Ltd PO Box 1213 Boroko, Portion 2150, Tarport Road Four Mile, N.C.D., Papua New Guinea Director: Datuk Yaw Teck Seng Concord Pacific is directed by its controlling shareholder Datuk Yaw Teck Seng, founder and Chairman of the Malaysian logging giant Samling Group.[1]
Location of damage	Papua New Guinea – the Kiunga-Aiambak 'road' Project[2] Active in Papua New Guinea's Western Province, Concord Pacific is logging in the heart of Asia Pacific's largest tract of ancient rainforest.
Company activity	A Malaysian-owned logging company operating in Papua New Guinea, Concord Pacific is—in theory—building a road between the small township of Kiunga and the village of Aiambak in the country's remote Western Province. In practice, the company has illegally extracted millions of dollars worth of timber from the region's pristine rainforests: seven years on from the beginning of 'road' construction, more than 179 km of forest have been cleared but there is not – and never has been—a functional highway.
Type of incident	- Illegal transfer of logging rights under a Timber Authority[3] - Misrepresentation of landowners[4] - Unlawful extension of the project[5] - Large scale (more than 600,000 cubic metres) extraction of illegal logs[6] - Human rights abuses[7]
Type of damage	- Theft from local landowners and loss of revenue through logs removed and sold without landowner consent - Alleged health and safety risks related to forest damage and poor logging practice - Alleged links with the illegal trade in drugs and guns between - Papua New Guinea and Australia[8] - poor government performance and allegations of corruption
Range of damage,	This logging activity has disturbed and degraded thousands of

[1] Samling control 1.5 million ha of forest concessions in Sarawak, Malaysia, as well as concessions in Cambodia and Guyana. Traditional indigenous peoples in Sarawak such as the Penan have been disputing their logging operations for more than 15 years, including most recently in April 2002. A summary of Penan protests against Samling and the company's practices in Guyana and Cambodia can be found in 'High Stakes : the need to control transnational logging companies – A Malaysian case study' by World Rainforest Movement and Forest Monitor Ltd, August 1998

[2] For a full report on this project see Greenpeace (2002) Partners in Crime: Malaysian loggers, timber markets and the politics of self-interest in Papua New Guinea.

[3] In 1995 the then Forest Minister for Papua New Guinea, Tim Neville, who now denies he signed the Timber Authority and says his signature was forged, issued a permit known as a Timber Authority to a company called Paiso Ltd, which professed to be a 'landowner company' representing the local landowners in the region. The company immediately subcontracted the permit to Concord Pacific, despite a prohibition in the Papua New Guinea Forest Act against transferring rights under a Timber Authority. Independent Review Team (2001) Review of forest harvesting projects being processed towards a Timber Permit or Timber Authority. October 2001.

[4] See footnote 1. In fact, Paiso Ltd was not owned by or representing local landowners. Rather it was owned by Malaysian-born Philip Lee (general manager and major shareholder in Concord Pacific) and a Papua New Guinean called David Kaya who did not belong to a local landowner group with land along the Kiunga Aiambak road. See: Registrar of Companies; Post Courier Port Moresby, 15 March 2002.

[5] Letter from Minister for Forests, Dr Fabian Pok, to Paiso Ltd, dated 21 September 1997

[6] Independent Review Team (2001) Auditing forestry projects currently 'in process' for compliance with the requirements of the policy, the Forestry Act and other regulations and guidelines. Individual project review report number 31: Aiambak-Kiunga Road Timber Authority (Western Province). March 2001; PNGFA (2001) Papua New Guinea Forest Authority Annual Timber Digest, 1995-2001

[7] Letter from CELCOR to Mr Klaus Roland, World Bank, dated 1 November 2001; CELCOR (2001) Submission to the World Bank Inspection Panel for inspection of Kiunga-Aiambak Road filed by certain named customary owners of forests in Kiunga-Aiambak, Western Province Papua New Guinea. November 2001

[8] Alleged by local Police Commander, in: Papua New Guinea Forest Watch (2002) Impacts of logging on forest-dependent communities. PNG Forest Watch, Port Moresby

amount of loss	hectares of pristine forest, leading to an estimated loss of more than US$60 million of potential revenue to local landowners[9]. Forest disturbance results in scarcity of animals traditionally hunted as food, loss of clean water supplies, and loss of traditional building materials and medicines[10].
Who is responsible?	Concord Pacific, Mr Philip Lee; various members of the Papua New Guinea government; and importers and consumers of Concord Pacific's unlawfully acquired timber.
Legal and/or public action taken	The issue of the Kiunga Aiambak 'road' has been raised publicly in Papua New Guinea by affected landowners, by Greenpeace taking action to prevent the loading illegal logs for export, and at international fora such as the Convention on Biological Diversity. The former Prime Minister of Papua New Guinea stated that the project should not have gone ahead, and that the extension should be stopped[11]. The PNG government sued the logging company in 1999, but the case languished when a temporary injunction was obtained by the logging company to stop the government interfering in operations while the case was being heard. Landowners in 2002 attempted to become a "party" to that legal action, but have met with vigorous opposition. Landowners have also launched a case for damages, while Greenpeace China served a customer of Concord Pacific with an "injunction" in an attempt to stop them contributing to forest destruction in Papua New Guinea. The Centre for Environmental Law and Community Rights also filed an ultimately unsuccessful Inspection Panel Claim against the World Bank on behalf of the Kiunga Aiambak landowners, saying the release of funds to the Papua New Guinea government contravened World Bank conditionality on forest management- as witnessed by the logging by Concord Pacific.
Subsequent behaviour of company	Despite public protests and attempts at legal action, the company has continued with business as usual – logging and exporting illegal logs. Concord Pacific has vigorously defended itself in Papua New Guinea courts against government attempts to close it down.

[9] PNGFA (2001) Papua New Guinea Forest Authority Annual Timber Digest, 1995-2001

[10] Independent Review Team (2001) Auditing forestry projects currently 'in process' for compliance with the requirements of the policy, the Forestry Act and other regulations and guidelines. Individual project review report number 31: Aiambak-Kiunga Road Timber Authority (Western Province). March 2001; Papua New Guinea Forest Watch (2002) Impacts of logging on forest-dependent communities. PNG Forest Watch, Port Moresby

[11] See http://www.pm.gov.pg/pmsoffice/pmsoffice.nsf/Pages/ress

Current status	Concord Pacific obtained an unlawful extension to the current road-alignment and the logging and so called 'road building' has continued[12]. The three-year old court action by the government has stalled, allowing the logging to continue. Meanwhile following elections in June 2002,the formation of the newly elected government is taking place and the country awaits any action the government may take on the road.
Final Greenpeace statement	The 'Paradise' forests of Kiunga-Aiambak are part of the largest remaining intact rainforest in Asia-Pacific – the third largest on the Earth. The Papua New Guinea government and the international donor community need to ensure that these highly biodiverse forests of Papua New Guinea's western border areas are protected. Additional aid and incentive funds are urgently required to support the PNG government to move away from large-scale destructive logging and to provide alternatives for the customary landowners in this isolated, sparsely populated area. They have so far failed to take adequate measures to protect the livelihoods of the landowners or to sanction Concord Pacific's unlawful logging activities. Meanwhile demand from importing nations and companies continues to drive the activities of this company.

[12] This new Timber Authority is totally illegal as it was granted without the approval of the Provincial Forest Management Committee and without any of the detailed procedures of either the 1993 Forestry Act or the 2000 Amendment Act having being followed. In: PNG Forest Watch; "Concord's new illegal logging permit gives access to 2.7 million hectares of forest", June 6, 2002

Dalhoff, Larsen and Horneman (DLH) (Denmark)

Company details	Dalhoff, Larsen and Horneman (DLH) DLH Group, Skagensgade 6, DK-2630, Taastrup, Denmark CEO: Jørgen Møller-Rasmussen Headquartered in Høje Taastrup, Denmark, the DLH Group has purchase and sales offices throughout Europe, Africa, Asia, Russia, and North and South America.
Location of damage	Ancient forests of the Amazon, West and Central Africa, European and Far East Russia, and South-East Asia.[1]
Company activity	The Danish-owned trading giant DLH operates in over 26 countries world-wide. Today DLH is one of the world's largest timber traders, involved in the procurement, global distribution and marketing of hardwood, softwood, wooden sheet materials and plywood.[2]
Type of incident	Purchasing of timber and wood products from ancient forest destruction world-wide, including from suppliers known to be: - involved in illegal logging on indigenous lands - subject to repeated sanctions for violating national forest laws[3] - involved in violation of national and international labour laws [4] - implicated in social conflict and human rights abuses
Type of damage	The activities of DLH's controversial suppliers result in widespread environmental and social damage including forest fragmentation and loss of biodiversity. Examples include: - habitat destruction of species such as Africa's Great Apes, the Amazon's jaguar and Russia's brown bear; - illegal land titles and theft of timber from indigenous landowners[5]; and - damage to forest-dwelling communities[6]. They have also been linked to arms trafficking[7].

[1] The DLH Group sources the majority of its hardwood timber from some of the world's most vulnerable ancient forest regions, including the Amazon (Bolivia, Brazil, Peru), Central and West Africa (Cameroon, Congo, Ivory Coast, Gabon, Ghana, Liberia) and Asia (Indonesia, Malaysia). It also procures softwood from European Russia. See: www.dlh-group.com

[2] www.dlh-group.com

[3] Several of DLH's suppliers of Cameroonian timber including Vicwood-Thanry (Hong Kong), Rougier (France) and the notorious Société Forestière Hazim (SFH) have been repeatedly fined—or even had their operations suspended—over years of illegal forestry practices, including logging outside legal boundaries, cutting undersized trees. See: Greenpeace International (2002)

[4] Global Witness and International Transport Workers Federation (2001). "Taylor-made; the pivotal role of Liberia's forests and flag of convenience in regional conflict."

[5] DLH buys from three of the 'Santarem Five'—five large producers/exporters linked to illegal land titles and other legal violations in the Brazilian Amazon. They have also tried to import mahogany which was banned by the Brazilian government in October 2001 because of widespread illegal logging on Indian and public lands. The governments of Germany, The Netherlands and Belgium detained this mahogany, under European CITES law, as it was being imported into Europe. See: Greenpeace International (2001) The 'Santarem Five' and illegal logging: a case study; Greenpeace International (2001) Partners in Mahogany Crime: Amazon at the mercy of 'gentlemen's agreements'.

[6] In 1998, Hazim's bulldozers destroyed part of a Baka 'pygmy' village of 200 inhabitants in preparation for building a fourth sawmill. It was not until the bulldozers destroyed part of the village – including ancestral graveyards – that the Baka were made aware of the company's intentions. Mentens J (2001) Hakken in Kameroen. Koopman en dominee in Afrika. Uitgeverij Papieren Tijger.

[7] DLH buys from Liberian loggers Oriental Timber Company (OTC) and Royal Timber Corporation (RTC) both of which have been linked to illegal arms trafficking, via company director Gus Kouwenhoven. See: United Nations Security Council (2000) Report of the Panel of Experts Appointed Pursuant to Security Council Resolution 1306 (2000) Paragraph 19, in relation to Sierra Leone S/2000/1195

Range of damage, amount of loss	Three of the 'Santarem Five' companies supplying DLH [8] have been linked to illegal land titles and other legal violations. DLH controls up to 50 % of the multi-million dollar international market in bigleaf mahogany. In Brazil it has bought mahogany from five companies linked to the 'Mahogany Kings', who are responsible for controlling the majority of the mahogany trade. OTC, another supplier, is believed to open up between 5,000 and 10,000 hectares of undisturbed forest every month, with hundreds of thousands of cubic metres of Liberia's threatened forest exported as logs[9] Hazim and other Cameroon-based logging companies from which DLH is buying are involved in large-scale illegal logging in Cameroon's rainforests.
Who is responsible?	DLH's dubious suppliers – the logging companies – are committing the crimes in the forest. But by continuing to buy stolen and other tainted wood from these companies –despite being fully informed of their activities – DLH continues to drive their criminal activities.
Legal and/or public action taken	Hazim, Rougier, Vicwood-Thanry and others have all been fined repeatedly for their criminal activities in Cameroon. An independent review team recommended that Hazim should have its operating license revoked[10]. Three of the 'Santarem Five' companies have had five forest management plans suspended and a further five cancelled, involving a total area of more than 23,000 hectares of forest[11]. Following evidence of widespread illegal logging on Indian and public lands organised by the Mahogany Kings (whose companies supply DLH), in October 2001 the Brazilian government suspended the trade in mahogany. In 2000 the UN Security Council recommended an embargo on Liberian timber exports "until Liberia could convincingly demonstrate that it was no longer involved in the trafficking of arms to, or diamonds from, Sierra Leone"[12].

[8] DLH buys from– Cemex, Madesa and Rancho da Cabocla

[9] Global Witness and ITWF (2001) Taylor-made: the pivotal role of Liberia's forests and flags of convenience in regional conflict.

[10] Auzel *et al* (2001) Impact de l'exploitation forestière illégale sur la fiscalité, sur l'aménagement et sur le développement local: cas de l'UFA 10-030 dans l'arrondissement de Messok, Province de l'Est Cameroun. Study prepared by Forests Monitor, Dutch Committee for IUCN and DFID – UK Department for International Development; Durrieu de Madron L and Ngaha J (2000) Revue Technique des Concessions Forestières. République du Cameroun. Comité technique de Suivi des Programmes. Rapport Version 4

[11] Ministério Público Federal (2001) Termo de compromisso de ajustamento de conduta contra Cemex. 17 July 2001; Ministério Público Federal (2001) Ação civil pública com pedido liminar de antecipação parcial da tutela contra Empresa Madesa – Madereira Santarém Ltda. 9 July 2001; IBAMA (2001) Relatório sobre a situação dos projectos de manejo florestal no Pará.

[12] See: Pratt D (2001) Sierra Leone: Danger and opportunity in a regional conflict. Report to Canada's Minister of Foreign Affairs. However, in early 2001, China and France – together responsible for two-thirds of Liberia's timber exports – objected, and the timber clauses were subsequently dropped from the final report. UNSC (2000) Report of the Panel of Experts Appointed Pursuant to Security Council resolution 1306 (2000), Paragraph 19, in Relation to Sierra Leone S/2000/1195

Subsequent behaviour of company	Regardless of legal action taken against a number of their suppliers, DLH has continued to purchase from these companies. In July 2001, DLH announced that it would suspend buying from OTC pending further investigation. However in February 2002, Greenpeace revealed that the company continued to buy from OTC and RTC.
Current status	DLH continues to play a major role in the providing the international timber trade with illegal and destructively logged timber from threatened ancient forests around the world.
Final Greenpeace statement	DLH shows little sign of any major change in its procurement practices from some of the worst suppliers and sources in the timber industry.

Société Forestière Hazim (SFH) (Cameroon)

Company details	Société Forestière Hazim & cie, B.P. 1477, Bonabéri Douala Cameroon Tel: +237 39 17 56 or +237 39 17 59 Fax: +237 39 17 52 Owned by Mr Hazim Hazim Chehade, the Lebanese consul to Cameroon[1] - and one of Cameroon's richest men.
Location of damage	Cameroon - logging concessions (UFAs = Unité Forestière d'Aménagement (logging concession or Forest Management Unit (FMU)): • UFA 08-003 – Ngambé-Tikar, Centre Province of Cameroon • UFA 10-029 and 10-030 – East Cameroon • UFA 10-047 – East Cameroon (on the periphery of the Dja reserve - a World Heritage site)
Company activity	One of the largest logging companies in Cameroon, Hazim has been active in Cameroon since the early 1980s operating both as a concessionaire and via subcontracting arrangements with other titleholders. Hazim is one of Cameroon's largest timber exporters, with four wood processing units and access to an estimated 280,000 hectares of forest.
Type of incident	Large scale illegal logging including: - No respect for logging agreements in allocated concession - Unauthorised logging in state forests - Fraudulent markings on logs - Fraudulent use of official documents (production declarations and transportation documents) - Fraudulent tax declaration - Fraudulent customs regulations
Type of damage	- Loss of forest biodiversity - Massive economic loss to government & local communities - Social conflicts
Range of damage, Amount of loss	In 1997 Hazim was granted a 53,000-hectare concession. Hazim was supposed to provide jobs through the management of this forest for at least 15 years. Instead, Hazim organised a highly destructive logging operation in the area[2]. (UFA: 08-003) In March 2000: Ministere de L'Environnement et des Forets (MINEF) fined Hazim 10 million CFA (Central African Francs) (USD13,000) for 'logging anarchically outside the licensed cutblocks' [3,4]. (UFA 08-003) In June 2000, MINEF and Global Witness [5] discovered that Hazim was operating illegally on a very large scale in this concession, which at that time was unallocated[6,7]. In 2001 an

[1] Carret J-C (1999) Industrialisation de la filière bois au Cameroun 4 June 1999. CERNA.
[2] Le Messager (2001) Hazim s'en va. 6 June 2001 p11
[3] Cameroon Tribune (2000). MINEF Communiqué. 24 March 2000
[4] MINEF (1999) Rapport de la mission d'évaluation des progrès réalisés sur les concessions forestières (UFA) attribuées en 1997 dans la province du Centre et Sud.
[5] Global Witness was formally accepted by the Cameroonian Government as an independent monitor in 2001.
[6] Auzel P, Feteke F, Fomete T, Nguiffo AS (2001) Impact de l'exploitation forestière illégale sur la fiscalité, sur l'aménagement et sur le développement local: cas de l'UFA 10-030 dans l'arrondissement de Messok, Province de l'Est Cameroun. Study financed by Forests Monitor, Dutch Committee for IUCN and DFID – UK Department for International Development.

	independent investigation—financed by Forests Monitor, Dutch Committee for IUCN and the UK Department for International Development (DFID) – found that more than 20,000 hectares had been logged illegally[8,9]. (UFA: 10-030) In June 2000, Hazim (operating as Nadja-EGM) was found to be logging without authorization in this concession that borders the Dja Reserve, a UNESCO World Heritage Site. The concession, belonging to a Mr Mponengang, had been classified as 'inactive' by MINEF in December1999[10]. (UFA: 10-047) Investigations revealed that 15,000 ha had been logged illegally in UFA:10-047.
Who is responsible?	Société Forestière Hazim, Mr Hazim Hazim Chehade, the Cameroonian government which has failed to curb the company's illegal and destructive forest activities and the importing nations and companies that continue to ignore the company's forest crimes.
Legal and/or public Action taken	Hazim has received several sanctions from the Cameroonian government as a result of its illegal activities, and was excluded from participating in the 2000 bidding process for new logging concessions. Hazim was fined 105,000,000 francs CFA (160,000 EUR) by MINEF for illegal activity in the concession 10-029. These sanctions have been publicly announced by the government in the Cameroon Tribune newspaper. However, the sanctions on Hazim so far reflect only a minor fraction of the economic damage it has caused, and the following recommendations by World Bank advisors (2000) and independent experts (2001) have yet to be implemented: - Withdrawal of Hazim's logging agreements and cancellation of the company's right to operate in the Cameroon forest sector[11,12]. - Payment of financial damages and interest calculated on the basis of compromised tax recovery[13]. The government of Cameroon recently lost the opportunity to receive an $8 million bonus from the World Bank, an unofficial reason being the governments refusal to punish flagrant violations of the Forestry Law. Specifically, the Bank wanted to see action taken against the Lebanese logger Hazim Hazim Chehade, guilty of pillaging UFA 10 030 to the tune of 24 billion FCFA. On June 13 MINEF published a communiqué[14] in which Hazim was cited as owing 2.5 billion FCFA in "penalties" for unauthorised logging in UFA 10 030. The communiqué threatened the firm with the confiscation of its security deposit, the suspension of its activities and legal action if the sum was not paid by June 30.

[7] Greenpeace International (2000) Plundering Cameroon's rainforests: a case-study on illegal logging by the Lebanese logging company Hazim.
[8] Auzel P, Feteke F, Fomete T, Nguiffo AS (2001) op. cit.
[9] Greenpeace International (2000). "op.cit.
[10] MINEF (1999) Rapport de la mission d'évaluation des progrès réalisés sur les concessions forestières (UFA) attribuées en 1997 dans la province du Centre et Sud.
[11] Auzel P, Feteke F, Fomete T, Nguiffo AS (2001) op.cit.
[12] Durrieu de Madron L and Ngaha J (2000) Revue Technique des Concessions Forestières. République du Cameroun. Comité technique de Suivi des Programmes. Rapport Version.
[13] Auzel P, Feteke F, Fomete T, Nguiffo AS (2001) op.cit.
[14] MINEF communiqué, published in the Cameroon Tribune June 13, 2002.

Subsequent Behaviour of Company	In 2000, Hazim obtained access to new concessions in Cameroon via controversial subcontracting agreements, despite its formal exclusion in the 2000 bidding process and despite the fact that fines for the 10-030 case were not yet paid. Mr Hazim claimed in 2000 that, *"There aren't enough trees over the legal diameter, I've got to cut below the legal minimum to supply my sawmill."*[15] Hazim is expanding its logging activities into neighbouring Congo-Brazzaville.
Current status	Cameroon's forest laws have yet to be applied and Hazim's infractions adequately sanctioned. Despite recommendations from the World Bank advisors[16] and other independent experts[17], the Cameroon government has done too little to sanction Hazim's illegal and destructive forest activities[18].
Final Greenpeace Statement	Operating in Cameroon since the 1980's and expanding into the Republic of Congo, Société Forestière Hazim is one of the most notorious logging companies in the region. Known for its anarchic logging practices and its conflicts with forest dwelling communities, Hazim has cost the Cameroonian government millions of US$. Rather than improving its forestry practices, the company threatens to take the government to court.

[15] Mr Hazim Hazim Chehade cited in Durrieu de Madron (2000)
[16] Durrieu de Madron L and Ngaha J (2000) op.cit.
[17] Auzel P, Feteke F, Fomete T, Nguiffo AS (2001) op.cit
[18] Greenpeace International (2002) op.cit.

Oriental Timber Company (OTC) (Liberia)

Company details	Oriental Timber Company, LIMINCO Housing estate, Buchanan , P.O. Box 6906, No. 129, Loop 1, Monrovia, Liberia Tel:+871 762 148 062 or +871 762 388 634 Fax:+871 762 148 064 or +871 762 388 636 Run by Dutch national Gus Kouwenhoven—a close associate of Liberian president Charles Taylor, OTC is linked to the Hong Kong-based Global Star Holdings, part of the Indonesian Djan Djajanti Group. Djan Djajanti has taken responsibility for 70% of the capital investment in the OTC operation[1].
Location of damage	OTC's massive forest concession—the largest in Liberian history—is located in Liberia's last rainforest block; a forest which represents almost half of what remains of the once extensive Upper Guinean Forest Ecosystem. This threatened ecosystem, which once covered the whole of Liberia, plus parts of Sierra Leone, Guinea, the Ivory Coast, Ghana and Togo, has been largely destroyed by over-harvesting[2].
Company activity	OTC is the largest and most notorious logging company operating in Liberia, producing and exporting hundreds of thousands of cubic metres of timber each year.
Type of incident	- Operation of an invalid concession[3] - Massive logging in endangered high conservation value forest - Involvement in arms trafficking activities[4] - Violation of national and international labour laws, particularly regarding safety[5] - Disregard for rights and customs of local people[6] - Intimidation[7].
Type of damage	- Irreversible destruction of some of Liberia's last rainforests - Habitat destruction of threatened species such as the pygmy hippopotamus and the forest elephant - Human rights abuses.

[1] United Nations Security Council (2001) Report of the Panel of Exports Pursuant to Security Council Resolution 1343 (2001) paragraph 19 concerning Liberia.

[2] The remaining Upper Guinean Forest Ecosystem has been identified as one of 15 threatened biodiversity 'hotspots' globally, supporting many plants and animals that are found nowhere else. It is home to some 9,000 species of plants and more than 1,300 species of vertebrate animals – including the only viable populations of the pygmy hippopotamus. It is the last stronghold of the forest elephant in West Africa. See: Myers N, Mittermeier RA, Mittermeier CG, da Fonseca GAB, Kent J (2000) Biodiversity hotspots for conservation priorities. Nature 403 pp 853-858; Peal A (2000) Green spot in Africa. In: Topfer K (ed) Our Planet. The Environment Millenium. UNEP www.ourplanet.com Philadelphia Inquirer (2001)

[3] The company is believed to have paid President Taylor between US$ 3 million and US$ 5 million for its massive concession. The concession is not legally valid and has never been ratified by the Liberian congress.

[4] Gus Kouwenhoven has been described by the United Nations Security Council as "responsible for the logistical aspects of many of the arms deals [with the Revolutionary United Front in Sierra Leone]. See: Global Witness and ITWF (2001) Taylor-made: the pivotal role of Liberia's forests and flag of convenience in regional conflict; UNSC (2000) Report of the Panel of Exports Appointed Pursuant to Security Council resolution 1306 (2000), Paragraph 19, in relation to Sierra Leone S/2000/1195

[5] Global Witness and International Transport Workers Federation (2001). 'Taylor-made: the pivotal role of Liberia's forests and flag of convenience in regional conflict.'

[6] Ibid.

[7] Local government officials and Liberian Forest Authority representatives inspecting the company's interests have been met with police intimidation and arrest. The private militia it operates to protect its holdings are armed with AK-47 assault rifles. See: Global Witness and International Transport Workers Federation (2001) Taylor-made: the pivotal role of Liberia's forests and flag of convenience in regional conflict.

Range of damage, amount of loss	It is estimated that 90% of West Africa's forests have already been destroyed—mainly by industrial logging—and what remains is heavily fragmented. OTC has a massive concession of 1.6 million hectares[8] and is believed to open up between 5,000 and 10,000 ha of undisturbed forest every month[9]. The company is believed to have paid President Taylor between US$ 3 million and US$ 5 million for its massive concession – contributing to the "large amount of unrecorded extra budgetary income to President Taylor for unspecified purposes"[10]. There are numerous reports illustrating how OTC's logging operations have caused severe social conflicts in Liberia. OTC operates armed militias that are causing social conflicts and major harassment to local communities[11].
Who is responsible?	Liberian President Charles Taylor and his close associate, Dutch national Gus Kouwenhoven; the international community and the nations and companies that continue to import OTC's timber.
Legal and/or public action taken	In 2000 the UNSC recommended an embargo on Liberian timber exports "until Liberia could convincingly demonstrate that it was no longer involved in the trafficking of arms to, or diamonds from, Sierra Leone"[12]. Various NGOs have campaigned against the role of OTC in illegal arms trafficking and its destruction of Liberia's rainforest. Public outcry against OTC has been widespread in both national and international press, yet President Taylor continues to defend the company and has responded to criticism by removing people from office and using police intimidation and arrests.
Subsequent behaviour of company	There are no indications whatsoever that either the destruction or the social conflicts have stopped. On the contrary, there are new reports of OTC's continued involvement in arms trafficking and other social conflicts[13].
Current status	Social conflicts and environmental destruction of Liberia's

[8] This represents one third of Liberia's remaining 4.8 million hectares of forest – of which 3 million have already been allocated to logging. UNSC (2000) Report of the Panel of Experts Appointed Pursuant to Security Council Resolution 1306 (2000) Paragraph 19, in Relation to Sierra Leone S/2000/1195

[9] Global Witness and International Transport Workers Federation (2001). "Taylor-made: the pivotal role of Liberia's forests and flag of convenience in regional conflict".

[10] UNSC (2000) Report of the Panel of Experts Pursuant to Security Council Resolution 1306 (2000) Paragraph 19 in relation to Sierra Leone S/2000/1195.

[11] Global Witness op.cit.. p. 21-25

[12] See: Pratt D (2001) Sierra Leone: Danger and opportunity in a regional conflict. Report to Canada's Minister of Foreign Affairs. However, in early 2001, China and France – together responsible for two-thirds of Liberia's timber exports – objected, and the timber clauses were subsequently dropped from the final report. UNSC (2000) Report of the Panel of Experts Appointed Pursuant to Security Council resolution 1306 (2000), Paragraph 19, in Relation to Sierra Leone S/2000/1195

[13] Washington Post June (2002) Liberian Leader Again Finds Means to Hang On: Taylor Exploits Timber to Keep Power 04.06.02; The Inquirer (2002) Logging companies' workers run amok---hold managers hostage for salary arrears. 18.06.02

	rainforests by OTC continue unabated, driven by international market and corporate timber consumers who don't care about the origin of their timber.
Final Greenpeace Statement	By far the largest and most notorious logging company in Liberia, Gus Kouwenhoven's OTC is characterised by Corruption, illegality and a total disregard for the Environmental or social impact of its operations. Yet Despite international public outcry against OTC, Charles Taylor's government continues to defend the company.

Stora Enso (Finland)

Company details	Stora Enso Kanavaranta 1, 00160 Helsinki, Finland CEO – Jukka Härmälä With joint direction in Finland and Sweden, Stora Enso also has an international office in the UK.
Location of damage	Kainuu, North Ostrobothnia and Lapland regions in some of Finland's last ancient forests[1,2].
Company activity	Stora Enso operates in more than 40 countries. Today it is one of the top paper and board producers world-wide, with a turnover of Euro 13.5 billion in 2001. The company is a world leader in integrated forest products, producing magazine papers, newsprint, fine papers, packaging boards and wood products. Its customers are publishers, printing houses and merchants as well as packaging, joinery and construction industries world-wide[3].
Type of incident	Purchasing of timber from endangered ancient forest – timber that is logged, in violation of EU regulations, within the Natura 2000 protected areas network[4].
Type of damage	- Irreversible destruction of some of Europe's few remaining ancient forests - Habitat destruction of endangered and threatened species such as the flying squirrel and the red-flanked bluetail bird. - Erosion of reindeer pastures which are crucial to the livelihoods and cultural survival of the indigenous Saami and other Finnish people who herd reindeer in these forests
Range of damage, amount of loss	Only five percent of all Finnish forest land is estimated to be ancient forest – and only half of this has been protected. The remaining 500,000 hectares are subject to intensive logging, with an annual loss of ancient forest estimated between 10,000 and 20,000 hectares per year[5]. The ongoing destruction of Finland's ancient forests will result in the decline of many forest dependent species. It is estimated that 62 forest species face extinction, and a further 1000 are feared to be at risk of vanishing[6]. For example, the three-toed woodpecker (*Picoides tridactylus*) and the flying squirrel (*Pteromys volans*) are facing dramatic changes in their habitats. Many species are dependent on dead wood, which has decreased by nearly 90 percent in managed forests.
Who is responsible?	The state-owned Forest and Parks Service are actively logging the forest, but as the FPS's single largest buyer (buying between 40 and 50% of the FPS timber) Stora Enso is guilty of buying timber

[1] Ancient forests are defined here as the world's remaining forests that are shaped largely by natural events and are little impacted by human activities. Finland's remaining fragments of ancient forest are generally referred to as 'old-growth' forest.
[2] Despite years of protest and controversy, Finland's state-owned Forest and Parks Service (FPS or Metsahallitus) has continued to log in several of Finland's last remnants of ancient forest – which make up only 5 percent of the country's remaining forests. Stora Enso is the FPS's largest customer, purchasing more than 40 % of their total harvest each year, with timber from the ancient forests of Kainuu, Lapland and north Ostrobothnia going to Stora Enso mills in Kemi and Oulu. Aksenov *et al* (2000) 'Last of the last – the ancient forests of boreal Europe.' Taiga Rescue Network 2000. Calculations based on figures from www.storaenso.com and www.metsa.fi. See also Stora Enso (1999) Stora Enso EMS Environmental Report.
[3] www.storaenso.com
[4] The European Union classified all remaining ancient forests as 'prioritised habitats' which should not be logged. The European Union's network of Special Areas of Conservation (SAC) is called Natura 2000. See: Directive on the conservation of natural and semi-natural habitats and of wild fauna and flora (92/43/EEC) (Habitats Directive, 1992) http://www.ecnc.nl/doc/europe/legislat/conveu.html
[5] Greenpeace estimate, 2002, based on field research and investigations in the regions
[6] Sources: Finnish Red Data Book 2000 and estimations by Finnish scientists (Prof. Ilkka Hanski, 1999)

	logged in contravention of European environmental law (Natura 2000) and is least partly responsible for driving ancient forest destruction in Europe's last ancient forests.
Legal and/or public action taken	Finnish environmental NGOs have sent several requests to the EU commission regarding the violations of Natura 2000. Finnish and international environmental NGOs have protested for several years against the FPS cutting of Finland's ancient forests and fully informed Stora Enso of their involvement through their purchasing activities
Subsequent behaviour of company	The company has not proved willing to engage in discussions over its purchasing policies and the fate of Finland's remaining ancient forests
Current status	The company remains the largest customer of the FPS (the government owned forestry enterprise responsible for logging Finland's last ancient forests), and continues to source some of its raw materials for pulp, magazine and fine paper from ancient forest.[7]
Final Greenpeace statement	As one of the world's wealthiest nations, Finland has no economic necessity to log its last fragments of ancient forest. Nevertheless the government-owned FPS/ Metsahallitus does just that, and, as this body's largest single customer buying from the ancient forest regions of Kainuu, North Ostrobothnia and Lapland, Stora Enso is knowingly responsible for driving this destruction.

[7] Greenpeace and Finnish Nature League (2001) 'Anything goes?' Report on PEFC certified Finnish forestry.

Oil cases

ExxonMobil (Alaska, USA)

Company details	Exxon (ExxonMobil) Corporation 5959 Las Colinas Boulevard Irving, TX 75039-2298 Texas, USA Chairman and CEO: Lee R Raymond
Location of damage	Prince William Sound, Alaska
Company activity	Transportation of oil
Type of incident	Oil spill
Type of damage	Marine pollution
Range of damage, amount of loss	The oil tanker Exxon Valdez struck Bligh Reef in Prince William Sound, Alaska on 24 March, 1989. Approximately 40,000 tonnes of oil spilled out[1]. From Bligh Reef the spill stretched 460 miles to the tiny village of Chignik on the Alaska Peninsula. Approximately 1,300 miles of shoreline were impacted by oil. It was the largest spill in U.S. history. About 250,000 seabirds, 3,500 sea otters, 300 seals, 22 orcas and billions of salmon and herring eggs died[2]. Restrictions were placed on herring and salmon fishing. Damages to the fishing community were estimated in the hundred of millions of dollars. Damage to the environment was estimated to have reached three billion USD[3].
Who is responsible	Mainly responsible was the Exxon Shipping Company because of its failure to supervise the master of the ship and provide a rested and sufficient crew for the Exxon Valdez.
Legal and/ or public action taken	A jury in Anchorage, Alaska, had ordered Exxon in 1994 to pay USD 5 billion in punitive damages to thousands of commercial fishermen, Alaska natives, property owners and others harmed by the nation's worst oil spill. On 7 November, 2001, a federal appeals court said some damages were justified to punish the company but ruled that USD 5 billion was excessive. The court sent the case back to federal court in Anchorage, Alaska to set a new, lower amount. The jury in Anchorage also awarded commercial fishermen USD 287 million to compensate them for economic losses suffered as a result of the spill. The appeals court left that part of the verdict intact.
Subsequent behaviour of company	So far Exxon has paid only for the clean-up costs, but has partly offset costs against tax liability. Exxon is doing everything possible to avoid or delay further payments.
Legal outcome	The case is not yet closed 13 years after the spill.
Final Statement	This case demonstrates that even national legislation in one of the wealthiest OECD countries can fail to provide for compensation for

[1] Exxon Valdez Oil Spill Trustee Council, http://www.oilspill.state.ak.us/; The Exxon Valdez was carrying 53 million gallons of crude oil of which around 11 million gallons was spilled, equivalent to 258,000 barrels or 38,000 tonnes, 'Oil Spills in the US: Response and Liability', http://www.pemsea.org, July 2000.
[2] Exxon Valdez Oil Spill Trustee Council, http://www.oilspill.state.ak.us/; Greenpeace Background Paper, Exxon Valdez-13 years later.
[3] Danielle M. Stager, 'From Kepone to Exxon Valdez Oil Spill and beyond: an overview of natural resource damage assessment', University of Richmond Law Review. 29:751 (1995).

	environmental damage. As noted by the US Supreme Court "when one contemplates the weight and immense mass of oil ever in transit by tankers, the oil's proximity to coastal life, and its destructive power even if a spill occurs far upon the open sea, international, federal, and state regulation may be insufficient protection"[4].

[4] U.S. v. Locke, Intertanko v. Locke, 120 S. Ct. 1135 (2000).

Shell Compañía Argentina de Petróleo – CAPSA

Company details	Shell Compañía Argentina de Petróleo - CAPSA Casilla de Correo 1759 1000 Buenos Aires Argentina Tel: 54 11 43283441 Fax: 54 11 43288783 Shell CAPSA is member of the Anglo-Dutch group Royal/Dutch Shell. Location of the Gas Station: Lima 835, Buenos Aires Argentina
Location of damage	Underneath the above-mentioned Shell Gas Station and Independencia stop of Buenos Aires subways Line E.
Company activity	Gas exploration and exploitation, oil refining, fuel transport and processing and sale of products including through a network of gas stations.
Type of incident	Damage and leaks from underground fuel tanks produced contamination of the soil and surrounding area.
Type of damage	In 1979 there was an explosion in the subway station because of the hydrocarbons present in a water pumping area of the station. Over the last two decades, leaks and vapours have been detected several times and the damage in the underground tanks has been confirmed.
Range of damage, amount of loss	According to the information distributed by Buenos Aires city Ombudsman, the area affected covers one hectare and is 15 metres deep. No estimate as to the quantity of leakage could be obtained.
Who is responsible	The owner of the gas station: Shell CAPSA.
Legal, public action by those concerned	In 1991, Subterráneos de Buenos Aires S.E. (the state-owned subway company) started a legal civil action against Shell. The community and NGOs as well as the city Ombudsman have also urged that the site be cleaned and the tanks repaired to avoid further leaks and risks of explosion as well as groundwater pollution.
Subsequent behaviour of company	Shell put new air extractors in the Subway Station but removed them after some time. No actual response was given to the results of the legal action and the soil has still not been remediated.
Legal outcome	The legal process ended with a verdict that requires Shell to remove the contaminated soil and change it with clean soil to repair and recover the environment. However, Shell has not yet done so.
Final statement	This case indicates that if companies are not clearly liable for their acts it can take a long time to prove responsibilities and to take measures to remediate the problem. The time until damage is clearly proven increases the problems and the risks for the public and the environment. It is also important to note that in Shell's home country, the Netherlands, gas stations are obliged to clean contaminated soils and if this is not done in Argentina it clearly shows a case of corporate double standards.

For more information see "Daño ambiental por filtración de hidrocarburos", Néstor Cafferatta. Publicado por J.A, 29/12/99, Nro.6174 . See also www.ecoportal.net/noti/notas961.htm

TotalFinaElf (Brittany, France)(Erika Oil Spill)

Company details	TotalFinaElf 2 place de la Coupole 92400 Courbevoie France Phone : +33-1-4744-4546 Chairman of the board : Thierry Desmarest 2001 year profit : EUR 7500 million (USD 6500 million)
Location of damage	450 kms of coast line polluted with heavy fuel oil (bunker C oil) from south Brittany to Oleron Island in the gulf of Biscay
Company activity	Oil transport
Type of incident	Accident: major oil spill, estimated between 15,000 and 18,000 tonnes of heavy fuel oil spilled[1] from the tanker *Erika*, which broke up in a storm on 13 December 1999.
Type of damage	Marine pollution Seashore pollution, heavy impacts on marine and bird life.
Range of damage, amount of loss	Overall damage was officially estimated as FRF 6 billion (EUR 900 million). However there are consequences which cannot be estimated in narrowly defined financial terms: depletion of sea bird life, degradation of sandy sea shore, degradation of seashore biodiversity, long term impact on tourism. By the end of March 2000, a total of 61,000 soiled birds from 58 species had been collected, of which fewer than 2,700 survived[2]. Shellfish, crabs, and some bottom-dwelling fish were shown to have accumulated hydrocarbons, and sale of these species was restricted for a time[3]. Unofficial estimates of tourism losses as high as EUR 1.5 billion (USD 1.36 billion) were published in the French press in February 2000.
Who is responsible	Mixture of responsibility : - The ship owner is responsible because it did not fully comply with the maritime safety rules (EU and IMO). The Erika tanker was not supposed to be at sea, as it was supposed to be undergoing repair ordered by RINA**.** - The classification agency (RINA in Italy) is responsible because it accepted delay on essential repairs to be made on the ship - The sea transport regulation authority is responsible because it did not order the ship to stop and come back to the harbour although it was aware of major cracks in the hull. BUT - the first responsibility is TotalFinaElf's, which should never have used a ship with such low safety standards for any transportation of an oil product[4].

[1] Out of a total of 30,000 tonnes.
[2] Cedre, http://www.ifremer.fr/cedre/_private/actualities/les_precautions_a_prendre.htm and La lettre du Cedre n°58: nouvelles de Mars 2000, http://www.ifremer.fr/cedre.
[3] See ITOPF updates of 10 March and 19 May 2000, http://www.itopf.com/news.html.
[4] International agreements, particularly the 1992 International Convention on Civil Liability for Oil Pollution Damage (CLC) and the 1992 International Agreement on the Establishment of an International Fund for Compensation for Oil Pollution Damage (Fund Convention), govern the regime for liability and compensation for oil pollution damage caused by oil tankers in French waters. Under Article III of the 1992 CLC, the charterer of a ship has no liability and no authority to undertake any spill response of its own. The shipowner has no legal authority to undertake oil spill response. However, the shipowner is liable for "any pollution damage caused by the ship as a result of the incident". There is strict liability to the shipowner for any spill from its vessel, regardless of fault - though the shipowner may limit the extent of its financial liability (in the case of the Erika, this was limited to approximately EUR 10 million or USD 9.07 million). Additional compensation was available from the 1992 IOPC Fund (which is financed through annually fixed contributions based on a set sum per tonne of oil imported for all importers of the IOPC member countries, including a contribution from the TotalFina group). The 1992 IOPC Fund can make up to EUR 180 million (approx. USD 163 million at the time) available for a single incident. After intense public pressure, the French government agreed that it would only claim its spill response expenses, estimated at EUR 50 million (USD 45.3 million), after private victims had received payments from the IOPC Fund. EUR 40 million (USD 36.2 million) were made available as emergency subsidies to meet the urgent needs of fishermen, shellfish farmers and the tourism industry. The TotalFina group

Legal and/or public action taken	Court cases: there is a court case before the Paris high court (as the accident occurred in international waters) in which TFE CEOs are accused of bad governance of the ship management. There were also minor legal suits from local authorities and some NGOs, but none of them came to any clear lawsuit against the company. There were major public protests after the oil spill, including Greenpeace actions, which provoked TFE to react.
Subsequent behaviour of company	TFE has taken charge of part of the damage control operations, such as beach cleanup, pumping of the remaining oil still in the wreck and waste treatment. TFE has faced hard attacks on its public image, but the company has not been affected economically; in fact, shareholder value has risen.
Legal outcome	Minor legal court actions were unsuccessful, as there were contradictions in the rules dealing with waste management regulation and those in relation to accidents at sea. The oil on the shore is not considered by the judge as waste even if it is treated as such (collected and processed as a waste). Legally speaking it is still part of the cargo, so part of the ship even if the ship is now a wreck. The IOPCF (International Oil Pollution Compensation Fund) / IMO rules were set up to deal with such cases and are considered by the judge as a sufficient liability and compensation. France is part of the Convention that settled the IOPCF and so it is not possible to challenge these rules in a French court. The court case in Paris attempted to demonstrate fault in the ordering of the ship for transport. If the court confirms the fault, TFE will be declared responsible. This court case is ongoing.
Final Greenpeace statement	This case shows that the current regime is not sufficient to impose responsible behaviour upon oil transportation companies. Since these companies rely on the IOPCF system as a sort of insurance for the next oil spill, they will never substantially change the way they manage their ships. However if, under a new law such as the US oil pollution act, oil transportation companies were made liable for all damages with no limitation, they would be motivated to invest in safer transports. No insurance company would accept the risk of insuring low safety standards ships and instead would ask for better quality oil tankers.

committed to provide a total of EUR 104 million (USD 99 million) for pumping oil from the wreck, treatment and disposal of oily waste, cleanup of inaccessible coastal areas, and restoration of the ecological balance of affected coastline. Repayment of these TotalFina expenses would only be claimed from the IOPC Fund if there was still money available after payments were made to private victims and the Government. In effect, the additional amount of EUR 200 million (USD 181 million) was added to the EUR 180 million (USD 163 million) available from the 1992 IOPC Funds. TotalFina announced a net profit of EUR 1.5 billion (USD 1.36 billion) for 1999, the year of the Erika accident.

TotalFinaElf Oil (Western Siberia, Russian Federation)

Company head office	TotalFinaElf Germany GmbH, Berlin, Germany. Subsidiary of TOTALFINAELF SA 2, place de la coupole 92400 COURBEVOIE France Phone : +33-1-4744-4546 Chairman of the board : Thierry Desmarest 2001 year profit : EUR 7500 million (USD 6500 million)
Location of damage	Russian Federation The oil is being produced in the Samotlor oil field in West Siberia and is transported through the Druzhba pipeline, which runs from West Siberia to Schwedt and Leuna, Germany.
Activity	TotalFinaElf has been importing 18 to 20 million tonnes of oil annually from West Siberia.
Failure category	Permanent Pollution: There is permanent pollution caused mainly by leaking oil pipelines, overflowing oil wells and other oil products.
Type of damage	Oil and chemical contamination and pollution of the groundwater is caused by pipeline and well spills and accidents, oily and chemical waste disposal, saline production water, operational discharges and leakage and production site drainage. Air pollution is produced through flaring and venting of associated gases, burning of oil spills, vents and production facilities and combustion emissions from energy production. Ground and surface water is also subject to contamination from oil and chemical spills from pipelines, wells and production facilities, production discharges, waste storage depots, leakage and site drainage. Human health can be affected by air pollution resulting from oil production; from the consumption of polluted food and drinking water polluted by hydrocarbons; and by contact with soil polluted by hydrocarbons and food grown in this soil. Impacts of the oil industry are especially important to indigenous people in the area, the Khants, the Mansis and the Nenets, since oil industry has health, social, economic and cultural impacts on their traditional way of life[1].
Range of damage, amount of loss	Between at least 700,000 to 840,000 hectares of land are contaminated by oil. Contaminated water wells pose a calculable risk to the inhabitants' health. Cancer rates and other diseases are dramatically higher than in non-contaminated regions. This leads to shorter life expectancies. More than half of the rivers used for fishing are polluted by oil products[2].
Who is responsible	Russian oil companies such as TNK, Yukos and Lukoil, and TotalFinaElf, the major importer of crude oil from West Siberia, are responsible. State authorities that tolerate their behaviour are also responsible.

[1] IWACO Report, West Siberia Oil Industry Environmental and Social Profile.
[2] IWACO Report, West Siberia Oil Industry Environmental and Social Profile.

Legal, public action by those concerned	Greenpeace informed the public of the disaster in West Siberia and tried to convince TotalFinaElf to take action to avoid further pollution by having the pipelines fixed. The firm's management knows about the decrepit state of facilities, the widespread contamination and the repeated accidents in the Samotlor oil field. Greenpeace has therefore filed a criminal complaint against the responsible parties at TotalFinaElf with the public prosecutor's department in Berlin. TotalFinaElf should accordingly be liable to prosecution for its part in polluting waters under Articles 324 and 25 of the German Criminal Code and, under Articles 324 and 13, for polluting waters by neglect. Those responsible are further accused of causing bodily harm in accordance with Articles 223 and 224 of the Criminal Code, and of causing bodily harm with fatal consequences as under Article 227. Three to seven per cent of the 20 million tonnes of oil TotalFinaElf imports leaks out. The corporation is thus partly responsible for the environmental damage caused[3]. In addition, in April 2002, Greenpeace asked the OECD to intervene because TFE has transgressed the OECD principles established for international corporations[4].
Subsequent behaviour of company	Responsible parties simply said that they knew about the circumstances in West Siberia but took no action at all.
Legal outcome	The department of the public prosecutor discontinued the preliminary proceedings. The department said this was because there was insufficient indication that a crime had been committed. It was confirmed that German legal norms applied, along with the elements of the offence of polluting waters in accordance with Article 324 of the Criminal Code, as this also protects waters outside Germany; but the department rejected the claim that those responsible at TotalFinaElf had been involved. The reason given for this was lack of sufficient evidence that those responsible had acted intentionally. Greenpeace filed objections to the discontinuance of the investigatory proceedings on 11 April, 2002.
Final Greenpeace Statement	This case demonstrates that despite the fact that a national law covers the protection of waters outside its national borders, it is difficult to bring the perpetrators to account.

[3] Criminal Complaint against the responsible parties at TFE.
[4] Letter from Greenpeace to the OECD.

Total Raffinage Distribution S.A. (France)[1]

Company details	TOTAL RAFFINAGE DISTRIBUTION SA La Mède 13220 Chateauneuf Les Martigues France Head office: 24, cours Michelet 92800 Puteaux France Subsidiary of TOTALFINAELF SA 2, place de la coupole 92400 Courbevoie France Phone: +33-1-47.44.45.46 Chairman of the board : Thierry Desmarest 2001 year profit : EUR 7500 million (USD 6500 million).
Company activity	Crude oil refining (including an extremely hazardous hydrofluoric acid alkylation unit). Products : diesel, fuel, gas, asphalt, gasoline, jet fuel, LPG, propane, butane, propylene
Location of damage	La Mède Refinery is situated on the Mediterranean coast of the urban districts of Martigues and Chateauneuf Les Martigues, 30 km West of Marseille (pop. 807,000).
Type of incident	Accident (explosion)
Type of damage	On 9 November, 1992, an extremely corroded piece of carbon steel piping failed and a huge explosion occurred ten minutes later. The catalytic cracking unit, built in 1953, was the oldest unit in the refinery. The company did not replace the unit on account of the 1973 oil crisis. In order to save money, routine maintenance checks had not been carried out on the piping for twelve years. Experts determined that the refinery was in very poor condition due to lack of maintenance between 1980 and 1990, while the plant was waiting for definitive shutdown. In 1991, because of the Gulf war, profits were up but no money was invested in renovation or safety upgrading of the oldest units (e.g., the control room, built in 1950, was not blast-proof). A maintenance shutdown planned for mid-1992 was postponed because margins were still high. The accident occurred before the shutdown.
Range of damage, amount of loss	At the time of the accident seven workers were present in the unit. Six of them were killed and one had severe injuries. There would have been more victims if the explosion occurred during daytime. Windows were shattered for a radius of 5 km and the explosion was heard 30 km away. The insurance companies paid USD 400 million to TOTAL. Half of it was for the entire rebuilding of part of the oil refinery (main destruction occurred in the old part built in 1953) and the other half was for the shareholders because of loss of production and profits.
Who is responsible	TotalFinalElf (TFE) is fully responsible for failing to maintain properly the installation that caused the accident. The poor condition of the installation had been known and approved at the highest level of the group. Priority

[1] - GP France direct witnessing of "TOTAL La Mède" court case from 29 January to 1 February 2002 (magistrate's court of Aix-en-Provence, attorney: Mrs Colette Michel)
- local daily newspaper LA PROVENCE", 29, 30 and 31 January, 1 February 2002
- Agence France Presse (AFP), dispatch on 24 April 2002

	was given to profits despite many smaller accidents that should have alarmed the management team. Workers at the court case[2] testified that they were alarmed but had become accustomed to working in fear. The government agency, the Regional Directorate for Industry, Research and Environment (DRIRE), is also responsible because it did not enforce strict rules for operation of the plant and was obliging to TOTAL. The dual role of the agency makes this almost inevitable: DRIREs are commissioned to develop industries on one hand and to control industries on the other.
Legal and/or public action taken	Nine people from the company and two from the French authorities were charged with criminal negligence. The trial took place at the criminal court of Aix-en-Provence end of January 2002, after many appeals. During the trial, the workers demonstrated at the refinery, condemning the safety conditions today which are the same as they were nine years ago, just before the accident. Top priority is still given to profitability to the detriment of safety e.g. by excessive use of subcontracting for maintenance but also environment and safety.
Subsequent behaviour of company	Total said the piping failure was extraordinary and inexplicable because their safety practices were the best. They denied the opinions of court experts but did not ask for a second expert evaluation. None of the responsible persons were fired, some of them have been promoted and some are living with luxurious pensions.
Legal outcome	The attorney of the criminal court asked for maximum sentences, but even the maximum allowed for a suspended sentence but not for imprisonment and a fine of only EUR 4,500. Sentences were announced on 24 April, 2002. Three former managers of the group Total (now TotalFinaElf) were sentenced to twelve to eighteen-months suspended sentences and to a EUR 4,500 fine after being convicted of manslaughter and involuntary injury, nine years after the explosion of the refinery. Four other sentences were pronounced against four executives. Two executives from the DRIRE were acquitted. The low charges in this case are explained by the former penal code in place in 1992, which allowed only minimal possibilities for prosecuting TOTAL.
Final Greenpeace statement	This is a case of total and inexcusable irresponsibility. The attitude of TOTAL during the trial (held only a few months after yet another TOTAL chemical plant explosion in Toulouse) made it clear that only mandatory legislation with high penalties can force such a powerful corporation onto a more responsible track. Many investments in several units of the refinery have ceased with the 1973 oil crisis. There is a growing threat that these accidents will happen again in other places.

[2] Court of Aix-en-Provence end of January 2002, see below under legal action

Shipping industry cases

Euronav, Bergesen, Vroon (Europe/Asia)[1]

Company details	Euronav Luxembourg SA, 20, rue de Hollerich, L-1740 Luxembourg Tel +352 48 28 50 / 55 Email: europ@euronav.com Bergesen DY ASA, Bergehus, Drammensveeien 106, N-0273, Oslo, Norway General manager: Mr. S.E. Amundsen Tel. +47 22 12 05 05 Website: www.bergesen.no Email: bergesen@bergesen.no Vroon BV, P.O. Box 28, 4510 AA Breskens, The Netherlands Tel: +31 117 384910 General manager: F.D. Vroon Website: www.vroon.nl Email: office@vroon.nl These Luxembourg, Norwegian and Dutch shipping companies are examples of the shipping industry as a whole, many of which are based in OECD countries.
Location of damage	Chittagong, Bangladesh[2] and Alang, India[3] Other documented and heavily polluted locations for the breaking of ocean-going vessels are Gadani Beach (Pakistan), several places along the Pearl and Yangtze River in China,[4] and Aliaga in Turkey[5].
Company activity	Euronav Luxembourg, fleet manager, controls a fleet of around twelve oil tankers. Bergesen, Norway is one of the largest operators of tankers and specialises in the transport of crude oil, liquefied petroleum gas and dry cargo. Bergesen controls a fleet of around 90 vessels. Vroon B.V., Netherlands, owns and manages a fleet of about 62 vessels. The vessels trade world-wide on time charter and voyage contracts in liner services.
Type of incident	Dumping: Old ships contain toxic substances and other hazardous materials. The vessels, broken on Asian beaches and along rivers, release toxic substances into the environment and into workers' bodies. Shipping companies circumvent the high costs for safe dismantling at western standards by sending their ships to Asian countries. Euronav Luxembourg exported the oil tanker *Flandre* (built 1977) at the end of January 2002, to Bangladesh. This company previously sold three other ships to Bangladesh and China (*Boree*, *Chaumont* and *Once*). Bergesen sold the 25 year old *Berge Ingerid* for scrap to Bangladesh in February 2002 and has sold nine ships in the last four years to Asia. Vroon has sold two ships this year to be broken on Indian beaches
Type of damage	Hazardous waste trade:

[1] Source: http://www.greenpeaceweb.org/shipbreak/
[2] Technical report DNV RN 590, Decommissioning of ships, shipbreaking practices/on site assessments, Bangladesh Chittagong, no 2000-3158
[3] Ships for scrap III, Steel and toxic wastes for Asia, Findings of a Greenpeace study on Workplace and Environmental Contamination in Alang-Sosya Shipbreaking yards, Gujarat, India, Greenpeace 2001
[4] Ships for scrap IV, Steel and toxic wastes for Asia, Findings of a Greenpeace visit to four shipbreaking yards in China, Greenpeace 2001
[5] Ships for scrap V, Steel and toxic wastes for Asia, Greenpeace report on environmental, health and safety conditions in Aliaga Shipbreaking yards, Izmir Turkey, Greenpeace 2002

	The export of western ships containing hazardous materials such as asbestos and PCBs constitutes a violation of the Basel Convention on hazardous waste trade. Export from the OECD to non-OECD countries of steel waste containing such substances is prohibited under the 1995 Basel Ban. Permanent pollution, release: The dismantling of old ships releases toxic substances into the environment and heavily pollutes soil, sea and rivers, making local fishing and agriculture as a livelihood almost impossible. Samples from several breaking yards around the world show that the breaking of ships has polluted the environment with mineral oil, heavy metals, PAHs, PCBs and organotin compounds. The levels of many of the pollutants found are high enough to warrant cleanup action according to western standards. The shipbreaking workers are constantly exposed to toxic substances. They breathe toxic fumes and asbestos dust, not only on the job, but also in nearby sleeping quarters. Many are expected to contract cancer from inhaling asbestos dust. Ballast water from ships-for-scrap pollutes the coastal area with oil, biocides and heavy metals. Discharge of ballast water threatens the ecological balance by introducing marine organisms from other areas of the world. Accident, explosion, fire, spill: Hundreds of people at the shipbreaking yards endure hard physical labour. They work in constant danger. Steel plates and pieces fall off the ships. On board, gasses cause fires and explosions. Many workers are injured or even killed by the physical hazards. The main causes of death are fire/explosion, falling materials, falls, suffocation and inhalation of CO_2.
Range of damage, amount of loss	Samples from several breaking yards around the world show that the breaking of ships has polluted the environment with mineral oil, heavy metals, PAHs, PCBs and organotin compounds. The levels of many of the pollutants found are high enough to warrant cleanup action according to western standards. The findings are documented in various reports. However, the extent of damage to the environment due to the poisons on board and in ships, to the livelihoods of the fisher folk and peasants that share the environment, and to the lives and health of the workers is not exactly known to this day. There has not been any quantification of the health and environmental effects due to the breaking of ships in Asia.
Who is responsible?	Responsibility lies with the shipping industry and in particular shipowners who, after having sailed their ships for many years, have no regard for the safe dismantling of a ship once it is taken out of service. State authorities share responsibility when they allow export of hazardous waste to Asia.
Legal and/or public action taken	Greenpeace has filed a complaint against the administrators of Euronav to the state prosecutor in Luxembourg about a violation of the Basel Convention. Euronav Luxembourg exported the oil tanker *Flandre* (built 1977) at the end of January to Bangladeshi breakers. The tanker contains hazardous substances such as asbestos, toxic paint and PCBs. Export from OECD to non-OECD countries of steel waste containing such substances is prohibited under the 1995 Basel Ban.
Subsequent behaviour of company	Greenpeace has asked shipowners several times to ensure that the vessels will be decontaminated before export to Bangladesh and India. To date, Greenpeace has not received any positive answer from the three companies named here. Nor are these companies willing to sign a declaration of good intent.
Legal outcome	There is no conclusion in the court case yet.
Final Greenpeace statement:	Although regulation exists on the transboundary movement of hazardous waste, and while the Basel Convention and the IMO might increasingly

	address aspects of this form of hazardous waste trade by defining responsibilities of port, export and import states, international governments should compel shipping companies to prevent the environmental and health damage associated with the breaking of old ships.

JönssonNovabolagen AB, Novator Rederi AB, G. Buck Schiffarts (Baltic Sea)

Company details	**JönssonNovabolagen AB** Jungmansgatan 3, Box 57 601 02 Norrköping, Sweden. Tel + 46 11 25 08 00. Email: info@rudjo-no.se **Novator Rederi AB** Jungmansgatan 3, Box 602 601 14 Norrköping Sweden. Tel + 46 11 25 08 00 **G. Buck Schiffarts KG MS Figaros** Carsten-Niebuhr Strasse 4 274 78 Cuxhaven Germany. These companies have been chosen as examples of the OECD-based shipping industry as a whole . More particularly, they are examples of irresponsible and illegal practices in the Baltic Sea .
Location of damage	Baltic Sea, East of Västervik, Sweden.
Activity	These companies control the operations of at least 12 medium sized and smaller ships that operate primarily in European waters, predominantly in the Baltic Sea. Some of the ships are company-owned , whilst others are chartered on time contracts. The companies specialise in the transport of containers and bulk cargo and have several liner services. These companies are also responsible for large amounts of cargo being shipped on many other ships in Europe and the rest of the world.
Failure category	Dumping: Ships of all kinds and sizes routinely dump slops from engine rooms (i.e oil spill sludge mixed with solvents and other hazardous substances) and from oil cargo tanks into the sea. Slops are classified as hazardous waste in many countries. The amount of oil released to the seas through this practice is estimated to be 500,000 tons per year. By dumping at sea, ship owners and operators avoid costs for collection, handling and disposal[1]. This practice is destructive in all sea regions. In the Baltic Sea and some other sea areas, it is illegal. The Baltic is identified as a Special Area according to IMO and oil discharges exceeding 15 ppm are prohibited by law. Nonetheless, every year there are several thousand such discharges of varying size into the Baltic Sea. The practice is possible since only a fraction of the discharges are observed and only a handful of observations can be connected to a certain ship. Even in the few cases when perpetrators can be identified they are seldom charged by authorities--and when charged almost never convicted. Between 1982 and 1996 only five cases were taken to court in Sweden, while under the same period, the total number of discharges in Swedish Baltic waters was around 15-30,000[2]. The companies in this case study are the operators of the ship *Fagervik*, previously named *Figaros*, which has been identified by Swedish authorities

[1] Oljeutsläppsutredningen, SOU 1998:158, pages 102-105
[2] Calculated from figures given by HELCOM, Swedish EPA.
[3] Courtcase against Guido Buck, Chmiel and G. Buck Schiffarts KG MS Figaros. Municipal court of Norrköping, Sweden, B477-01, 16 November 2001.

	as responsible for the discharge of engine room slop in the Baltic Sea on February 13th, 2001[3].
Type of damage	Permanent pollution: The Baltic Sea is one of the most polluted sea areas in the world with very high levels of fossil hydrocarbons and heavy metals in the sea water, marine life and sediments. This pollution is causing a range of problems for many kinds of marine organisms and wild life as well as humans. Discharges of engine room oil mixed with solvents into the Baltic Sea are a major contributor to the ongoing pollution of the Baltic as well as in other seas. The discharges cause long term pollution. Discharge: The Baltic sea is a very important habitat for sea birds in Northern Europe and tens of thousands of sea birds have to be killed in the Baltic every year because of oil discharges. The oil also causes severe damage to the sea floor in large areas of the Baltic Sea[4].
Range of damage, amount of loss	The exact size of the discharge from *Fagervik (Figaros)* has not been determined but is estimated to be between 750 and 1500 litres of engine room slops containing an unknown volume of oil, POPs and metals. According to the prosecutor, the discharge may have been 10 times as large. It is estimated that total discharges of engine room slops to the Baltic amount to many thousands of tons annually[5].
Who is responsible	The shipping industry as a whole is responsible, in particular ship operators--such as the companies above—that do not make sure the ships they operate and the crews they employ are adequately equipped and trained. State authorities also bear responsibility for not implementing adequate legislation and measures to address the problem.
Legal, public action by those concerned	The owner of the *Fagervik (Figaros)* has been charged by the Swedish authorities and was taken to the municipal court in Norrköping in 2001. In November 2001 the court decided to acquit the owner, captain and chief engineer because it could not be proven that the discharge was deliberate. The attorney has appealed and the case is up for a new trial in 2002[6].
Subsequent behaviour of company	The *Fagervik (Figaros)* is still operating the same route in the Baltic under the same owners and captain.
Legal outcome:	The owner was acquitted in the court in November 2001. The verdict has been appealed by the prosecutor.
Final Greenpeace statement:	Although regulation exists against discharges in the Baltic Sea these are usually ignored because there are no measures in place to enforce the regulations. This case shows that, even in regions with better regulations, shipowners and operators are not accountable and are not held liable for their behaviour. Many other seas in the world do not have the same formal protection. A global liability regime is needed to ensure the responsibility, accountability and liability for shipping companies in all seas in the world. Such a regime should make shipping companies responsible for preventing environmental and health damage associated with the operation of ships.

[4] HELCOM, Swedish EPA.
[5] HELCOM, www.helcom.fi/manandsea/shipping/oilpollution.htm
[6] Communication with Christer Pettersson, prosecutor, Norrköping Sweden, April 2002.