

Clouds of injustice

Bhopal disaster 20 years on

[Inside cover text]

Cover photo: A young protester taking part in a demonstration demands that the Union Carbide plant site in Bhopal be cleaned up, December 2002. The demonstration, outside the Dow headquarters in Mumbai, marked the anniversary of the 1984 disaster. © Maude Dorr

Back cover photo: The Union Carbide pesticide plant in Bhopal, India, photographed in 2002, almost 20 years after the gas leak. © Maude Dorr

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[Inside back cover text]

Bhopal: the battle for justice

Bhopal Gas Peedith Mahila Purush Sangarsh Morcha campaigns on issues of health and the environment of affected people.

Bhopal Gas Peedith Mahila Stationery Karamchari Sangh has championed the cause of women affected by the gas leak and their right to a livelihood. It is also involved in ensuring adequate rehabilitation for survivors.

Bhopal Gas Peedith Mahila Udyog Sangathan is an organization of affected people campaigning for the rights of affected people, in particular the economic rights of women. It has also pursued legal remedies for the victims.

Bhopal Gas Peedith Nirashrith Pension Bhogi Manch works to protect the rights

of those impoverished by the gas leak, especially widows.

Bhopal Group for Information and Action and Bhopal Gas Peedith Sangarsh Sahyog Samiti are engaged in documentation, campaigning and advocacy on issues relating to the gas leak.

Bhopal Ki Awaaz is an organization of young people who were orphaned by the gas leak and campaigns for their rights.

International Campaign for Justice in Bhopal (ICJB) is an alliance of various local, national and international groups working for justice for the victims of Bhopal.

Sambhavna Trust Clinic provides medical care to survivors using alternative therapies and allopathic (conventional, Western) systems of medicine. The clinic also conducts research and maintains extensive documentation on various aspects of the Bhopal gas disaster.

www.bhopal.net

[Back cover text]

More than 7,000 people died within a matter of days when toxic gases leaked from a chemical plant in Bhopal, India in December 1984. Since then, exposure to the toxins has resulted in the deaths of a further 15,000 people as well as chronic and debilitating illnesses for thousands of others. The plant site has not been cleaned up so toxic wastes continue to pollute the environment and groundwater. Despite determined efforts by survivors to secure justice, they have been denied adequate compensation and appropriate and timely medical assistance and rehabilitation. Astonishingly, no one has been held responsible for the leak and its devastating consequences.

Clouds of injustice: Bhopal disaster 20 years on looks back over the two decades since the tragedy through a human rights lens, pointing out the responsibilities of Union Carbide Corporation and the Indian government.

Amnesty International is calling for an immediate clean-up of the site as well as a full remedy for the victims, which should include acknowledgement of the harm suffered, compensation, rehabilitation and for those responsible to be held to account. It is also calling for an international human rights framework that can be applied to companies directly, so that victims of human rights violations such as those suffered in Bhopal have effective access to justice.

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Glossary

AIR	All India Reporter
CSIR	Council for Scientific and Industrial Research
Dow	Dow Chemical Company, which took over Union Carbide in 2001
FFM	Fact Finding Mission on Bhopal
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICMR	Indian Council for Medical Research
MIC	methyl isocyanate
SCC	Supreme Court Cases
UCAPC	Union Carbide Agricultural Products Company, a wholly owned subsidiary headquartered in the USA
UCC	Union Carbide Corporation
UCE	Union Carbide Eastern, Inc, a wholly owned subsidiary headquartered in Hong Kong but incorporated in the USA
UCIL	Union Carbide India Limited

Executive summary

Twenty years ago around half a million people were exposed to toxic chemicals during a catastrophic gas leak from a pesticide plant in Bhopal, India. More than 7,000 people died within days. A further 15,000 died in the following years. Around 100,000 people are suffering chronic and debilitating illnesses for which treatment is largely ineffective.

The disaster shocked the world and raised fundamental questions about corporate and government responsibility for industrial accidents that devastate human life and local environments. Yet 20 years on, the survivors still await just compensation, adequate medical assistance and treatment, and comprehensive economic and social rehabilitation. The plant site has still not been cleaned up so toxic wastes continue to pollute the environment and contaminate water that surrounding communities rely on. And, astonishingly, no one has been held to account for the leak and its appalling consequences.

Efforts by survivors' organizations to use the US and Indian court systems to see justice done and gain adequate redress have so far been unsuccessful. The transnational corporations involved - Union Carbide Corporation (UCC) and Dow Chemicals which took over UCC in 2001 - have publicly stated that they have no responsibility for the leak and its consequences or for the pollution from the plant. UCC refuses to appear before the court in Bhopal to face trial and the Indian government agreed to a final settlement which has left survivors living in penury.

The settlement, endorsed by the Indian Supreme Court in 1989, involved UCC paying US\$470 million. Even this inadequate sum has not been distributed in full to the victims. About 30% of claims for injuries have been rejected by the government, around 16,000 claims are outstanding, and most of the successful applicants have received minimal amounts of compensation. At the time of writing in September 2004, around US\$330 million of the US\$470 million remained held by the Reserve Bank of India.

This report, for which Amnesty International liaised closely with survivors and those working on their behalf in Bhopal, looks back over the 20 years since the Bhopal tragedy through a human rights lens. Of the many complex issues that continue to be thrown up by the gas disaster, the report focuses on:

- the human rights impact of the leak and the contamination;
- corporate accountability for the leak; and
- the responsibility of the Indian state to hold UCC to account and to ensure victims receive adequate compensation and rehabilitation.

The report has two aims. The first is to expose the failure by UCC/Dow and the Indian government to comply with their respective obligations and responsibilities to (a) prevent the gas leak and address its consequences, and (b) prevent and stop the continuing pollution of the environment and water through the dispersal of toxic and hazardous substances. The second aim is to demonstrate - by showing how companies evade their human rights responsibilities - the need to establish a universal human rights framework that can be applied to companies directly.

Governments have the primary responsibility for protecting the human rights of communities endangered by the activities of corporations, such as those employing hazardous technology. However, as the influence and reach of companies have grown, there has been a developing consensus that they must be brought within the framework of international human rights standards. There is already a clear trend to extend international obligations beyond states, including to individuals (for international crimes), armed groups, international organizations and private enterprises. Amnesty International supports this trend and believes that companies have an inalienable responsibility for the human rights impact of their operations.

[Photo caption]

Twenty years after the gas leak the Union Carbide plant in Bhopal stands derelict.
© Maude Dorr

[End caption]

This report begins with a brief description of the leak on the fateful night of 2/3 December 1984. It then describes the impact of the leak - the thousands of lives cut short; the tens of thousands of lives ruined by chronic, debilitating illnesses; the health problems of children, including those born after the disaster; and the continuing contamination and pollution around the site. Many of the words used come from survivors - those who witnessed the tragedy unfolding and have lived with the dreadful consequences ever since.

Chapter 2 sets out the human rights framework used for assessing this tragedy. Thousands of people in Bhopal were denied their right to life, and tens of thousands of people have had their right to health undermined. Those struggling for justice and the right to a remedy in Bhopal have been frustrated in their efforts. Thousands of poor families have suffered illness and bereavement, further impairing their ability to realize their right to a decent standard of living.

These and other fundamental human rights are explicitly guaranteed in international treaties which are legally binding on the Indian state. Such obligations can be enforced by Indian courts if they are incorporated into Indian law. The Indian Constitution guarantees the right to life, and the Indian Supreme Court has held that this includes the right to health and to protection from environmental pollution. The Court has also determined that companies are responsible for environmental damage and for compensating anyone harmed by their activities.

Chapter 2 also highlights the UN Norms on the responsibilities of transnational corporations and other business enterprises with regard to human rights (UN Norms), the approval of which in 2003 was a significant step towards generating international standards for corporate responsibility. The Norms can be seen as the basis of a universally recognized, normative framework to identify the responsibilities of companies for the human rights impact of their actions.

Chapter 3 examines the accountability of UCC for the Bhopal disaster. The company decided to store quantities of the "ultra-hazardous" methyl isocyanate (MIC) in Bhopal in bulk, and did not equip the plant with a corresponding safety capacity. UCC transferred technology that was not proven and entailed operational risks. It did not apply the same standards of safety in design or operations to Bhopal as it had in place in the USA. Unlike in the USA, the company failed to set up any comprehensive emergency plan or system in Bhopal to warn local communities about leaks. As early as 1982, UCC was aware that there were major safety concerns regarding the Bhopal plant. Months before the December 1984 disaster, the US parent company was warned of the possibility of a reaction similar to the one that caused the eventual leak in Bhopal.

UCC has withheld the identity of reaction products released and related toxicological information critical to the medical treatment of victims. The company tried to shift responsibility between the various arms of the corporation. In fact, UCC maintained a high degree of corporate, managerial, technical and operational control over its Indian subsidiary, Union Carbide India Limited (UCIL). It was therefore aware of the dangers posed and in a position to take precautions. After UCC was taken over by Dow Chemicals, both companies used the new ownership structure in an attempt to avoid further responsibility for the Bhopal disaster.

Chapter 4 examines the responsibilities of the government of India and the state government of Madhya Pradesh for the leak and for dealing with its consequences. Officials were aware that the Bhopal plant involved hazardous substances and processes, but Amnesty International has been unable to find evidence that the central or state government took adequate steps to assess the risk to local communities or the environment, or to press Union Carbide to review safety mechanisms.

In 1989, cutting short ongoing legal proceedings, the Indian Supreme Court announced a court-endorsed final settlement between the corporation and the government of India without consulting the victims. It said that providing relief to victims took precedence over settling questions of law and liability. In response to a modest financial payment to victims, the settlement bestowed sweeping civil and criminal immunity on UCC, trading off its legal liability while excluding the victims of the disaster from shaping the end of the case. The payment of compensation did not, however, begin until 1992 and involved numerous problems including payment of inadequate sums, delayed payments and arbitrary rejection of claims.

In 1994, all government research on the medical effects of the Bhopal disaster was discontinued without explanation. The full results of the research carried out have yet to be published.

Government efforts to provide rehabilitation have proved ineffective. The poor quality of the healthcare system has meant that most survivors have had to spend most of their compensation money on medical treatment. Economic rehabilitation measures have failed to prevent the impoverishment of already economically vulnerable survivors.

The report concludes that there is no substitute for taking steps to regulate the activities of transnational corporations in both host and home countries. Laws in host countries must be developed and enforced to allow national governments and local communities to control the activities of transnational companies operating in their territory. Transnational corporations should avoid double standards in safety and adopt the best practices in all aspects of safety in all their operations.

The Bhopal disaster and its aftermath demonstrate clearly the need for an international human rights framework that can be applied to companies directly, that could act as a catalyst for national legal reform, and could serve as a benchmark for national law and regulations. Ensuring public participation and transparency in decisions relating to the location, operational safety and waste disposal of industries using hazardous materials and technology is an essential step to heighten risk awareness and responsible behaviour as well as to ensure better preparedness to prevent and deal with disasters like Bhopal.

The international community must ensure that victims of human rights violations have effective access to justice and effective redress for the harm suffered, without discrimination, and regardless of whether those responsible for the violations are governments or corporations.

CHAPTER 1:

The gas leak – a human rights tragedy

The winter of 1984 began like any other for the residents of Bhopal, capital of the state of Madhya Pradesh in central India. For the thousands of poor residents living in the settlements around Union Carbide's pesticide factory in the northern part of the city, winter meant a welcome respite from searing summer temperatures and warm, sweaty nights in crowded tenements.

For Puna Bai, then a young mother of three, living in Jai Prakash Nagar, a poor urban settlement just across the road from the factory, the night of 2 December 1984 was no different, until her husband woke up sometime around midnight to drink some water.

"... All of a sudden he started coughing and in the meantime he heard screams coming from outside. As soon as my husband opened the door all we could see was smoke entering our house. Then everyone in my family started coughing and my kids started complaining of their eyes burning. Then we heard someone saying that we should all run because some gas pipe has exploded in the Union Carbide factory. We all started running and eventually I got separated from my family. I just remember not being able to locate my family and then after that I had lost consciousness."

Unknown to Puna Bai and thousands of unsuspecting citizens of Bhopal, shortly before midnight on 2/3 December, tonnes of deadly methyl isocyanate (MIC) were silently leaking into the atmosphere. One of the 20th century's worst industrial disasters had begun to unfold. A subsequent investigation stated:

"At 12.20am, the MIC Production Supervisor notified the Plant Superintendent of the release. The Plant Superintendent, who was in the formulations area, arrived in the MIC Unit around 12.25am and found much MIC in the atmosphere... At 12.45am, the Supervisor's Log records that Derivatives Unit operations were suspended because of the high concentration of MIC in the area. About 1.00am, a Derivatives Unit operator turned on the Toxic Gas Alarm. Also at about this time, the Plant Superintendent and the MIC operator verified that MIC from Tank 610 was being emitted from the vent gas scrubber stack to the atmosphere."¹

The Derivatives Unit operator, V.N. Singh, who turned on the toxic gas alarm, and his colleagues had felt the first signs of MIC in the atmosphere at about 11.30pm and had informed the supervisor. Some time after 12.50am V.N. Singh broke

the alarm glass to start the loud factory siren. *"This was to warn other workers and to call the rescue squad. After a few minutes, the loud siren was turned into a muted siren. The rescue squad came to the MIC plant and tried to stop the toxic release by putting large amounts of water spray through fire hydrants. The leak was uncontrollable so that after some time, everyone started to flee from the MIC unit in the opposite wind direction. I also ran away from the MIC plant."*²

The then Additional District Magistrate (ADM)³ of Bhopal says that the first official warning of the leak came at about 1.15am when a police officer on a night patrol came across a large number of people fleeing their homes suffering from severe burning in their eyes and coughing fits. He relayed the information to the Police Control Room at approximately 1.20am. The ADM phoned the Works Manager of the factory at his residence, who said he was unaware of any toxic leak and suggested that if any gas was causing irritation to the eyes then water be used to wash eyes thoroughly. *"The Union Carbide had not divulged the name of the gas. The Collector [a senior district-level official with administrative and judicial responsibilities employed by the state government] came to the control room at about 3.40am and with great difficulty he could ascertain the name of the gas as 'Methyl Isocyanate' (MIC) from Shri. Shetty, the Plant Superintendent."*⁴

Even though plant officials knew that there was a possibility that MIC was leaking into the atmosphere shortly after midnight, they did nothing to alert the communities living in the area or the local city administration or the police until around 2am when the loud toxic gas siren began to sound continuously.⁵

Like Puna Bai and her family, thousands of people across Bhopal had woken up around or after midnight coughing and breathless as the clouds of toxic gas swept through their homes. The effects of the leak were felt immediately and most intensely in the working class neighbourhoods built up to the factory's walls. Survivors said it felt like breathing the fumes when chillies are burned, and that they experienced intense irritation of their eyes and throat. People began coughing violently, and some vomited.

[Photo caption]

The tank that leaked on the night of 2 December 1984. © Maude Dorr

[End caption]

Everyone began to flee, some into worse gas pockets than in their homes,⁶ increasing the amount of toxic chemicals they inhaled.⁷ For many of those who tried to flee, it was already too late. A government report on the subject captured the scene:

*"Within hours all the hospitals of Bhopal were full of poison gas-stricken victims. Doctors, medical students and volunteers worked round the clock but in the absence of any open toxicological information about MIC, only symptomatic treatment could be provided... A trail of both short-term and long-term problems ensued... No one knew for certain what gases had been released from the Union Carbide facility...The Union Carbide management was completely silent on this and did not even say what toxic gases had been released from their facility or what antidotes could help."*⁸

Dr Heeresh Chandra, who performed over 100 autopsies at Hamidia Hospital in the days following the disaster, reported that there was *"a gross increase in the weight of the lungs of up to three times the normal. The entire respiratory tract showed pathological changes. The lungs were heavily water logged and had a distinctive cherry-red colour... The mucosa was intensely congested. The trachea and the major divisions of the bronchi revealed necrotizing or ulcerative*

changes.”⁹

As the sun set on Bhopal on 3 December, the graves were fast filling up and the funeral pyres were burning bright; thousands had died and many more were ill. At least half a million people had been exposed to the toxic fumes. In the days, weeks and years to come the toll would rise – and rise. Bhopal is still counting.

What happened in Bhopal was one of the worst industrial disasters ever witnessed. But it was not just a tragedy of the past; it has continued to be a tragedy ever since.

[box]

What gases leaked?

According to Union Carbide, “approximately 54,000 pounds (24,500kg) of unreacted MIC left Tank 610 together with approximately 26,000 pounds (11,800kg) of reaction products.”¹⁰ Twenty years after the fatal leak, UCC has still not revealed the exact contents of the reaction products.

[end box]

Deaths

“There were thousands of bodies. There were bodies everywhere. And people were dying all round.”

Mohammad Owais, a volunteer at Hamidia Hospital

Between 7,000 and 10,000 people died within three days of the gas leak. This estimate, based on information obtained by Amnesty International, is two to three times that of most official sources.

Illahi Baksh, aged 59, who drove a truck for the Bhopal Municipal Corporation, said he ferried hundreds of bodies on 3 December 1984. He stated that he transported up to 25 bodies on each trip from areas near the Bhopal plant to the hospital morgue. He made between eight and 20 trips, and his was just one of up to 10 similar trucks. Illahi Baksh and his colleagues transported at least 1,600 bodies on 3 December alone, and many other trucks were in operation across other areas.

[box]

Extracts from UCC’s Reactive and Hazardous Chemicals Manual

‘Methyl isocyanate is a hazardous material by all means of contact. Its odor or tearing [weeping] effects cannot be used to alert personnel to an unsafe concentration of vapor. The Threshold Limit Value (TLV) is 0.02 ppm [parts per million] by volume in air for average 8-hour exposures... but no odor or tearing is perceived by humans even at concentrations as high as 0.4 ppm. Mild irritation to the nose, throat, and eyes (with no odor) is noticeable at 2.0 ppm; this irritation becomes more intense at a concentration level of 4.0 ppm... Methyl isocyanate is a poison to humans by inhalation as defined by ICC [a US company that offers advice on hazardous materials] regulations and should be regarded as a poison by swallowing or skin contact.

Because of the high ratings for breathing and contact with the eyes, methyl isocyanate is assigned the maximum health rating of 4 in the UCC hazard signal system.

Methyl isocyanate liquid will seriously injure the eyes even when it is diluted with a non-toxic liquid to a 1 per cent concentration... Avoid eye contact with vapors or liquid by wearing vapor proof goggles or full-face mask.

Methyl isocyanate is a recognised poison by inhalation and is intensely irritating to breathe. It causes severe bronchospasm and asthma-like breathing. Major residual injury is likely in spite of prompt treatment.

Avoid breathing vapors of methyl isocyanate.

Liquid methyl isocyanate can cause skin burns, and absorption through the skin can be harmful. Minor to major residual injury may result by contact with the skin in spite of prompt treatment.'

[end box]

Aslam Parvez, Secretary of the Jaddha cemetery in Jahingirabad, and Muhammad Khurram, one of the young men who, in 1984, volunteered to dig graves, told Amnesty International: *"Ours is a relatively small cemetery and quite further away from the plant, but still we must have buried at least 400-500 bodies by the 5th. At that time there were at least seven other cemeteries in old Bhopal, some of which are much bigger than ours. At least 1,000 to 1,200 people must have been buried in Badebagh, the biggest of them, alone."*

According to local restaurateur Shyam Babu, who supplied wood for funeral pyres, more than 7,000 corpses were burned on the Vishram Ghat Trust's five funeral pyres. The Cloth Merchant Association stated that it had supplied enough material to make shrouds for at least 10,000 Hindu victims.¹¹

A number of people told Amnesty International that bodies were simply taken away by army trucks and dumped in mass graves or in the river Narmada far from Bhopal.

Official figures do not account for people who died after fleeing from Bhopal. Hundreds of thousands of people left the area and no one knows how many never came back because they died. Some 15,000 claims were filed for deaths. The government accepted just over 5,000, but in many cases, no one was left to file claims.¹²

Amnesty International has found no evidence of any systematic attempt by the Indian government to keep a record of gas-related deaths in the 20 years since 1984. The 2003 annual report of the Madhya Pradesh Gas Relief and Rehabilitation Department stated that a total of 15,248 people had died as a result of the gas leak by October 2003. However, this number includes deaths in the immediate aftermath, of which official estimates are grossly understated. Activists and survivors' organizations estimate that over 20,000 people have died since 1985.

The only systematic study of mortality rates was done by the Indian Council for Medical Research (ICMR) beginning in 1985 but this was terminated abruptly in 1993. Comparing mortality figures in the affected areas with control groups, and using the 1981 census for the population figures, Amnesty International believes that at least 15,000 people have died between 1985 and 2003 because of the gas leak.¹³ This is in addition to the 7,000 to 10,000 people who died in the immediate aftermath, taking the total death toll to well over 20,000.

Damage to health

Union Carbide medical experts insisted at the time of the leak that MIC could only cause superficial injury, and that it does not enter the bloodstream or cross the lung barrier. However, later blood and tissue analysis revealed evidence of methyl carbamylation in the blood of victims who had died,¹⁴ and

MIC trimer, a chemical found in the residues in Tank 610 which is known to be the source of the gas leak.¹⁵

According to the Sambhavna Trust Clinic, exposure to the toxins that leaked on the night of 2/3 December 1984 has resulted in chronic, debilitating illnesses for at least 120,000 people for whom treatment has proved largely ineffective.¹⁶ The government of Madhya Pradesh Gas Relief and Rehabilitation Department's 2003 annual report reveals that by October 2003, 554,895 compensation claims for varying degrees of injuries (minor and major) or disability had been medically assessed and approved.¹⁷

[Photo caption]

A health worker visits a tuberculosis (TB) patient in one of the gas-affected communities. Several local organizations are active in promoting health awareness and treatment programmes for survivors in Bhopal. © Maude Dorr

[end caption]

Despite the intensive work done immediately after the leak, the extent and the quality of medical research has not been adequate to meet the level necessary to make decisions about action on detoxification, short- and long-term treatment, long-term health consequences and the implementation of a programme to compensate victims. This inadequate research has been further weakened by the lack of information about the nature of the gases released during the leak and their toxicity.¹⁸ Even today there are gaps in medical analysis of the consequences of the Bhopal leak, leaving decision-makers as well as affected citizens uncertain of the precise links between exposure and health status. It is understandable that those suffering from health problems they believe to be the result of exposure to gases or to long-term contamination of water often have little confidence in the medical services available.

Respiratory illness

Many survivors face chronic respiratory illness and studies have underscored that MIC inhalation is "profoundly damaging" to the lungs.¹⁹ Zaki Mohammed, 53, has been receiving treatment at the Jawaharlal Nehru Hospital, built in Bhopal exclusively for gas-affected patients. He explained: *"We have spent a lot of money on my medical treatment... Sometimes we don't even have 5 or 10 rupees for tea or medicines. I was very healthy before the gas... After the gas, it has been cough and breathlessness, cough and breathlessness. Sometimes it would go away and I would think that I would get better... Every three months, every three months, I come to this hospital... I have injections here, and pills and I take oxygen. Oxygen has the most effect."*

[Photo caption]

Raes Mohammed © Private

[End caption]

Since the gas leak, numerous surveys among gas-exposed populations have found prevalent and persistent respiratory illness. The Indian Council for Medical Research (ICMR) found that 96% of men and women in the severely affected areas reported respiratory system damage immediately after the leak. A medical survey conducted by a non-governmental organization in March 1985 found that 94.6% of people living between a half and two kilometres away from the factory had symptoms such as coughs and chest pain, and 104 days after the accident, 79.7% still complained of respiratory illness.²⁰

Five years later, a survey found that 70% of the sample from the severely affected area reported breathlessness.²¹ Ten years later, a study found persistent obstruction of the small airways in survivors.²²

Eye disease

MIC has an intensely irritating effect on the eyes, and ocular problems were among the most widely reported symptoms in the initial stages after the gas leak.²³ The ICMR reported that 60-70% of patients seen in the days and weeks after the leak were suffering from eye problems. The ICMR also reported that with treatment, all patients with eye problems well and became asymptomatic within a few days."²⁴

However, eye irritation persisted in exposed populations. Raes Mohammed, 62, told Amnesty International that he used to be a sign board artist before the gas leak occurred. The day after the attack, he said, *"my eyes were swollen. When I looked at the light it looked like 1,000 rays. Every day after that I went to go and get drops put in for treatment... After that my eyes were never good. I was never again able to do my previous job."*

Nine months after the accident, a study found persistent eye watering and other chronic symptoms of irritation, but no cases of blindness. A follow-up three years later found an increased risk of eye infections, symptoms of eye irritation, corneal erosions and cataracts, a phenomenon termed the "Bhopal eye syndrome".²⁵ A study beginning three years after the incident found that, single acute exposure seems to have resulted in a chronic inflammatory process."²⁶

Immune system impairment

One of the reported effects of the gas leak was damage to the immune system, making those affected susceptible to illness.²⁷ Nearly 20 years after exposure, severely exposed people were four times more likely to suffer from common illnesses, five times more likely to suffer from lung ailments, three times more likely to suffer from eye problems, and more than twice as likely to suffer from stomach ailments, according to the Madhya Pradesh Gas Relief and Rehabilitation Department.²⁸

One indication of immune system impairment was a sudden increase in tuberculosis (TB) infections.²⁹ The ICMR found that one in 14 people in the worst affected areas of the city had TB, three times the national rate.

Nazma Bi, 22, was two years old at the time of the gas leak. She said, *"Four years ago [ie 16 years after exposure to gas], I had constant fever for eight to 15 days... I was diagnosed with TB after a phlegm test, and underwent treatment for six months... When I got TB, there was no hope that I could survive. I had lost so much weight, and I stayed in bed for so many days."*³⁰

Neurological damage

Complaints of short-term memory loss, problems with concentration, headaches, difficulty staying awake, and abnormal smell and taste were common after the gas leak. However, many doctors dismissed these complaints, and the extent of neurological damage has been given little attention.³¹ Studies by the International Medical Commission on Bhopal a decade after the incident indicated neurological damage among severely exposed people.³² Follow-up studies supported this initial observation, but made no clear link between the degree of exposure and the extent of neurological damage.³³

Neuromuscular damage

Neuromuscular symptoms such as muscle aches and pain, tingling and numbness are prevalent among those exposed to the gas.³⁴ Zaki Mohammed, who often suffered severe pain across his shoulders, said in 2004 shortly before his death: *"At that time [of the severe pain], I feel like I want to die because the pain is so bad."*

Shaheen had received treatment for breathing difficulties in the Jawaharlal Nehru Hospital. She weighed only 27kg in 2004, shortly before she died. She said: *"In my ankles and arms and shoulders, I have swelling and pain always. I cannot even stretch my arms and legs. It feels like someone is pulling my nerves from the inside."*

Cancers

Newspapers have reported increased cervical and breast cancers among women.³⁵ Munni Bi, 45, who lived in Rajghat colony, less than a kilometre from the plant, at the time of the leak, has cervical cancer. She reported in 2004: *"I was completely healthy. Then 14 months back, the problems started. I have blood and discharge all the time. I also had headaches, joint pain and breathlessness for the last eight years, but it had not been frequent... I am getting radiotherapy."*

Studies conducted after the gas leak indicated higher frequencies of chromosomal aberrations among exposed groups, especially among women.³⁶ These have been linked to carcinogenic genetic changes in the body. However, a full understanding of MIC's carcinogenic potency will have to wait until 30 to 40 years after the accident.

Gynaecological disorders

As early as March 1985, two studies revealed a large number of gynaecological disorders in exposed women.³⁷ Chief among the symptoms were excessive vaginal discharge and abnormal uterine bleeding.³⁸

Subsequent studies have shown persistent, long-term gynaecological problems as a result of the Bhopal gas disaster, but little or no work has been done in this area.³⁹

Sitara Bi, 40, has faced chronic menstrual problems. She explained: *"The doctor says that I will have to have a hysterectomy. I had irregular periods... It began for me one year after I was affected by the gas... When my period comes, I have weakness. I had back pain... I could not leave the house and I would have pain like I was having a miscarriage. First I was embarrassed that I had problems. When I told the doctors that I had this, they would respond that all ladies had this problem. When I asked them about whether my medicines were causing the bleeding, they told me to drink milk and eat fruit. We can't even afford to eat rotis [bread]. How are we going to afford to eat fruit?"*

Miscarriages

Many women who were pregnant at the time of the gas leak suffered miscarriages. According to the ICMR, of 2,566 pregnant women, 373 had "spontaneous abortions".⁴⁰ Rates of miscarriage decreased sharply from severely exposed to less exposed areas. In severely exposed areas, the rate was over 50% in 1984.⁴¹ Another detailed study confirmed these findings.⁴²

Exposed women who conceived after the incident have continued to suffer after-effects. ICMR studies showed a higher incidence of miscarriage in affected areas until 1989, when the study was terminated.⁴³ A survey administered a decade after exposure revealed that of 390 pregnancies conceived after the gas leak, 9% resulted in still births, compared with 4% in unexposed areas.⁴⁴

Mental health

The gas leak severely damaged the mental health of local people, but psychiatrists became directly involved only eight weeks after the disaster.⁴⁵ Problems have included depression and anxiety.⁴⁶

The ICMR reported that 10-12% of patients who visited clinics had "psychological symptoms".⁴⁷ According to data from 10 satellite government clinics in moderately and severely affected areas, 22% of 855 patients had psychiatric problems.⁴⁸

Women's mental health was particularly affected, as was that of children. A government study found that exposed children suffered from bed-wetting, stubbornness, irritability and fearfulness.⁴⁹

A pilot study by the Psychology Department of Bhopal University found that 32.5% of exposed children produced unrecognizable human drawings, while all children in the control group were able to draw recognizable drawings. Many doctors working in Bhopal after the gas leak said claims of psychological problems were exaggerated, even suggesting that the free rations provided by the state encouraged people's complaints.⁵⁰ However, psychiatric problems have been persistent since the gas leak. A survey conducted 10 years after the leak found that 36% of those interviewed reported nightmares, 65% anxiety, 24% depression, and 64% difficulty in decision making/lack of concentration.⁵¹

Amravathi, a 45-year-old woman, said that she had *gabrahat*, a word that means anxiety in Hindi but is used in Bhopal to describe the lingering mental consequences of gas exposure. She said in 2004: *"I have gotten anxiety since the leak. For the past 10 years it has been worse. When I have it I feel as if I have no life in my body. My head feels heavy, it feels like the world is spinning around me. Yesterday, I fell down. The symptoms are getting worse.. Without medicines I have no strength to go on. The attacks are frequent, only 10 to 15 days apart. Not a month goes by without them."*

Children

Children and the elderly proved most vulnerable in the wake of the disaster. Children under the age of 10, both boys and girls, died in large numbers.⁵²

In the first two weeks after the disaster, the Hamidia Hospital admitted 1,337 children. The majority of young patients had symptoms of coughs, breathlessness, painful watering eyes, photophobia (hyper-sensitivity to light), diarrhoea and vomiting. Some had convulsions and episodes of unconsciousness and coma.⁵³

Children also exhibited signs of trauma and psychiatric problems related to their medical problems and social disruption.⁵⁴

The few studies available on the effects of the Bhopal gas disaster on children are mostly observational in nature. News reports suggest that children continue to be the most adversely affected by the disaster.⁵⁵

The long-term effects of gas exposure on children are still being uncovered. Naresh, 23, was exposed to the gas when he was only three years old. He is now less than five feet [1.5m] tall. He explained: *"I have very low height, but I really don't know why.. It looks as if I am the youngest among my [younger] brothers."*

A recent study on the effects of exposure to MIC toxic fumes on the physical growth pattern of adolescents found significant decreases in most measurements in boys, but not girls.⁵⁶ The effects were most significant in boys that were exposed in the womb, possibly as a result of the sex-specific effects of the MIC degradation product trimethylamine.⁵⁷

Entrenchment of poverty

While there has been research on the effects of gas exposure on people's health, few studies have determined the impact of the disaster on other aspects of life for the people of Bhopal. Despite this, it is clear that the gas leak radically altered the social fabric and economics of everyday life, and entrenched existing poverty and social disempowerment.

[Photo caption]

A Sevin processing unit now rusted and decaying on the plant site at Bhopal.
© Maude Dorr

[End caption]

Because of the location of the plant and the direction of the wind on the night of 2/3 December 1984, the gas leak disproportionately affected the poorest in the city. According to ICMR studies, 68-86% of the population in the severely affected area belonged to a "very depressed socio-economic class". More than 70% of those living in severely affected areas were found to be living in poor quality houses.⁵⁸

The economic and social consequences of the gas leak were therefore largely borne by those with the least resources. Many poor families lost their main wage earner. Large numbers of animals owned by families died. Survivors face chronic illness and mental distress. Some cannot work or must work reduced hours. Others have been forced to change their occupation. Many women were unable to marry or faced great trouble in their married homes as a result of gas exposure (see below).

Many survivors complain of reduced earnings because of their inability to work as a result of various health problems or injuries. Speaking about the impact of poor health on herself and her five children, 46-year-old Hasina Bi from Atal Ayub Nagar said: "*Since birth I have worked - I used to roll beedis [cigarettes]. I have problems with my vision so I stopped... My children can only work for two days at a time [due to poor health]...*" As day labourers, Hasina Bi and her children are only paid when they work.

Mohammad Ayub, 45, from Jai Prakash Nagar, has been unable to work as a driver for long periods due to severe pain in his hands and shoulders. His family has incurred large debts as a result.

According to a Medico Friend Circle survey from 1985, soon after the gas leak, 65% of working people in the severely exposed area faced a drop in income ranging from 20% to 100%. Five years later, 90% of those who had worked before the leak reported a reduced capacity to work.⁵⁹

Daily wage labourers - an estimated 70% of the gas affected working population - felt the effects of the gas most keenly. According to a survey of workers conducted by the Fact Finding Mission on Bhopal (FFM Bhopal), 35% of male workers and 25% of female workers became unemployed after the leak. No less than 81% of male workers who changed jobs earned less. The 456 workers in the FFM Bhopal survey suffered chronic cough (81%); weakened eyesight (67%); and breathlessness and weakness (34%). Many respondents had left their job because of ill-health; had slowed down in their work; were able to work only intermittently; suffered perpetual fatigue; and were not able to work after sunset because of eye problems.⁶⁰

Union Carbide's contributions to Bhopal have been limited to medical relief. The government of Madhya Pradesh planned relief and rehabilitation projects, including special housing and funds for widows and orphans, vocational training and special production centres for gas-affected women, and loan schemes. However, although the health of the affected population has continued to deteriorate,⁶¹

the impetus to implement these programmes has faded.

Women

Women widowed as a result of the disaster have found themselves in a particularly precarious situation. *"Not all of us receive even the paltry Rs.150 [US\$3.26]⁶² a month that is doled out to widows. I was refused that on the grounds that I am not 60 years old,"* said Kiran Jain, 40, a widow. Another, Nanni Bai, is around 60 years old but does not receive any pension and is not entitled to buy food at subsidized prices. *"The government is not giving either employment or pension. And all the compensation money I received for my husband's death is long exhausted, firstly paying off the lawyer and middleman who got me the compensation and then all the medical bills. How long will it last? How are we expected to live?"*

[Photo caption]

Nanni Bai © Private

[End caption]

The widows' calls for water, electricity, welfare support and employment for their children have received little response from the government *"We have done everything - organized demonstrations, protest rallies and even road blocks but little has changed. They [the authorities] keep making promises but do nothing,"* said Kiran Jain.

Marriage, and the ability to marry, has social as well as economic ramifications for many women in India. Being gas-affected carries with it social stigma, and activists working with survivors' organizations say that young women who are known to be gas exposed often face difficulties in getting married. This is attributed primarily to possible difficulties with child bearing and the potential financial liability that chronic ill-health entails. Research completed in 1996 indicated that the proportion of women not married between the ages of 15 and 29 was 19% in severely exposed areas compared with 6% in mildly exposed areas.⁶³

Married women exposed to the gas face difficulties because of their inability to work and possible difficulties with child bearing or increased financial liability because of illness. Haseena Bi, a resident of Jai Prakash Nagar, fears that her 16-year-old daughter Rubina, who suffers from anaemia, weakness and high levels of vaginal secretions, will not be able to marry since she is known to be suffering from illnesses caused by exposure.

Suneetha was four years old at the time of the gas leak. She says that she cannot work in her in-laws' house because of chest pain and weakness. *"My mother-in-law used to say 'She eats so much, and she doesn't do any work.' She got my husband to beat me... I used to be so sick. And they [her in-laws] would say 'We didn't know that you were gas affected, and we would not have married you to our son if we had known'."*

Reena, daughter of Ramgopal Meena and Imarthi Bai, was left in her parents' home by her husband, since he could not cope with her constant illness. According to activists working with survivors, this is a common phenomenon. It also appears that the reduced ability of women to do housework because of illness or exposure-induced weakness may render them more vulnerable to abuse.

Pollution

The impact of the plant on human rights is not confined to the gas leak. Since the plant opened in 1970, it has been a source of environmental pollution. Even

today the contaminated site continues to pollute the groundwater, the sole source of water for those around the plant, with toxins.

The Bhopal plant began manufacturing the pesticide Sevin in September 1977, using imported MIC. By February 1980, the plant was manufacturing MIC on site, as well as the pesticide Aldicarb (marketed as Temik), phosgene and monomethylamine, both used to make MIC.⁶⁴ All operations ceased in December 1984 after the gas leak.

Operational and waste disposal practices at the factory harmed the environment, even before the gas leak. Internal documents reveal that the US parent company was aware of numerous events at the Bhopal plant which had serious consequences for the environment.

UCC's engineering department warned back in 1973 that the design of the Bhopal plant, which used solar evaporation ponds for waste effluent, posed a of polluting sub-surface water supplies in the Bhopal area". It stated that, ponds will have to be constructed at one to two-year intervals throughout the life of the project in order to address this problem."⁶⁵ A 1973 internal memo notes: similar waste streams have been handled elsewhere, this particular combination of materials to be disposed of is new and, accordingly, affords further chances for difficulty."⁶⁶

A host of internal, governmental and non-governmental reports revealed that soil and groundwater around the plant site were, indeed, contaminated, but the company did not warn surrounding communities nor take substantive action to clean the site.

In **1980** a field storage tank for hydrochloric acid gave way from below, leaking acid into the soil.⁶⁷

In **March 1982** UCIL sent a telex to UCE reporting a leak from one of the solar evaporation ponds and an emergency pond.⁶⁸ A second telex of April 1982 noted that "continued leakage from the evaporation pond [was] causing great concern."⁶⁹

An Operational Safety Survey of the Bhopal plant site conducted by UCC personnel in **May 1982** concluded: "The housekeeping in and around the entire area was found to be poor. The naphthol spillage is difficult to control but the general pile of old and oily drums, old pipe, pools of oil on ground, etc, create unnecessary fire and access problems in the area."⁷⁰

[Photo caption]

Bhopal residents demonstrate for clean water, July 2004. Two months earlier the Indian Supreme Court had ordered the Madhya Pradesh state government to supply fresh drinking water to people whose supplies had been contaminated. © Maude Dorr

[End caption]

In **May, June and July 1989** UCC conducted "preliminary" tests on solid and liquid samples drawn from "land-fill areas and effluent treatment pits inside the plant". Both liquid and solid samples were toxic to fish. The solid samples contained naphthol or naphthalene in substantial quantities, the liquid samples contained "naphthol and/or Sevin in quantities far more than permitted by the Indian Standards Institution (ISI) standards for onland disposal."⁷¹

In **April 1990** the National Engineering Environmental Research Institute (NEERI), commissioned by the Madhya Pradesh government to study the extent of pollution damage from the solar evaporation ponds, concluded that there was no soil or groundwater contamination due to seepage from the ponds.⁷²

However, the same month the US National Toxics Campaign (NTC) released an analysis of soil and water samples taken from in and around the factory premises.

Contrary to the findings of NEERI, this revealed the presence of numerous toxins including dichlorobenzene and polynuclear aromatic hydrocarbons, many of which are known carcinogens.

The NTC report tested for many more chemicals than NEERI.⁷³ Internally, UCC advised in using the NEERI data" but UCC continues to cite the NEERI report in its defence.

In **November 1990** UCC officials discussed serious concerns about percolation of contaminants into the soil during monsoon rains. More contamination studies were advised "...primarily for our own understanding of the situation."⁷⁴

In **1996** the Chief Chemist of the State Research Laboratory in Madhya Pradesh found toxic pollutants in 10 samples from communities near the factory.⁷⁵ It concluded: is established that this pollution is due to chemicals used in the UCC factory that have proven to be extremely harmful for health."⁷⁶

In **October 1997** NEERI reported on waste disposal practices at UCIL. The report stated that solid and tarry wastes were dumped in just over one fifth of the total plant area and would have to be "to the environmental quality of the plant premises".⁷⁷ The NEERI report concluded that some 17 sites within the factory had been heavily contaminated. Nonetheless, NEERI stated unequivocally that groundwater the drinking water quality criteria" and estimated that it would be 23 years before contamination from waste disposal practices on the plant site had any effect on the groundwater.⁷⁸

However, Arthur D. Little (ADL), an international consulting group hired by UCC to assist NEERI, had questioned NEERI's findings and conclusions before publication. ADL's comments on this NEERI report criticized its methodology and stated that travel times to the aquifer below the site... could be significantly less than identified in the report."⁷⁹ It stated, "[O]ne can argue that the worst case scenario travel time could be two years". ADL said that conclusions about whether groundwater was fit to drink were too definitive given the limits of the data. None of these comments were reflected in the final NEERI report, which Dow has since used to assert an absence of contamination of local drinking water.⁸⁰

In **July 1998** Eveready Industries India Ltd (EIIL), the renamed UCIL, surrendered the lease to the site while still conducting a remedial programme supervised by the Madhya Pradesh Pollution Control Board to dispose of solid and tarry residues and decontaminate soil around the waste disposal areas. Despite repeated entreaties from the Madhya Pradesh Pollution Control Board to EIIL to finish the clean-up programme, this had not been completed at the time of writing.⁸¹

[Photo caption]

Two boys collect water from a contaminated well at Sunder Nagar, a colony in Bhopal, 2004. Pumps at contaminated wells are painted red by the government.
© Rachna Dhingra

[End caption]

In **November 1999** Greenpeace released a report on Bhopal which concluded that the site and immediate surroundings were contaminated with chemicals arising from routine processes, spillages and accidents at the plant, or from dumped and stored materials on the site. Greenpeace found hot-spots of severe contamination with heavy metals and persistent organic pollutants⁸² and noted that bags of Sevin were still stored on factory premises and that residue on remaining plant fixtures had not been cleaned.⁸³ The chemicals found included carbon tetrachloride, chloroform, trichloroethene, tetrachloroethene and dichlorobenzene. These chemicals were found in concentrations ranging from five to more than 600 times the limits recommended by the US Environmental Protection Agency. All are toxic, most probably carcinogenic.

A **January 2002** report by Shrishti and Toxics Link, a Delhi-based environmental non-governmental organization, found not only contamination in vegetables grown around the plant site, but also a bio-concentration of contaminants in breast milk samples taken from women in the surrounding areas.⁸⁴

In **May 2004**, based on a report by the Waste Monitoring Committee,⁸⁵ the Supreme Court of India observed that "due to indiscriminate dumping of hazardous waste due to non-existent or negligent practices together with lack of enforcement by the authorities, the groundwater, and, therefore, drinking water supplies" have been damaged.⁸⁶ The Supreme Court passed an order instructing the Madhya Pradesh government to supply fresh drinking water through tankers to people whose potable water supplies were contaminated by pollutants from the plant.⁸⁷

Water

In 1997, 250 hand-pumps around the plant were painted with new red signs declaring that the water they provided was unfit for drinking. In the absence of any other convenient source, most people in the surrounding communities continue to drink the water from the pumps.⁸⁸ At the time of writing, the state government had yet to implement the Supreme Court order to provide fresh water to these communities.

Hasina Bi of Atal Ayub Nagar, a neighbourhood in Bhopal near the plant, has been drinking the water from the hand-pump near her house for 18 years. She said: "*When you look at the water, you can see a thin layer of oil on it. All the pots in my house have become discoloured... green-yellow.*" She added: "*We have to travel at least two kilometres to get clean water - to Chola Nakka. My health is so bad that it prevents me from carrying the water I need from there.*"

Faujia, a 15-year-old girl who often goes to draw water from the pump, complained that the "*water is red here and it smells... like there is some medicine in it.*" Munni Bi said the water "*is bitter... difficult to swallow*". Their families live in Annu Nagar, an area in Bhopal, and the government freshwater tankers rarely, if ever, enter their neighbourhoods.

Many people who were not exposed to the gas leak developed health problems similar to those who had been exposed, probably from drinking contaminated water. Shehesta Kureishi, 35, moved to Annu Nagar after her marriage 12 years ago. She explained: "*Two and a half years ago, I stopped menstruating entirely. Initially, I had it every two months, then four months, then not at all.*" She also complained of pain from her lower back to her groin. Her seven-year-old son Ateeb complains of joint pains. Neither of these people were exposed to the gas, but both have been drinking contaminated water.

CHAPTER 2:

Human rights law framework

The disaster in Bhopal was and remains a human tragedy and a tragedy for human rights. By using the human rights framework to examine what happened, we can see what obligations under international law have been breached and what protective standards failed. The human rights framework also points to mechanisms for holding governments to account if they fail to meet their obligations to respect, protect and fulfil human rights.

Acts and omissions related to the disaster at Bhopal violated the civil and political rights of the victims as well as their economic, social and cultural rights. At the very heart of the laws and standards that define human rights is the principle that all human rights are universal and indivisible - in other words, all human rights should be enjoyed by all people. The wide range of human rights - civil, cultural, economic, political and social - are interdependent and interrelated.⁸⁹

There are some differences between the way that civil and political rights are guaranteed in international law, and the way that economic, social and cultural rights are guaranteed. Economic, social and cultural rights are to be fully realized progressively, according to the maximum resources available to states.⁹⁰ Nevertheless, there are more similarities than differences. Indeed civil and political rights too are to be fully realized progressively,⁹¹ and both sets of rights have a minimum core content, which states are bound to ensure in all circumstances.⁹² Failure to comply with these obligations results in human rights violations.

Human rights treaties and standards are traditionally applied to states. Since India's accession to the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR) in 1979, the government of India and the state government of Madhya Pradesh, have been legally bound to respect, protect, and fulfil the human rights in the ICCPR and the ICESCR.⁹³ The USA, whose courts have exercised jurisdiction over some aspects of the Bhopal disaster, is also a party to the ICCPR and is bound by its provisions.

UN bodies - the Human Rights Committee and the Committee on Economic, Social and Cultural Rights - have interpreted the provisions of the ICCPR and ICESCR and monitored states parties' compliance with these treaties.

Human rights responsibilities extend beyond states. Since 1948 the Universal Declaration of Human Rights has provided a common standard of achievement which means that every individual and every organ of society bears responsibility for the universal and effective recognition and observance of the rights and freedoms it sets out.

Since the Bhopal disaster, this responsibility as it applies to businesses has been further elaborated by the UN Working Group on the Working Methods and Activities of Transnational Corporations.⁹⁴ In 2003 the UN Norms on the responsibilities of transnational corporations and other business enterprises with regard to human rights (UN Norms) were adopted by the UN Sub-Commission on the Promotion and Protection of Human Rights and transferred for discussion to the UN Commission on Human Rights. The preamble to the UN Norms notes that "transnational corporations and other business enterprises, their officers and persons working for them are also obligated to respect generally recognized responsibilities and norms contained in United Nations treaties and other international instruments."⁹⁵

Violated rights

Right to life

The right to life is set out in the Universal Declaration of Human Rights and many other human rights treaties and standards. For example, Article 6 of the ICCPR, a legally binding treaty to which India acceded in 1979, states:

"Every human being has the inherent right to life. This right shall be protected by law. No one shall be arbitrarily deprived of his life."

The Human Rights Committee provides authoritative interpretations of rights under the ICCPR which are formulated in its General Comments. General Comment 6, paragraph 5, states: expression 'inherent right to life' cannot properly be understood in a restrictive manner, and the protection of this right requires that States adopt positive measures."

Amnesty International maintains that such measures would include the regulation of corporate activity to ensure that it does not threaten the right to life. In *EHP v Canada*, the UN Human Rights Committee found that a complaint alleging large-scale dumping of nuclear waste that threatened the lives of local residents amounted to a prima facie case for a violation of the right to life.⁹⁶

Right to the highest attainable standard of health

Tens, possibly hundreds of thousands of people suffer chronic ill-health as a direct result of acts and omissions of the state and others in relation to the Bhopal disaster. Their right to the highest attainable standard of health has been violated. The right to health is enshrined in the ICESCR, also a legally binding treaty to which India acceded in 1979. This builds on the inclusion of health under the right to an adequate standard of living in the Universal Declaration of Human Rights (Article 25.1).⁹⁷

Article 12 of the ICESCR states:

"The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health."

The Committee on Economic, Social and Cultural Rights, in its General Comment 14 of 2000, clarified that the right to health is an inclusive right, which applies not only to health care, but to the underlying determinants of health, such as access to safe and potable water and adequate sanitation, an adequate supply of safe food, nutrition and housing, healthy occupational and

environmental conditions, and access to health-related education and information, including on sexual and reproductive health.”

Article 12(2) (b) of the ICESCR requires states parties to take steps necessary for improvement of all aspects of environmental and industrial hygiene”. General Comment 14 clarifies that this entails measures in respect of occupational accidents and diseases” as well as prevention and reduction of the population’s exposure to harmful substances such as radiation and harmful chemicals or other detrimental environmental conditions that directly or indirectly impact upon human health.”

International treaties obligate states to respect, protect and fulfil human rights. For instance, with respect to the right to health:

- States are required to respect the right to health by not interfering with access to health. For example, they are obliged to change policies that obstruct people from accessing care.
- States are required to protect the right to health, by taking measures against those who abuse other people’s right to health.
- States are obliged to fulfil the right to health by creating conditions that allow people to realize their right to health.⁹⁸

Although rights under the ICESCR are to be realized progressively, according to the maximum of available resources,⁹⁹ states that ratify or accede to the ICESCR agree to obligations which come into effect immediately. In the view of the Committee on Economic, Social and Cultural Rights, these core obligations” are non-derogable;¹⁰⁰ in other words, they apply at all times and in all circumstances. Failure to realize these obligations may lead to a claim for a human rights violation. The Committee on Economic, Social and Cultural Rights has considered violations of the right to health to include: to enact or enforce laws to prevent the pollution of water, air and soil by extractive and manufacturing industries.”¹⁰¹

Right to a remedy

Those struggling for justice in Bhopal – for compensation, rehabilitation, acknowledgement of the harm they have suffered, and for those responsible to be held to account – have had little or no success. They have been denied their right to a remedy for violations of their human rights.

The right to a remedy is set out in the ICCPR. Article 2 states:

“Each State Party to the present Covenant undertakes:

- (a) To ensure that any person whose rights or freedoms as herein recognized are violated shall have an effective remedy, notwithstanding that the violation has been committed by persons acting in an official capacity;*
- (b) To ensure that any person claiming such a remedy shall have his right thereto determined by competent judicial, administrative or legislative authorities, or by any other competent authority provided for by the legal system of the State, and to develop the possibilities of judicial remedy;*
- (c) To ensure that the competent authorities shall enforce such remedies when granted.”*

The Committee on Economic, Social and Cultural Rights likewise recommends that states provide judicial remedies in respect of rights which may, in accordance with the national legal system, be considered legally enforceable. The Committee also refers to the right to a remedy under the ICCPR and its relevance to economic, social and cultural rights in relation to equality and non-discrimination.¹⁰² More recently the Committee has stated, in terms of the domestic application of the ICESCR, that: “The Covenant norms must be recognized in appropriate ways within the domestic legal order, appropriate means of redress, or remedies, must be available to any aggrieved individual or group, and appropriate means of ensuring governmental accountability must be put in place.”¹⁰³ In the Committee’s

view, the right to an effective remedy and redress could include restitution, compensation, satisfaction or guarantees of non-repetition.¹⁰⁴

The USA played the key role in the formulation of the Organisation for Economic Co-operation and Development (OECD) Principles Concerning Transfrontier Pollution. These principles included and reaffirmed the general rule that those injured by environmental harm are entitled to remedies from the polluter in the state of origin.¹⁰⁵ The Bhopal victims' civil claims for damages and clean-up of pollution against UCC remain pending in the courts of the USA.

Right to an adequate standard of living

Thousands of poor families have been further impoverished by the effect of the gas and the environmental damage on their ability to work and ensure a decent standard of living for themselves and their families. As this was the result of action and inaction of the state and corporate actors, their right to an adequate standard of living, set out in the ICESCR, has been violated. Article 11 of the ICESCR states:

"The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions."

The Committee on Economic, Social and Cultural Rights also issued a General Comment on the right to water which specifically states that environmental hygiene, in the context of the right to health, taking steps... to prevent threats to health from unsafe and toxic water conditions." State parties are obliged to ensure that natural water sources are from contamination by harmful substances and pathogenic microbes," and are required to and combat situations where aquatic ecosystems serve as a habitat for vectors of diseases wherever they pose a risk to human living environments."¹⁰⁶ The pays" principle, recognized in the Rio Declaration, suggests that legal liability for such environmental harm should be channelled towards private corporate actors actually responsible for causing it.¹⁰⁷

Right to freedom from discrimination

Women who have been affected by the gas leak bear a social stigma. Local activists support the testimonies of survivors that women known to have been exposed to the gas often find it hard to get married. Married women exposed to the gas also face particular problems, including in some cases desertion by their husbands, because of their inability to work, possible difficulties with child bearing, or increased financial liability because of illness. Some women may have a substantially increased care burden within families that have chronically ill members, while widows face an especially precarious situation (see Chapter 1).

Women's right to enjoy their human rights without discrimination has been further undermined, a right set out in the ICCPR and ICESCR, as well as in the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), a treaty ratified by India in 1993. Article 3 of CEDAW states:

"States Parties shall take in all fields, in particular in the political, social, economic and cultural fields, all appropriate measures, including legislation, to ensure the full development and advancement of women, for the purpose of guaranteeing them the exercise and enjoyment of human rights and fundamental freedoms on a basis of equality with men."

Right to a safe environment

protection of the environment is... a vital part of contemporary human rights doctrine, for it is a sine qua non for numerous human rights such as the

right to health and the right to life itself. It is scarcely necessary to elaborate on this, as damage to the environment can impair and undermine all the human rights spoken of in the Universal Declaration and other human rights instruments."¹⁰⁸

Judge Weeramantry sitting in the International Court of Justice in The Hague

As Judge Weeramantry points out, the protection of the environment is instrumental to the realization of human rights. States are obliged to ensure, at the very least, that environmental degradation does not seriously impair the right to life, the right to the highest attainable standard of health and an adequate standard of living, in particular the right to adequate food and clean water.

The duty of each state to protect other states from injurious acts by private individuals within its jurisdiction was recently affirmed by the International Court of Justice.¹⁰⁹ In two opinions the Court stated: "*[T]he existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment.*"¹¹⁰

[Photo caption]

Women and children drink from a truck supplying safe water for the demonstrators protesting against the contamination of their water supply, 20 July 2004. More than 1,000 people took part in the protest. © Maude Dorr

[End caption]

Additionally, environmental pollution has been linked to the right to freedom of information (to allow those living near premises with the potential to cause environmental pollution to make informed decisions),¹¹¹ the right to participate in decision-making which may affect the realization of rights,¹¹² and the right to privacy.¹¹³

The Aarhus Convention on Access to Information, Public Participation and Access to Justice in Environmental Matters builds on these principles.¹¹⁴ It reflects the rule in international law that private individuals injured by environmental harm originating in another state have the right to obtain redress from the originator of the harm in the state of origin. The USA recognizes these principles.¹¹⁵

The duty to take precautions to avoid environmental pollution (known as the precautionary principle) has been held by the Supreme Court of India to be a rule of customary international law.¹¹⁶ In other words, it is binding on states even if they have not ratified a particular treaty. The precautionary principle is reiterated in the 1990 Bergen Ministerial Declaration on Sustainable Development: "*Environmental measures must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious and irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*"¹¹⁷

Indian law and standards

International commitments, including human rights obligations, must pass into domestic law before they can be applied and enforced by the courts in India.

Article 21 of the Indian Constitution guarantees to everyone the right to life. The Supreme Court of India has read this as protecting the right to health and a safe environment: "environmental, ecological, air, water, pollution etc should be regarded as amounting to a violation of Article 21."¹¹⁸

Much legislation has been enacted setting standards of environmental protection in an effort to protect this right.¹¹⁹ These rules mandate regulation of environmental pollution, and allow for both companies and government agencies that are lax in adhering to domestic standards to be held liable for legal proceedings and punishment.¹²⁰

Over the years the Supreme Court has stressed that the right to life in Article 21 includes the right to good health;¹²¹ an obligation to prevent damage to the environment;¹²² the right to a clean and safe environment;¹²³ and the right to clean air and water.¹²⁴

Indian courts have, on occasion, held companies to account for harm to health and the environment. Courts have ordered polluting businesses to move and to pay exemplary fines to serve as a deterrent to other enterprises.¹²⁵ In 1987, in *M.C. Mehta v Union of India*, a case involving the leak of oleum gas from a chemical plant, the Supreme Court of India held that:

*"[any] enterprise which is engaged in a hazardous or inherently dangerous industry which poses a potential threat to the health and safety of persons working in the factory and residing in the surrounding areas, owes an absolute and non-derogable duty to the community to ensure that no harm results to anyone on account of [its activities]."*¹²⁶

The Court also held that such an enterprise is absolutely liable to compensate all those affected by the accident and further, that such liability is subject to no exceptions and that compensation must be correlated to the magnitude and capacity of the enterprise.

The Indian Supreme Court has established three key principles in connection with the right to a safe environment:

- the precautionary principle (the duty to take precautions to avoid environmental pollution);
- the "polluter pays" principle;¹²⁷
- the principle of restitution (the polluter must restore the environment to its prior state, and repair the harm done to victims).¹²⁸

Responsibilities of companies

Numerous international environmental agreements establish obligations for private, non-state actors not to cause serious harm to the environment that endangers human life or health, particularly in the context of toxic wastes.¹²⁹

More than 20 years ago, the International Law Commission determined that gravely endangering the human environment breaches principles that become particularly essential rules of general international law."¹³⁰

The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade relies on private actors to ensure that information on chemical and pesticide hazards is made available to the public. Article 4 of the Convention on Biological Diversity establishes that each state is responsible for taking action to control the processes and activities of its nationals, even when the effects occur outside the limits of national jurisdiction (Article 4(b)). In effect, this transposes international environmental obligations into national law binding on private actors.

The Stockholm and Rio Declarations also suggest that international law places responsibility for environmental protection on non-state as well as state actors.¹³¹

The most general expression of the imposition of civil liability on originators of environmental harm has been developed in the Council of Europe. With few exceptions, every private operator of a dangerous activity, which

includes the production, handling, storage, use or discharge of one or more dangerous substances, is liable for, among other things, loss of life or personal injury resulting from its activities. The preamble to the Convention makes clear that strict liability in this context is based upon the "polluter pays" principle (see above). The preamble also recognizes the need to the burden of proof for persons requesting compensation" for damage caused by dangerous activities.¹³²

It is now a recurrent theme in environmental law that liability for environmental harm is channelled towards the private originator or polluter, sometimes on the basis of fault and in other cases on the basis of strict liability.¹³³ Operators of hazardous facilities are held liable, in some cases by treaties imposing strict liability.¹³⁴

As stated earlier, the Universal Declaration of Human Rights calls on every individual and every organ of society, which includes companies and business enterprises, to protect and promote human rights. International human rights law places the primary obligation for realizing human rights on states. However, there is recognition that responsibilities extend to "every organ of society", including corporations.

There is also an increasing trend towards placing human rights obligations on corporations themselves. The Committee on Economic, Social and Cultural Rights, for example, has said that states need to that the private business sector and civil society are aware of, and consider the importance of, the right to water in pursuing their activities."

The imposition of the duties on individuals and businesses is also reflected in the action of UN human rights bodies. In 1995 the Commission on Human Rights adopted a resolution to appoint a Special Rapporteur on the adverse effects of the illicit movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights.¹³⁵ The Special Rapporteur is mandated, among other things, to produce an annual list of the countries and transnational corporations engaged in illicit dumping, as well as a list of people killed or maimed or otherwise injured because of such dumping.¹³⁶

Likewise there are moves to develop standards of corporate accountability for human rights.¹³⁷ Amnesty International believes that within their spheres of activity and influence, companies have responsibilities in connection with the interests, health and safety, and human rights of employees and their dependants, of business partners, associates and subcontractors and of the communities in which they operate.

UN Norms

Many human rights organizations have addressed concerns to businesses for a number of years. Recognizing that economic globalization has expanded the reach of corporate power, advocates have struggled to ensure that companies, no less than other significant actors, are brought within the framework of international human rights rules. Using the human rights framework as a benchmark to measure the impact of companies' activities helps to provide a common and universal standard.

This has resulted in calls for more detailed, comprehensive instruments. The UN Norms on the responsibilities of transnational corporations and other business enterprises with regard to human rights (UN Norms) took shape in this context.

The UN Norms and their Commentary¹³⁸ were approved by the Sub-Commission on the Protection and Promotion of Human Rights¹³⁹ after a process of consultation with businesses, unions and non-governmental organizations. The UN Norms and their Commentary set out, in a single, succinct document, a comprehensive list of the human rights norms relevant to the activities of companies. The UN Norms are also a useful benchmark by which to judge national legislation to determine

whether governments are living up to their obligations to protect rights by ensuring that appropriate regulatory frameworks are in place.

According to Article 14 of the UN Norms, transnational corporations and other business enterprises are responsible for the environmental and human health impact of their activities.

The Commentary to Article 14 states:

"(a) Transnational corporations and other business enterprises shall respect the right to a clean and healthy environment..

(b) Transnational corporations and other business enterprises shall be responsible for the environmental and human health impact of all of their activities..

(c) ..."on a periodic basis (preferably annually or biannually), transnational corporations and other business enterprises shall assess the impact of their activities on the environment and human health including impacts from... the generation, storage, transport and disposal of hazardous and toxic substances. Transnational corporations and other business enterprises shall ensure that the burden of negative environmental consequences shall not fall on vulnerable racial, ethnic and socio-economic groups.

...

(e) Transnational corporations and other business enterprises shall respect the prevention principle... and the precautionary principle..

(f) Upon the expiration of the useful life of their products... transnational corporations and other business enterprises shall ensure effective means of collecting or arranging for the collection of the remains..

(g) Transnational corporations and other business enterprises shall take appropriate measures in their activities to reduce the risk of accidents and damage to the environment by adopting best management practices and technologies... and reporting of anticipated or actual releases of hazardous and toxic substances."

Other provisions of the UN Norms also address situations like that of the Bhopal disaster. Article 18, for example, calls on transnational corporations and other business enterprises to make reparations for damage done through their failure to meet the standards spelled out in the Norms:

"Transnational corporations and other business enterprises shall provide prompt, effective and adequate reparation to those persons, entities and communities that have been adversely affected by failures to comply with these Norms through, inter alia, reparations, restitution, compensation and rehabilitation for any damage done or property taken. In connection with determining damages, in regard to criminal sanctions, and in all other respects, these Norms shall be applied by national courts and/or international tribunals, pursuant to national and international law."

Article 17 calls on states to have in place the necessary legal and administrative framework to give effect to the Norms:

"States should establish and reinforce the necessary legal and administrative framework for ensuring that the Norms and other relevant national and international laws are implemented by transnational corporations and other business enterprises."

The UN Norms did not exist at the time of the Bhopal disaster, and one cannot expect the UCC, UCIL, the government of India or the state government of Madhya Pradesh to have been guided by them. However, the Bhopal disaster and its aftermath demonstrate the serious effect that the activities of transnational corporations and the governments responsible for regulating them can have on

the respect, protection and fulfilment of human rights. What happened in Bhopal can leave no doubt about the importance of the UN Norms and the need for governments and transnational corporations to acknowledge the responsibilities of business enterprises with regard to human rights.

CHAPTER 3:

Accountability of Union Carbide

Amnesty International holds companies to account for their actions that affect human rights. In the case of the Bhopal plant, there is a pattern of serious failures by UCC in the years before the accident occurred. UCC decided to bulk store MIC in Bhopal but did not equip the plant with the safety mechanisms to deal with accidents. UCC was aware that some of the technology it transferred was not proven,¹⁴⁰ and entailed operational and safety risks. UCC did not export the same standards of safety in design or operations to Bhopal as it had in place in the USA. In particular, UCC failed to set up any comprehensive emergency plan or system in Bhopal to warn local communities about leaks, even though it had such a plan in place in the USA. As early as 1982, UCC was aware that there were major safety concerns regarding the Bhopal plant. Months before the accident, UCC was warned of the possibility of a reaction similar to the one that caused the eventual leak in Bhopal.

In its response to the tragedy, UCC withheld information, tried to discredit the victims and attempted to shift responsibility between its various arms. When UCC was taken over by Dow, both companies tried to avoid responsibility.

[box]

The Union Carbide plant in Bhopal

In 1984, the Union Carbide Corporation (UCC), a wholly owned subsidiary of Dow Chemicals since 2001, was one of the world's largest chemical multinationals.¹⁴¹ Based in Danbury, Connecticut, USA, UCC owned or operated through its divisions, subsidiaries and affiliates hundreds of plants around the world. These manufactured and processed chemicals, petrochemicals and allied products to produce complex chemicals, pesticides, insecticides and other consumer products.¹⁴²

In India, UCC operated through Union Carbide India Limited (UCIL). UCC owned 50.9% of the equity of UCIL and as such exercised majority control over its voting

shares, thereby giving UCC extensive management and operational control over UCIL. In the context of India's fast-rising consumption of pesticides owing to the Green Revolution in India,¹⁴³ UCC first proposed the establishment in 1966 of a facility to produce the pesticide Sevin¹⁴⁴ in India, and subsequently selected Bhopal as the best site. The government of India and the state government of Madhya Pradesh granted permission to UCC/UCIL to establish the plant, which was designed and constructed under close supervision by UCC engineers and personnel.

Initially UCC/UCIL imported MIC and alpha naphthol into India, two essential ingredients for the manufacture of Sevin.¹⁴⁵ UCC/UCIL was granted a licence to manufacture MIC at Bhopal in 1976. Between 1976 and 1980 UCC conceived, designed and supervised construction of the MIC unit and trained UCIL employees in India and the USA to work on all aspects of the MIC plant. The MIC plant in Bhopal went into operation in 1980.

[end box]

Why did the gas leak?

The immediate precipitating factor for the disastrous leak was the entry of a substantial amount of water and other impurities into Tank 610 that stored several thousand pounds of MIC,¹⁴⁶ according to the UCC investigation team and the India-based Council for Scientific and Industrial Research (CSIR) investigation, among others.¹⁴⁷

However, there has been more than one explanation of how the water and other impurities entered the MIC storage tank. One theory, argued by workers at the plant, is that it occurred during routine water washing of pipes on the evening of 2 December during the second shift of production on which there was no longer a maintenance supervisor due to staff cuts.¹⁴⁸ As several bleeder lines were clogged, water began to back up in the system and pushed through a leaking valve into the relief valve vent header (RVVH). It then fell into a jumper line which ran between the RVVH and the process vent header (PVH) which had been installed in May 1984 with the authorization of UCC engineers.¹⁴⁹ One valve remained to protect Tank 610, the nitrogen outflow valve, but this was known to be leaking as engineers had been unable to pressurize the tank on 26 November.¹⁵⁰

UCC did not identify any specific cause for entry of water into the tank in its 1985 investigation report¹⁵¹ and did not mention the jumper line. Sometime after the leak, UCC started to give credence to the theory that it was due to sabotage by a disgruntled employee, and commissioned a report by the international consulting group Arthur D. Little, written by Dr Ashok Kalelkar and published in May 1988.¹⁵²

The sabotage theory has been challenged by many, including workers from the factory and testimony by UCC managers themselves.¹⁵³ An independent chemical engineer commented: *"Even if Dr Kalelkar believes in his sabotage theory (I don't), he ought not to let it be used to divert attention from the underlying failings of design and management that created the conditions for a disaster."*¹⁵⁴ The sabotage theory did, however, manage to complicate and further delay civil

proceedings in the Indian courts.¹⁵⁵ UCC has refused to name the employee and has not produced any specific evidence in court regarding sabotage.

The decision to bulk store MIC

The MIC that leaked on the night of 2/3 December 1984 was manufactured sometime in late October that year and would not have been used up until around mid-December.¹⁵⁶ This was because the Bhopal plant produced and stored substantially more MIC than it could immediately process. As the 1985 CSIR report noted:

"The Sevin unit could process MIC to the order of three to four tonnes per day. The inventory of MIC in the storage tank was of the order of 90 tonnes, equivalent to nearly 30 days production... It was entirely unnecessary to provide facilities for storage of such large amounts of MIC in tanks. The quantities stored were quite disproportionate to the capacity of further conversion of MIC downstream unit. This permitted the MIC to be stored for months together without appreciation of potential hazards."

During the factory design stage UCIL had preferred to store MIC in small individual containers, for reasons of both economy and safety. However, UCC disagreed and bulk storage tanks for MIC were installed in the Bhopal plant, similar to the UCC's plant in Institute, West Virginia, USA.¹⁵⁷ The crucial difference was that the UCC plant in Institute worked around the clock, processing large quantities of MIC for production of pesticides or for sale as a chemical. In Bhopal, the MIC processing capacity was so low that it resulted in large quantities of MIC being stored for weeks.

In testimony before the US Congress shortly after the accident, Ronald Wishart, a Union Carbide Vice-President, said, *"With respect to our safety standards, we meet the higher of the two, whether it be Union Carbide or the local standard."*¹⁵⁸ If this was the case, then the UCC plants in Bhopal and West Virginia should have had the same safety standards. It appears, however, that there were a number of critical differences in levels of design and operations for the Bhopal and Institute plants (see table).

Safety measures in UCC plants in the USA and India ¹⁵⁹	
Institute, West Virginia, USA	Bhopal, Madhya Pradesh, India
<p>Capacity</p> <p>High production of MIC matched with high processing capacity. MIC not stored for long periods of time.</p>	<p>High production capacity of MIC but low processing capacity. MIC stored in large quantities for long periods of time.</p>
<p>Emergency scrubbers</p> <p>MIC storage tank equipped with emergency scrubbers (to neutralize any escaping MIC) designed to operate under emergency conditions.</p>	<p>No emergency caustic scrubber to neutralize any MIC leak.</p>

<p>Computerized monitoring</p> <p>Computerized monitoring of instruments (gauges, alarms, etc) and processes to support visual observation.</p>	<p>No computerized monitoring of instruments and processes. Relied solely on manual observation.</p>
<p>Cooling system</p> <p>MIC field storage tanks used a cooling system based on chloroform (inert and non-reactive with MIC).</p>	<p>MIC tanks used a cooling system based on brine (highly reactive with MIC).</p>
<p>Refrigeration unit</p> <p>Refrigeration unit to control temperature in the tanks was never turned off.</p>	<p>Refrigeration unit had been turned off since June 1984.</p>
<p>Nitrogen pressure</p> <p>MIC was always maintained under nitrogen pressure.</p>	<p>MIC tanks had not been under nitrogen pressure since October 1984.</p>
<p>Emergency plan</p> <p>An elaborate four-stage emergency plan to deal with toxic releases, fires, etc, including a general public alert linked to community police, river and rail traffic and local radio stations. Various emergency broadcast systems in place to alert and disseminate appropriate information to the public.</p>	<p>No system to inform public authorities or the people living adjacent to the plant. No emergency plan shared with communities living adjacent to the plant; no system to disseminate information regarding emergency to the public with the exception of a loud siren.</p>
<p>Maintenance programme</p> <p>A maintenance programme to determine and evaluate replacement frequency for valves and instrumentation and alarm systems. Weekly review of safety valves and reviews and maintenance recorded extensively.</p>	<p>No evidence of an effective instrument maintenance programme. Safety valve testing programme largely ineffective and no proper records maintained of reviews of instruments, valves and alarm systems, etc.</p>
<p>Lab analysis</p> <p>A lab analysis of MIC was conducted to test quality and check for contamination prior to storage, processing or distribution.</p>	<p>No lab analysis of quality was undertaken. MIC stored for long periods without testing for contamination.</p>
<p>Training</p> <p>Extensive employee training programme to ensure high level of training and information among all employees of normal and emergency procedures.</p>	<p>Operators put in charge without sufficient training.</p>
<p>Protective equipment</p> <p>Extensive provision of appropriate</p>	<p>Personal protective gear and breathing</p>

personal protective equipment to employees including protective clothing, air respirators, etc.	air equipment not easily accessible, inadequate and of poor quality.
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Ignoring the warnings

There is overwhelming evidence to suggest that UCC management was aware of safety problems at the Bhopal plant for some time before December 1984. In May 1982, after several accidents that year including gas leaks and burn injuries, an Operational Safety Survey of the Bhopal plant was carried out by a team of UCC technicians from the USA.¹⁶⁰ The survey noted numerous lapses in safety regulations and highlighted at least 10 hazards which it classified as "major", including:

- potential for release of toxic materials in the phosgene/MIC unit and storage areas, either due to equipment failure, operating problems, or maintenance problems;
- deficiencies in safety valve and instrument maintenance programmes;
- problems created by high personnel turnover at the plant, particularly in operations.

There is evidence to show that subsequently things got worse rather than better:

- In March 1983, a local attorney, Shahnawaz Khan, wrote a letter to the general manager of the Bhopal plant threatening legal action for storing hazardous substances that posed a serious risk to the population and releasing toxic waste that contaminated water and soil and damaged the health of communities.¹⁶¹
- In June 1984, a Bhopal-based journalist, Raj Kumar Keswani, wrote an article in *Jansatta*, one of India's leading Hindi newspapers, entitled "Bhopal: On the brink of a disaster", highlighting the dangers posed by the Bhopal plant.¹⁶²
- In August 1984, the General Secretary of the Union Carbide Karamchhari Sangh (Workers' Union), a union of the Bhopal plant workers, wrote to the Works Manager of the Bhopal plant raising concerns about air and noise pollution and workers' exposure to hazardous substances.¹⁶³ The letter notes that, have complained so many times against the rising pollution of air and noise in different departments of our factory but we are disappointed that... it is increasing day by day in an uncontrolled manner."

In September 1984, an Operational Safety/Health Survey of the MIC II Unit at UCC's Institute plant, warned: is a concern that a runaway reaction could occur in one of the MIC Unit Storage tanks and that response to such a situation would not be timely or effective enough to prevent catastrophic failure of the tank."¹⁶⁴ The report identified the relatively long storage period of MIC, coupled with the possibility of its contamination from: a) the coolant (brine); and/or b)

water from a leak; and/or c) impurities/catalytic material feeding back from the flare system that would hasten the runaway reaction.¹⁶⁵ These were some of the factors that the CSIR investigation identified as possible causes of the runaway reaction and the subsequent catastrophic tank failure at the Bhopal plant.¹⁶⁶ Amnesty International is not aware of any evidence to show that this report was shared with UCIL or of any appropriate preventive measures taken at the Bhopal plant.

Cutting costs, increasing risks

Between the beginning of 1983 and the time of the disaster, a series of cost-cutting measures was implemented. Damaged or malfunctioning equipment was patched up rather than repaired, or replaced by sub-standard material. As a former Safety Officer recalled: *"We started using bits and pieces of equipment which were better thrown away - for instance caskets and bits and pieces of pipelines. We welded them together and used them."*¹⁶⁷

These measures further eroded the quality and quantity of plant personnel, some of whom have said they were already severely affected by poor job security, lack of a promotion policy and a poor wage policy.¹⁶⁸ By 1983 the MIC unit only had six operators compared to 13 in 1980, while the number of maintenance personnel was reduced to just two.¹⁶⁹ It became established practice in the plant to move workers from their regular positions to wherever there was a shortage. The quality and length of training suffered. Despite the warnings of the 1982 Operational Safety Survey (see above), operators and other personnel were moved between units and asked to take charge despite being insufficiently trained. The high turnover of personnel meant that trainees were left to handle a substantial part of the operations.¹⁷⁰

Corporate issues

Relationship between UCC and UCIL

UCC has consistently claimed it cannot be held accountable for the leak at Bhopal since it exercised no control over UCIL, which operated the Bhopal plant.¹⁷¹

Even though UCC has denied any liability in US and Indian courts on the grounds that UCIL was totally autonomous and not under its control, no court has made a final ruling on UCC's liability. In dismissing the case from the US courts on the grounds that UCC submit itself to Indian courts, the US Southern District Court of New York stated that it expressly declined to make findings as to actual liability at this stage of the litigation."¹⁷²

Ruling that UCC was liable to pay interim relief, the Madhya Pradesh High Court found that was the defendant-UCC which had real control over the enterprise which was engaged in carrying on the particular hazardous and inherently dangerous industry at the Bhopal plant and as such it was absolutely liable (without any exceptions) to pay damages/compensation to the multitude of gas victims."¹⁷³

[Photo caption]

A 1962 advertisement announcing the arrival of Union Carbide in India. © UCC

[End caption]

Ownership control

Although UCC has attempted to absolve itself of any responsibility for the running of UCIL, this is at odds with the UCC's Corporate Charter which states: UCC management system will be designed to provide centralized integrated corporate strategic planning, direction and control; and decentralized business strategic planning and operating implementation." ¹⁷⁴

UCC's *Corporate Policy Manual* spells this out even more explicitly: for certain special situations, it is the General Policy of the Corporation to secure and maintain effective management control of an affiliate. Normally this is accomplished through ownership of 100% of affiliate equity where this is consistent with the laws, policies, and customs of the host country...¹⁷⁵

On 2 December 1973 a UCIL proposal to set up a MIC-based chemicals project accompanied by a capital budget and a finance plan was submitted to the Management Committee of UCC for approval by Union Carbide Eastern, Inc (UCE), a wholly owned subsidiary of UCC. ¹⁷⁶ The Finance Plan, referring to negotiations with the government of India on the extent of foreign equity, clearly reveals that UCC never intended to reduce its equity holding to anything less than what would give it a controlling stake in UCIL:

proposal is subject to the success of these negotiations. We fully expect to be successful in these negotiations. If we are forced to go below 53.5% ownership, a new proposal will be submitted to the Management Committee. Our specific objective is not to accept any conditions which would reduce our equity below 51%."¹⁷⁷

Control over board

UCIL reported to UCE, a wholly owned subsidiary of UCC based in Hong Kong but incorporated in Delaware, USA. UCE in turn reported to UCC, Danbury, Connecticut, USA. Other UCIL divisions reported to product line management of UCC; the Bhopal plant reported through Union Carbide Agricultural Products Company (UCAPC), a wholly owned subsidiary based in the USA. ¹⁷⁸

The chairperson of UCE, who was also a Corporate Vice-President of UCC, and three officials of UCE were on the Board of UCIL, reinforcing the assertions that UCIL's management decisions were heavily influenced, if not controlled, by UCC.

Design, technical and operational control

The memorandum to the UCC Management Committee requesting approval of the capital budget proposal and the finance plan for setting up the MIC-based plant at Bhopal notes:

"To the extent feasible UCC will provide the necessary technology and process design and will review any technology developed outside UCC. In addition to responsibilities for these activities, UCC has also agreed to start up support and training outlined in this proposal.

"This project has the support of the UCC Worldwide Agricultural Policy

Committee and of the U.S. Agricultural Chemicals Division, and is endorsed by U.C. Eastern. It has been reviewed by the Law, Finance and Environmental Affairs Departments.

*"Your consideration of this proposal is hereby requested."*¹⁷⁹

The memorandum clearly indicates that from the very outset the project was to rely on UCC for technical and design support, and that UCC would also review any technology developed outside by UCIL.

The MIC unit in Bhopal went into start-up in early 1980. Warren Woomer, who had served as a Special Projects Manager within the Agricultural Products Division at Institute, West Virginia was appointed on a two-year contract starting in 1980 as Works Manager at Bhopal's MIC unit.¹⁸⁰ He stated in his deposition that he was provided with all the records of the Institute plant that could provide answers to questions regarding the MIC plant in Bhopal. If the records from Institute proved insufficient in any circumstance then he contacted his counterpart at Institute directly by telex.¹⁸¹

The extent of operational control that UCC exercised over UCIL is confirmed by other former UCIL employees. One of them stated: *"To my personal knowledge, each design modification and every significant change in operating procedure at UCIL was ratified and approved by Union Carbide officials in the United States, specifically those at Charleston, West Virginia, and Institute, West Virginia... Unlike the Sevin plant, most of the equipment and instruments of the MIC plant were imported from the United States. Senior plant personnel had been given training in the Institute plant in West Virginia."*¹⁸²

Another former employee said, *"Any design change made in India had to be approved by the US. Any change in material of construction of various equipments had to be approved because, you see, they had experience in dealing with MIC - we didn't. We were dependent on them for recommendations."*¹⁸³

A 1986 *New York Times* report based on court documents observed: *"After a 1981 accident in Bhopal that killed a worker, a telex said that improvements 'will receive close attention by the management committee in New York'."* Another memo said: *"No design changes have been made without the concurrence of general engineering or Institute plant engineering,"* referring to Union Carbide's corporate engineers in Institute, West Virginia.¹⁸⁴

In mid-1982 UCIL applied for a renewal of its foreign collaboration agreement with Union Carbide for manufacturing MIC-based pesticides. The application shows the inter-relationship between UCIL and UCAPC (a wholly owned subsidiary of UCC based in the USA) and the dependence of UCIL on UCC in key technical and operational areas.

"Manufacture of MIC is known to involve some extremely hazardous processes with complexity in areas of efficiency, material balance, corrosion and safety. In view of this we have to work more closely with the foreign experts towards assimilating technology inputs. [W]e need continued assistance from UCAPC..."

"As a result of experience in handling toxic chemicals over several years, UCAPC could develop effective procedures and facilities on Plant safety. Current knowledge and experiences in handling highly toxic materials will

be continuously available to UCIL. Highly professional activities are involved in dealing with emergency situations like toxic gas release sometimes accompanied with fire endangering the safety of the community. Continuous availability of data in this area will assist UCIL in fully protecting the plant personnel and properties...

"UCAPC scientists generate massive... data on various products for their registration. For commercial manufacture of technical and formulation they generate data on toxic by-products and gases released during manufacturing process, besides antidotes and safety precautions that should be taken during manufacture by staff and workmen."¹⁸⁵

The application also makes a case for collaboration citing the continuing support from UCAPC with regard to corrosion studies, equipment reliability studies and in providing assistance to UCIL on operating difficulties. This application was accepted by the government of India and the foreign collaboration agreement was in effect at the time of the tragedy in December 1984.

Disinvestment in the Bhopal plant

The Bhopal plant was never profitable. In 1981, UCAPC set up a "Bhopal Task Force" to explore ways of making it viable.¹⁸⁶ By the time of the disaster, UCC was exploring possibilities of putting the plant on the open market. A plan submitted in February 1984 by the Chairman of UCE to UCC to sell or lease the Bhopal facility proposed that UCIL could retain the MIC unit to produce MIC for export, but dispose of or lease the rest of the plant.¹⁸⁷ Finally, UCIL was ordered to produce a feasibility study for selling the plant outright, which was completed just three days before the disaster.¹⁸⁸ As part of this study, UCIL engineer Umesh Nanda sent a telex in November 1984 warning management that the dismantling and shipment of the MIC unit would be a problem "because of the high corrosion at several points" requiring repairs at considerable expense.¹⁸⁹

Post-disaster response

UCC's response to the disaster was at first to downplay the toxic nature of MIC by claiming it was harmless. It then withheld vital information about its toxicology as well as the identity of reaction products that were released. Subsequently, UCC sought to stonewall the legal process by raising complex legal issues, claiming that UCC was not a transnational company, and denying the dangerous nature of MIC. UCC refused to pay interim relief to victims, whom it tried to discredit. It also refused to appear in court in the criminal case and eventually, through its merger with Dow Chemicals, sought to wipe out all traces of accountability.

Investigation of the leak

UCC's initial response to the disaster may suggest its sense of responsibility for the accident. After the leak, UCC sent a team of engineering and scientific specialists to India to assist in safe disposal of the remaining MIC and investigate the probable cause of the disaster. The team spent 24 days in December 1984 in India and at least two more months in the USA collecting and processing

a wide range of information covering the operational, physical and chemical dimensions of the leak.¹⁹⁰ The report of the team was released on 20 March 1985 in Danbury, USA, the corporate headquarters of UCC.

Withholding information

While thousands were dying in Bhopal as a result of exposure to gases, UCC/UCIL officials denied that MIC was toxic. Jackson Browning, then UCC's Director of Health and Safety and Environmental Affairs, said that what leaked was more than a potent tear gas."¹⁹¹ However UCC's own literature, dating to well before the Bhopal leak, reveals that UCC knew that MIC was potentially deadly. The UCC Material Safety Sheet on MIC clearly notes that exposure cause fatal pulmonary edema" [swelling of the lungs due to accumulated fluid].¹⁹² UCC's *Reactive and Hazardous Chemicals Manual* states: of the high ratings for breathing and contact with the eyes, methyl isocyanate is assigned the maximum health rating of 4 in the UCC hazard signal system."

In March 1985, UCC's own investigation concluded that 54,000 pounds [24,500kg] of unreacted MIC left Tank 610 together with approximately 26,000 pounds [11,800kg] of reaction products."¹⁹³ Yet to this day, UCC has not named any of the chemicals and reaction products that leaked along with the MIC.

Five years after the leak a leading chemical industry journal noted, Carbide toxicologists may have the best information on MIC toxicity around, but they are treating it like a trade secret."¹⁹⁴ By withholding details of the reaction products, UCC denied, and continues to deny, those affected by the leak information critical for effective treatment and research.

This behaviour is in stark contrast to UCC's response to a gas leak at its plant in Institute, West Virginia, USA in August 1985. Following the leak, UCC made public a detailed list of reaction products by name and quantities released, in amounts ranging from 650 pounds (295kg) to as small as seven pounds (3.2kg).

¹⁹⁵

[Photo caption]

A banner of the International Campaign for Justice in Bhopal, one of the many organizations working worldwide for justice for victims of the disaster. The organization demands that Dow be held accountable for cleaning up the contamination. © Maude Dorr

[End caption]

Discrediting the victims

Despite UCC's claims to bear a "moral responsibility" for the victims of Bhopal, and stated offers of assistance, the company disparaged the survivors before courts in the USA and India.

Urging that the case be thrown out of the USA, UCC argued before the US District Court that, "*Indeed, the practical impossibility for American courts and juries, imbued with US cultural values, living standards and expectations, to determine living standards for people living in the slums or 'hutments' surrounding the*

UCIL, Bhopal, India, by itself confirms that the Indian forum is overwhelmingly the most appropriate. Such abject poverty and the vastly different values, standards and expectations which accompany it are commonplace in India and the third world. They are incomprehensible to Americans living in the United States."

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In India, UCC lawyers argued before the Bhopal judge that *"the plaintiffs are illiterate and do not understand the contents of the affidavits on which they have placed their thumbprints. Therefore... the complainants must be thrown out."*

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UCC's legal team spent much of its time in court deliberately increasing the complexity of the case¹⁹⁸ and drawing attention away from the plight of the victims. The team opened with arguments in July 1985 that US courts were an inappropriate forum to try the case and that Indian courts represented both an adequate and appropriate forum. In support of its argument UCC counsel submitted that: *"Not only is the Indian legal system based on sound and established principles of Anglo-Saxon Law but the courts in India have evolved and developed the Indian jurisprudence to levels on a par with if not beyond any other democracy in the world."*¹⁹⁹ Indeed, UCC presented lengthy arguments to demonstrate the competency, creativity and capacity of Indian courts.²⁰⁰

Although the US District Court upheld the motion on condition that UCC submit to the jurisdiction of the Indian courts, UCC appealed against the condition. In a complete about-turn, the company then claimed in the Appeals Court that: *"Indian courts, while providing an adequate forum, do not observe due process standards that would be required as a matter of course in this country."*²⁰¹

UCC: a domestic US enterprise

UCC repeatedly claimed in the courts that it was purely a US-based corporation. It stated that it *"denies that it has 'operations' in India as alleged, or elsewhere outside the United States of America as alleged."*²⁰²

In stark contrast, UCC's annual report of 1984 stated that Carbide Corporation's business worldwide is conducted principally through the divisions, subsidiaries and affiliates listed below."²⁰³ One of those listed was UCIL, which was also included in UCC's consolidated balance sheet for the same year. UCC's Chief Executive Officer Warren Anderson told a Congressional Subcommittee Hearing on 14 December 1984 that Union Carbide had 100,000 employees around the world.²⁰⁴ Jackson Browning, then a senior UCC executive, claimed: *"In 1984, Union Carbide reported sales of \$9.5 billion, reflecting its position as one of the largest industrial companies in the United States and the world. International operations represented nearly 30% of total sales that year. India was one of three dozen countries where the company had affiliates and business interests."*²⁰⁵

'MIC is not ultra-hazardous'

The information provided by UCC to an Indian court contradicts information provided by the company's Director of Health, Safety and Environmental Affairs. In its statement submitted to the Bhopal District Court, UCC admitted that *"under*

certain conditions (emphasis added), MIC is toxic, flammable and hazardous," but, it went on to say, defendant denies that MIC is 'ultra-hazardous'." ²⁰⁶

On 14 December 1984 Jackson Browning, then Director of Health, Safety and Environmental Affairs for UCC, told a Congressional Hearing: is an extremely hazardous chemical. It is reactive, toxic, volatile and flammable."²⁰⁷ UCC's Material Safety Data Sheet on MIC and its *Hazardous and Reactive Chemicals Manual* also reiterate the extremely toxic, volatile and reactive nature of MIC, but go further, stating that MIC exposure may cause major residual injuries, *despite prompt treatment*. Thus, while the medical profession was struggling to understand the extent of MIC's toxicity, UCC was presenting arguments to the court intended to draw a difference between "hazardous", "extremely hazardous" and "ultra-hazardous".

Obstructing victims' right to justice and interim relief

In April 1987, the Bhopal District Court made proposals to both UCC and the Indian government concerning payment of interim relief to victims of the tragedy. On 17 December the court directed UCC to deposit Rs.350 crores (1 crore = 10 million) - around US\$220 million - for payment of interim compensation and welfare measures for the gas victims".²⁰⁸ The Court made it clear that the interim relief order was in no way prejudging the question of the liability of UCC, or of the governments of either India or Madhya Pradesh.

UCC appealed to the High Court, characterizing the District Court's order on interim relief as being "'arbitrary, harsh, burdensome', 'wholly perverse', and 'displaying a complete prejudgement'." Lawyers for UCC argued that the order had no basis in law, was punitive in nature, and that the judge had been coerced into making it by public pressure.²⁰⁹

On 4 April 1988 the High Court of Madhya Pradesh restated the law permitting the court to award a sum in interim compensation", reducing the amount to be deposited by UCC from Rs.350 crores to Rs.250 crores.²¹⁰ UCC immediately protested against this decision.

In a long and detailed petition before the Indian Supreme Court, UCC challenged the orders of the High Court, claiming that the decision was made in effect "without evidence or basis or precedent".²¹¹ The UCC petition in the Supreme Court raised many questions regarding Indian judicial process and power,²¹² increasing the complexity of the case to a level that ruled out any possibility of a quick judicial resolution.

By this time four years had passed since the disaster and the victims and their families had received virtually nothing. Then, in February 1989, the Supreme Court suddenly announced that full and final settlement had been agreed between UCC and the government of India. The victims had not been consulted and the issue of liability had not been settled.

Since 1991, UCC has refused to appear before the Bhopal District Court where criminal charges are still pending against it. This is in violation of the order of the US District Court, which stated that the case should be tried in India on the condition that UCC submits itself to the jurisdiction of the courts there. While no court in India or the USA has set aside the case against UCC, none has been able to bring the company before it.

UCC's merger with Dow

In February 2001 UCC became a wholly owned subsidiary of The Dow Chemical Company (Dow), the largest chemical multinational in the world.²¹³ Even though UCC continued to be a separate legal entity, its corporate identity and all of its business is fully integrated with that of Dow.

UCC's website, now a part of Dow's, notes: Union Carbide's acquisition by TDCC [The Dow Chemical Company], Union Carbide sells most of the products it manufactures to TDCC..."²¹⁴ UCC's *Annual Report 2003* notes: Corporation's business activities comprise components of Dow's global businesses rather than stand-alone operations..."²¹⁵

The extent of Dow's control over UCC is crucial in the context of the pending criminal charges against UCC in the Bhopal District Court and any possible civil liabilities that may arise in future.

Misrepresentation in the merger agreement

In December 1991 the Chief Judicial Magistrate in Bhopal issued a proclamation ordering Warren Anderson, then Chief Executive Officer of UCC, and Union Carbide Eastern (UCE) to appear in court in February 1992 to face charges of culpable homicide not amounting to murder in connection with the gas leak. Despite these orders, none of them appeared in the court, and they were declared "proclaimed absconders". The criminal prosecutions against UCC, UCE and Warren Anderson are still open and pending. All three accused parties remain identified as "absconders" by the Bhopal District Court and the Supreme Court of India.

[Photo caption]

Protesters outside the Dow headquarters in Mumbai, during a demonstration in December 2002 to mark the anniversary of the disaster, demand the clean-up of Bhopal. The large banner at the front reads, "Hit Dow with a broom: Bhopal gas-affected women workers". © Maude Dorr

[End caption]

The merger agreement between Dow and UCC denies outright UCC's criminal liability in the Bhopal case. In fact, it denies that any pending criminal prosecution exists against UCC. Article V of the Merger Agreement²¹⁶ states: "there are no (i) civil, criminal or administrative actions, suits, claims, hearings, investigations or proceedings pending or, to the actual knowledge of its executive officers, threatened against it or any of its Subsidiaries... except for those that are not, individually or in the aggregate, reasonably likely to have a Material Adverse Effect on it."

Dow responsibility

A senior US-based attorney representing the victims of the gas disaster suggests that in terms of US law, all of UCC's civil and criminal liabilities were acquired by Dow with its purchase of the former.²¹⁷ The legal representatives of the victims in the US Court also pointed out to Amnesty International that in the 1987 case

Alamo Bank v United States, the US Supreme Court held that a state bank that is the survivor of a merger between a national bank and a state bank is responsible for pre-merger criminal violations that were committed by the national bank prior to the merger.²¹⁸ Citing several other cases the US Supreme Court also maintained that "the deterrent purposes of corporate criminal liability could be substantially weakened if a corporation could extinguish liability for its criminal conduct through a change in corporate form."²¹⁹

In fact, the Merger Agreement between UCC and Dow also recognizes a transfer of liability inasmuch as the latter accepted approximately US\$2 billion of outstanding UCC debt.²²⁰ Furthermore, Dow has paid for asbestos exposure claims against Union Carbide dating back to 1972 in Texas and West Virginia, USA.²²¹

Continuing obligations to address effects of pollution

Immediate steps are needed to check for further contamination of water and soil as a result of the continuing presence of toxins discharged by the Bhopal plant and to protect the right to health and a safe and clean environment of those in affected communities.

The possibility of holding UCC to account for cleaning up pollution has arisen again in the US courts. On 17 March 2004 a US Appeals Court ruled that the request for "remediation" to restore the environmental quality of the site, brought by plaintiffs from Bhopal against UCC, could not be barred by limitations of time.²²² The Appeals Court declared that the District Court should be free to revisit its dismissal of the claim for plant-site remediation in the event that the governments of India or Madhya Pradesh sought such relief. Subsequently, the governments of India and Madhya Pradesh have urged the District Court to order UCC to pay for plant-site remediation and pollution damage.²²³ UCC/Dow, upon independent assessment of damage, still have the potential to be held accountable by a court of law for contamination, and may be asked to pay for the clean-up and damages.

CHAPTER 4:

Role of the Indian government

In all countries, the state has the primary responsibility for ensuring the fulfilment of human rights. This includes taking reasonable steps to ensure that environmental degradation does not endanger the life or health of the population, and where this does occur, to ensure swift and adequate reparations.

The Indian government and the state government of Madhya Pradesh were aware that the Bhopal plant involved hazardous substances and processes. For instance, the 1982 application for renewal of foreign collaboration between UCIL and UCC clearly notes: of MIC is known to involve some extremely hazardous processes with complexity in areas of efficiency, material balance, corrosion and safety.”

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Amnesty International is not aware of any information that indicates that either the central or the state government took or asked UCIL/UCC to take any specific steps to assess the risk to local communities or the environment, or to review or augment safety mechanisms.

After the plant began operating, densely populated settlements grew up all around it. As early as 1975 the municipal planning administrator of Bhopal issued a notice on the plant asking for it to be relocated. However, instead it was the administrator who was transferred from his position. In 1984, just a few months before the fatal leak, the state government conferred legal titles to a large number of houses that had come up close to the perimeter of the plant.

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The Director of the Industrial Safety and Health Department in the state government of Madhya Pradesh had the primary responsibility for ensuring that the Bhopal plant took adequate steps to ensure occupational safety and to guard against possible risks from hazardous substances or processes. The Department's safety inspectors were responsible for inspecting the plant. Before 1984 the Department had recorded at least six accidents at the plant. Inspections following each of the accidents recorded recommendations or instructions, but

the Department did not follow up the implementation of its recommendations.²²⁶

Following the death of a worker due to an accident involving phosgene gas in December 1982, the government of Madhya Pradesh commissioned an investigation. The report of this investigation, which some sharp concerns about the fundamental safety of the plant," was delivered in March 1984, but there is no evidence that it provoked any substantial response from the government.²²⁷

At the time of the accident the Factories Act of 1948 that governed health and safety regulations did not have any specific provisions to regulate or deal with hazardous technology and processes, nor was there any kind of legislation on environment protection. As well as an inadequate legislative framework and lack of institutional preparedness, the government appears also to have lacked the political will to discipline Union Carbide.²²⁸

The settlement

Steps to realize the right to a remedy for individuals who are victims of human rights violations should include, according to guidelines currently being considered by the UN Commission on Human Rights, access to justice, reparation for harm suffered (including restitution, compensation, rehabilitation, satisfaction and guarantees of non-repetition), and access to factual information concerning the violations.²²⁹

Despite outstanding claims by victims, on 14 February 1989, while UCC was appealing against a High Court ruling that it should pay Rs.250 crores (approximately US\$157 million at the prevailing rate) as interim relief, the Supreme Court announced a court-endorsed settlement between UCC and the government of India. This settlement was negotiated without the participation of the victims, despite the fact that an application on behalf of the victims had explicitly asked the Court to involve victims in any negotiations around a settlement.²³⁰

The Supreme Court order specified that all civil proceedings related to the Bhopal gas disaster should be transferred to the Supreme Court and stand concluded in terms of the settlement, and all criminal proceedings related to and arising out of the disaster shall stand quashed wherever they may be pending".²³¹

[Photo caption]

Residents of Bhopal celebrate the announcement that the Supreme Court had ordered remaining compensation money for victims of the gas disaster to be paid out. 19 July 2004. © Maude Dorr

[End caption]

The next day the Supreme Court issued an order which specified that UCC and UCIL were to pay US\$470 million in compensation the Union of India *as claimant and for the benefit of all victims* of the Bhopal Gas Disaster under the Bhopal Gas Leak Disaster (Registration and Processing of Claims) Scheme, 1985, and *not*

as fines, penalties or punitive damages" (emphasis added).²³²

The settlement bestowed sweeping civil and criminal immunity on UCC and UCIL, eliminating their legal liability.

Following the settlement both the Supreme Court and the government faced widespread public criticism. In May 1989, the Supreme Court explained that it had decided that the and humane" duty to provide immediate relief to victims took precedence over settling complex questions of law and liability that four years after litigation... are yet being debated."²³³

As well as excluding the victims from the process, the settlement capped UCC's liability at US\$470 million before the claims had been categorized and the full extent of damages estimated.

Three months after the gas leak, the Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985 (Claims Act) was enacted in parliament. The legislation gave the government the right" to represent and act on behalf of victims in any litigation in India or elsewhere. The Act also set up an elaborate bureaucratic system to file, process and categorize claims.

The Claims Act deprived victims of their right to pursue individual court claims against UCC for damages or personal injury due to the gas leak. Survivors challenged the Claims Act in the Supreme Court on the grounds that it was unconstitutional and that the government of India could also potentially be held responsible for the leak.²³⁴

"The entire system was based on treating victims like culprits who are lying", said an activist who has been working with victims in Bhopal almost since the leak happened. Hameeda Bi recalled angrily, *"In the court you were treated with no respect. When the claim was approved we had to provide imprints of both our palms and then had to give our fingerprints. The judges, officers and others treated us badly, even dacoits [bandits] are treated with more respect in courts than us gas victims."*

Victims, civil society groups and others protested against the settlement and challenged it in a review petition. In its ruling on the petition, the Supreme Court upheld the settlement but reinstated criminal charges against UCC/UCIL.²³⁵ The Supreme Court also ruled that if the settlement proved insufficient to meet the costs of personal injuries and compensation, the government of India would make up the shortfall.

The Claims Act, which forced the victims to accept the government as their advocate, as well as the Supreme Court-endorsed settlement of 1989, show how executive action to overcome judicial complexity has had the consequence of securing corporate impunity rather than corporate accountability. The complexities of the legal system led to a denial of the right of the victims to access justice.

Compensation: 'treating the victims like culprits'

The government claimed that it reached a settlement in the interests of the victims because case of this kind could not have reached a conclusion in less than 15 to 20 years from now." It argued that the settlement was adequate, and that the negotiations had been successful because the amount was higher than

the US\$350 million or so that UCC was initially willing to pay.²³⁶

However, the US\$470 million settlement was far less than most estimates of the damage at the time. In its amended case before the Bhopal District Court in January 1988, the government maintained that the claims connected to the leak would exceed US\$3 billion.²³⁷ A year later, it settled for less than one sixth of that amount. An intervention filed on behalf of the victims before the Supreme Court claimed that Rs.1,000 crores (around US\$628 million) were needed as interim relief alone.²³⁸ The entire settlement only amounted to Rs.750 crores (around US\$470 million) at the time.

The estimates of independent experts were also far higher than US\$470 million. Professor Alfred de Grazia, author of the online book *A Cloud Over Bhopal*, estimated in 1985 that the economic losses alone would total up to US\$1.3 billion. His estimate is based largely on loss of earnings due to death, disablement and injury, loss of business and property and legal costs. It excludes the costs of rehabilitation and medical treatment. The 1986 estimates of Arun Subramaniam and Ward Morehouse, authors of the book *The Bhopal Tragedy*, are more comprehensive, and cover costs relating to economic losses, medical research and treatment, vocational rehabilitation and legal costs. Their estimate totalled a little over US\$4 billion.²³⁹

The Supreme Court stated in May 1989 that the settlement was based on an estimate of 3,000 dead, 30,000 permanent or total disabilities, 20,000 temporary or partial disabilities, 2,000 serious injuries, and 50,000 minor injuries. In addition, the Court also considered 50,000 cases of loss of belongings and 50,000 cases of loss of livestock etc.²⁴⁰ These estimates, involving a total of 205,000 victims, were based on the figures that the High Court had used to direct UCC to pay interim compensation.

At best, these figures were only estimates. At the time of the settlement, more than 600,000 compensation claims had been filed but fewer than 29,000 had actually been processed and the deaths or nature and extent of injury confirmed.²⁴¹ By the time the Supreme Court pronounced its final judgment on the settlement in 1991, the official death toll had already risen from the estimate of 3,000 to 3,828.

In an order dated 3 March 1989, the Supreme Court ordered the distribution of free food grains to 582,692 gas-affected victims.²⁴² However, in the settlement calculation, the Court used an estimate of 105,000 dead, injured or disabled and 100,000 cases of loss of personal belongings or livestock etc.²⁴³

The 2003 annual report of the Madhya Pradesh Gas Relief and Rehabilitation Department reveals that by October 2003, compensation had been awarded in 15,248 cases of death and at least 554,895 cases of injury or disability - more than five times the numbers of dead, injured and disabled used by the Supreme Court to calculate the settlement.²⁴⁴

[Box]

Compensation: a case for putting the victims first

Victims of the Bhopal gas leak attempted and failed to access justice through the tort system in both the USA and India.²⁴⁵ In his decision to send the Bhopal

case to the Indian courts, US Judge Keenan noted that he was "firmly convinced that the Indian legal system is in a far better position... to determine the cause of the tragic event and thereby fix liability" and, because of access to greater information than the US courts, to fix the appropriate amount of compensation.²⁴⁶ Yet litigation in India did not determine the cause of the accident and did not fix liability.

Cases such as these hold many obstacles for plaintiffs. Apart from being generally slow and expensive, in cases involving toxic pollution the evidentiary burden of establishing liability often defeats the plaintiffs.²⁴⁷ While tort cases are reasonably effective in assessing personal injury and property damage, they are less well suited to assessing, evaluating and quantifying damages to environmental goods and processes.²⁴⁸ For cases with an international dimension, additional questions arise about the appropriate forum for the case and the applicable law. Even if cases are accepted by a court of a country other than where the harm occurred, compensation awards can be small if the court decides it is proper to use the more limited law of the state in which the harm occurred.²⁴⁹ Applying tort law to transnational corporations raises particular problems, given their complex organizational and legal structures that may be spread over divisions, subsidiaries and affiliates across countries.²⁵⁰

Based on the experience of the victims of Bhopal, activists working with survivors' organizations made a case for a system of compensation that does not place on victims of human rights violations the onerous burden of proving fault and establishing causation through a painful legal process. It was more than seven years before victims started receiving compensation, only the first step towards full reparations. For most victims it was too little too late.

Over the years there have been some attempts to move away from fault-centred models of compensation and these include public compensation models such as no-fault compensation schemes.²⁵¹ These schemes seek to compensate victims for injuries and provide timely rehabilitation assistance through a process that is largely administrative and does not involve complex litigation. Such models of public compensation separate the issue of victim compensation from the question of liability and deterrence, ensuring payment of compensation quickly without removing the deterrent effects of liability from the legal system.²⁵²

[End box]

The survivors faced numerous problems relating to the amount of compensation. The sums paid were inadequate, no interest was paid on delayed payments, and compensation remained unpaid. Problems in the process included: denial of the individual's right to claim damages; corruption; victims forced to choose between settling or facing litigation; denial of appropriate appeal mechanisms; denial of legal aid; and long delays and huge bureaucracy.²⁵³

The compensation mechanism

The May 1989 order of the Supreme Court setting out the settlement stated: individual claimant shall be entitled to claim particular quantum of compensation even if his case is found to fall within any of the broad

categories.”²⁵⁴ This meant that victims were denied their individual right to prove the extent of individual damages suffered and claim appropriate compensation.

Claims were adjudicated in claims courts by Claims Commissioners, Additional Claims Commissioners and the Welfare Commissioner (a sitting judge of the Madhya Pradesh High Court).²⁵⁵

Claimants had to pass through several stages in order to secure compensation: registration; identification (requiring proofs of identity, residence and medical records to prove gas effects); notification of their hearing; categorization; adjudication and, for an unfortunate few, the appeals process.

Survivors say that the process involved innumerable trips to hospitals, government offices, lawyers, banks and the court. They said they had to stand for hours in long lines and endure apathy, indifference, suspicion and corruption at the hands of employees, brokers, middlemen and lawyers. For poor and illiterate people, the process was fraught and frustrating, and at the end they gained very little.

A 1995 assessment reveals that the maximum average compensation was awarded not in the two severely affected wards (Nos. 13 and 20) but in Ward No. 21, categorized as mildly affected.²⁵⁶ In 1995 the average compensation received for personal injury was Rs.26,531, just above the stipulated minimum of Rs.25,000 (around US\$545 at current rates). Average awards were far smaller than originally envisioned. This indicates the arbitrary nature of the awards. The difference between the highest and the lowest average compensation paid for injury was Rs.8,483, although the 1992 guidelines issued to the Welfare Commissioner stated that the compensation for injuries should be in the range Rs.25,000 to Rs.400,000 (around US\$8,700). In at least five wards the average compensation was equal to the minimum, while in six wards it was actually less than the minimum. In cases where the victim had died, the average compensation given by 1995 was Rs.73,638 (around US\$1,605), far less than the minimum Rs.100,000 stipulated by the Supreme Court. An October 2002 survey in one severely affected ward revealed that 91% of the 1,481 claimants had received only the minimum compensation.²⁵⁷

Fast-track justice?

In 1995 special fast-track courts called *Lok Adalats* were set up to expedite the processing of thousands of claims in the claims courts. The lack of due process in these courts was described by a committee appointed by the Supreme Court:

*“In the Lok Adalats, a particular amount was specified and the claimants were coerced to accept this amount and accord their consent to the medical categorisation... In the office of the Lok Adalats, no legal assistance was available to the claimants”.*²⁵⁸

Lawyers and counsel were barred from representing victims in *Lok Adalats*. Victims were completely unaware of the process, and directions on minimum compensation were not followed. Claimants had to go to the Supreme Court to secure the right to appeal against the decisions of the *Lok Adalats*.²⁵⁹

Delays

Claimants faced significant delays at every stage of the process, even after adjudication. *"The cheque was awarded at least two months after the judgment. And the money was available only a further 40 days after the award"*, said Shanti Devi, herself a victim and now an activist.

Delays were aggravated by the fact that claimants were not paid any interest for the delay on the amounts payable to them. Interim relief of Rs.200 per month was ordered by the Supreme Court in March 1990 because adjudication of claims had not started. This was deducted from the eventual compensation that victims secured.

Problems with medical categorization

The Process of Injury Evaluation (PIE) categorized the degree of disability or injury according to scores given to symptoms, signs, treatment received and investigation results. Evidence suggests that claims of medical injury were not accurately scored.

The PIE relied mostly on three investigations: X-rays, the Pulmonary Function Test (PFT) and the Exercise Tolerance Test (ETT). However, these were not widely administered: a 1989 study showed that while at least 60% of the victims required PFT and ETT, the claims directorate had ordered only 15% and 2% respectively to take these tests. The state government declared that was not practicable to subject every claimant to these time-consuming investigations in mass operations like this."²⁶⁰

The medical records and the PIE did not assess how victims' exposure and subsequent illness affected their ability to carry out their normal level of activities and their work. The ability of a claimant to produce medical records for the post-exposure period was critical. large number of victims were being categorized as 'no injury' even though they are ill and can produce proof of residence in the exposed area, all because they cannot produce medical documents for the post-exposure period."²⁶¹

[Box]

Batul Bi, nearly 70, is a resident of Ahata Sikander Kali. Her husband, Taj Mohammad, fell ill after the gas leak and was treated at two private clinics in Bhopal and one in Delhi. He died in September 1989. Batul Bi filed a claim for the death of her husband.

After five years her claim was upheld on 19 June 1995 by a Claim Court of the Deputy Welfare Commissioner. She was granted the minimum compensation of Rs.100,000. However, the Upper Claim Court of the Welfare Commissioner decided, without saying why, to review the case. On 30 August 1996, more than a year later, the Welfare Commissioner set aside the previous decision.

The Commissioner's order, about a page long, acknowledged that Taj Mohammad suffered from chronic bronchitis and that his urine thiocyanate test was abnormal. It noted that Taj Mohammad died a day after he was admitted to hospital due to pus formation in his right shoulder, which the Commissioner stated "had nothing

to do with exposure to toxic gas", without giving any reason for this explanation. The Commissioner noted that there were no records of the private treatment Taj Mohammad received in Delhi or Bhopal, and concluded, "For the above mentioned reasons Taj Mohammad's death bears no relationship to the toxic gas exposure".

The order downgraded the claim from death to personal injury, ruling that Taj Mohammad should be compensated for his chronic bronchitis, and awarded Rs.35,000. Batul Bi's lawyer-broker then forced her to pay him Rs.32,000 for his efforts. That left her with Rs.3,000. "I spent more than that on my travel, preparing papers and other things. I was left with nothing, except the money that I spent", recalled Batul Bi, almost in tears.

Batul Bi filed her own claim for personal injury in early 1988. She has a copy of her registration reference, a copy of the Tata Institute survey that proves she was a resident that night in an affected area, and she is sick. To date, some 16 years later, she has not even received a notification of the hearing of her claim; despite innumerable trips to various offices. The only reply she has received is that her file cannot be found.

[End box]

As a result of the paucity of quality medical research on the consequences of the Bhopal gas leak and lack of comprehensive information about the toxicity of MIC, neither those claiming to have been affected nor those adjudicating their claims have had any rigorous basis to understand the link between the exposure to gas and the origin of health-related disabilities. This has given rise to a widespread sense of grievance that compensation has been arbitrarily decided.

Failure to register claims

A study by the Bhopal Group for Information and Action of three gas-affected localities concluded that the claims of 42.4% of the residents had not been registered. In one severely affected locality, nearly one sixth of the claims were not registered. The single largest omission comprised at least 15,000 gas-affected victims who were under 18 at the time of registration of claims. Not until August 1992 did the Supreme Court order that minors had a legal entitlement to be registered. Children born to gas-affected parents have continued to be excluded, despite the Supreme Court recognizing the entitlement of "later born children who might manifest congenital or pre-natal MIC afflictions".²⁶²

Failure to pay the compensation available

Of the Rs.750 crores (around US\$470 million at the prevailing rate) settlement, UCC contributed US\$420 million, which was held in a US dollar account, and UCIL contributed Rs.68.99 crores (around US\$44 million), held in a rupee account.²⁶³ The money was available in 1989 but the claims courts began adjudicating cases only in 1992 and the process is still not complete.

Over the years, owing to the appreciation of the US dollar vis-a-vis the Indian rupee and the interest earned on undistributed funds, the sums held have grown considerably.²⁶⁴ As of mid-2004, a total of Rs.1,503 crores (US\$327.5 million)

was held by the Reserve Bank of India and Rs.1,535.58 crores (US\$334.6 million) had been disbursed by claims courts.²⁶⁵

After approaches by victims' groups, on 19 July 2004 the Supreme Court ordered the disbursement of the remaining funds, giving each of approximately 570,000 victims the same amount they had earlier received as compensation.²⁶⁶

Corruption

The claims system saw hundreds of thousands of poor and illiterate survivors facing a complex bureaucratic system. Survivors complain that the system required excessive paper work and complicated procedures and that this opened the way for intermediaries, brokers and opportunistic lawyers. Nanni Bai, a widow, paid Rs.60,000 to a lawyer and broker to procure compensation of Rs.100,000 for her husband's death. Ahmadi Bai, 65, paid Rs.500 to a doctor to testify that her illness was because of her exposure. A number of survivors say that even the person who delivered the notification of the date of the claim hearing had to be bribed.

Kiran Jain, a 40-year-old widow, said: *"Having all your papers is not enough. You have to pay a bribe for everything even to get a Pension Book or a Below Poverty Line card. If you pay, you get what you want; if you don't, then just suffer."*²⁶⁷

[Photo caption]

Kiran Jain © Private

[end caption]

Rehabilitation of victims

In the days after the disaster, the state government of Madhya Pradesh organized a relief effort that involved virtually every arm of government including the army. It housed people in camps, distributed food, provided medical treatment, gave out ex-gratia payments for the dead and injured, and undertook other tasks such as processing the remaining MIC, and disposing of thousands of dead animals.²⁶⁸

The government of Madhya Pradesh had a seven-year action plan (1984-85 to 1990-91). In this period it spent Rs.164.3 crores (about US\$35.8 million) on the medical, social and economic rehabilitation of the affected population.²⁶⁹ A subsequent five-year rehabilitation action plan, costing Rs.258 crores (about US\$56.2 million), covered the period 1990-95. This was later extended to July 1999. Central government provided 75% of the costs, with the rest coming from the state government.²⁷⁰

Madhya Pradesh state government says it spent around Rs.24 crores annually on relief and rehabilitation. This includes Rs.19 crores on medical rehabilitation, Rs.1 crore each on "economic rehabilitation" (restitution), "environmental rehabilitation" and miscellaneous expenditure and Rs.2 crores on judicial and administrative expenditure.²⁷¹

Medical rehabilitation

The government's medical rehabilitation programme consisted of offering free care to the gas-exposed population in existing government hospitals, building new ones, and conducting research on the effects of gas exposure on the population.

Currently, there are seven government hospitals in Bhopal,²⁷² all of which are supposed to offer free care to gas victims. Testimonies from patients show that the standard of care at the hospitals is variable.

Sitara Bi said that she used to get treatment from Jawaharlal Nehru Hospital, but that *"it would bring tears to my eyes the way we were treated there. We were told to go from one line to another to another."*

Patients also complain that treatment is ineffective. Hasina Bi said: *"I don't go to government hospitals because their medicines are of no effect."*

A report by the International Medical Commission on Bhopal (IMCB) in 1994 found that care was largely symptomatic, suggesting that treatment protocols for chronic patients had yet to be developed and implemented.²⁷³ The IMCB found indiscriminate use of corticosteroids and antibiotics. A 1990 evaluation of drug use at two government hospitals by the Bhopal People's Health and Documentation Clinic revealed that 26.8% of prescriptions were inappropriate, and 13.2% of drugs prescribed were banned in other countries because of adverse effects. The results of the 1990 study were reported in the 1998 report by the Sambhavna Trust Clinic.²⁷⁴

Many patients complain that medical treatment costs far too much. Even at government hospitals, there are numerous bills to pay for medicines, blood tests and other procedures. A common complaint is that medicines are never available in the government hospitals where they are supposed to be free. Many people have found the treatment at government hospitals so poor that they have paid for private treatment. According to the Fact Finding Mission on Bhopal, nearly 61% of compensation money was used for medical expenses, although medical care for those exposed to the gas was supposed to be free.²⁷⁵

Research headed by the Indian Council for Medical Research (ICMR) involved 20 research projects including long-term epidemiological studies, studies on patterns of lung disease, mental health studies, and studies on pulmonary, psychiatric and other effects in children.²⁷⁶ In 1994, a decade after the gas leak, the government discontinued all research on Bhopal by the ICMR without explanation.

Few results from these studies were published by the ICMR until 2004, when a technical report based on the long-term epidemiological studies was released. In the absence of any other long-term studies on the effects of gas exposure in Bhopal, the release of remaining ICMR information is crucial.

Special Industrial Area and industrial training

As part of the rehabilitation action plan, 152 work-sheds were built in a Special Industrial Area to generate employment in small- and medium-scale industries. Construction of the sheds was completed in 1991. Of the 152 sheds, 55 were allotted to private entrepreneurs, 52 were occupied by the Rapid Action Force

(a special division of the police) and the remainder lie vacant. Of the 55 sheds allotted to entrepreneurs, industries were begun in only 20 sheds. From a total expenditure of Rs.8.19 crores (US\$1.78 million), only 243 gas-affected people have found employment.²⁷⁷

[Box]

Parvati Bai's house in Bhopal's Gas Affected Widow's Colony contains nothing but a fan hanging from the roof, a steel bed and some old dented pots and pans. Her husband, Mohan Yadav, died a few months after the gas leak. They had no children and earned a living as construction workers. She was so poor that she had to sell the house to pay her medical bills and survive. She now lives in a house that belongs to someone else. Most of her compensation money went to intermediaries and lawyers, and to repay debts.

Parvati Bai is now around 70 years old, ill and far too weak to work. Her only source of income is the Rs.150 she receives each month as a pension. "That is not enough even to buy myself some food ", she said.

She lives off the kindness of others. "I am too old and sick to work so often I just go around and ask for food. Some day I will die and the Municipal Corporation will just take my body away. That will be the end," she said. She is not even recognized as being Below Poverty Line (BPL), which would entitle her to an extra subsidy on food grains.

[Photo caption]

Parvati Bai © Private

[End caption]

[End box]

Another key component of the economic rehabilitation programme was a seven-year (1990-91 to 1998-99) programme of industrial training for affected workers. Only 4,080 trainees received training under this programme, just 583 per year.²⁷⁸

Vocational training for women

Beginning in 1985, the state government set up 50 training/production centres in different localities for women gas victims to train them in trades such as sewing, hosiery embroidery and stationery manufacture.

Women trainees were offered a stipend of Rs.150 per month. Within four years, all but two of the centres had been closed. The two are known as "the stationery centre" and about 90 women work there. The "stitching centres", where 2,300 gas-affected women were employed, were closed down by the government in 1992.

²⁷⁹

Shamshad Bi, 42, from Jai Prakash Nagar, earned Rs.320 (US\$7) a month at a "stitching centre". She said: "My husband is sick and is incapable of doing his carpentry regularly and the compensation money is already spent on treatment and other domestic expenses. Where do I go? And how does the government expect

us to survive?"

Social rehabilitation

The colony of 2,486 houses that the state government built for the gas victims, especially for widows, is a picture of neglect with poor access roads, open drains and gutters, overflowing sewers and piles of garbage and rubbish. There is no access to clean drinking water: some public tanks in the colony carry warnings against drinking the water. Many residents complain that they have not been granted authorized electricity connections with proper meters.

The Madhya Pradesh government admitted in August 2004 that the colony "is in bad shape and developmental (drainage and sanitation, pipe water facilities) and maintenance works are urgently needed... in order to improve the quality of life of victims."²⁸⁰

Orphans abandoned by the state

At least 28 children were orphaned in the immediate aftermath of the gas leak. Twenty years later many of them are still waiting for the state to fulfil its promises to them.

Phiroza was 10 years old at the time of the gas leak. After the death of her parents she had to work along with her grandmother to support herself and her younger sister, Firdaus. "The government did little to help us in a meaningful way", she recalls angrily.

The orphans were supposed to be under the care of the Department of Women and Child Development of the Madhya Pradesh government. "They did undertake some preliminary medical check-ups," said Shahid Noor, who was a young child when the disaster struck. "But otherwise their assistance was limited to taking us to the market once every year, to buy us clothes and other essentials worth Rs.500." After a few years this sum was increased to Rs.1,000.

[Photo caption]

Firdous, Ganga, Suman, Sanjay, Firoza, Shahid and Sadanand - pictured here with younger family members - were among the many children orphaned as a result of the Bhopal disaster. © Private

[end caption]

The orphans, most of them now in their twenties, say that their biggest complaint is that the state failed to ensure that they went to school to receive an education.

Ganga was one of the few children whom the government housed in Kalyani, a home for orphaned children. Despite this, the state did not ensure that she finished her schooling. "I was never encouraged to study. It did not matter to anyone," she said. Those who did go to school did so because they had older siblings or relatives who worked to support their schooling.

One orphan, Shahid, said: "The government claims that they have spent hundreds

of thousands of rupees to rehabilitate orphans. But we have seen only a fraction of that." Another orphan, Sadanand, acknowledges that orphans were allotted houses in the relief colony but points out that even years later, *"We have no piped water or even proper electricity. The colony is filthy, without proper roads or sewage."* Despite his ill-health, due to the exposure, he manages to make a living as a tailor.

The poverty of the orphans of Bhopal is aggravated by the amount that they still have to spend on medical treatment. Sadanand recalls, *"The government set up such a huge gas relief department and mechanism but they did not think it fit to employ us orphans. We do not want their charity. All we demand is employment that provides a decent remuneration."*

Shahid summed up their feelings: *"First the government said 'grow up, become adults and we will provide you jobs'. Once we became adults they said 'now that you have grown up you take care of yourself'."*

Repression of activists

In the months immediately following the disaster, media reports were received that officials and agencies of the Madhya Pradesh state government repressed activists working on behalf of survivors of the gas leak.

One of the first alleged instances of repression of protests took place on 4 January 1985, when 10 people were hospitalized after being beaten by police during a sit-in outside the residence of the Chief Minister of Madhya Pradesh because the distribution of free rations, earlier provided to Bhopal victims and others, had been halted by the government. The police arrested and held overnight some 300 more protesters, half of them women, who were also protesting against the halting of free rations. They were released without charge the following day.²⁸¹

Social activists and dissident medical professionals set up their own clinic in order to provide forms of treatment difficult to acquire through government hospitals. On 24 June 1985, the so-called People's Health Clinic was raided by police. Forty people were arrested, six of them doctors. The clinic was forced to close apparently with the intent of sabotaging the efforts of the Bhopal Gas Peedith Mahila Purush Sangarsh Morcha (see inside back cover) which helps to organize gas survivors into pressing the government on issues of relief and rehabilitation. One newspaper reported: *basti [slum] people, including women with infants, were in gaol more than ten days after the arrests"*.²⁸² A rally of up to 5,000 people held the next day was charged by police and a further 400 people were arrested. Most were released the following day.

In September 1986, three activists were reportedly arrested and charged with violating the Official Secrets Act after recording a meeting discussing the medical condition of survivors.²⁸³ One of the activists, a British citizen named David Bergman, commented on the reason for his arrest: *"Any relief effort which the government cannot control is seen as a threat. It highlights their inadequacy in failing to solve the physical and mental health problems of the gas victims."*²⁸⁴ During another protest demanding more aid for gas victims on 29 September 1986, some 2,000 people were arrested, 500 of them women.²⁸⁵ Sixteen years later, on 25 November 2002, 70 people were arrested and several beaten by police following

an occupation of the factory site intended to draw attention to the contamination.²⁸⁶ Charges of trespass were later dropped.

CHAPTER 5:

Conclusion and recommendations

This report highlights how an industrial disaster can involve a complexity of violations of civil, political, economic and social rights for generation after generation. Today, 20 years after the disastrous gas leak at Bhopal, tens of thousands of people are still suffering the after-effects. Despite the determined efforts of survivors to secure justice, the large numbers affected have received inadequate compensation and medical assistance. People already living in poverty face health problems that are shortening their lives and affecting their ability to work. The site has not been cleaned up so toxic wastes continue to pollute the water which the surrounding communities rely on. The struggle of all those affected by the tragedy, in the face of enormous obstacles, not only deserves support but also offers many lessons to anyone interested in defending human rights.

Corporate failures

Union Carbide Corporation (UCC) owned 50.9% of the equity of Union Carbide India Limited (UCIL) and therefore had majority control of UCIL's voting shares. An internal memo suggests that UCC was aware that its technology entailed safety risks, increased by the fact that the chemical to be produced and bulk stored in Bhopal was an "ultra-hazardous substance".

In the aftermath of the tragedy Union Carbide withheld information that could have assisted the medical treatment of victims. It also shifted responsibility between the various arms of the corporation. In 2001, when UCC merged with Dow Chemical Company, both companies used the new ownership structure in an attempt to avoid further responsibility for the disaster.

Union Carbide has not still cleaned up the Bhopal site, and toxic wastes continue to pollute the environment and groundwater. UCC, UCIL and Dow have publicly stated that they have no further responsibility for the effects of the gas leak, and continue to refuse to appear before the court in Bhopal. However,

the question of liability has yet to be decided by US courts and criminal charges against UCC and UCE are still open and pending.

Indian government failures

Despite recent positive steps, the Indian government has failed in several ways to protect the rights of the victims of the Bhopal disaster. It was obliged to ensure that UCC and UCIL complied with existing safety regulations in order to avoid gas leaks. However, government officials of Madhya Pradesh state failed to act effectively on numerous occasions when less serious but nonetheless alarming incidents had occurred. These incidents should have alerted state officials to the possibility of a disaster.

After the leak, the government decided to accept an inadequate final settlement without allowing survivors to participate in the resolution of the case. This undermined the victims' right to a remedy, which includes compensation, rehabilitation, acknowledgement of the harm they have suffered, and for those responsible to be held to account. Today, about US\$330 million of the settlement deal has yet to be disbursed. The government has also failed to ensure that survivors received adequate compensation and medical assistance, or to prevent widespread corruption affecting the compensation process.

Finally, the government discontinued without explanation the medical research on the impact of the leak, and has yet to publish all the interim results.

National legislation

The most important means to ensure companies respect human rights remains effective domestic regulation. If developed and administered fairly, national laws and legal infrastructure are more likely than international measures to address local priorities and interests.²⁸⁷ Such laws require well-managed and resourced government agencies to monitor implementation and to take action to punish and remedy breaches of the law. However, even when such conditions prevail it remains difficult to hold to account corporations that are responsible for human rights abuses.

The liberalization of trade and the deregulation and privatization of state functions have coincided with an expansion in the power of large transnational corporations. According to one source, the largest 300 firms control about 25% of the world's productive assets.²⁸⁸ The vast resources of many transnational corporations have enabled unscrupulous companies to abuse their power and influence. In Bhopal, the company has used its considerable means to avoid responsibility for the consequences of the failures in its business operations.

The structure of many transnational corporations is complex, with headquarters in one country, subsidiaries and operations in others, and shareholders spread across the world. As a result, even though most transnational corporations operate with the coherence of a single entity, it is sometimes difficult for a court to exercise jurisdiction over all the component parts.²⁸⁹

Governments in developing nations face a difficult choice as they are responsible for the health and safety of the population but are aware that

over-regulation or strict control over corporate activity can drive away investment, frustrating economic development and job creation.²⁹⁰ In the case of Bhopal, the government was unable or unwilling to effectively regulate Union Carbide to ensure that it took all appropriate measures to avoid the human tragedy that occurred.

In subsequent cases, involving local companies, the Indian government and legal system have been far more rigorous, finding that any company responsible for a hazardous enterprise has an *absolute duty* to ensure that no harm is caused to anyone on account of its activities. The Indian state has also found that such a company is liable to compensate all those affected by the accident.²⁹¹ What remains unclear is why such liability is apparently restricted to Indian companies.

Corporate responsibility for human rights

Scrutiny of the activities of global businesses led many companies to adopt codes of conduct during the 1980s and 1990s, and an emerging movement on corporate social responsibility led to numerous voluntary codes. However, voluntary codes of conduct, while a welcome signal of corporate commitment, have proved insufficient. Many codes are vague in regard to human rights commitments. As far as Amnesty International is aware, fewer than 70 companies worldwide even refer explicitly to human rights in their codes. Whether unique to the company, or adopted sector-wide, voluntary codes too often lack international legitimacy.

[Photo caption]

Twenty years on from the gas leak a large amount of poisonous material remains on the contaminated site, affecting the health of people in the area. This sack bears the warning "Not for sale - Poison - Handle with care". © Maude Dorr

[End caption]

In 2001 the Organisation for Economic Co-operation and Development (OECD), a group of governments of 29 industrialized countries, issued *Guidelines for Multinational Corporations*, which are essentially agreements and guidelines for member home governments of multinational corporations. The *Guidelines* specify that enterprises should respect the human rights of those affected by their activities in a way that is consistent with the host government's international obligations and commitments.

There is concern among human rights organizations, however, that the *Guidelines* - which apply only to companies that are based in OECD or adhering countries - are weakened by the discretion allowed to companies in crucial areas such as disclosure and environmental protection. In addition, no investigative powers are specified and implementation procedures are subject to arbitrary decisions and interpretations by government officials, who lack any formal training in human rights and who are seen to be too closely allied to business interests. The fact that implementation of the *Guidelines* is monitored by government officials in the countries where the companies are registered raises the concern that narrow national economic interests may unduly influence the

way in which a company's behaviour is assessed.²⁹²

International Labour Organization (ILO) Conventions 174 and 176 on industrial accidents, safety and health are international treaties, subject to ratification by ILO member states. They are negotiated between governments, workers and employers and, like the OECD *Guidelines*, are intended to promote good practice rather than punish. The ILO has a specific standard related to transnational corporations, the Tripartite Declaration of Principles concerning multinational enterprises and social policy (1977), which it describes as a voluntary code.²⁹³ As a legal instrument for obtaining corporate accountability, however, it suffers from many of the same limitations as the OECD's *Guidelines*, particularly regarding implementation.

These initiatives have been valuable in raising awareness of key issues among companies, but to date they have failed to allay the prevailing public mistrust of companies or to reduce the negative impact that some companies' activities have on human rights.

The UN Norms on the responsibilities of transnational corporations and other business enterprises with regard to human rights (UN Norms) were adopted by the UN Sub-Commission on the Promotion and Protection of Human Rights in 2003, after a process of consultation with businesses, trade unions and non-governmental organizations.²⁹⁴ The UN Norms and their Commentary set out, in a single, succinct statement, an overview of human rights responsibilities of companies. They highlight best practice. In addition to setting a standard that business can measure itself against, the UN Norms are also a useful benchmark against which national legislation can be judged.

Global framework

There is already a clear trend to extend international obligations beyond states, including to individuals (for international crimes), armed groups, international organizations and private enterprises. Amnesty International supports this trend and believes that companies have a responsibility for the human rights impact of their operations. The Universal Declaration of Human Rights calls on "every organ of society" to respect, promote and secure human rights.

Weak international enforcement mechanisms mean that national law remains the most important means of ensuring legal accountability. However, the international human rights framework can act as a catalyst for national legal reform, and as a benchmark to judge the adequacy of national law and regulations. Corporate accountability cannot be achieved when, as US Judge Doggett stated in a case involving Dow Chemicals, "*the United States allows its multinational corporations to adhere to a double standard when operating abroad and subsequently refuses to hold them accountable for these actions*".²⁹⁵

[Photo caption]

Bottles of chemicals have still not been removed from the site of the Union Carbide plant 20 years after the disaster. © Maude Dorr

[End caption]

In Amnesty International's view, the UN Norms and their Commentary represent a step towards the establishment of a common global framework for understanding the responsibilities of businesses with regard to human rights. What emerges most clearly from the experience in Bhopal is the need for an international human rights framework that can be applied to companies directly:

- Human rights standards distil the basic rights and freedoms that all human beings have in common, but they are not reflected consistently in national laws. A human rights framework for company conduct would provide a common starting point for the consistent expectations of the role of companies in the respect and fulfilment of human rights.
- A human rights framework could provide common and universal standards, which could assist efforts to establish compatible regulatory regimes across national boundaries. Business activities are measured by different standards: labour, environmental, criminal, commercial, corporate laws and others. All these standards vary considerably between countries and legal systems. International human rights provide universal benchmarks that the conduct of companies can be expected to meet in their spheres of activity.
- The advocacy power of human rights is especially important in order to give vulnerable or marginalized communities a voice in cases where there is no effective remedy at the national level, as has been found in cases where some governments protect investors' interests over the rights of the population. It is vital that victims of industrial accidents do not suffer the same fate as those in Bhopal.

One of the clearest lessons of Bhopal is the importance of transparency and public participation in decisions relating to the location and operation of industries using hazardous materials. Ensuring that transnational corporations operate transparently, especially when they deal with hazardous technology or processes, is an essential step towards avoiding human tragedy and abuses of rights. Universal standards should require disclosure by companies of any use of hazardous and toxic materials, and the role that home countries play in this is critical.²⁹⁶

Recommendations

Having noted the steps taken by governments in India to assist the victims of the Bhopal tragedy:

Amnesty International calls on the governments of India and Madhya Pradesh to:

- ensure the effective and prompt decontamination and clean-up of the Bhopal site by Union Carbide Corporation (UCC)/Dow Chemical Company, or to undertake the job if UCC/Dow is either unwilling or unable to do so;
- conduct a detailed assessment of the nature and extent of damage to health and environment from improper waste disposal and contaminants from the abandoned factory site and make public the findings;
- ensure that Dow/UCC provide full reparations, restitution, compensation and

rehabilitation for the continuing damage done to health and the environment by the ongoing contamination of the site;

- ensure regular supply of adequate safe water for the domestic use of the affected communities in line with the order issued by the Supreme Court;
- ensure adequate and accessible healthcare for all survivors, in particular by making sure the offer of free health care is extended without discrimination to all those affected by the disaster, including to children born of parents affected by the gas leak;
- work with survivors' organizations to establish a mechanism for the distribution of all outstanding compensation in a way that guarantees the victims access to justice and due process, ensures transparency and guards against corruption;
- reassess the compensation received by victims, following the 1989 settlement, and make up any shortfall in line with the Supreme Court's 1991 order;
- ensure that UCC makes available all information about the reaction products released on the day of the leak and full information regarding their toxicity and impact on people and the environment, and make sure that such information is passed on to the survivors in languages they can understand;
- ensure that all studies carried out by the Indian Council of Medical Research and any other relevant research on the health impact of the gas leak are made public;
- conduct a thorough and transparent review of the rehabilitation programmes in consultation with survivors' groups;
- address the particular needs of women who face social stigma and those who were orphaned as a result of the disaster.

Amnesty International further calls on the Indian government to:

- invite relevant Special Procedures of the UN Commission on Human Rights to visit India to examine the effect of UCIL/UCC activities and the Bhopal disaster on contamination of groundwater and the environment, and consequently on the human rights of affected communities. Key procedures [mechanisms] would include the Special Rapporteur on adverse effects of the illicit movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights; the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health; the Special Rapporteur on adequate housing as a component of the right to an adequate standard of living; and the Special Rapporteur on the right to food.

Amnesty International calls on the US government to:

- do everything within its legal authority to ensure that Bhopal survivors are able to obtain redress;
- cooperate with the government of India to ensure that UCC and/or Dow Chemical appear before the Bhopal Court to face trial on the criminal charges.

Amnesty International calls on Dow Chemical Company to ensure that UCC:

- effectively and promptly decontaminates the Bhopal factory site, cleans up the groundwater and removes the stockpiles of toxic and hazardous substances left by the company when they abandoned the site;
- cooperates fully with those who are assessing the long-term health consequences of the gas leak and of the hazardous and toxic substances left on site since 1984;
- promptly makes public all information it has on all reaction products released on the day of the gas leak and full information regarding their toxicity and impact on people and the environment;
- appears before the Bhopal Court in the criminal case.

Amnesty International calls on Dow Chemical Company to:

- provide promptly full reparations, restitution, compensation and rehabilitation for the continuing damage done to people's health and the environment by the ongoing contamination of the site.

Amnesty International calls on the UN Commission on Human Rights to:

- work towards the adoption of an international, universally recognized normative framework for business, including minimum human rights standards for corporations to be incorporated into domestic law.

Amnesty International calls on the UN High Commissioner for Human Rights to:

- take a leading role in multilateral efforts to clarify the human rights responsibilities of transnational corporations and other business enterprises;
- offer the technical assistance of her office to ensure that mechanisms of reparation for survivors of the Bhopal tragedy accord with international human rights standards.

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56 There was no significant effect of exposure, including *in utero*, for girls. However, exposure was associated with significant decreases in most anthropometric measurements in boys. The exposure effect was most pronounced in boys exposed *in utero* and least severe in boys born before the incident.

57 Varma D., Ranjan N., Sarangi S., Padmanabhan V. T., Holleran S., Ramakrishnan R., "Methyl Isocyanate Exposure and Growth Patterns of Adolescents in Bhopal," *Journal of the American Medical Association*, Vol 290, No. 14, 8 October 2003, pp.1,856-1,857.

58 "Health Effects of the Toxic Gas Leak from the Union Carbide Methyl Isocyanate Plant in Bhopal", op cit, p.45.

59 Sathyamala C., "Reproductive Health Consequences of Bhopal Gas Leak," *Economic and Political Weekly*, 6 January 1996, pp.43-57.

60 Fact Finding Mission on Bhopal, *Economic Rehabilitation*. The survey respondents were 268 men and 188 women.

61 An ICMR study showed that the morbidity rate increased in the 36 affected wards of Bhopal from 15% to 30% between 1987 and 1990. Quoted in *Socioeconomic Impact of Disbursement of Interim Relief to Gas Affected Families in Bhopal*, Academy of Administration, Bhopal, 1991, p.2.

62 Rs. signifies Indian rupees. Except where specified, all figures expressed in US\$ represent the current exchange rate of US\$1=Rs.45.89.

63 "Reproductive Health Consequences of Bhopal Gas Leak", op cit, p.48.

64 Greenpeace, *The Bhopal Legacy*, Technical Note 04/99, November 1999, p.5.

65 Transmittal Memorandum from UCC Engineering attaching Draft Criteria Report for Waste Liquid Incinerator, 27 November 1973.

66 Excerpt from a UCC Internal Memorandum, 2 December 1973, UCC 04206. The memorandum from Union Carbide Eastern, signed by B.T. Burgoyne, accompanied the proposal to set up the MIC unit in Bhopal and was addressed to the Management Committee.

67 "Events having environmental impact", statement of site history prepared for Arthur D. Little, 20 July 1989, UC 04097, p.42.

68 A copy of this telex is in Amnesty International's possession.

69 A copy of this telex is in Amnesty International's possession.

70 Operational Safety Survey CO/MIC/Sevin Units, Union Carbide India Ltd Bhopal Plant, UCC, July 1982.

71 "Presence of Toxic Ingredients in Soil/Water Samples Inside Plant Premises", UCC 02268.

72 Solar Evaporation Ponds, NEERI, Nagpur 1990, p.xv.

73 The NEERI report shows that it left as many as nine peaks unidentified in a [chromatography] of soil and water samples, NEERI 1990, pp.73-4.

74 "Presence of Toxic Ingredients in Soil/Water Samples Inside Plant Premises", op cit.

75 www.bhopal.net/oldsite/contamination.html

76 Translation of this document was provided by the Sambhavna Clinic.

77 *Assessment of Contaminated Areas Due to Past Waste Disposal Practices at EIL, National Engineering Environmental Research Institute (NEERI), Nagpur, October 1997, UCC 01099-01100.*

78 *Assessment of Contaminated Areas Due to Past Waste Disposal Practices at EIL, op cit.*

79 Letter from Arthur D. Little to UCIL, 31 March 1997, UCC 03031-03046.

80 <http://www.indusbusinessjournal.com/news/2002/06/01/Community/Bhopal>.

81 Letter from V. K. Jain, Chairman, Madhya Pradesh Pollution Control Board, to Resident General Manager, Eveready Industries India Ltd stating that the company is required to discharge their responsibility to clean the site.

82 Greenpeace, "The Bhopal Legacy: Toxic Contaminants at the former Union Carbide factory site, Bhopal, India", Technical Note 04/99, pp.2-3.

83 Greenpeace, "The Bhopal Legacy", op cit, p.13.

84 *Surviving Bhopal 2002: Toxic Present, Toxic Future*, Srishti, Delhi, India, January 2002.

85 This Committee was created by the Supreme Court of India in response to a writ petition: *Research Foundation for Science v Union of India and Anr.* Writ Petition (Civil) No. 657/1995.

86 Order of the Supreme Court, 7/05/2004 in *Research Foundation for Science v Union of India and Anr.* Writ Petition (Civil) No. 657/1995.

87 *Research Foundation for Science v Union of India and Anr*, op cit.

88 Pearce, Fred, "5,000 days later, Bhopal Damage, Agony Continues," op cit.

89 World Conference on Human Rights, Vienna Declaration and Programme of Action, UN Doc. A/CONF.157/23, para 5.

90 International Covenant on Economic, Social and Cultural Rights, Article 2(1).

91 See, for example, Human Rights Committee, General Comment No. 6, The Right to Life, 30/04/82 in particular para 5.

92 Both the Human Rights Committee and the Committee on Economic, Social and Cultural Rights consider these core obligations as non-derogable. In other words, they may not be suspended or set aside in any circumstances. See Human Rights Committee, General Comment No. 29, States of Emergency (Article 4), UN Doc. CCPR/C/21/Rev.1/Add.11, and Committee on Economic, Social and Cultural Rights, General Comment No. 14, The Right to Health, UN Doc. E/C.12/2000/4, para 47. General Comments are opinions of treaty bodies (that monitor implementation of particular covenants and treaties) that interpret, elaborate and clarify international human rights law on particular questions.

93 Vienna Convention on the Law of Treaties, Article 27.

94 The Working Group was established by the Sub-Commission on the Promotion and Protection of Human Rights to study the responsibilities of transnational corporations with regard to human rights.

95 UN Norms on the responsibilities of transnational corporations and other business enterprises with regard to human rights, UN Doc. E/CN.4/Sub.2/2003/12/Rev.1 (2003).

96 See UN Human Rights Committee, Communication No. 67/1980, in United Nations, 2 Selected Decisions of the Human Rights Committee under the Optional Protocol 20, UN Doc. CCPR/C/OP/2 (1990).

97 Health is also addressed in other human rights treaties in addition to the ICESCR, including the International Convention on the Elimination of All Forms of Racial Discrimination (Article 5 (e)(iv)), which deals with the right of non-discriminatory access to public health services; the Convention on the Elimination of All Forms of Discrimination against Women (Articles 11.1(f) and 12), which deals with the right to protection of health in working conditions and non-discrimination in access to healthcare services; and the Convention on the Rights of the Child (Article 24). India has agreed to be bound by these treaties.

98 Paragraph 6 of the *Maastricht Guidelines on Violations of Economic, Social and Cultural Rights*, International Commission of Jurists (ICJ), *Economic, Social and Cultural Rights: A Compilation of Essential Documents*, Geneva, ICJ, 1997.

99 UN Committee on Economic, Social and Cultural Rights, General Comment No. 3, Nature of States Parties Obligations, UN Doc. E/1991/23.

100 UN Committee on Economic, Social and Cultural Rights, General Comment No. 14, Right to Health, UN Doc. E/C.12/2000/4, para 47.

101 UN Committee on Economic, Social and Cultural Rights, General Comment 3, Nature of States Parties Obligations, UN Doc. E/1991/23, para 51.

102 UN Committee on Economic, Social and Cultural Rights, General Comment 3: Nature of States Parties Obligations (Article 2, para 1), 14 December 1990, para 5.

103 UN Committee on Economic, Social and Cultural Rights, General Comment 9: The domestic application of the Covenant, UN Doc. E/C.12/1998/24, 1 December 1998, para 2.

104 UN Committee on Economic, Social and Cultural Rights, General Comment 14: The right to the highest attainable standard of health, UN Doc. E/C.12/2000/4, 11 August 2000, para 59.

105 Article 5(b) of the OECD Principles, 14 November 1974, C (74) 224.

106 UN Committee on Economic, Social and Cultural Rights, General Comment No. 15: The Right to Water, UN Doc. E/C.12/2002/11, para 8.

107 The Rio Declaration on Environment and Development is not legally binding. However, it has been signed by more than 178 nations, including the USA. Rio Declaration on Environment and Development, 13 June 1992, UN Doc. A/CONF.151/5/Rev.1 (1992), 31 I.L.M. 874 (1992).

108 *Case Concerning the Gabcikovo-Nagymaros Project (Hungary v Slovakia)*, 1997 ICJ Rep 7 (25 September; sep op., Judge Weeramantry), 4.

109 Recognized in the Stockholm Declaration, Principle 21, and the Rio Declaration, Principle 2.

110 "Legality of the Threat or Use of Nuclear Weapons", Advisory Opinion, I.C.J. Reports 1996, pp. 241242, para. 29; *Gabcikovo-Nagymaros Project (Hungary v Slovakia)*, Judgement of 25 September 1997, para. 54.

111 This standard has generally been interpreted narrowly: see in Europe, in the context environmental pollution, *Anna Maria Guerra and 39 others v Italy*, 1998-1 ECHR 14967/89, Judgement of 19 February 1998.

112 By the UN Human Rights Committee in *Apirana Mahuika et al v New Zealand* (CCPE/C/70/D/547/1993).

113 For example, in Europe: *Lopez-Ostra v Spain, Guerra and Others v Italy*: "severe environmental pollution may affect individuals' well-being and prevent them from enjoying their homes in such a way as to affect their private and family life."

114 The Convention, sponsored by the UN Economic Commission for Europe (UNECE), is open for signature by the 55 members of the UNECE and all other states having consultative status with the UNECE, in effect all UN member states.

115 See, for example, "Restatement (Third) of Foreign Relations Law", Section 602 (1987).

116 *AP Pollution Control Board v Nayudu* (1999) SOL Case No. 53 at 8; *Vellore Citizens Welfare Forum v Union of India* (1996) 5 SCC 647. Also the Supreme Court of Canada in 114957 Canada Ltée (*Spraytech, Société d'arrosage v Hudson (Town)*) [2001] 2 SCR 241.

117 This declaration is not legally binding. Bergen Ministerial Declaration on Sustainable Development in the ECE Region. UN Doc. A/CONF.151/PC/10 (1990) paragraph 7.

118 *Virendra Gaur v State of Haryana* (1995) 2 SCC 577.

119 Environmental Protection Act 1986 (accompanied by the Hazardous Wastes (Management & Handling) Rules, 1989 and Environment (Protection) Rules, 1986, Air (Prevention & Control of Pollution) Act, 1981, and the Water (Prevention & Control of Pollution) Act, 1974.

120 <http://www.vakilnol.com/bareacts/envProtAct/envprotact.htm> (EPA 1986).

121 *M.C. Mehta v Union of India* (1999) 6 SCC 9, para 1.

122 *Animal and Environment Legal Defence Fund v Union of India* (1997) 3 SCC 549, para 15.

123 *Shantistar Builders v Narayan Khimalal Totame*, All India Reporter (AIR) 1990 SC 630; *Bhavani River-Shakti Sugars Ltd* AIR 1998 SC 2578.

124 *Subhash Kumar v State of Bihar*, AIR 1991 SC 420.

125 *M.C. Mehta v Kamal Nath* (2000) 6 SCC 213 available at <http://www.elaw.org/resources/text.asp?ID=1108>.

126 AIR 1987 SC 1086.

127 *S. Jaganath v Union of India* (1997) 2 SCC 87.

128 *Bhavani River - Shakti Sugars Ltd* [1998] 6 SCC 335.

129 For example, the duties contained in the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal require that anyone managing hazardous waste prevent pollution. Art. 4, 28 I.L.M. 657 (1989).

130 International Law Commission, Report of the International Law Commission on the work of its 28th Session, Chapter III, Commentary to Article 19 of the Draft Articles on State Responsibility, Par. 33, 67, *Yearbook of the International Law Commission*, 1976, Vol II, Part Two, 109, 12021 (1976).

131 Stockholm Declaration, para 7: Defending human environment demands "acceptance of responsibility by citizens and communities and by enterprises and institutions at every level."; Rio Declaration, Principle 13: "States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage."

132 The Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment (Lugano, 21 June 1993).

133 A recent example is a Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and their Disposal, agreed on 10 December 1999, UNEP/CHW.1/WG.1/10/2 of 20 September 1999.

134 For example, the OECD Convention on Third Party Liability in the Field of Nuclear Energy establishes that the operator of a nuclear installation shall be liable for damage to or loss of life of any person upon proof of loss and without regard to fault. http://www.nea.fr/html/law/nlparis_conv.html.

135 Resolution 1995/81, UN Commission on Human Rights, 8 March 1995.

136 The mandate of the Special Rapporteur on the adverse effects of the illicit movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights has been contentious from the outset, and has not secured the support of a significant part of the membership of the Commission on Human Rights.

137 The UN Norms on the responsibilities of transnational corporations and other business enterprises with regard to human rights (E/CN.4/Sub.2/2002/13).

138 UN Norms on the responsibilities of transnational corporations and other business enterprises with regard to human rights, E/CN.4/Sub.2/2003/12/Rev.2 and Commentary

E/CN.4/Sub.2/2003/38/Rev.2. See http://web.amnesty.org/pages/ec-unnorms_2-eng.

139 Resolution 2003/16, UN Doc. E/CN.4/Sub.2/2003/L.11 at 52 (2003).

140 A UCC internal memorandum of 2 December 1973, which accompanied the proposal to set up the MIC unit in Bhopal, stated: "The comparative risk of poor performance and of consequent need for further investment to correct it is considerably higher in the UCIL operation than it would be had proven technology been followed throughout. CO [carbon monoxide] and 1-Naphthol processes have not been tried commercially and even the MIC-to-Sevin process, as developed by UCC, has had only a limited trial run. In short, it can be expected that there will be interruptions in operations and delays in reaching capacity or product quality that might have been avoided by adoption of proven technology."

141 "In 1984, Union Carbide reported sales of \$9.5 billion, reflecting its position as one of the largest industrial companies in the USA and the world. International operations represented nearly 30 per cent of total sales that year." Quoted in *Union Carbide: Disaster At Bhopal* by Jackson B. Browning, ed Jack A. Gottschalk, Visible Ink Press, a division of Gale Research, Detroit, Michigan, available at: <http://www.bhopal.com/infoarch.htm>.

142 For more on UCC, see Mac Sheoin, undated; Prajapati, 2003; Highlander Center and PRIA, 1985; Morehouse and Subramaniam, 1996; Lapierre and Moro, www.tray.com, www.bhopal.net, www.greenpeace.org among others.

143 The Green Revolution was a massive government-led initiative to boost food grain production based on intensive mechanized agriculture using high yielding seed varieties that demanded heavy inputs of fertilizers and pesticides.

144 A pesticide capable of killing a wide range of parasites that was developed by research funded by UCC in the USA. UCC first began commercial production of Sevin in Institute, West Virginia, USA, in 1957.

145 The production of Sevin involves three stages, all of which involve toxic chemicals: a mixture of carbon monoxide (CO) and chlorine (Cl₂) forms phosgene (COCl₂). Phosgene is then combined with monomethylamine (CH₃NH₂) to form MIC. Finally, MIC is reacted with naphthol to produce Carbaryl (Sevin). See Greenpeace, "The Bhopal Legacy", op cit, p.7.

146 MIC is highly reactive with water and the mixing of the two produced a runaway heat generating chemical reaction that resulted in the leak, *Bhopal Methyl Isocyanate Incident Investigation Team Report*, op cit. See also *Report on Scientific Studies on the Factors Related to Bhopal Toxic Gas Leakage*, Indian Council for Scientific and Industrial Research (CSIR), December 1985 (hereafter CSIR 1985 report).

147 CSIR 1985 report, op cit.

148 Shrivastava, P., *Bhopal: Anatomy of a Crisis*, second edition, Paul Chapman Publishing, London, 1992, p.39.

149 Morehouse, W. and Subramaniam, A., *The Bhopal Tragedy*, Council on International and Public Affairs, New York, 1986, pp.7-8.

150 CSIR 1985 report, op cit.

151 *Bhopal Methyl Isocyanate Incident Investigation Team Report*, op cit.

152 Kalelkar, Ashok of Arthur D. Little, "Investigation of Large-Magnitude Incidents: Bhopal as a Case Study," presented at the Institution of Chemical Engineers Conference on Preventing Major Chemical Accidents, London, England, May 1988, p.15.

153 For a detailed rebuttal, see *Bhopal: The Inside Story - Carbide Workers Speak Out on the World's Worst Industrial Disaster*, op cit, p.43.

154 John Fox, quoted in Dembo, D., Morehouse, W., Wykle, L., *Abuse of Power, Social Performance of Multinational Corporations: The case of Union Carbide*, New Horizons Press, New York, 1990, p.110.

155 Cassels, Jamie, *The Uncertain Promise of Law - Lessons from Bhopal*, University of Toronto Press, 1994, pp.163-184.

156 CSIR 1985 report, op cit.

157 Affidavit of Edward Munoz in *Re: Union Carbide Corporation Gas Plant Disaster At Bhopal, India*, December 1984. MDL Docket No. 626, Misc. No. 21-38, 85 Civ. 2696 (JFK), US District Court, Southern District Court of New York.

158 Testimony of Ronald Wishart, *Hearing before the Subcommittee on Asian and Pacific Affairs of the Committee on Foreign Affairs, House of Representatives, 98th Congress, 2nd Session, US Government Printing Office, Washington, 12 December 1984, p.56.*

159 Table based on information drawn from: a) Operational Safety Survey CO/MIC/Sevin Units, Union Carbide India Ltd Bhopal Plant, UCC, July 1982. The members of the team were all UCC personnel: J.M. Poulson, Steve Tyson and Leonard Kail; b) *Operational Safety/Health Survey-MIC II Unit, Institute Plant, 10 September 1984*; c) Testimonies of Bhopal plant workers in *Bhopal: The Inside Story - Carbide Workers Speak Out on the World's Worst Industrial Disaster*, op cit; d) Inspection Report of the Union Carbide Corporation Institute West Virginia, Occupational Safety and Health Administration (OSHA), USA, February 1985; e) Testimony of Ronald Wishart (see endnote 157); and f) *Bhopal Methyl Isocyanate Incident Investigation Team Report*, op cit.

160 Operational Safety Survey CO/MIC/Sevin Units, Union Carbide India Ltd, Bhopal Plant, UCC, July 1982. A copy of this report along with a copy of a letter addressed to UCIL by the team leader J.M. Poulson is in Amnesty International's possession.

161 Letter from Shahnawaz Khan to General Manager, UCIL, 4 April 1983. A copy of this letter is in Amnesty International's possession.

162 *Jansatta*, 16 June 1984. As early as September and October 1982, Raj Kumar Keswani had written three articles in the newspaper highlighting the dangers posed by the Bhopal plant. The articles gave numerous examples of accidents and warned of a major disaster.

163 The letter from R.K. Yadav, General Secretary, to Works Manager dated 24 August 1984, is in Amnesty International's possession.

164 Major Concern SM1 MIC Storage Tank Runaway Reaction in I UCC, Engineering and Technology Services, South Charleston, WV, *Operational Safety/Health Survey-MIC II Unit, Institute Plant, 10 September 1984*. This survey was also led by J.M. Poulson, who led the 1982 Operational Safety Survey of the Bhopal plant.

165 Poulson, J.M. et al, *Operational Safety/Health Survey, MIC II Unit, Institute Plant, 10 September 1984*. Amnesty International is in possession of a copy of this internal survey.

166 CSIR 1985 report, op cit.

167 Kamal Pareek in *The Betrayal Of Bhopal* produced by World In Action, Granada Television, UK, June 1985, producer Laurie Flynn, abridged transcript produced by the Delhi Science Forum, B1, 2 Floor, L.S.C., J-Block, Saket, New Delhi-17, India. Kamal Pareek was the Safety Officer of UCIL in Bhopal between 1981 and 1983 and was part of a team that was trained in the USA by UCC.

168 For example, see the account of P.R. Koshe, an employee of UCIL, in *Bhopal: The Inside Story: Carbide Workers Speak Out on the World's Worst Industrial Disaster*, op cit, p.92.

169 *Bhopal: The Inside Story*, op cit, p.60.

170 *Bhopal: The Inside Story*, op cit, p.60.

171 See, for example, Kelley, Drye and Warren (law firm), *Memorandum in Support of Union Carbide*, US Southern District Court of New York, In Re: *Union Carbide Gas Plant Disaster at Bhopal, India in December 1984*, MDL Docket No. 626, 85 Civ. 2696 (JFK). See also www.bhopal.com/facts.htm (UCC website).

172 Opinion and Order, Judge John F. Keenan, 12 May 1986, quoted in Baxi, Upendra, *Inconvenient Forum and Convenient Catastrophe, The Bhopal Case*, Indian Law Institute, N.M. Tripathi Pvt. Ltd, Mumbai, 1986.

173 In Order on Interim Relief, High Court of Madhya Pradesh, Jabalpur, 04-04-1988, Civil Revision No. 26 of 88, reproduced in Baxi, Upendra and Dhanda, Amita, *Valiant Victims and Lethal Litigation, The Bhopal Case*, Indian Law Institute, N.M. Tripathi, Mumbai, 1990, p.380.

174 "Memorandum of Law, Michael V. Ciresi, Stanley M. Chesley and F. Lee Bailey, in Re: *Union Carbide Corporation Gas Plant Disaster at Bhopal, India in December 1984*. MDL Docket No. 626, 85 Civ. 2696 (JFK), US District Court, Southern District Court of New York, p.4."

175 *Corporate Policy Manual* at 1.5.4, Exhibit 3. Union Carbide produced an internal manual

Legal Control of a 50-50 Joint Venture Affiliate which lists a number of "devices or expedients" on how to retain control of an affiliate. Another publication entitled *Master Guidelines and Check List for Matters to be Considered in Organizing and Reorganizing Equity in an Affiliate* details how to accomplish this key corporate objective.

176 Memorandum from B.T. Burgoyne, Union Carbide Eastern addressed to the Management Committee dated 2 December 1973 enclosing "Sevin Project - India, Finance Plan" and Capital Budget Proposal 73-8, dated 12 February 1973, "Union Carbide India Limited Methyl-Isocyanate Based Agricultural Chemical Project".

177 Memorandum from B.T. Burgoyne, op cit.

178 See Memorandum Of Law, Michael V. Ciresi, Stanley M. Chesley and F. Lee Bailey, In Re: *Union Carbide Corporation Gas Plant Disaster At Bhopal, India in December 1984*. MDL Docket No. 626, Misc. No. 21-38, 85 Civ. 2696 (JFK), US District Court, Southern District Court of New York (hereafter *Memorandum Of Law*, Ciresi et al).

179 Memorandum from B.T. Burgoyne, op cit.

180 Deposition of Warren Woomeer, pp.80-81; 107-108; 136-146, Exhibit 25 in *Memorandum Of Law*, Ciresi et al, op cit.

181 Deposition of Warren Woomeer, pp.188, 190, 194-200, Exhibit 25 in *Memorandum Of Law*, Ciresi et al, op cit. See also *Five Past Midnight in Bhopal*, op cit.

182 Affidavit of Tota Ram Chouhan, p.2, in Amended Class Action Complaint, US District Court Southern District Court of New York, Index No. 99 Civ. 11329 (JFK). Tota Ram Chouhan joined UCIL as a trainee plant operator in 1975 and in 1982 was transferred to work at the MIC plant.

183 Kamal Pareek in *The Betrayal Of Bhopal*, op cit, abridged transcript produced by the Delhi Science Forum, B1, 2 Floor, L.S.C., J-Block, Saket, New Delhi-17, India.

184 Stuart Diamond, "Discrepancies Are Seen In Bhopal Court Papers", *New York Times*, 3 January 1986, Late City Final Edition, Section D, p.1.

185 Exhibit 8 to Ghosh Affidavit, Exhibit 11 in *Memorandum Of Law*, Ciresi et al, op cit.

186 Exhibit 38 in *Memorandum Of Law*, Ciresi et al, op cit.

187 Exhibits 45 and 46 in *Memorandum Of Law*, Ciresi et al, op cit.

188 *Valiant Victims and Lethal Litigation*, op cit, pp.120-2.

189 Hazarika, Sanjoy, *Bhopal: the lessons of a tragedy*, Penguin Books India, Calcutta, p.138; and *Five Past Midnight in Bhopal*, op cit.

190 *Bhopal Methyl Isocyanate Incident Investigation Team Report*, op cit.

191 *The Bhopal Gas Tragedy 1984-?*, op cit.

192 UCC, Material Safety Data Sheet F-43458A.

193 *Bhopal Methyl Isocyanate Incident Investigation Team Report*, op cit.

194 Dagani, Ron, "Data on MIC's toxicity are Scant, Leave Much to be Learned," *Chemical and Engineering News*, 11 February 1989, p.37. At the time of the disaster, data regarding MIC toxicity was scant because of its limited industrial use.

195 *Chemical and Engineering News*, 2 September 1985, p.6 in Tara Jones, *Corporate Killing*, Free Association Books, London, 1988, p.51.

196 *Memorandum in Support of Union Carbide*, op cit, pp.12-13.

197 *Bhopal Journal: The Voiceless Victims*, American Lawyer, April 1985, p.130.

198 *Valiant Victims and Lethal Litigation*, op cit, p.xix.

199 Affidavit of J.B. Dadachanji, 14 December 1985, in support of Union Carbide motion in Re: *Union Carbide Corporation Gas Plant Disaster At Bhopal, India*; MDL Docket No. 626, 85 Civ. 2696 (JFK) US Southern District Court of New York reproduced in *Inconvenient Forum and Convenient Catastrophe, The Bhopal Case*, op cit.

200 *Memorandum of Law In Support of Union Carbide Corporation's Motion To Dismiss These Actions On The Grounds Of Forum Non Conveniens*, 31 July 1985, in Re: *Union Carbide Corporation Gas Plant Disaster At Bhopal, India In December 1984*, op cit.

201 In *Re: Union Carbide Corporation Gas Plant Disaster*, 809 F 2d 195 (2nd Cir. 1987), 204 in *The Uncertain Promise of Law*, op cit, p.146.

202 Written Statement, Counter Claim and Set-Off of Union Carbide Corporation, 10 December 1986 in Regular Civil Suit No. 1113 of 86 in Court of the District Judge: Bhopal, reproduced in *Valiant Victims and Lethal Litigation*, op cit, p.62. In the same statement, UCC also denied that "one third of its total sales are derived from its operations outside of the United States."

203 *Union Carbide Annual Report*, 1984, p.40.

204 Hazardous Air Pollutants, Hearing Before the Subcommittee on Health and the Environment of the Committee on Energy and Commerce House of Representatives, Ninety-Eighth Congress, Second Session, 14 December 1984 Serial No. 98-192, US Government Printing Office, Washington, p.24. In reply to a question from Mr Florio, Warren Anderson said, "Two weeks ago Union Carbide employees around the world, and there are 100,000 of us, were extremely proud of their safety record..."

205 Browning, Jackson B., *Union Carbide: Disaster At Bhopal*, 1993, Reprinted with permission of *Crisis Response: Inside Stories on Managing Under Siege*, edited by Jack A. Gottschalk, Visible Ink Press, a division of Gale Research, Detroit, Michigan. Available at www.bhopal.com/infoarch.htm.

206 Written Statement, Counter Claim and Set-Off of Union Carbide Corporation, 10 December 1986 in Regular Civil Suit No. 1113 of 86 in Court of the District Judge: Bhopal reproduced in *Valiant Victims and Lethal Litigation*, op cit, p.67.

207 Statement of Jackson B. Browning, Hazardous Air Pollutants, Hearing Before The Subcommittee on Health and the Environment Of The Committee on Energy and Commerce House Of Representatives, Ninety-Eighth Congress, Second Session, December 14, 1984 Serial No. 98-192, US Government Printing Office, Washington, p.17.

208 Order on Interim Relief, 17-12-87, Gas Claim Case No. 1113 of 1986, Court of the District Judge Bhopal reproduced in reproduced in *Valiant Victims and Lethal Litigation*, op cit, p.289.

209 *The Uncertain Promise of Law - Lessons from Bhopal*, op cit, p.202.

210 Usha Ramanathan, *Business and Human Rights: The India Paper*, IELRC Working Paper No. 2001-2, Part I.

211 Special Leave Petition of Union Carbide, Appeal (Civil) No. 8717 of 1988, Supreme Court of India in *Union Carbide Corporation v Union of India*, reproduced in *Valiant Victims and Lethal Litigation*, op cit, p.413.

212 *Valiant Victims and Lethal Litigation*, op cit, p.xxii.

213 *Annual Report 2003*, p.47, <http://www.dow.com/financial/2003ann/pdfs/161-00610.pdf> accessed on 12 August 2004.

214 <http://www.dow.com/ucc> accessed on 12 August 2004.

215 Union Carbide Corporation, Annual Report on form 10-K for the fiscal year ending 31 December 2003. UCC's annual report filings with the Securities and Exchange Commission (SEC) can be accessed from <http://www.unioncarbide.com>.

216 Submitted with the Schedule 13D, as well as in other public filings before the Securities and Exchange Commission.

217 "According to H. Rajan Sharma, Esq., an attorney representing Bhopal survivors and victims of environmental pollution in litigation against UCC in the federal courts of the USA since 1999, the question of US law is relevant since both UCC and Dow are companies organized under the laws of the USA, and their merger was governed by US law and subject to approval by regulatory authorities such as the Securities & Exchange Commission under US law. Some of the recently revealed documentary evidence was obtained from public documents filed in this New York litigation. Mr. Sharma's research on international legal issues concerning Bhopal was also referred to by Amnesty International in this report."

218 On 1 April 1987, the Central National Bank (CNB) became a branch of Alamo Bank of Texas (Alamo) as per a merger agreement. A few months later Alamo was criminally indicted for violations of reporting requirements by CNB prior to the merger. Alamo moved to dismiss

the indictment on the ground that it could not be held criminally responsible for CNB's pre-merger conduct. The accused raised a number of arguments on the proposition that, because it "had no knowledge of (CNB)'s transgressions," the harsh sanctions of the criminal law ought not to be applied to it. The US Supreme Court rejected this argument in its entirety.

219 *Alamo Bank of Texas v United States*, 880 F. 2d 828 (5th Cir. 1989), rehearing denied, 886 F. 2d 1314 (5th Cir 1989), Cert denied. 493 US 1071 (1990).

220 "Dow Chemical Company, Annual Report on Form 10K For the Year Ended December 31, 2001, p.56, from <http://ccbn.tenkwizard.com/filing.php?repo=tenk&ipage=1681535&doc=1&total> accessed on 12-08-04 at 17.30."

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