STRATEGIZING BHOPAL: MOTIVES AND MANIPULATION

IN RESPONSE TO AN INDUSTRIAL DISASTER

A Thesis

by

ROBERT MITCHELL STEPHENS

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

May 1997

Major Subject: Anthropology
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ABSTRACT

Strategizing Bhopal: Motives and Manipulation in Response
to an Industrial Disaster. (May 1997)

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This thesis examines the political and economic motives behind the responses of the Indian Government and nongovernmental organizations to the Union Carbide chemical disaster that occurred on December 3, 1984 in Bhopal India. Using F. G. Bailey's model of political interaction and competition as outlined in his book *Stratagems and Spoils*, three points are discussed regarding the Bhopal disaster and environmentalism in India. (1) Environmental activists in India so far have had minimal impact in the relief efforts for the victims of the tragedy or in shaping environmental policy at the state and national levels. (2) The rise of environmentalism on the international and national agendas has created new entrepreneurial opportunities for an emerging group of unemployed, educated professionals in India. (3) Contrary to popular belief, environmentalism in India is not strictly a grassroots movement. India’s environmental movement includes a large proportion of educated middle class individuals. These individuals provide organizational and educational resources for nongovernmental organizations.

In addition to these three points, India’s environmental policy, is discussed along with an examination of the relationship between Hinduism and environmentalism. The events leading up to and surrounding the Bhopal disaster are
outlined as well as the responses to the disaster from local, national, and international organizations, international government, and the chemical industry.

This thesis shows that the responses of the government and the nongovernmental organizations to the Bhopal disaster were affected by a host of physical and social environmental factors. While both parties proclaimed that their highest priority was to provide relief and compensation for the victims, their actions indicated that other objectives, such as their continued existence, were given higher priority.
DEDICATION

To my dog Babs who passed away in September while I was writing this thesis. She was living proof that animals can have souls.
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Returning to school after a six year hiatus would have been practically impossible without the encouragement and assistance of a number of people, most notably my Thesis Committee Chair and Advisor, Dr. Norbert Dannhaeuser, who, had he been a lesser man, would have probably washed his hands of me long ago. I would like to thank my parents and my brother and sisters for their understanding and support, especially my mother whose counseling and advice helped in many ways. I would also like to thank my Thesis Committee members, Dr. Lee Cronk and Dr. Jesus H. Hinojosa, and the staff, faculty, and graduate students of the Texas A&M University Department of Anthropology for their assistance and for providing me the opportunity to return to school. Last but not least, my heartfelt thanks go out to Dr. Jeffrey Cohen, whose encouragement helped me realized that being an anthropologist is, for me, as much a passion as it is an occupation.
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CHAPTER I
INTRODUCTION

During the past three decades, environmental issues have become an important subject on the global agenda. The influence of the environmental movement on modern society has grown to such an extent that it has been called “as fundamental a movement as the emergence of a working class in 18th century Europe” (Buttel, 1992:1). When environmental protection started to emerge as a public issue in the late 1960’s, India was among the first developing countries to promote environmentalism. In India today, green issues can initiate a tremendous public response in the form of protests, sit-ins, marches, and political involvement. Village and city socio-political structures are becoming increasingly affected by “greening” trends and environmental efforts from a variety of sources.

This acceptance of environmentalist ideals would seem to indicate that India is well on its way to an ecological recovery. Most of the evidence, however, points to the contrary (Centre for Science and Environment, 1984, 1985; Jalees, 1985a, 1985b; Laughlin, 1993, 1995, 1996; Newman, 1989; Varadan, 1993). Environmentalists and religious leaders talk of the close relationship Hinduism has with nature. The vast majority of the contemporary literature touts India as a model of environmental reform. The Indian Government has consistently passed new regulations

This thesis follows the format of the journal Current Anthropology.
encompassing the gamut of environmental concerns, and the press has documented numerous events in which the peoples of India have voiced outrage and staged protests over the perpetrators of environmental degradation (Khator, 1991). With all of this “pro-environment” sentiment, why is India still one of the most polluted countries in the world (Centre for Science and Environment, 1984, 1985; Khator, 1991; Jalees, 1985a)?

In order to understand this seeming contradiction, it is important to remember that environmental viewpoints are imbedded in a host of other social, political, and economic motives, only a fraction of which are influenced directly by actual environmental dilemmas. Poverty, overpopulation, and pollution due to industrial and agricultural development have caused near irreparable damage to some parts of India. India’s endemic poverty and desperate need for development contribute to conditions that exacerbate current environmental problems. Moreover, India’s environmental movement, seen by many as one of the most progressive in the Third World, has had little influence on actual government policies, policies which have done little to halt or lessen the rate of degradation. Given these conditions—endemic poverty, a desperate need for development, and a government that can not or will not effectively address environmental problems—why then have environmental issues continued to remain so prominent on the social agenda?

One reason may be because of the globalization of environmental issues. Many of the environmental problems we face today—global warming, ozone depletion, deforestation—are problems that require world-wide cooperation. Other
environmental issues, such as acid rain and river siltation, can create problems hundreds of miles from their source. Incidents at Love Canal, Chernobyl, and Bhopal illustrate the dangers associated with industrial development, dangers that exist in thousands of communities around the world. With today's high technology media, the consequences of these disasters are rapidly communicated across the globe. This intense media coverage can create the perception that similar incidents could occur close to home. Often the reporting of these incidents prompts public outrages for government action both nationally and internationally. It is the public's perception of the potential for similar catastrophes and the associated consequences worldwide that has moved the international community to address environmental conditions in developing countries.

Another reason why the environmental issue is prominent in India is because of the highly charged political environment. The politicization of Indian society since independence and the leadership of Nehru and Gandhi in the 1950s, 1960s, and 1970s, has fostered the exploitation of environmental causes for political gain. Environmental issues have become tools for obtaining political objectives. From this perspective, the decision to support or not to support an environmental issue depends on the potential political costs incurred, and on the potential benefits gained by governments and nongovernmental organizations.

This study will explore the political structure and the social dynamics of India's environmental movement through the perspective of an event that has had a tremendous impact on the international environmental movement, the Bhopal chemical
disaster which occurred on December 3, 1984. Three points will be explored regarding the Bhopal disaster and environmentalism in India. (1) Environmental activists in India so far have had minimal impact in the relief efforts for the victims of the tragedy or in shaping environmental policy at the state and national levels. (2) The rise of environmentalism on the international and national agendas has created new entrepreneurial opportunities for an emerging group of unemployed, educated professionals in India. (3) Contrary to popular belief, environmentalism in India is not strictly a grassroots movement. India’s environmental movement includes a large proportion of educated middle class individuals. These individuals provide organizational and educational resources for nongovernmental organizations.

This thesis is intended as a preliminary study for my doctoral dissertation. The information gathered to substantiate my assertions comes from published references and is not to be considered primary source material. My thesis is based on data collected through library research conducted at Texas A&M University and the University of Texas at Austin. The information used is, for the most part, qualitative in nature and relies on accounts of the events during and after the gas leak reported through newspapers, technical journals, and through field work conducted by Kim Laughlin, currently at Rensselaer Polytechnic University, during her dissertation research in Bhopal.

This data is presented in several chapters. Chapter II presents a brief review of some of the major theoretical contributions to the area of ecological and political anthropology and outlines how I will apply Bailey’s model of political interaction and
competition to the Bhopal crisis. Chapter III presents a discussion of the history and nature of environmental policy development in India, environmentalism as a social movement, and the rise of nongovernmental organizations. In that chapter I will also examine the relationship between Hinduism and environmentalism. Chapter IV is presented as a chronological narrative of the events preceding, during, and immediately after the gas leak. The next chapter, Chapter V, discusses the responses by the government, Union Carbide, local and international organizations to the disaster and their reactions to each other. Chapter VI concludes with discussions on the three themes presented in this introduction. First, a review of the political strategies employed by the competitors within the Bhopal arena and why the groups have used and continue to use Bhopal to further their self-interests. Next a discussion of the role entrepreneurship plays in the rise of environmental NGOs in India. The last point of discussion concerns environmentalism as a globalizing force and how middle class activists in Bhopal balance global environmentalism and regional identity in their efforts to influence the public.
CHAPTER II

CONCEPTUAL FRAMEWORK

Anthropology and the Environment

In anthropology, the relationship between humans and the physical environment has been studied for many decades. Julian Steward's cultural ecology analyzed the relationship between subsistence systems and the environment by focusing on a "culture core" which he defined as "the constellation of features which are most closely related to subsistence activities" (Steward, 1955:37). In later formulations of cultural ecology, such as cultural materialism, an assumption was added that a set of basic needs existed which arose from the biological and psychological processes that maintain life (Harris, 1979). These needs, independent of culture, must be met for mankind to exist. Culture then became both a tool for achieving those needs and an outgrowth of the processes of existence (Johnson, 1982; cf. Malinowski, 1944). According to A. Johnson, "explanation in cultural ecology amounts to showing how some body of cultural data becomes understandable as a solution to the problem of fulfilling one or more basic needs" (1982:22).

Clifford Geertz was one of the first anthropologists to advocate the use of the ecosystem in cultural analysis. With his approach, he "attempt[ed] to achieve a more exact specification of the relations between selected human activities, biological transactions, and physical processes by including them within a single analytical
system, an ecosystem” (Geertz, 1963:3). The task of the scientist then becomes “investigating the internal dynamics of such systems and the ways in which they develop and change” (Geertz, 1963:3). In Geertz’s approach aspects of the social environment, in this case history and politics, were incorporated in a holistic system that influences both the physical environment and economic development. The physical, social, and cultural domains become interrelated parts of the ecosystem. Other studies, most notably Roy Rappaport’s Pigs for the Ancestors (1968) have shown that a host of cultural factors—not just production—can affect environmental relationships.

John Bennett expanded the cultural-ecological paradigm into the area of public policy research in his 1976 book, The Ecological Transition. There he made the case that research data relevant to environmental policy development can best be obtained through cultural ecological analysis. Bennett believed this was necessary because the “ecological transition—the progressive incorporation of nature into human frames of purpose and action ... is rapidly eliminating the cases of distinctive, isolated tribal adaptations to natural phenomena that have been a specialty of the anthropologists” (1976:3). As the cultures that anthropologists have traditionally studied lose their cohesiveness and become assimilated into larger social systems the methodology of anthropologists must adapt to reflect these changes.

According to Bennett, the study of adaptation should be the focus of any approach to human-ecological research. For Bennett, adaptation or “strategic behavior” became the “key to a policy-oriented cultural ecology” (1976:3). In this
approach, Bennett focused on the dynamic processes of complex institutions and the role conscious choice, and the environmental consequences of those choices, have in determining adaptive strategies in industrial societies. This strategic behavior, according to Bennett, has resulted in the "growing absorption of the physical environment into the cognitively defined world of human events and actions"—indeed, to the point where the argument seriously can be advanced that the concept 'human ecology' is a myth, and that there is (or shortly will be) only, and simply, Human Society: people and their wants, and the means of satisfying them" (1976:4). While I feel that this position is somewhat extreme—humans are still a long way from completely controlling nature—the dissolution of the distinction between the physical and social environments should be an important factor in the study of environmental issues in industrial societies.

Bennett refers to human adaptation as the "rational or purposive manipulation of the social and natural environments" (1976:3) that happens in response to changes, whether actual or perceived, in the physical and cultural environments. This manipulation can be seen as an attempt by individuals or groups of individuals to satisfy their needs and wants within the bounds of society. If we expand this concept of adaptation to include social and environmental policy, then such policies become mechanisms for the purposive manipulation of the cultural and natural environments by individuals to satisfy their needs within the context of society. If there is no distinction between the natural and cultural environments, then cultural and environmental policy can be seen as two sides of the same coin, one being inseparable from the other.
But how can there be no distinction between the physical and cultural environments? Most people have definite ideas about what they would consider to be "natural" (wild animals, trees, rivers, mountains, and so on) and "man-made" (cities, farms, corporations, nations). One factor in the decision to eliminate this distinction in ecological research is that all these items can be seen as resources in terms of policy. Bennett asserts that "a cultural ecology concerned with ... processes of resource utilization will need to explore problems of power ... This means that political power and social stratification can be placed in an ecological frame of reference; ultimately, cultural ecology must investigate the question of how power is related to Nature via human actions"\(^1\) (1976:27).

Another factor in the decision to lump the natural and cultural environments together in this thesis lies in the previously mentioned fact that for all intents and purposes there is no such thing as an "untouched natural environment" anymore. Every inch of this planet has been affected to some degree by human activity. Terms such as "background contaminant level", "half life", and "absorption capacity" are commonly used in the environmental literature when referring to remediation efforts and pollution controls. Many of the problems affecting the environment also pose threats to human safety. Policies affecting the environment are by definition regulating society (Bennett, 1976).

\(^1\) Current research in political ecology has begun to codify this bio-cultural-political framework. For an excellent discussion of the foundations of political ecology, see Greenberg and Park (1994) in addition to other work in the *Journal of Political Ecology*. 
Policy decisions are made within the political arena where an elite few are actually involved in the decision making process (Bailey, 1969). Any discussion regarding environmental issues and policy development should then be viewed from a political perspective where, behind every policy decision, there exists a political objective. Renu Khator in her book *Environment, Development, and Politics in India*, examines the environmental policy process and its political purpose from two angles; first, the system angle—how environmental issues fit into the larger framework of priorities within the political system; second, the individual angle—how individuals involved in the policy process perceive environmental issues and the possible advantages to supporting these issues. In this thesis, I will focus on the individual angle which explores the costs and benefits the political actors associate with environmental issues (Khator, 1991).

**Politics and Policy**

The Indian policy process, which Renu Khator has dubbed the “political perspective model”, exhibits the following characteristics.

1. The process of policy formation has a zigzag pattern marked by sudden shifts and changes;
2. policies reflect an inherent bias for the system and the individuals involved, in the sense that they provide direct or indirect political benefits to the system and/or its supporters;
3. the implementation process is dependent on the system’s tolerance...
for the issue and, therefore, is unpredictable, and finally; (4) the role of
the public is negligible. (Khator, 1991:8)

Within this process Khator asserts that personalities can play dominant roles in policy
development. Khator also indicates that India’s political system is primarily structured
to support the political needs of the participants with minimal influence from the public
(1991). Therefore, environmental issues and policy development become tools to
maintain positions or to achieve new positions of power in the political arena.

In the field of political anthropology, F.G. Bailey’s contributions regarding
political structures and competitive arenas provide a valuable model for an analysis of
politics, within a democratic context, is portrayed as a “competitive game” that pits
teams against each other for prizes. In this arena, the prize is power—the power to
decide policy, the power to influence the course of history and the prestige and
perquisites that come with that power. These games are orderly, conducted using a
set of rules that are agreed upon among the competitors. For an incumbent
administration, the primary objective during their term in office is to maintain political
stability and minimize the threat of challengers. Competitors will try to disrupt the
stability of the incumbent administration in the hopes of winning positions of power in
the next elections. Both sides must maintain an appearance of operating within
society’s “normative rules” or public values while having to resort to covert
“pragmatic rules” to win (Bailey, 1969:5).
One of the normative rules regarding elected officials is that they are elected to represent their constituency on policy issues. A corresponding pragmatic rule is that to remain in office, an elected official must effectively deal with many interest groups—his/her constituency being just one, sometimes an unimportant, interest group among several competing for his/her attention. As a normative rule, a general pro-environment stance would appear to be beneficial to any official. No rational human being would suggest that we purposely destroy our environment or promote the destruction of our environment. However, as a pragmatic rule, the specifics of any policy decision regarding human activity and the environment will almost always affect some involved parties adversely. Before taking a position on an issue, a politician must determine if the parties that would be adversely affected represent a potential threat to his/her continued political career. The politician must also consider his party’s position and a host of other alliances and obligations in which he/she is currently involved.

In Bailey’s model, the political system consists of two parts, the political structure and the environment. The political structure is a set of rules that define the roles of individuals within the political system. The structure lists the rights and duties of the particular roles within the system and lists the rules of normative behavior for each role. An individual within the system may have many roles. A state minister may also be a parent, a landowner, and/or a businessman. According to Bailey, all these roles compete for an individual’s time and resources and may directly influence a person’s political behavior.
Bailey's definition of environment is similar to Bennett's, and consists of both the physical and sociocultural environments that interact with the political structure. Bailey asserts that the relationship between the environment and political structure is both dynamic and bi-directional in terms of causation. However, only some parts of the environment interact with some parts of the political structure. Political structures themselves, Bailey contends, "contain rules, both normative and pragmatic, which attempt to shield them (political structures) from excessive demands from the environment" (1969:11).

Nevertheless, environmental factors, both physical and sociocultural, can initiate a "chain of causation" (Bailey, 1969:11) to which the political structure must adjust or adapt. From this perspective, the chemical leak at Bhopal can be seen as the initiating factor, the independent variable, and the resulting struggle between government, Union Carbide, and activists as the dependent variables. There has been much written on the causes of the Bhopal disaster and I will review the major theories in this study. Bailey asserts that this interaction between structure and environment occurs as a series of discrete events which can be isolated and studied. For the purposes of this thesis, I will examine the events leading up to the gas leak, the leak itself, and the responses to the leak from the perspective of the competing parties as discrete but interrelated events.²

² For information regarding disasters, cultural change, and related research, see Coates and Coates, 1991 and Oliver-Smith, 1986.
According to Bailey, a chain of causation—a series of interrelated events or dependent variables—can begin with a specific event, an independent variable, which, in the Bhopal case, is the gas leak. This event elicits responses within the political structure. These responses can come from a variety of sources. The incumbent administration’s responses will attempt to restore equilibrium to the system, minimize the damaging effects of the event, and possibly use the event to weaken an opponent’s position or neutralize a potential threat. The individuals competing within the political system may try to change the rules or introduce new rules into the structure in order to control the event’s consequences. Opponents of the administration will try to use the event to their advantage, trying to capitalize on the instability caused by the event to oust the incumbent administration or to maneuver themselves into a position of greater influence relative to the other participants in the political system.

Bailey uses the term *maintenance* to define “the process by which a structure adjusts itself to changes in the environment or modifies the environment to suit itself” (1969:12). Bailey’s *maintenance* is similar to Bennett’s *human adaptation* in that both terms refer to the manipulation of the environment in some way through physical and social processes. For Bailey, conflicts arise when rival entities compete for the same resources, be they material or political. The successful competitor is the one that gains access to more resources and/or uses them with greater skill than the opponent.

**Leaders and Teams**

In the aftermath of the Bhopal disaster, three principle teams emerged to address the relief efforts and to prepare for the inevitable legal skirmishes. These
teams included Union Carbide Corporation, the governments (local, state, and national) of India, and the victims as represented by relief organizations and nongovernmental agencies working to assist the victims of the disaster. The individuals participating in these various teams did so for two basic reasons. The victims' rights groups and nongovernmental organizations, as representatives of the victims participate by proxy because the majority of the victims are unable—whether physically, mentally, or educationally—to participate effectively in the conflict. Union Carbide executives and government officials became participants as part of their job responsibilities.

These teams each had leaders to direct and coordinate the team's actions. According to Bailey, leaders direct their followers through the expenditure of resources. Bailey sees leaders "as men who have limited resources with which to gain their ends and who must choose between the different maneuvers or counter-maneuvers which are open to them according to their estimate of the relative costs" (1969:37). Leaders must continually assess what the effects of their actions will have on their political credit.

Bailey separates members of teams into two types: the "hirelings" and the "faithful" (1969:37). Hirelings are followers who have a strictly monetary relationship with their leader. As an employee, the hireling does not have to profess a conviction in the beliefs of an organization. He or she is engaging in a purely economic transaction. If a leader is not able to pay his hirelings, they will look elsewhere for employment. The faithful are cause based followers, giving a gift to the cause through
participation and the allocation of time to the team. Their rewards are an easy conscience and the duty itself.

Bailey asserts that the different motivations of hirelings and the faithful impose different relationships between the two groups and their leader. In the Bhopal disaster, the hirelings—government and Union Carbide employees—generally do not impose moral values on their relationship with the leader. The followers—members of activist organizations—however, by donating their time and effort to the cause, impose on the leader an obligation not merely to serve the cause, but also to stand as an example of the group’s ideals. In addition, whereas hirelings are paid to follow, leaders and their faithful have an egalitarian relationship in that they are all servants of the cause. By using “services given ‘for love’ ... [a] leader accepts obligations; he must feed the faithful and he must also through adequate propaganda, nourish the cause itself” (1969:43).

In addition to directing the activities of their followers, leaders are needed to make decisions under conditions of uncertainty or when there is a need for innovative thinking (Bailey, 1969). In the Bhopal scenario, many decisions faced by the parties involved were unprecedented. The magnitude of the relief efforts, the logistical problems of access and support, and the lack of medical information created many unique problems. With these new problems came opportunities for innovative leadership.

Leadership qualities of decision making in the face of uncertainty are also required of entrepreneurs, whether they be active in industry or in the nonprofit sector.
Indeed, Dennis Young argues that many activities that are considered entrepreneurial are attempts to change existing rules to eliminate environmental constraints by introducing new applications into the economic sector (1983). The entrepreneurial opportunity for non-profit enterprises after the Bhopal disaster can be seen by the rapid increase in the number of nongovernmental organizations in the proceeding years (see Appendix A, Figure 1).

Fredrik Barth, in his study of entrepreneurs in Norway, asserts that “entrepreneurship is closely associated with general leadership” and that entrepreneurs often act as brokers between their society and other, economically more advanced societies (1972:4). Barth characterized the entrepreneur as someone who will “take the initiative, and manipulate other persons and resources” (1972:6). When politics becomes the enterprise, attention is focused on locating unsatisfied needs and creating needs within a community. According to Barth, the “successful political innovator locates and develops that particular set of needs in a population … regarded by the clients as vital … and the entrepreneur can [then] present himself as singularly qualified and able to cater … [to those] needs” (Barth, 1972:14). The role of the entrepreneur as both business and political innovator, especially in the nongovernmental organizations (NGOs), involved in the Bhopal incident will be discussed in more detail in the next chapter.
CHAPTER III

INDIA AND THE ENVIRONMENT

Hinduism and the Environment

In much of the press, India stands as one of the most progressive developing
countries in terms of environmental protection. India’s support for the environment is
based on an ideology of non-violence, conservation, coexistence and non-materialism
(Prime, 1992; Peritore, 1993). Within India’s major religions, love and respect for the
environment is encouraged along with peaceful coexistence between individuals and
communities (Unterberger and Sharma, 1990). The Hindu religion, India’s largest
religion with over 800,000,000 practitioners, emphasizes a harmonious relationship
between people and the environment.

Texts that discuss the relationship between Hinduism and environmentalism
stress the natural association between the practice of ahimsa, or nonviolence to all
living things, and the practice of environmentally conscious living. The concept of
ahimsa is thought to have begun in the Vedas as a rejection of animistic worship of the
Indo-Aryan peoples (Walli, 1974). The following verses from the Arthava Veda,
written two thousand years ago recognize the need for environmental protection.

May Earth yield milk, this earth of many streams,

and shed on us her splendor copiously.
Impart to us those vitalizing forces
that come, O Earth, from deep within your body,
your central point, your navel; purify us wholly.
The Earth is mother, I am son of Earth.

Mother of plants and begetter of all things,
firm, far-flung Earth, sustained by heavenly Law,
kindly and pleasant is she. May we ever
dwell on her bosom, passing to and fro
Whatever I dig up of you, O Earth,
May you of that have quick replenishment;
purifying one, may our thrust never
reach right into your vital points, your heart. (Khator, 1991:46)

One Hindu sect in southwestern Rajasthan, the Bishnoi, has carried Hindu
doctrine to the extreme by dedicating their lives to preserving the delicate ecology of
that desert region (Hazarika, 1993). Many researchers see the Indian environmental
movement itself as developing a neo-religious status.

If India, and Hinduism specifically, have such a long tradition of environmental
protection, why then has the environmental movement not been more effective?
Partly, the answer may lie in that the interpretation of Hindu doctrine to promote
environmental *activism* is a recent event that corresponds to our increasing understanding of ecological principles and the physical evidence of man's destructive effect on the environment. More importantly, the answer may be found in the fact that the correlation between religious doctrine and the realities of day-to-day existence is usually extremely small.

Regarding Hindu religious doctrine and environmental activism, Knut Jacobsen asserts that originally, "the ethical doctrine of non-injury toward all living beings (*ahimsa*) [could] be understood as an attempt to transcend the ecological processes of nature" (Jacobsen, 1994:298). He later elaborates that the development of this ethic was "not intended as an ecological practice" (Jacobsen, 1994:301), but rather as a renunciation of the animal sacrifice and its symbolic representation of man's place in the food chain. *Ahimsa*, or non-violence, has more often been equated with non-action as a rejection of the material world. "The ethics of non-injury toward all living beings is founded on the desire for freedom from the interdependence of nature [whereas] the contemporary [environmental] concern is based on an understanding of the interdependency of humans with the community of all living beings and a wish for an integration of humans with nature" (Jacobsen, 1994:300). Thus *ahimsa* as conceived in early Hindu texts, was a course of action designed to assist individuals in their journey down the path to spiritual enlightenment.

The stress that Hinduism places on the individual's path to spiritual attainment and the de-emphasis of mundane existence produces a fundamental dichotomy between values and behavior. Most ecclesiastical faiths, according to J. R. Engel
(1990), combine a restraining fundamentalism with a wider moral order that is both liberal and creative. The religious order of society continually challenges the tenets of greed and injustice of the secular order, while at the same time reinforcing the establishment's right to existence (Engel, 1990). Christopher Key Chapple (1993) notes that the *Laws of Manu*, contain situations where meat eating is considered acceptable in Hinduism, such as during times of famine or within the ritual of sacrifice. These laws were established to govern earthly society, while simultaneously addressing the renunciation of the world.

The inevitable destruction of life, or *himsa*, is considered part of living in Hinduism and cannot be completely avoided. "Man has to destroy some life not only to sustain his own body but also for protecting those who are under his care" (Walli, 1974:20). Harris's (1966) study of the sacred cow complex asserts that while Hindus adhere to the tenets of *ahimsa*, they have no compunction against using starvation and neglect to cull their herds of unnecessary bovines. Another study states that "despite religious sanctions against the slaughter of cattle, bovine age, sex, and species ratios in India and in Kerala are systematically adjusted to demographic, technological, economic, and environmental conditions" (Vaidyanathan et. al., 1982:373).

Therefore, when examining their behavior in the environmental arena, Hindus may profess a solemn belief in the ethics of "non-injury" to the environment and will not condone active destruction of natural resources. They will, however, allow environmental degradation to continue through passive means. The dumping of sewage into rivers and oceans is part of the life process and therefore inevitable *himsa*. 
Unscrupulous factory owners who bribe officials to look the other way are not the concern of the person walking the path of spiritual enlightenment. Cutting down trees for firewood is necessary to keep the family warm and fed which are a parent's moral responsibilities. As so often happens in countries around the world, the concrete necessities of survival outweigh the abstract needs of environmental protection. Hinduism provides a moral justification—"the protection of [the family] under [the father's] care" (Walli, 1974:20)—for exploiting natural resources that overshadows the preachings of conservation and coexistence with nature.

Yet, despite the demands of India's population pressures and the tacit justification in Hinduism for ecological exploitation, environmental legislation in India has had a long history.

India's Environmental Policy—History

A survey of environmental legislation indicates that the British Government's awareness regarding environmental issues in India extends back into the nineteenth century. One of the earliest pollution laws, the Shore Nuisance (Bombay and Kolaba) Act of 1853, authorized the Collector of Land Revenue in Bombay to remove dangerous objects found below the high water mark in Bombay harbor. In 1857, the government fined the Oriental Gas Company and gave individuals whose water was "fouled" by the company's discharges the right to compensation (Rosencranz et al., 1991).

In 1860, the Indian Penal Code expanded the action taken against the Oriental Gas Company to include any person who voluntarily "fouls the water of any public
spring or reservoir”. In addition, the Code penalized negligent acts with poisonous substances that endangered life, caused injury, or created public nuisances. The Indian Easements Act of 1882 protected waterfront landowners against excessive upstream polluters. The Indian Fisheries Act passed in 1897, outlawed the killing of fish by poisoning water or by using explosives. Provisions regulating the discharge of oil into port waters and prohibiting the poisoning of water in forests were created in the early twentieth century (Rosencranz, et al., 1991).

The protection of elephants was the focus of the first wildlife protection law passed nationally in 1879. The Central Government enacted the Wild Birds and Animals Protection Act in 1912 which specified closed hunting seasons and regulated the hunting of designated species through licenses. The first comprehensive law for the protection of wildlife and its habitat was perhaps the Hailey National Park Act of 1936 which established the Hailey (now Corbett) National Park in the State of Uttar Pradesh (Rosencranz, et al., 1991).

Regarding industrial waste generation, the earliest laws aimed at controlling air pollution were the Bengal Smoke Nuisance Act of 1905 and the Bombay Smoke Nuisance Act of 1912. Two early post-independence laws touched on water pollution. Section 12 of the Factories Act of 1948 required all factories to make “effective arrangements” for waste disposal and empowered state governments to frame rules implementing this directive. Second, river boards, established under the River Boards Act of 1956 for the regulation and development of interstate rivers and river valleys were empowered to prevent water pollution. In both these laws, however, prevention
of water pollution was only incidental to the principal objective of the enactment, that of developing interstate water travel (Kothari, et al., 1989). These two laws were the only environmentally related laws passed during the first twenty-five years of India’s independence.

India’s long record of environmentally related legislation afforded high visibility at the United Nations Conference on the Human Environment which convened in Stockholm in 1972. The Stockholm Conference was the first international conference to address environmental issues from a global perspective. One of the subjects that was debated was how to reduce pollution levels in developing countries. Indira Gandhi made an impassioned speech at the conference proclaiming “we do not wish to impoverish the environment any further and yet we cannot for a moment forget the grim poverty of large numbers of people. Are not poverty and need the greatest polluters?” (United Nations, 1973; for the complete address, see Appendix II). During the conference, the UN stated that the majority of environmentally related problems in developing countries are caused by underdevelopment. The UN recommended that developing countries “must direct their efforts to development” (United Nations, 1973:3). The UN also recommended that while establishing environmental standards is important in reducing pollution levels, “all countries agree that uniform environmental standards should not be expected to be applied universally by all countries with respect to given industrial processes or products except in those cases where environmental disruption may constitute a concern to other countries” (United Nations, 1973:26).
Following the conference, Mrs. Gandhi began developing several pieces of environmental legislation which she was able to pass through parliament with a minimum of debate. In 1972, the Committee on Environmental Planning was formed. This was followed by the Central Board for the Prevention and Control of Water Pollution in 1974 and by the Department of Environment in 1980 (Dwivedi and Kishore, 1982). In 1985 all three agencies were consolidated and upgraded to full Ministry status with the Ministry for Environment and Forests. The Water (Prevention and Control of Pollution) Act was enacted in 1974 and the Air (Prevention and Control of Pollution) Act was passed in 1981. In addition, two powerful agencies were created to tackle specific environmental problems: The National Wasteland Development Board and the Central Ganga Authority (Khatore, 1991).

To combat air pollution in Bombay, the Maharashtra Government in 1984 amended the city's Motor Vehicles Act of 1939 to require the periodic testing of emissions of petroleum-powered vehicles. Moreover, in 1986 Maharashtra introduced regulations for the transport of hazardous substances, including labeling requirements based on the recommendations of the United Nations Committee of Experts on the transport of dangerous goods (Rosencranz et al., 1991).

The most significant legislation to emerge from the Bhopal tragedy was the Environment (Protection) Act of 1986. This sweeping legislation, which established the Ministry for Environment and Forests, empowered the Ministry to establish environmental regulations nationally and provided broad enforcement powers. In 1987, a new chapter regulating hazardous industrial processes was introduced into the
Factories Act of 1948. The amendments to the Air Act in 1987 and the Water Act in 1988 empowered the enforcement agencies to close polluting industries and to stop their power or water supply. The penal provisions in both these laws were also strengthened (Rosencranz, et al., 1991).

**India’s Environmental Policy—Current**

To date, India’s environmental policy continues to focus on regulation rather than cooperation with industry and communities. According to Khator (1991), this emphasis on regulation, combined with a tutelary and lenient attitude towards industry have achieved a tenuous balance between economic development and environmental protection. Laws, such as the Water Act and the Environment Act, provide the government with an appearance of environmental protection that neutralizes protests from environmentalists and eases international pressures. The selective enforcement by national agencies of these laws allows violators to manipulate local officials through bribes or pressure and “provides superficial assurances to the masses while keeping the basic structure of the society intact” (Khator, 1991:80).

Even with this new emphasis on environmental protection, the Central Government has initiated several controversial development projects. Indeed, in every major environmentally disruptive project sanctioned since the mid-1980s—the Narmada River and the Tehri Hydel hydroelectric dam projects, and the Kaiga nuclear power station are examples—the Central Government has paid only lip service to public and environmental considerations (Khator, 1991). In addition to these projects, two more large dams and six power and industrial “megaprojects” are in the planning
stages with little apparent incorporation of environmental concerns (Hattangadi and Rubin, 1996)

Corruption has played a significant role in recent controversies. In 1989, news sources exposed the Maharashtra Government’s secret practice of issuing ad hoc directives for altering land use in Bombay in disregard of what appear to be mandatory public comment procedures. Many of these plots were reserved in the development plan for community needs such as gardens and playgrounds. Apart from undermining the town planning regulations, the government’s directives led to huge windfalls for land owners, fueling suspicion that kickbacks might have influenced the decisions (Rosencranz, et al., 1991).

Ten years after the Bhopal disaster, progress in the field of environmental protection has been erratic. In 1995, courts in India closed nearly 1,000 factories because of pollution violations. In May 1996, the Indian Supreme Court fined 15 plants, including some owned by multinational corporations, for discharging waste into waterways. The fines assessed by the court averaged only $14,000, even if they were unprecedented in the history of Indian law (Hattangadi and Rubin, 1996).

While the courts may have begun cracking down on industrial polluters, the pollution control industry in India is still in its infancy. Of India’s 3,245 municipalities, only 21 have even partial sewage treatment facilities. Bombay is scheduled to receive $355 million from the World Bank to upgrade its woefully inadequate sewer system. The OECD is providing funding for a water treatment plant in Madras that will be a joint project between the Indian Government and private investment (Hattangadi and
Rubin, 1996). The Ganga Action Plan, a massive project to clean up the Ganges River and the afforestation projects under the direction of the National Wastelands Development Board, are showing slow but steady progress (Gupta, 1988; Sen, 1992).

While these reforms have, to a certain extent, altered the complexion of environmental policy, they have not changed India’s political landscape. While non-governmental organizations, active in lobbying and environmental litigation, have certainly benefited from the changes, their effectiveness in determining environmental policy is questionable. Environmental policy decisions in India are still determined primarily by what Renu Khator refers to as “the politics of reconciliation” (Khator, 1991:22). By supporting environmental laws, a politician can accrue a voting record showing he/she is committed to his constituency. He can do this knowing that the corruption within the system will allow business-as-usual to continue, in that way minimizing the political damage such policies might cause in the industrial sector. These laws thus become a means of reconciliation—the primary objective turns out to be pacifying opposing viewpoints instead of addressing environmental problems.

These reforms have also perpetuated a centralization of power within the Central Government. As the Ministry for Environment and its departments have increased their influence, other ministries, like the Ministry of Steel and Mines, which until recently paid scant attention to environmental factors, have suddenly found their projects stalled due to inadequate environmental impact appraisals. This is also true for state and local governments dependent upon the Ministry for Environment’s approval before they can begin development projects. Environmental regulation has
become another avenue the Central Government can use to maintain its power over state and local governments (Bagchi, 1994).

While the power of the Central Government continues to be extensive in India, it has been challenged. Since independence, industry, professional, and technically oriented occupations have increased dramatically. The resulting urban middle class has emerged into economic prominence, rivaling pre-independence privileged classes, such as British civil servants, foreign industrialists, and native elite. While India's economic system has expanded to accommodate the new middle class, the political system has not adapted to them as quickly. This class contains groups that have been referred to as “free floaters”, social groups that are not restricted by allegiances to any one political platform. One area that has benefited from the expanding middle class is the non-profit sector. The free floaters have found nongovernmental organizations a suitable platform for their unconventional political orientations. Partly because of this, NGOs have seen a rapid increase in their numbers over the last twenty years (Khator, 1991).

Nongovernmental Organizations and the Environment

In 1992, environmental nongovernmental organizations (NGOs) were thrust into international prominence during the Earth Summit in Rio de Janeiro (Fisher, 1993). Well before the Rio Summit, however, NGOs had become an important part of international aid in developing countries. Beginning in the late 1960s, many of these organizations, most of which have their headquarters in industrialized nations, began expanding their efforts in developing countries by establishing partnerships with
innovative individuals (Borghese, 1987; Fisher, 1994; Korten, 1980). During this period of expansion, NGOs gained a reputation for innovation, for promoting local participation, and for reaching the poor (Tendler, 1982). Since then, the role of NGOs in developing countries has expanded to such an extent that some analysts predict NGOs will, “over the long run ... fundamentally alter the world’s political landscape” (Durning, 1989:67). In Asia alone, an estimated 60 million people were involved with NGOs as both members and recipients (Borghese, 1987). In 1992, OECD countries sent $2.5 billion in development assistance through NGOs, up 30% from a decade earlier (see Appendix A, Figure 1; Organization for Economic Cooperation and Development, 1992).

Most NGOs work to bring about changes within communities by focusing on resolving problems at a local level. Michael Cernea has listed several reasons why NGOs are created. These are “(1) societal conflict and tension; (2) the need to respond more effectively to crisis situations or new demands when traditional structures break down or become unresponsive; (3) ideological and value differences with the powers-that-be; (4) neither government or business has the will or the capacity to deal with specific socioeconomic problems; (5) a determination to help people at the grassroots level get organized and involved” (1988:13). According to Cernea, NGOs provide organizational assistance and serve as mediators between individuals and governments within local communities (Cernea, 1988; Kaimowitz, 1993).
One of the most difficult aspects of defining NGOs active in environmental protection is the wide variety of organizations that are listed as nongovernmental organizations (Cernea, 1988; Meyer, 1993, 1995; Smith, 1972). Many of these organizations have no formal status, functioning as small, poorly funded groups that work to address specific problems as they arise. Others, such as CARE and the Rockefeller Foundation, operate internationally with multimillion dollar budgets (Masoni, 1985). For purposes of this thesis, I will focus on NGOs that are, (1) nonprofit, (2) are active in the Bhopal area or fund NGOs in the Bhopal area and, (3) are interested in environmental issues.

The number of NGOs in India interested, or involved in environmental issues today is larger than in any other Third World country (Organization for Economic Cooperation and Development, 1992). However, most of these groups do not consider themselves “environmental organizations” per se. This is especially true of grassroots voluntary groups in rural areas, which only recently have begun to take up environmental issues as part of a shift towards a concern with sustainable development (Agarwal, 1985b).

**NGOs as Business Enterprises**

It has been only recently that scholars have recognized the economic value of nonprofit organizations (Meyer, 1993). While it is inevitable that some NGOs exist only to make money and with no interest in assisting their client countries, they are a minority (Fisher, 1994; Reilly, 1993). Most NGOs have made substantial contributions to the economic and social welfare of people in developing countries.
This is true both for the individuals the NGO’s programs assist, and the salaried individuals—mostly at the managerial level—employed by the NGOs. While most studies of nongovernmental organizations have portrayed the actions of the managers of these organizations as purely altruistic, some researchers disagree with this position (Meyer, 1993, 1995; Rose-Ackerman, 1987; Young, 1983).

If we assume, according to neoclassical economic analysis, that NGO managers have other interests that are not purely altruistic, then a different interpretation of behavior emerges (Meyer, 1993; 1995; Young, 1983). According to Burton Weisbrod (1977), the rise of the nonprofit sector can then be seen as an entrepreneurial response to government’s and the business sector’s failure to provide certain needed public goods. While Weisbrod characterizes nonprofit organizations as a “second-best solution” (Meyer, 1993:193) to shortages in the public sector, Henry Hansmann sees the nonprofit sector as an entrepreneurial alternative to the private enterprise, filling public sector gaps (Hansmann, 1980).

In addition to the entrepreneurial aspects of NGOs, the problem of managing nonprofit organizations is an issue that bears comment. Carrie Meyer points out that in many studies of NGOs, managerial behavior is factored out because it is considered merely executing the wishes of the outside donors. Meyer cites Susan Rose-Ackerman’s work on the actual independent role managers play in nonprofit organizations (Meyer, 1993). By assuming that disagreements about the nature and quality of the services an organization provides are inevitable between managers and
donors, Rose-Ackerman posits that NGO managers can exercise great discretion in the direction of an organizations activities (Rose-Ackerman, 1987).

Meyer, in her study of environmental NGOs in Latin America provides an economic framework to aid in understanding the expanding role of the nonprofit sector in international development.

Nonprofit NGOs are recognized to be the result of entrepreneurial activity and are viewed as producers of international public goods. Self-interested economic behavior is shown to be consistent both with opportunism and with altruism as fundamental confusions between opportunism and entrepreneurship are clarified. The innovation of the entrepreneurs in NGOs extends not only to the production of new public goods but also to institutional change (Meyer, 1995:1279).

Meyer concludes that as NGOs grow in size and complexity, the “relationships with international donors, governments, and the private sector alter incentives that NGOs face” (Meyer, 1995:1286). These new incentives will, in turn, alter the existing relationships these expanding NGOs have with the community and other locally based NGOs. Meyer suggests that as these organizations grow, NGOs in developing countries should perhaps be viewed more as “independent entrepreneurial economic entities—not as advocates of grassroots justice” (Meyer, 1995:1287).
As with any economic enterprise, income generation plays a key role in determining business strategy. Even though most NGOs finance their operations through different sources of funding (i.e. government assistance and private donations) in entrepreneurial terms, they operate in a manner similar to other service oriented businesses.
CHAPTER IV

THE CRISIS

Background

Bhopal, the capital of the State of Madhya Pradesh, was founded in 1728 (see Appendix A, Figure 2). With a population today exceeding one million people, this important railway junction has grown to be an industrial center (National Geographic, 1992). Bhopal’s main industries are electrical equipment, textiles and jewelry. Union Carbide Corporation (UCC), head-quartered in Danbury, Connecticut, is the 35th largest industrial company in the United States and fourth largest chemical company. It operates plants in 38 countries and manufactures a wide range of products, from consumer goods to industrial chemicals and pesticides. In 1984 UCC reported assets of $11 billion and sales of $9.5 billion. Approximately 14 percent of annual sales were derived from Carbide’s holdings in developing countries in Asia, Africa, the Middle East, and Latin America (Everest, 1986).

In 1969, Union Carbide India, Ltd. (UCIL) and Union Carbide Corporation agreed with the government of India to build a pesticide manufacturing plant in Bhopal (Walker, 1990). Originally, this plant was designed to combine and package intermediate chemicals needed for the production of the pesticide, Sevin. The constituents of Sevin, alpha-naphthol and methyl isocyanate (MIC), were to be combined, diluted with non-toxic powder, and packaged at the Bhopal plant. In India,
where pesticides have dramatically increased food production, Union Carbide demonstrated both sophisticated technology and export potential to the Central Government of India. Therefore, the Union Carbide Corporation was permitted to own 50.9 percent of Union Carbide India, Ltd. which owned the Bhopal plant, and the remaining 49.1 percent was distributed among Indian shareholders. Of the 49.1 percent owned by Indians, almost half—22 percent of the total—was controlled by the Central Government, and the balance was held by approximately 23,500 Indian citizens. Union Carbide Corporation is a corporation incorporated under the laws of the State of New York (Walker, 1990).

To maintain its operating license in India, Union Carbide agreed to begin building a second plant in Bhopal during 1977. Before construction was finalized in 1979, substantial problems appeared, resulting in construction modifications during 1978. By 1980, the plant was considered operational. Designed to produce 5,000 tons of Sevin per year, the plant never operated at this capacity (Everest, 1986).

The expansion, while sanctioned by the Central Government, was considered by many people to be a danger to the local communities and to the city of Bhopal itself. In the early 1980s, Madhya Pradesh Chief Minister, Arjun Singh, gave ownership of the land around the plant to the hundreds of migrants that had constructed a shanty town on this property (Lepkowski, 1985a). Several opposition parties criticized the expansion and the location of the plant. In September 1984, a lawyer from the Communist Party warned the factory, on behalf of his party, of the danger of a gas leakage (Ram, 1984a). The Madhya Pradesh Minister of Labor,
Tarasingh Viyogi, responded to Communist state legislators who voiced their concerns over the Bhopal plant by saying "250 million Rupees [$20.38 million] has been invested in that factory. It is not a piece of stone which I can pick up and place at some other location. And it is not that it is posing a big danger to Bhopal or that there is any such possibility" (Ram, 1984a:10).

In 1982, ten safety deficiencies were discovered (Ram, 1984b). Through 1984, various stages of shutdown and partial operation took place. One of the deficiencies, the refrigeration unit designed to cool the MIC, was never completely corrected. However, in June 1984, the headquarters of Union Carbide was told that most of the equipment and safety deficiencies uncovered at Bhopal in 1982 had been corrected. On the date of the accident, a pressure gauge was missing on tank 610, evidently making it possible for water to enter the tank and mix in a heat producing reaction to form a toxic gas (Ram, 1984b).

In 1983, sales at UCIL were down 23% from the previous year. The facility was operating at one-third its capacity and UCC was considering getting out of the MIC based pesticide manufacturing business. By 1984, the plant’s five hectare site in 1969 had expanded to 32 hectares. Early in 1984, Warren Anderson, Chairman of Union Carbide Corporation, endorsed a plan to sell the plant due to its underutilization. In October, 1984, Carbide executives announced it was expanding investments in other lines of business—petrochemicals, industrial gases, metal, and carbon products, consumer products, and technological services and specialty products. At the time, UCC’s entire contribution to the Bhopal plant consisted of
providing technical services which in 1983 totaled $460,000 (Ram, 1984b). Just as a new year was starting with two strong quarters for Union Carbide, the Bhopal disaster occurred (Everest, 1986).

The Disaster


The methylene isocyanate (MIC) production unit had been shut down for nearly two months, and on the night of December 2, workers were performing routine maintenance that included washing out lines near the plant’s three MIC storage tanks. Toward the end of the evening shift, at approximately 10:15 p.m., a supervisor instructed an operator to wash the piping around one of the three MIC storage tanks. These tanks were in use at the time and each tank contained between 11,290 and 13,000 gallons of MIC. The 15,000 gallon tanks are not supposed to contain more than 8,000 gallons of MIC at any time for safety reasons—the extra space could be used to dilute the MIC or absorb heat in the event of a runaway reaction. Also the refrigeration unit on tank 610, which is supposed to keep stored MIC at a temperature of from zero to five degrees centigrade had been dismantled and moved to a different
location. Even if the refrigeration unit had been there, the freon based unit was not large enough to adequately cool the extra volume of MIC stored in the tank.

According to employees, water entered MIC storage tank number 610 through a leaking valve and initiated a run-away chemical reaction. Methylene isocyanate is considered a water reactive substance and the introduction of water into the storage tank caused a chemical reaction that produced methyl amine, various MIC polymers and trimers, carbon dioxide, and heat. At 11:00 p.m., one of the new shift operators noticed that the pressure in tank 610 had risen from 2 pounds per square inch to 10 pounds per square inch. Corresponding tank temperatures were not available because standard procedure did not require recording the temperature. The worker assumed that the tank had been pressurized with nitrogen gas during the previous shift in order to transfer its contents to the pesticide manufacturing unit, so he did not mention the pressure increase to his supervisor. By 11:30 p.m., some operators sensed irritation in their eyes similar to that caused by small leaks of MIC gas. Once they discovered the leak, they reported its prescence to their supervisor who decided to deal with the leak after their tea break, scheduled for 12:15 a.m. By midnight the pressure build up reached a point where it burst a rupture disc, causing MIC gas to escape into the atmosphere via a 33 meter high vent line (see Appendix A, Figure 3).

At this point, the plant's safety systems that should have been activated to contain the leak failed to do so. The first line of defense, a gas neutralizing scrubber using caustic soda, had been disconnected and was under repair at the time. Likewise, the flare tower at the top of the vent line was out of commission due to a corroded
length of pipe that had not been replaced. Even if the flare had operated, the flare vent stack was designed to burn off only small quantities of gas and would have been overwhelmed with the escaping reaction. Once the leak entered the atmosphere, a network of water jets was to have saturated the escaping gas to prevent dispersal into the city. The water pressure in the lines, however, was so low the jets could only reach 12 to 15 meters instead of the 33 meters to reach the top of the vent line. When workers tried to divert MIC from the reacting tank, a faulty gauge showed that the spare tank was 22 percent full, eliciting concern that use of the tank would only aggravate the situation.

The Aftermath

By the time the reaction had dissipated, about two hours later, Union Carbide estimated that of the 90,000 pounds of MIC in tank 610, 54,000 pounds of pure MIC vapor and 26,000 pounds of reaction products had escaped into the atmosphere. Because the leak happened during the winter, the cold air quickly cooled the chemical components of the gas. As the gas became heavier than air, it began drifting down into the neighboring villages. The leak itself had lasted 40 minutes and blanketed 25 square miles of the city, extending in a southerly direction from the plant into the most densely populated areas of Bhopal (see Appendix A, Figure 4; Chemical and Engineering News, 1984a). As the gas spread, weak and elderly people died within minutes. Incoming trains were diverted away from the main station, halting the most effective means of escape. The affluent fled in their cars. Approximately half of the one million inhabitants of Bhopal fled on foot, victims of the worst industrial accident
in history. The Mayor of Bhopal was quoted as saying, “I can say that I have seen chemical warfare. Everything so quiet. Goats, cats, whole families—father, mother, children—all lying silent and still. And every structure totally intact. I hope never again to see it” (Agarwal, 1985a:221).

By the next morning, the city was in chaos. Individuals who had not been able to leave the city made their way to the local hospitals. At the Hamidia Hospital, the closest hospital to the plant, the first victims began trickling in around 1:15 a.m. Soon hundreds were arriving. By 2:30 a.m., the hospital had received over 4,000 patients (Agarwal, 1985a). Doctors worked around the clock caring for the victims. Medical supplies were soon exhausted and supply trucks from neighboring cities were slow to arrive. Concerned with compensation and legal issues, one planeload of supplies from the United States was ordered back by the Indian Government (Lepkowski, 1985c). The lack of information about the acute toxicological effects of the gas hampered treatment efforts and very little was known regarding the long term effects of MIC (Agarwal, 1985a, Ali, 1984). This lack of information was attributed to its relatively low usage rate in the chemical industry. Most companies regarded MIC as too hazardous for large-scale operations (Dagani, 1985).

The newly formed government, under the direction of Rajiv Gandhi who was still mourning the assassination of his mother, Prime Minister Indira Gandhi in October 1984, was faced with a devastating crisis. Mr. Gandhi who called the situation “horrifying”, announced the creation of a government relief fund (Hazarika, 1984a). Relief efforts were directed towards the victims of the Bhopal gas leak who had
received the most severe injuries, including burned lungs, scarred eyes, or damaged nervous systems, but were still expected to live. Doctors were concerned that many of the victims would experience acute problems such as “sterility, kidney and liver infections, tuberculosis, vision problems and brain damage”, while potential for birth defects and chronic illnesses were yet to be known. While subject to dispute, there were subsequent reports that stillbirths were beginning to occur and fetuses were being aborted (Trotter et al., 1989).

The day after the accident, the Central Bureau of Investigation began an inquiry into the cause of the disaster. A judicial inquiry headed by a high court judge was also ordered by the government of Madhya Pradesh. When state authorities arrived at the plant, they arrested five of the plant’s managers, seized all log books and factory records, and detained all plant personnel at the site (Stevens, 1984). The next day, two teams of industry and environmental experts flew in from New Delhi. Prime Minister Gandhi also flew in, taking time out from his election campaign to visit the victims. Mr. Gandhi stated that threats to national security came from “unnamed external powers” and their “association with oppositional players” and vowed to stop corruption in the government (Ram, 1985c). Also on the day after, news bulletins were issued saying that the situation was “fast returning to normal” and that it was safe to return to the city (Agarwal, 1985a).

Three days after the accident, the city began to move toward stability. The plant in Bhopal was ordered closed and locked by the District Magistrate. A team of scientists and engineers from UCC arrived in Bhopal and were refused admission to
the plant for fear they might destroy evidence (Ram, 1984c). The Indian Minister of Chemicals and Fertilizers accused Union Carbide Corporation of failing to provide the safety standards of United States plants to the Indian plant. The official death toll by this time stood at 1,267 with 3,700 people still hospitalized and 200,000 individuals treated. Several Indian news agencies reported medical personnel on the scene disputed these figures as being too low (Hazarika, 1984b).

On Friday, December 7th, Warren M. Anderson, Chairman of Union Carbide Corporation, arrived in Bhopal where he was promptly arrested along with Keshav Mahendra, chairman of Union Carbide India Limited, and V. P. Gokhale, managing director of UCIL, and charged with “criminal conspiracy and culpable homicide not amounting to murder, causing a death by negligence, mischief, mischief in the killing of livestock, making atmosphere noxious to health, and negligent conduct in respect to poisonous substances” (Reinhold, 1984a: A7). The three officials were detained at Union Carbide’s guest house for six hours and released on $2,000 bond. After posting bond, Mr. Anderson boarded a plane for New Delhi and was taken to the United States Embassy (Reinhold, 1984a).

A Madhya Pradesh spokesman issued a statement saying that Chief Minister Singh had decided to arrest Anderson and the other officials because:

We are convinced on the basis of facts already available that each one of them has constructive and criminal liability for the events that have led to the great tragedy in the Union Carbide plant at Bhopal.
This government cannot remain a helpless spectator to the tragedy and knows its duty toward the thousands of innocent citizens whose lives have been so rudely and traumatically affected by cruel and wanton negligence (Reinhold, 1984a: A7).

A second statement issued after bail was posted implied that one condition of Anderson’s bail was that he leave the country. Government spokesman Sundeep Banerjee commented that Mr. Anderson’s continued presence in India was “not desirable” and “might provoke strong passion against him” (Reinhold, 1984a: A7). Mr. Banerjee affirmed that all charges against Mr. Anderson would remain in place and if he remained in the country or returned at a later date, he could be tried (Reinhold, 1984a).

The opposition parties were quick to condemn the tragedy and the government’s supposed duplicity in the incident. Charan Singh, a member of the Bharatiya Janata Party called for the judicial inquiry to examine whether nepotism had contributed to the poor management of the plant. He also said that the inquiry should investigate to see if “antiquated technology had been dumped on India” by Union Carbide. The president of the Janata party, Chandra Shekhar, called the arrest and subsequent release of Warren Anderson “a big fraud on the people” and said that Anderson had been released because a trial would “reveal the complicity and negligence of the state and Central Government” (Hazarika, 1984c: A8). Suresh Kalmidi, parliamentary secretary of the Congress(S) Party, a splinter faction of the
ruling Congress(I) Party, was reported as saying the government had “bungled” the Anderson arrest (Hazarika, 1984c). The Janata Party also called for the immediate resignation of Chief Minister Arjun Singh and the dismissal of the Madhya Pradesh Government for “failure to protect the lives of citizens [by granting property ownership to squatters near the plant]” (Stevens, 1984: A10). The Madhya Pradesh State Assembly pointed out that when originally approved, the plant had been isolated. Over the years, the thickly populated shanty town had developed around it (Kharbanda, 1985).

By the seventh day, Union Carbide India Limited announced that it was contributing $830,000 to a special relief fund for the victims established by Chief Minister Arjun Singh. This contribution was rejected by the Madhya Pradesh Government due to fears that acceptance of the money could complicate subsequent compensation issues (Chemical and Engineering News, 1985c). Anderson replied to the government’s refusal by stating that aid offers from neither UCIL nor UCC had anything to do with potential compensation. He then authorized $1 million to be donated to the relief fund. The check from UCC was presented to the Madhya Pradesh Government by the United States Ambassador to India (Chemical and Engineering News, 1985a). In addition to the relief fund, the company was transporting medical supplies and a team of doctors to Bhopal, and revealed plans to build an orphanage (Reinhold, 1984b). UCC set up a treatment camp operated by Mother Theresa’s Missionaries of Charity and supplied female gynecologists (Lepkowski, 1985b).
The government gathered a team of senior scientists headed by Dr. S. Varadarajan, director-general of the Council of Scientific and Industrial Research (CSIR), to determine the best method of neutralizing the remaining MIC in the ruptured storage tank. The team of scientists weighed the effectiveness of four different methods of disposal—neutralization, incineration, transferal to another location for processing, and restarting the plant to convert the MIC into pesticide (Agarwal, 1985a).

The Madhya Pradesh Government had canceled the operating license issued to the Bhopal plant immediately after the accident and now was reluctant to allow Union Carbide to restart the plant. Chief Minister Singh had declared that the plant would never be allowed to open again and the Times of India pointed out that reopening the plant “would be tantamount to granting Union Carbide some sort of safety approval or certificate and to letting its management, with its all-too-visible safety record, run the plant as it likes” (Agarwal, 1985a:212).

The next day, the Chief Minister announced that the government team had concluded that restarting the factory was the “most practical and safe way” to neutralize the threat posed by the remaining MIC. Singh also announced that while the neutralization process would pose no threat to the city or its residents, the government had summoned a large number of busses to Bhopal from the Madhya Pradesh State Road Transport Corporation to provide evacuation assistance for 13 vulnerable locations to refugee camps or relatives in neighboring areas if people wanted to leave. By the December 14, over one quarter of the population of Bhopal
had taken advantage of the transportation provided by the government (Agarwal, 1985a; Everest, 1986).

At 8:30 am on December 16, “Operation Faith” started and the laborious process of reactivating the shut-down plant and processing the MIC began. The UCIL officials arrested on the first day of the disaster were released to oversee the operation. The Times of India reported that:

in spite of the presence of the Indian experts led by Dr. S. Varadarajan of CSIR, there is very little doubt as to who is really in charge. The team of Indian experts does not yet seem to be in full and direct nuts-and-bolts-level command. The details of the job have been left to the Union Carbide management. As Dr. Varadarajan says, ‘we didn’t really know the plant all that well.’ Even more significant, the involvement of the managers of Union Carbide Corporation, USA in the present operation is visible. (Agarwal, 1985a:217).

Several high profile officials attended the opening of the plant on that day including the Chief Minister, Arjun Singh, the governor, Professor K. M. Chandy who had earlier refused to drink any water in Bhopal, as well as the president of the Bharatiya Janata Party, Chandra Shekhar. By the end of the first day, four of the estimated 15 tons of MIC remaining in the tank had been converted into pesticides. The operation which was expected to last four or five days was finished on Saturday,
December 23, one week after the neutralization process began. Twenty-four tons of MIC had been converted into pesticides, 60 percent more than had originally been estimated (Agarwal, 1985a).

While Operation Faith was in progress, United States Representative Stephen J. Solarz (D-N.Y.), Chair of the House Subcommittee on Asian and Pacific Affairs arrived in New Delhi on a fact finding mission. Representative Solarz was interested in introducing legislation in the United States that would force American companies to follow United States environmental regulations internationally (Chemical and Engineering News, 1984b). Other concerns included ensuring that relations between the United States and India would not sour. One State Department official was quoted as saying, “there’s bound to be an after-effect, but if Union Carbide and the United States Government are seen as acting responsibly, the negative fall-out may be minimal” (Manning, 1985a:58).

The continued transfer of high technology from the United States to India was a priority on the list of issues discussed during Representative Solarz’s visit. According to Pradeep Rohatgi, MIT educated head of the Madhya Pradesh Regional Laboratory, “the biggest lesson I would glean from this [the Bhopal disaster] is that developing countries need more, not less, sophisticated technology than that in the developed countries. Workers are less sophisticated so you need higher standards of safety than in industrialized countries” (Lepkowski, 1985b).

On December 24, Rajiv Gandhi was reelected to the position of Prime Minister as he swept the national elections. Mr. Gandhi’s election platform stressed improved
ties with developed nations and opening India up more to western business (Sillitoe, 1985). That same week Warren Anderson conducted an interview with Chemical and Engineering News where he talked about the hope of a speedy recovery (Chemical and Engineering News, 1985a). Union Carbide also forwarded the possibility that sabotage, either from a disgruntled employee or the work of a Sikh terrorist group calling themselves Black June, had been the cause of the leak (Atkinson, 1988; Chemical and Engineering News, 1985e).

The Trial

One of the first issues to arise from the disaster was the question of compensation to the victims. Once the number of lives lost and the extent of the destruction had been estimated, it was realized that this disaster had the potential to be the largest, and most lucrative, civil suit case in history (Stewart, 1984). Four days after the tragedy, an American lawyer told the Wall Street Journal, “I’ll bet half the top personal injury lawyers in America are on planes to New Delhi, or are arranging for local counsel to represent victims” (Stewart and Hilder, 1984:A2). Indeed, within a week, dozens of lawyers began soliciting clients in Bhopal. Melvin Belli, perhaps the most famous of the group, defended his trip by saying “these other people caused the accident. We are trying to get some compensation” (Baldwin, 1985:4). Soon Union Carbide was facing over 60 lawsuits totaling more than $100 billion on behalf of 148,000 victims (Agarwal, 1985a).

When the details of some of the contracts offered by these lawyers were made public—some lawyers were charging commissions as high as 40 percent for their
services—the government of Madhya Pradesh urged people not to enter into any agreement with foreign lawyers (Baldwin, 1985). The state government opened legal aid and guidance camps where forms for filing damage claims against Union Carbide were provided. As the number of cases against Union Carbide piled up in the Indian courts, threatening to overwhelm an already backlogged court system, the Central Government was preparing its own case against the company (Agarwal, 1985a).

To ensure that victims received fair and equitable representation, the National Parliament enacted the Bhopal Gas Leak Disaster (Processing of Claims) Act in March, 1985 (The Bhopal Act). The Bhopal Act named the Indian Government as the sole legal representative for all plaintiffs in the case against Union Carbide, and directed the government to organize a plan for the regulation and processing of the victims’ claims (Manning, 1985b).

In order to provide the best possible prosecution for the victims and to protect its own interests, the government of India hired an American law firm specializing in product liability cases and mass disaster cases. After reviewing the information on the disaster, the firm filed charges including “culpable homicide not amounting to murder, causing death by negligence, mischief, and mischief by killing or maiming cattle, negligent conduct with respect to poisonous substances, and criminal conspiracy” (Newton and Dillingham, 1994:34) against executives of the Union Carbide Corporation (Rosencrantz et al., 1991). The District Attorney of India rejected UCC’s initial offer of $230 million. (Chemical and Engineering News, 1985c; Manning, 1985b)
The Attorney General of India vowed to sue Union Carbide in an American court because Indian courts are a less viable alternative to the plaintiffs (Dhavan, 1985). Indian laws require the plaintiff to pay a very high filing fee to begin the legal process, and to date, there has yet to be a wrongful death judgment in India of more than $40,000. Because punitive damages do not exist in Indian lawsuits, Union Carbide would clearly benefit from a trial held in an Indian court. Even compensatory damage judgments in Indian courts often amount to only a few rupees (Webber, 1985b).

In addition to the substantially higher settlements American courts typically award, the Indian Government’s preference for an American Court also stemmed from a lack of confidence in its own judicial system, the lure of large damages that an American jury might award, and its uncertainty about whether Carbide would submit to the jurisdiction of an Indian court. In April, 1985, one month after the Bhopal Act was passed, the Indian Government sued Union Carbide in the United States Federal Court (Rosencranz, et al., 1991).

The United States District Court, under the review of judge John F. Keenan, declined on the basis of Forum non Conveniens to try the Bhopal lawsuit, declaring that India was the more appropriate forum. Judge Keenan did urge Union Carbide to send $5-10 million in emergency relief aid “as a matter of fundamental decency” (Chemical and Engineering News, 1985c). When UCC offered $5 million in emergency aid to India, the offer was rejected according to an Indian spokesman because of “onerous record keeping requirements” (Manning, 1985b). A compromise
was then arranged to allow the disbursement of the emergency aid to be shared
between the American and the Indian Red Cross (Chemistry and Industry, 1985).
Consequently, in September 1986, nearly two years after the tragedy, the Indian
Government sued Carbide in the Court of the District Judge, Bhopal, for $3 billion in

Meanwhile, according to the Minister of India, the Indian Government had
immediately after the disaster begun making temporary benefit payments of
approximately $766 per family of those who died in the disaster, and $115 per family
of those injured. These payments, however, were canceled after four days due to
difficulties in identifying the proper recipients. By March 1985, only 1,900 death
benefit payments had been made to families and injury payments had been suspended
indefinitely (Galanter, 1985).

The Bhopal case reached the Indian Supreme Court through the separate
appeals of Carbide and the Indian Government from the judgment of Justice Seth of
the Madhya Pradesh High Court. In April, 1988, Justice Seth awarded interim
damages of $192 million on the basis of "more than a prima facie case having been
made out" against the defendants (Rosencranz, et al., 1991:345). Carbide's lawyers
claimed that the judgment was unsustainable because it amounted to a verdict without
trial. The Indian Government appealed because Justice Seth had reduced by 30
percent District Judge Deo's earlier interim payment award of $270 million (Trotter, et
al., 1989).
On February 14, 1989, the Supreme Court induced the Indian Government and Carbide to accept its suggestion for an overall settlement of the claims arising from the Bhopal disaster. Under the settlement, Carbide agreed to pay $470 million to the Indian Government on behalf of all the Bhopal victims in full and final settlement of all past, present and future claims arising from the Bhopal disaster. The entire amount had to be, and was paid by March 31, 1989. In addition, to facilitate the settlement the Supreme Court exercised its extraordinary jurisdiction and terminated all the civil, criminal and contempt of court proceedings that had arisen out of the Bhopal disaster and were pending in subordinate Indian courts (Ali, 1989). Reaction to the settlement the next day on Wall Street was indicative of which side emerged victorious when Union Carbide’s stock rose 18 points. An editorial by *The Economist* regarding the settlement stated that “justice was served with regards to the law, but the law is flawed” (1989:70).

In December, 1989, the Supreme Court of India upheld the constitutional validity of the Bhopal Act under which the Indian Government had acted as the sole representative of all Bhopal victims in civil litigation against Carbide. The Court acknowledged that the Bhopal Act entitled the victims to notice and an opportunity to be heard on any proposed settlement, and that the February 1989 settlement of $470 million failed to give such notice and hearing. Nevertheless, the Court concluded that in the special facts and circumstances of the case, “a post-decisional hearing would not be in the ultimate interest of justice” (Rosencranz et al., 1991:346). The Court felt that the hearings to be held during the *review* of the settlement (in review petitions filed by
some of the victims in the Supreme Court) afforded a "sufficient opportunity" to the victims. Thus, the Court explicitly verified the terms of the settlement. The Court rationalized its view by declaring, "to do a great right, after all, it is permissible sometimes to do a little wrong" (Rosencranz et al., 1991:346).

Opposition parties strenuously protested the settlement calling it a "sellout" to Union Carbide and multinational corporations in general. The Bharatiya Janata Party claimed that the Congress(I) Party received $666 million from Union Carbide Corporation for its election fund in exchange for a lower settlement. The BJP also demanded criminal prosecution of Union Carbide Corporation and its Indian subsidiary. The Communist Party of India urged the public to join in the protest over the settlement (Ali, 1989).

In September, 1990, the Bhopal settlement was threatened when the National Front Party, which took charge of the government in December, 1989, declared the settlement too low. The government, seeking to back out of the settlement, affirmed its support to review petitions filed by some of the victims. The petitions claimed that many of the dead victims had been incorrectly classified as injury cases with regards to compensation awards. This threat was averted recently, when the Supreme Court, instead of voiding the agreement, referred all cases whose compensation status were in dispute back to the Welfare Commissioner for review (Kumar, 1996).

To date, many victims still have not received compensation for their injuries (Kumar, 1996). Overcrowded facilities, fraud, corruption, and bureaucratic mismanagement have caused compensation to the victims to be delayed. By August of
1993, the courts had paid only $3.1 million in claims, rejecting 75% of the claims due, in large part, to inadequate paperwork even though the Central Government had validated most of the claims (Moore, 1994). In December, 1995, of the 504,000 claims that have been filed, 249,000 injury cases have received awards totaling $176.5 million with $130.83 million of the awards having been disbursed. In the 15,310 claims for death benefits, 10,110 cases have been settled with families of the victims having received $21.6 million in awards. Victims' relief organizations and activists have protested the rate at which the awards have been made. Marches and demonstrations still commemorate the anniversary of the disaster and protest the treatment of the victims by Union Carbide and the Indian Government (Majupuria, 1995).
CHAPTER V

THE RESPONSES

Responses from Local and National Organizations

Both the Indian scientific community and the press criticized the government’s handling of the disaster, emphasizing the supposed complicity of the Indian authorities (Lepkowski, 1985a; Ram, 1985a). As the press grew more critical, access to information became more difficult and the public became more frustrated (Laughlin, 1993). Within a month after the disaster, the public began venting its frustration through protests and demonstrations against the government. Several protests in the city of Bhopal were organized by various relief groups. These protests included the Chakkajam, literally “Stop the Wheels”, where demonstrators filled the streets, halting traffic. That was followed by the Dhikkar Divas—Day of Condemnation—a day to show support against the government’s complicity with Union Carbide. Shortly after, the Rail Roko, literally “Stop the Trains”, lasted ten days. Like the Chakkajam, it was organized to slow business activity, this time by filling the central rail switchyards (Khator, 1991). While few in number, there were reports of violence in response to the disaster. The most noteworthy involved an attack in the spring of 1985 on a DuPont plant construction site by local villagers. After the second such attack in one month, the government halted construction of the plant indefinitely (Schapiro, 1992).
Over time, the targets of these protests changed. In 1985, the main targets were Union Carbide and the government for collaborating with the company. By 1988, the focus of the protests had shifted from the government's association with Union Carbide to the government's association with the local elite—lawyers, private doctors, and local officials—who were accused of exploiting the victims and relief efforts for personal gain (Khator, 1991). Protests were also prompted by the government's lack of support over a joint effort by trade unions, relief committees, and environmental groups to reopen the plant with the unions as owners (Jacobs, 1985).

Turning first to NGOs in the Bhopal area, several volunteer groups and nongovernmental organizations were formed in an effort to assist the victims (for a list of Indian organizations, see Appendix D). Of these groups, BGPMUS—the Bhopal Gas Peedit Mahila Udyog Sangathan (Bhopal Gas Affected Women's Workers Organization)—is the largest victim's group with 14,000 members (Bergman, 1991).

The BGPMUS is supported through a number of other organizations. The Bhopal Group for Information and Action, a local group of middle class activists, was formed in 1985 to handle the day-to-day activities of the BGPMUS. The BGIA works to keep "Bhopal in the public memory" (Laughlin, 1993:1). It does so by supporting and publicizing the demands made by the BGPMUS, by printing newsletters and other publications to keep the victims and public updated on the trial and other compensation issues, by personalizing the victims through published interviews (see
Appendix E) and by publicizing the medical problems and economic hardships of these victims (Laughlin, 1995).

The Zahreeli Gas Kand Sangharsh Morcha (ZGKSM) was organized to coordinate the efforts of volunteers from other cities who traveled to Bhopal. Their membership consists of local professionals, academics, and union members who assume that there are "no technical solutions to social problems" (Laughlin, 1993:54). In addition to attending to the needs of the victims, the ZGKSM puts volunteers to work investigating and publicizing graft and corruption occurring within the agencies administering the compensation process. "[The ZGKSM] work[s] to expose blame of local officials who let UC operate negligently, expose inefficiency and corruption of local relief efforts" (Laughlin, 1993:54).

The Society for Participatory Research in Asia (PRIA) coordinated the activities of the Poisonous Gas Incident Struggle Forum—a coalition of local activists and citizens groups in Bhopal. The Forum's activities included, conducting a detailed damage assessment survey in Bhopal, preparing and publishing a report on the Bhopal disaster as a step in building a national movement around the issue of hazardous technologies, and pressing for a "freedom-of-information act" along the lines of the right-to-know laws in the United States (Abraham, 1985).

While the BGPMUS, BGIA, and the ZGKSM are based in Bhopal, several relief groups from across India, both new and existing, rushed to the victims' aid. In New Delhi, the Delhi Science Forum hosted a public symposium on the disaster in January, 1985. The symposium issued a resolution calling for adequate interim relief
and full compensation to be paid to the victims, for a thorough investigation and that those responsible for the disaster be brought to justice, and for new laws and regulatory guidelines to be instituted governing hazardous industries (Abraham, 1985). The Bhopal Gas Affected People's Support Committee (BGAPSC) and the Bhopal Gas Victims' Solidarity Organization (BGVSO), both organizations based in New Delhi, were formed during the symposium. The BGAPSC are activists who continue to publicize the plight of the Bhopal victims nationally and internationally. The BGVSO is a group of doctors, lawyers, and journalists. Their work focuses on developing legal arguments to force the government to provide rehabilitation programs for those victims unable to return to their previous occupations (Laughlin, 1993).

In a move designed to express solidarity with the Bhopal relief organizations, the Kerala Sastra Sahitya Parishad—Kerala People's Science Movement (KSSP)—organized a nationwide boycott of all Union Carbide products. The boycott targeted Union Carbide products such as Eveready batteries and the pesticides Sevin and Temik and was supported by several national interest groups. In addition to the boycott, there were mass processions, signature campaigns, pickets in front of local Union Carbide offices, and burning effigies of Union Carbide. Some of the other Indian organizations that participated in the boycott included Eklavya—a group that provides science curriculums to secondary schools, the All India Drug Action Network, Medico Friends Circle, Argoya Dakshatha Mandal, Delhi Science Forum, Kishore Bharathi, Lok Vignam Sangatana and Katnata Rajya Vignan Parishath (Laughlin, 1993). The boycott, according to a KSSP spokesman, was meant as a warning to Union Carbide
and other multinational corporations “not to exploit Third World countries to satisfy
their hunger for profit” (Abraham, 1985:31).

The Medico Friends Circle, one of the groups involved in the boycott, issued a
statement which stressed that it is important to analyze the social, political, and
technological factors that contributed to the crisis of which the Bhopal tragedy is only
a symptom. The Medico Friends Circle outlined several criteria for analysis. These
included, to quote (Abraham, 1985:29):

(1) The role of TNCs [Trans-National Corporations] in double
standards of human health and safety practiced in developing vis-à-vis
developed countries. (2) The government’s role and complicity in the
improper siting, licensing and monitoring of hazardous industries, as
well as the flouting of the government’s own rules and regulations. (3)
The national industrialization and development policy issues from the
standpoint of people’s health and ecological dimensions. (4) The
political exploitation of the poor, especially of the slum-dwellers and
workers. (5) The lack of awareness among people, citizens groups and
public interest organizations on health, safety, and environmental
matters. (6) The whole issue of the right-to-information at all levels,
and the existing control of information at the corporate, government,
and professional levels. (7) The basic issue of the relevance of
pesticides to our agricultural economy in the light of available scientific
and social knowledge regarding human poisonings, the disruption of ecosystems, and the long-term adverse effects on land and agriculture.

Other rhetorical responses from activists were varied and prolific. They included statements by other NGOs, such as the example in Appendix F by the environmental group known as Parisar entitled Lessons of Bhopal. One widely circulated document was an unpublished manuscript chronicling the disaster by former Union Carbide employee T. R. Chouhan. A popular book, The Bhopal Gas Tragedy—Accident or Experiment, accused Union Carbide of staging the leak as an experiment to test how effective MIC would be as a nerve gas. Its author, Brojendra Nath Bannerjee, states in the book, “was Union Carbide Research Centre at Bhopal being used for the Pentagon’s chemical warfare experiments? The answer to this question from circumstantial evidence seems to be yes “ (Banerjee, 1986:198).

Another rhetorical method Laughlin documents in her research was fictive writing. Many activists employed performance media—stories, songs and plays in traditional forms—to convey ideological positions to the public. These writings included stories about nonviolent resistance and utopian worlds where natural, pesticide free farming produces bumper crops. According to Laughlin, “People’s Theater” remains active in India as a means of political discourse (Laughlin, 1993).

In April, 1991, the National Convention on the Bhopal Gas Leak Disaster and its Aftermath was organized. Participants gathered to show their support of the voluntary work conducted on behalf of the Bhopal victims and to revitalize awareness
of the tragedy. The convention concluded that medical data released by the Madhya Pradesh State Government was produced for political purposes in an attempt to lessen the liability charges against Union Carbide and reinforce the low settlement. The convention demanded that the decision be overturned and that "Continuing Liability"—a settlement based on actual treatment, rehabilitation, and compensation costs rather than a lump-sum award—be established (Laughlin, 1993).

Responses from International Organizations

Several international organizations have been formed in response to the plight of the victims. Indians in the United States established the National Bhopal Disaster Relief Organization in April, 1985 with a membership of 450. These individuals raised approximately $3 million which was channeled through the BGPMUS in Bhopal. When informed of the US group, Union Carbide spokesman Dinish Chandra replied that UCC would like to contribute to the fund, but anti-Carbide sentiment in India would require any donations to be "indirect" (i.e., anonymous) (Chemical and Engineering News, 1985d). Two other American based organizations, the International Coalition for Justice in Bhopal—a group working to expose the link between industrial hazards and human rights violations—and the Citizens Commission on Bhopal, adopted statements calling for an end to the exploitation of developing nations and stricter regulations for industries that manufacture and use toxic chemicals (Abraham, 1985; Laughlin, 1993; see Appendix H for the complete statement of the Citizens Commission on Bhopal).
Two international labor organizations—the International Confederation of Freetrade Unions (IFCU) from Brussels, and the International Federation of Chemical, Energy, and General Workers Unions (IFCEGWU) from Geneva—sent independent investigation teams to Bhopal. Both teams in their analyses of the events concluded that the sabotage theory was implausible and the water that initiated the chemical reaction entered the tank through the process lines that were being cleaned. In addition, the unions issued statements supporting the victims rights groups and charging Union Carbide with full financial responsibility (Chemical and Engineering News, 1985f).

The International Organization of Consumers Unions (IOCU) at their 11th annual World Congress in Bangkok, December 9-14, 1984 issued this resolution.

Following the devastating toll of human life and suffering taken by the worst chemical disaster the world has yet known, the General Assembly deplores the gas leak tragedy in Bhopal, India, as the latest evidence of gross lack of care to ensure consumer safety by multinational corporations in Third World countries, and calls upon the appropriate authorities to impose and enforce stronger environmental and safety regulations; penalties for all who transgress them; and redress and compensation for all who suffer. (Abraham, 1985:23).
In addition, the World Congress agreed on the following actions.

(1) To carry a "Bhopal Never Again!" banner, which was signed by some 380 Congress participants from over 90 countries, to the UN which was then debating the UN guidelines on Consumer Protection in New York, then to present the banner to the headquarters of Union Carbide Corporation. (2) To appoint a special committee to identify hazards in the manufacture, storage and use of pesticides, and to demand sufficient safeguards through international forums. (3) To demand that Union Carbide and other TNCs in the pesticide business follow the ILO, UNEP and FAO guidelines with regard to safety in the manufacture and marketing of pesticides the world over. (4) To collect information on the immediate and long-term hazards to life and the environment from the Bhopal disaster. (5) To undertake a comprehensive study of the Bhopal holocaust from various aspects, including the role of the government agencies; the efficacy of regulatory measures or the lack of them; the design, safety, licensing and production processes; and negligence on the part of Union Carbide to provide information to the public about the hazards of MIC. (6) To document and build a data base on the Bhopal tragedy. (7) To set up a new IOCU Working Group on Hazardous Technologies (Abraham, 1985:23).
The IOCU also published a book that summarizes the disaster, examines other “potential Bhopals”, and offers remedial measures to prevent the occurrence of similar tragedies (Abraham, 1985).

The Global Meeting on Environment and Development for NGOs was organized by the Environment Liaison Center in Nairobi, Kenya, for the week of February 4-8, 1985. At the Meeting, delegates appealed to NGOs the world over to set aside a special day to commemorate the Bhopal tragedy. NGOs were encouraged to promote “Bhopal Day” through press conferences, public seminars, petitions supporting campaigns against exporting hazardous products and technologies to developing countries, and fund raising efforts for the victims of the disaster (Abraham, 1985). At the conclusion of the meeting, the attending NGOs launched a “No-More-Bhopals” network of loosely organized public interest groups working towards treatment, compensation and justice for the victims (Abraham, 1985).

The International Medical Commission on Bhopal was formed in 1992 at the request of the Bhopal gas victims organizations and several other NGOs who were frustrated with the indifference of Indian Government officials and the medical establishment to the problems victims were having getting compensation and treatment. The Commission found that several cases that had been diagnosed as psychosomatic were in fact cases of chronic neurotoxicity. In a general press release, the Commission condemned Union Carbide and the settlement. The Commission concluded that “the conditions for compensation claims [were] based on
discrimination, biased judgment, and inappropriate use of medical evidence” (Kumar, 1994:284).

In addition to providing treatment, rehabilitation and compensation to the disaster victims, these and many other organizations continue to work to symbolize Bhopal, to place the disaster within a larger context. Bhopal has become an example of how developing countries have been subjected to exploitation and abuse from multinational corporations and from developed countries. “The agenda of symbolizing Bhopal is similar to that of Japanese writers on Hiroshima who insist that the Bomb not only be remembered as an awesome technological achievement but also for its capacity for devastation” (Laughlin, 1993:61).

**International Governmental Responses**

A multitude of responses to the Bhopal crisis came from governments in the international arena. Many of these responses were aimed at India and Union Carbide. However, many others (especially governmental and industrial responses) were reactions to threats or perceived threats from domestic chemical processing and manufacturing.

Immediately after the disaster, France and Brazil refused to allow shipments of MIC headed for Union Carbide plants in these countries into their ports. Responding to rising public sentiment, Union Carbide voluntarily halted production at their pesticide plant in West Virginia pending a thorough safety inspection. Union Carbide subsequently reformulated their manufacturing process at their West Virginia, Bezi...
(France) and Sao Paolo (Brazil) plants to eliminate the use of MIC (Basta, 1985; Chemical and Engineering News, 1984b; 1985c).

In the area of legislation, major policy initiatives were begun in the United States and Europe. In the US, several House subcommittees began hearings on amendments to the EPA and OSHA laws regulating the manufacture and use of hazardous substances. Eventually, Congress would enact what came to be known as the Superfund, Emergency Response, and Community Right-To-Know Laws. These laws required producers and users of dangerous chemicals to notify the local authorities regarding the types and amounts of chemicals they stored on-site and their operations that used dangerous chemicals and establish integrated emergency response programs with local governments (Long and Hanson, 1985; Stover, 1986).

In addition to the United States legislation, several European governments have proposed or enacted stricter controls on the production and use of hazardous materials. The Dutch Government revised its legislation regulating the export of hazardous chemicals, requiring exporters to provide documentation indicating the receiving country has consented to the importation of the specified chemical. Sweden, in turn, passed legislation that would require consent from the government to import hazardous chemicals (Abraham, 1985).

In Belgium, the Flemish Regional Environment Ministry denied Union Carbide a permit to expand its storage capacity at its Malle facility, even though the storage was to be for non-hazardous material. The United Kingdom’s Health and Safety Commission submitted a proposal to Parliament to repeal laws preventing the
Commission from disclosing information to communities regarding hazardous operations at nearby industries (Abraham, 1985). The proposal was approved in early 1996.

**Responses from Industry**

Responses from the chemical industry focused mainly on community safety procedures and evaluating ways to minimize the risk of hazardous operations. In a press release on March 25, 1985 (see Appendix F), the Chemical Manufacturers Association announced a series of initiatives designed to “increase public access to hazard information about chemicals” (Abraham, 1985:57). The American Institute of Chemical Engineers established a Center for Chemical Plant Safety to evaluate existing procedures for assessing industrial hazards, develop safer methods of storing and handling hazardous chemicals, and to evaluate plant operation and safety training (Abraham, 1985).

At an international symposium held in London November 7-8, 1985, entitled *The Chemical Industry After Bhopal*, hosted by the Chemical Manufacturers Association, the CMA outlined two programs the Association implemented early in 1985. In a statement made at the introductory address, J. D. Rimington, Chairman of the international symposium, said that the programs were in response to public fears about other “Bhopals” occurring elsewhere. Rimington stated that “it is difficult to imagine an identical disaster in this country [England], but, nevertheless, it is now part of the public perception of the chemical industry that this kind of thing could happen” (Rimington, 1986:3). These programs, the Community Awareness and Emergency
Response Program (CAER) and the National Chemical Response and Information Center (NCRIC), were designed to help the chemical industry comply with the recent *Emergency Response* and *Right-to-Know* legislation. CAER provides informational resources and trained personnel to both chemical plants and communities. The NCRIC established a two 24 hour-a-day telephone information and response lines. The first line, known as CHEMTREC, provides critical response for transportation incidents. The second line, CHEMNET, provides emergency response for on-site hazardous chemical incidents (Stover, 1986)

At the 1985 CMA symposium, J. B. Browning, Union Carbide’s Vice President of Health, Safety, and Environmental Affairs, in addition to extolling the contributions Union Carbide has made to the Indian economy, presented the results of Union Carbide’s investigation into the causes of the Bhopal disaster (see Appendix F for the complete presentation). After concluding his presentation of the investigation results, Browning announced that Union Carbide had begun a program to reduce the inventories of hazardous chemicals their plants would maintain on a daily basis. Browning also informed the symposium that Union Carbide had conducted a “plant-by-plant, facility-by-facility” risk assessment of their other operations and had begun implementing improvements to their safety management programs (Browning, 1986).
CHAPTER VI
DISCUSSION AND CONCLUSIONS

Introduction

As shown in the preceding chapters, the repercussions of the Bhopal disaster can still be felt more than a decade after the event. Despite the continuing efforts of local relief groups, many of the victims have yet to receive compensation for their suffering and probably many never will. Former Union Carbide Chairman Warren Anderson (now retired) and other Union Carbide executives remain charged with a variety of criminal offenses, but will most likely never be brought to trial. Many experts agree that the settlement the Indian Government reached with Union Carbide in the Indian courts was substantially less than if the case had been tried in the American courts. The settlement was considered a sellout by Indian opposition parties, instigated to induce multinational corporations to continue investing in Indian industry. Since the Bhopal disaster, India’s environmental policies have improved, but poverty, population pressures, and corruption continue to undermine their effectiveness.

India’s political landscape has been characterized by Khator as one in which public opinion is relatively unimportant in policy formation. According to her, the “impetus for the environmental movement came from the government itself” in response to international pressures rather than in response to an increase in national
public opinion such as has taken place in industrialized nations in the past decades (1991:196). As a result of this governmental impetus, environmental conflicts have not been resolved. Rather, India's environmental policy development has focused on reconciliation; that is, it has depended on pacifying activists by enacting laws that appear to provide substantial regulation of polluting industries, but in actuality are easily circumvented by unprincipled companies through bribery and threats. Indian environmental policies emphasize political feasibility, instead of seeking solutions to environmental problems (Khator, 1991).

This thesis focuses on the interaction of three opposing groups, the Indian Government, Union Carbide, and the environmental nongovernmental organizations in their responses to the Union Carbide disaster in Bhopal. The disaster is viewed as an independent variable that has elicited responses—what Bennett (1976) refers to as adaptive strategies—from all three teams. Each team's responses to the incident, and to the events following the incident, were based on a set of prioritized objectives.

Union Carbide's primary response was to maintain a low profile after the accident. Their main objectives were to minimize the loss of business as a result of the accident, to assure stockholders that this was a temporary setback, to prevent excessive new regulations both nationally and internationally, and to prepare for the inevitable lawsuits. Union Carbide's strategies were aimed at limiting their liability and presenting a positive corporate image.

The Indian Government had several, sometimes contradictory, objectives after the accident. The most obvious of these were to help the victims of the disaster, while
avoiding overtaxing its own economic resources in the relief efforts. The government had also to minimize the advantage the disaster created for opposition parties to gain power and it had to ensure that foreign companies were not driven away from India by an excessive settlement. To meet these objectives, the government employed several strategies which will be discussed in later sections of this chapter.

Activist organizations involved with the disaster also had several objectives in addition to providing relief for the victims. As mentioned in Chapter III, many of the organizations that were involved in the Bhopal disaster were not solely environmental groups (Khatore, 1991). For these nonenvironmental organizations, incorporating the disaster into their existing agendas was a primary objective. One strategy to achieve this objective was by using the Bhopal disaster to symbolize a wide range of issues, including the exploitation of developing countries by multinational corporations, and the failure of rationalism and scientific discourse to adequately address the ills of developing countries (Laughlin, 1991).

The magnitude of the disaster increased the demand in the Bhopal area for many of the types of services offered through nonprofit organizations. These services included fund raising to purchase food and medical supplies for the victims, distributing aid to the victims, publicizing the plight of the victims, and pressuring the government to provide compensation and rehabilitation to the victims. To meet these demands, new organizations were entrepreneurially created and existing organizations expanded the size and scope of their operations.
Environmentalism: Grassroots Initiative or Vanguard Mobilization?

There has been much written on the “Environmental Movement” and its rising popularity as a type of social movement. Environmentalists are generally seen as educated urban middle class individuals with liberal political views (Dunk, 1994; Jones and Dunlap, 1992). Mario Diani in his survey of recent social movement literature has constructed a definition that incorporates common elements from several theoretical perspectives. According to Diani, “a social movement is a network of informal interactions between a plurality of individuals, groups and/or organizations, engaged in a political or cultural conflict, on the basis of a shared collective identity” (1992:13). With this definition in mind, I will discuss the dynamics of India’s environmental movement in the context of the Bhopal incident.

Most of the publicity regarding India’s growing environmentalism has focused on local participation and community action as the key to its spread. In addition, much of the literature regarding environmentalism in India has labeled the movement as a grassroots one (Agarwal, 1985a; Berreman, 1989; The Economist, 1990; Gadgil, et al., 1984; Gupta, 1988; Hattangadi and Rubin, 1996; Jalees, 1985a; Karan, 1994; Khator, 1991; Laughlin, 1993; Newman, 1989; Prime, 1992; Sen, 1992). Pictures of elderly women in villages with their arms wrapped around trees as unscrupulous businessmen advanced with chainsaws growling vividly conveyed that image in the media covering the Chipko Aandolan movement and its protests against deforestation.

Can the concept of a grassroots movement, however, adequately explain the dynamics of India’s environmentalism? David Kowalewski, in his study of a small
community in upstate New York, offers some insight into the forces behind environmental movements (1995). Kowalewski identifies two models for the analysis of social movements. The Grassroots Initiative model is characterized by spontaneous protest derived from long standing grievances, usually related to economic conditions, among the lower classes. These protests are sparked by some particular action or event that puts people "over the edge." Once these groups have exhibited enough support, the middle classes side with the lower classes. When the political elite realizes the level of support the radicalized groups have gathered, they abandon the more conservative economic elites and throw their support behind the masses. The issue then is incorporated into the political agenda and concessions are made in the established policies to appease dissent. Once the protests subside, the middle classes revert to supporting the elites.

In the Vanguard Mobilization model, conflict originates from a politico-ideological struggle between a disenfranchised middle class and ruling elites. According to Kowalewski, "the grassroots rise up after middle class citizens, in particular young, educated, liberal, urban professionals apply their ideological and organizational skills to popular mobilization" (1995:54). These middle class sectors have the educational and economic resources to maintain a concerted effort to radicalize the lower classes. However, once support increases from the lower classes, the movement becomes socially down-scaled and conservatized. Socioeconomic grievances, rather than idealistic differences, are brought to the forefront of the movement's agenda. As the movement becomes more conservatized, the middle class
initiators become disillusioned, become more dissent oriented and less active in conventional politics. Once political elites perceive that middle class support for the movement is diminishing, they in turn begin withholding their support.

Kowalewski indicates that the two models may be time-dependent. According to him, the Vanguard Mobilization model would be more useful in the early stages of a movement, and the Grassroots Initiative more applicable as the movement develops. I would contend that in the case of India’s environmental movement, Kowalewski’s models are not mutually exclusive. Given Kowalewski’s definitions, the Grassroots Initiative can best be applied to event oriented conflict, whereas the Vanguard Mobilization can be seen as indicative of sustained conflict.

The demonstrations that followed the Bhopal accident and that have continued with each anniversary of the leak consist mainly of lower class individuals—victims, laborers, and shanty town residents—that form the Grassroots Initiative. The main opposition to the Central Government’s handling of the disaster, however, comes from the Vanguard Mobilization—relief organizations and environmental groups on both the local and national levels. As discussed previously, these groups consist of educated, largely unemployed professionals from the middle class sectors, the same sectors mentioned in the Vanguard Mobilization model of Kowalewski as having the educational and economic resources to mount a sustained opposition. In short, the evidence suggests that repercussions of the Bhopal disaster exhibited and continues to exhibit characteristics of both models, spontaneous protests by the masses occurring in
conjunction with a sustained oppositional campaign conducted by radicalized middle class sectors.

While both the lower class demonstrators and the middle class activists rely on public protest to demonstrate their opposition to the government, they employ different, and complimentary, methods. The lower classes use their large populations to their advantage by organizing protests that not only gather intense media coverage, but also disrupt business and city operations. The middle classes use their educational and organizational skills to spread awareness about environmental issues and about the adverse effects of the government’s current policies.

Protest as Propaganda

When examining the protests of the activists, two methods of confrontation were and continue to be employed—public demonstrations and rhetorical dissemination. The demonstrations staged by the local organizations in Bhopal focused on two subjects—the supposed collusion of the Indian Government with multinational corporations in their exploitation of the poor, and the lack of adequate compensation for the victims. The first organized march, the Chakkajam attracted 10,000 participants. In addition to the earlier mentioned Dhikkar Divas and the Rail Roko, several marches and sit-ins occurred in front of the residence of the Madhya Pradesh Chief Minister, Argun Singh. Participants in these demonstrations were mostly individuals from the lower classes, many of them victims or relatives of victims (Agarwal, 1985a; Everest, 1985; Weir, 1987).
Although the protests were designed to focus attention on the plight of the victims while adhering to Gandhian ideals of passive resistance (Peritore, 1993), there have been outbreaks of violence. During one demonstration in Bombay, members of the BGPMUS overran and smashed the corporate offices of Union Carbide. Most of the female members felt that this was an appropriate response to the perceived indifference of Union Carbide to the problems of the victims (Laughlin, 1993).

Local authorities in Bhopal were at times also not opposed to using violence to control the demonstrations. Several members of the ZGKSM, one of the groups organizing the demonstrations, were arrested and jailed during the protests (Agarwal, 1985a). Police guarding the plant after the gas leak were overwhelmed by an angry crowd who tried to storm the gates. The police, in their attempts to control the crowd, incited a panic that injured several individuals by telling the protesters that another gas leak was in progress (Everest, 1985).

While the Bhopal protests against Union Carbide and the government rarely addressed environmental concerns, one aim of the middle class activists was to combine the demonstrators’ concerns with public health and the victims’ compensation with issues of environmental health and preservation (Karan, 1994). One unidentified Indian activists stated that “the Indian environmental movement must be an economic movement, a human rights movement, and a movement contesting the nature of state power and its legacy of conspiracy with imperialism” (Laughlin, 1993:vi). The Bhopal disaster is therefore portrayed as a symptom of the larger problems facing Indian society.
These larger issues of human rights and government culpability are addressed through the rhetorical strategies of the nongovernmental organizations. Laughlin (1993) discusses four writing forms employed by the activists in their attempts to incorporate the Bhopal disaster into their agendas for social change. These are advocacy, descriptive/historical, analytic/hermeneutic, and fictive forms. Each of these conveys different information and addresses different audiences. The following paragraphs briefly discuss these forms.

Advocacy writing in the Bhopal tragedy consisted mainly of attempts based on persuasion to influence legal or legislative decisions in favor of the victims. Examples of advocacy writing included arguments addressed to the American courts urging a reversal of the decision to dismiss the civil suit (see Appendixes H, I), and pamphlets and notices urging public support for the victims (Abraham, 1985; Agarwal, 1985a; Bhopal Action Group, 1989; de Grazia, 1985; Everest, 1986; Laughlin, 1993).

Most of the writing produced by activists Laughlin categorizes as descriptive/historical. This method of writing is used to provide information regarding the Bhopal disaster. These accounts stand on their own, “without the need of explicit ideology” (Laughlin, 1993:iii). The implication in these writings is that the audience, having read the information presented, will arrive at the intended conclusions without the author stating these conclusions.

Examples of analytic/hermeneutic writing given by Laughlin show attempts to involve audiences through rhetorical questioning in a discourse aimed at elucidating activist positions regarding specific issues, and educating the audience in the objectives
of the activist organizations. Not only are these writings scaled to the educational level of the audience, they are also designed to situate the organization’s objectives within a broader context. This context is one in which issues of environmentalism, social justice, and human rights are coherent and consistent with the audience’s social background.

The last writing style, the fictive, involves the depiction of fictitious events that illustrate the consequences of negative environmental and social practices. One example, a play entitled *Water*, depicts a village where untouchables, seeking to escape the exploitative prices of the ruling Brahmans for water, construct a dam to capture water for themselves. The dam lowers the river level to such an extent that crop irrigation is threatened. In reaction, the Brahmans destroy the dam and order that anyone who attempts to build a new dam is to be shot. This and similar stories, performed in village theaters, examine how traditional modes of oppression—caste and gender roles—can provoke conflict and violence. They also portray how traditional social structures can contribute to ecological degradation (Laughlin, 1993).

Of the forms of protest discussed, public demonstrations gained the most publicity for the activists’ causes. Mass demonstrations are media friendly events that offer the press dramatic scenery—thousands of people blocking the streets and chanting; they offer easily understood themes—the deaths of thousands of innocent people. The intent of the demonstrations was not so much to convey information about the activist causes, but rather to show the level of support for the causes. The purpose of the rhetorical strategies was to project information concerning the disaster,
the activists’ position to the government’s responses and the activists’ organizational philosophy.

Information and Media Manipulation

In *Stratagems and Spoils*, Bailey discusses how politics encourages the intentional deviance from normative rules of behavior. According to Bailey, politics leans toward a “calculated lack of clarity”, or “intellectual disorder” (1969:86). He describes how on one occasion an intentional insult to one individual in a meeting broke up the entire meeting. This had been the intent of the individual who made the insult. The reason for this lack of political transparency comes from the pressure in political competition to find ways of skirting the rules without being caught. Having an unnamed source leak damaging information about a competitor is an example.

In the Bhopal conflict, disorder was and continues to be fostered by the manipulation and control of data gathered regarding the disaster. One method used by the government immediately after the accident was to restrict the amount of information that was released. The government was able to do this by barring entry into the plant to everyone except government officials, which left reporters dependent upon official press releases for information regarding the situation in the plant. In India, the broadcast media is a strictly controlled state monopoly (Ram, 1985c). This allowed the government to dictate what was released over the airways.

Another method of information manipulation used was to dispute the validity of information released by the opposing side and by offering conflicting accounts of the events that caused the leak. As discussed in Chapter III, casualty rates, number of
affected persons, types and amounts of permanent injuries, and the number of compensation claims processed are figures that have been argued over by the government and the relief groups. Activists, medical authorities, and international organizations have consistently stated that the death toll from the accident was much higher than the government’s estimate. Other contested figures include the extent of the damage to the environment and agricultural products, total economic costs including lost wages, medical and rehabilitation expenses, and loss of business revenues from the leak and the protests that followed. The accuracy of the information is easily disputed because it is based on estimated amounts.

A related method of information manipulation used extensively by all the groups consisted of publicizing conclusions that favored their own positions. The Indian Government and Union Carbide each conducted separate investigations. Each of their investigations favored a sequence of events and/or a cause of the accident that would be least damaging to the group sponsoring the investigation. The Indian Government conjectured that a small amount of water was accidentally introduced into the storage tank through negligent maintenance personnel. Union Carbide alleged that the accident was the result of sabotage. Several activist groups released their own publications regarding the disaster. Their conclusions range from a conspiracy between Union Carbide and the government to hide blatant disregard of safety regulations, to allegations that Union Carbide was conducting chemical warfare experiments (Banerjee, 1986; Everest, 1986).
To date, there has been little conclusive evidence uncovered that would help in determining the cause or causes of the accident. Whereas all parties agree that the introduction of water into the storage tank was the immediate cause of the reaction, no one can agree on how the water entered the tank or even the amount of water in question. Union Carbide contends that a disgruntled worker intentionally added the water to the tank, a scenario that both the government and activists discount. Without convincing proof for either side’s account, criminal prosecution of Union Carbide officials or a saboteur seems unlikely.

On the surface, this may seem like an undesirable situation for the Indian interests. However, not all these interests would benefit from a criminal trial, in particular the Indian Government. If Union Carbide officials were brought to trial, information might emerge that could prove the government’s complicity in the accident and verify the allegations made by activists. If a saboteur were prosecuted, it would bolster Union Carbide’s case for a smaller settlement. Moreover, a conviction of sabotage would show the government’s incompetence in the investigation, and embarrass those victims’ representatives that accused Union Carbide of negligence. For the Central Government, in essence, any criminal trial would be a no-win situation.

Motives

As discussed in Chapter II, Bailey asserts that political competition followed an orderly progression. The responses from the Indian Government and the activists to the Bhopal crisis conformed to both explicit and implicit rules of interaction. The Central Government’s responses—superseding the State’s jurisdiction, closing the
plant to unauthorized personnel, and charging Union Carbide Corporation instead of just Union Carbide India Ltd.—were all within its legal authority. The activists, through their protests and publications, also worked within their legal boundaries. In the early stages of the aftermath, both parties responded predictably.

Once the Indian Government, however, perceived that the resolution of the compensation issue by the established rules could potentially damage its administration, it decided to change the rules (Manning, 1985b). The Bhopal Act was the result. The activists responded to the Bhopal Act by organizing protests and disseminating information that criticized the effectiveness of the Bhopal Act and the motives of the government (Agarwal, 1985b; The Economist, 1989; Galanter, 1985; Webber, 1985b). The government then released its own information promoting its responses and assuring the public that its programs to help the victims were working.

The Bhopal trial provides an example of two teams, the government and activists, with supposedly similar purposes in mind—the prosecution of Union Carbide and the recovery of damages for the injured. The responses of each side, however, would indicate other objectives held higher priorities. In applying Bailey’s model to the Bhopal tragedy, the purpose of helping the victims seems to have been established as a normative rule for both the government and the activists. Conversely, the pragmatic rule seems to be that other objectives had higher priority (Bailey, 1969).

The government’s highest priority in any situation will be its continued existence, not only the existence of the Indian Government as an institution, but also in the preservation of the incumbent party in power (Carras, 1972; Parsons, 1964). In
order to maintain their ruling status, the incumbent party must contend with oppositional factions within the political structure, rival parties. Therefore, information that could prove disastrous to the government, even information that could increase the compensation of the victims, must not be allowed to fall into the hands of competitors.

For many of the NGOs, survival is also their highest priority. Some of the NGOs that were created solely for the benefit of the victims have vowed to continue fighting for workers rights and social justice so “Bhopal will never be forgotten” Other organizations exist as subsidiaries of larger organizations. For many of these organizations, their protest of the Bhopal disaster is a show of support for reconsidering social values. They regard this as a “higher purpose” than merely fighting for more money for the victims. In essence, the goals that the activists work for elevate the organization above the material benefits, including compensation of the victims, that they might achieve. In addition, this higher purpose can justify their continued existence even if they fail to produce any material benefits for the victims.

While the NGOs’ contributions to the victims’ material welfare is uncertain, the material contributions to their founders and managers is not. By establishing and managing new nongovernmental organizations, many educated unemployed-turned-activist professional middle class individuals were able to satisfy a combination of needs. These included such basic needs as income generation, but they also include more tangential issues such as social status, the desire to participate in the political process and the challenge of establishing and owning a business (Young, 1983). This
is not to say that the NGO entrepreneurs and managers were and are not committed to the ideals represented by their organizations. Yet, by establishing and managing nongovernmental organizations, they follow entrepreneurial strategies that allow them to satisfy both individual and societal objectives.

Many of the environmental NGOs, while professing to be nonpolitical, maintain political agendas. Indeed, many environmental activists distrust all politicians and therefore prefer to work outside the official political structure (Laughlin, 1993). Therefore the ruling party must contend with two opponents, oppositional political parties and activist groups. In addition, the apolitical nature of these organizations does not exclude individuals in these groups from participating in political activities.

In the Union Carbide case, the main threat to the government from political opponents and activists came from two sources. First, if a civil or criminal case had gone to trial against Union Carbide, there was the chance that testimony could have emerged during the trial that would have damaged the government’s credibility or implicated the government in the disaster. Such testimony would have provided ammunition for the opposition parties in their attempts to unseat the incumbent administration. Second, the Indian Government also had to ensure that Union Carbide was held accountable financially for the disaster and that the victims received compensation.

In addition to satisfying the activists’ concerns regarding adequate compensation for the victims, the government had to make sure that any civil settlements with Union Carbide by victims did not jeopardize future foreign investment
in Indian industry. The ratification of the Bhopal Act in 1985, as mentioned in Chapter IV, enabled the government to exert total control over the legal proceedings against Union Carbide. This allowed the government to work out a settlement with Union Carbide that was seen as favorable by the international business community, while avoiding a potentially damaging court trial.

Conclusions

While the terms "competition" and "game" seem to trivialize the political process, Bailey states that in a sense politics are considered secondary by the public, secondary to raising families or providing enough to eat (Bailey, 1969). While for many people this is true, participants in the political arena consider politics their bread and butter. Professional politicians and individuals employed by political organizations consider their work as important to their survival as a coal miner, engineer or secretary would consider their work important. Politics becomes a means of livelihood to those who carry it out. Consequently, what the public may consider secondary in their lives, the "game" of politics can have very serious consequences for the losing side. In a very real sense, the politics of the Bhopal disaster affected not only the continued existence of the thousands of surviving victims of the accident, but also of the Indian Government officials, Union Carbide executives and workers, and of the activists embroiled in the struggle.

The framework of political competition surrounding the Bhopal disaster was affected by a host of physical and social environmental factors. The existence of electoral politics in India, which facilitated the rise of western environmentalism, and
the rise of an urban middle class has challenged traditional hierarchically based system-maintaining norms at the city level (Daniels, 1991; Heginbotham, 1975; Seshadri, 1995; Yocum, 1992). State governments still exert great power over the cities in India, but the Central Government can supersede the state's authority at any time as it did in Bhopal following the disaster (Oldenburg, 1976).

Since independence, Indian cities have become culturally more diverse and the urban populations have become increasingly subject to political uncertainty (Jones, 1974). Of the 25 metropolitan areas with more than one million residents, only four cities have a two party system. The other cities, Bhopal included, contain numerous independent parties (Anderson, 1995; Oldenburg, 1976). Local interest groups, party and factional alliances surface as communities compete for funding and for the patronage of municipal administrators. Corruption runs rampant in cities as government officials use their positions to grant favors in exchange for citizens' support (Carras, 1972; Ember, 1985; Groenfeldt, 1991; Jones, 1974). It is not surprising, therefore, that attempts at coordinated urban environmental management in these cities are met with suspicion (Gadgil et al., 1984).

Within these urban conglomerates, Indian environmentalists attempt to educate residents about environmental issues and to attract followers to their cause. This is no simple task. Environmental attitudes tend to rise and fall with economic highs and lows, and many environmental issues are not perceived as serious enough to warrant diverting attention away from other problems (The Economist, 1990; Varadan, 1993).
Many of the tactics used by activists, such as marches and sit-ins, are designed to attract attention for this reason.

As environmentally related problems continue to appear that threaten the health and safety of communities, opportunities for environmental activism and environmental organizations will increase. Growing monetary allocations and private donations for environmental preservation provide opportunities for established NGOs to expand and for more entrepreneurs to enter the nonprofit sector. Consequently, the nature of the relationships between these organizations, local, state and national governments, and international entities will change. However, while the players and the rules of the game might change, the game itself will remain the same.

Topics for Further Study

The debate surrounding technology and the environment illustrates one of the major themes in anthropology today; that is, the role of globalization and modernity in cultural change (Robertson, 1992). Environmentalism confronts established attitudes regarding social equality and regional isolation. In India, traditional caste and gender roles conflict with the egalitarian nature of the environmental movement. Environmentalism must encompass both global and regional perspectives to be effective. How are activists achieving this goal? How is environmentalism changing global attitudes and perspectives among India’s urban populations? Laughlin’s work has show how some activists have attempted to integrate environmental values into Indian communities through traditional modes of expression (1991). In the case of the Bhopal disaster, activists have associated environmental issues with the health and
fertility of communities surrounding industrial areas. More comparative research on how environmental awareness has been incorporated into traditional viewpoints, however, is needed.

Another topic meriting further study relates to the roles Indian environmental nongovernmental organizations play in local economies. How much external funding do these organizations receive? Where and how is the money being spent? Who actually benefits the most from local environmental development programs? Meyer suggests that environmental NGOs in Latin America benefit their founders as much as the communities they work in and should be viewed as entrepreneurial entities rather than altruistic organizations (Meyer, 1993, 1995). While my thesis contends that this is true for India, my conclusions are based on circumstantial evidence gathered through library research. To support these conclusions, field research in Indian metropolitan areas that focuses on the economic activities of environmental NGOs is needed.

Environmentalism as a social phenomenon will continue to expand as we enter the twenty first century. An understanding of the complexity of the motivations and forces promoting that expansion will assist us in documenting the changes that these movements continue to cause in culture and society.
REFERENCES CITED


APPENDIX A

MAPS AND FIGURES
FIG. 1. Chart showing the resources for development and relief activities allocated to nongovernmental organizations from 1974 through 1990 in $ millions (Organization for Economic Cooperation and development, 1992).
FIG. 2. Map of India showing the state of Madhya Pradesh and the city of Bhopal.
The System that Failed

2. The Vent Gas Scrubber is supposed to spray caustic soda on escaping vapours to neutralise them. The scrubber was under maintenance.

3. Vent Line Poisonous MIC vapour escaped from the top of the 33 meter high vent line.

4. The Refrigeration System keeps MIC cool but was out of commission and tank 610 could not be cooled to slow down the reaction.

5. The Water Curtains which could have neutralised the MIC was designed to reach a height of 12 to 15 metres, but the MIC vapour was gushing out 33 meters above the ground.

6. The Flare Tower could not be used because a length of piping was corroded and had not been replaced.

FIG. 3. Diagram showing the safety systems that failed or were inoperative during the night of the gas leak (Agarwal, 1985a:207).
FIG. 4. Map of the city of Bhopal showing the location of the Union Carbide plant and the dispersal pattern of the gas during the leak (Agarwal, 1985a:207).
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This report supplements the information provided in The State of India's Environment – 1982 and is not a substitute for it.

The report has gone to print in various stages and several officials have since changed. The Prime Minister referred to in the report is Mrs Indira Gandhi, except where stated otherwise.

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APPENDIX B

ADDRESS OF PRIME MINISTER INDIRA GANDHI AT THE
UNITED NATIONS CONFERENCE ON THE HUMAN
ENVIRONMENT, STOCKHOLM, JUNE 14, 1972
On the one hand the rich look askance at our continuing poverty—on the other, they warn us against their own methods. We do not wish to impoverish the environment any further and yet we cannot for a moment forget the grim poverty of large numbers of people. Are not poverty and need the greatest polluters? For instance, unless we are in a position to provide employment and purchasing power for the daily necessities of the tribal people and those who live in or around our jungles, we cannot prevent them from combing the forest for food and livelihood; from poaching and from despoiling the vegetation. When they themselves feel deprived, how can we urge the preservation of animals? How can we speak to those who live in villages and in slums about keeping the oceans, the rivers and the air clean when their own lives are contaminated at the source? The environment cannot be improved in conditions of poverty. Nor can poverty be eradicated without the use of science and technology.

For the last quarter of a century, we have been engaged in an enterprise unparalleled in human history—the provision of basic needs to one-sixth of mankind within the span of one or two generations. When we launched on that effort our early planners had more than the usual gaps to fill. There was not enough data and no helpful books. No guidance could be sought from the experience of other countries whose conditions—political, economic, social and technological—were altogether different. Planning in the sense we were innovating, had never been used in the context of a mixed economy. But we could not wait. The need to improve the conditions of our people was pressing. Planning and action, the improvement of data
leading to better planning and better action, all this was a continuous and overlapping process. Our industrialization tended to follow the paths which the more advanced countries had traversed earlier. With the advances of the 60s and particularly during the last five years, we have encountered a bewildering collection of problems, some due to our shortcomings but many inherent in the process and in existing attitudes. The feeling is growing that we should re-order our priorities and move away from the single-dimensional model which has viewed growth from certain limited angles, which seems to have given a higher place to things rather than to persons and which has increased our wants rather than our enjoyment. We should have a more comprehensive approach to life, centered on man not as a statistic but an individual with many sides to his personality. The solution of these problems cannot be isolated phenomena of marginal importance but must be an integral part of the unfolding of the very process of development.

There are grave misgivings that the discussion on ecology may be designed to distract attention from the problems of war and poverty. We have to prove to the disinherited majority of the world that ecology and conservation will not work against their interest but will bring an improvement in their lives. To withhold technology from them would deprive them of vast resources of energy and knowledge. This is no longer feasible nor will it be acceptable.

The environmental problems of developing countries are not the side effects of excessive industrialization but reflect the inadequacy of development. The rich countries may look upon development as the cause of environmental destruction, but
to us it is one of the primary means of improving the environment for living, or providing food, water, sanitation and shelter; of making the desert green and the mountains habitable.

The ecological crises should not add to the burdens of the weaker nations by introducing new considerations in the political and trade policies of rich nations. It would be ironic if the fight against pollution were to be converted into another business, out of which a few companies, corporations, or nations would make profit at the cost of the many.

It has been my experience that people who are at cross purposes with nature are cynical about mankind and ill-at-ease with themselves. Modern man must re-establish an unbroken link with nature and with life. He must again learn to invoke the energy of growing things and to recognize, as did the ancients in India centuries ago, that one can take from the Earth and the atmosphere only so much as one puts back to them. In their hymn to Earth, the sages of the Atharva Veda chanted: I quote,

What of thee I dig out,

let that quickly grow over,

Let me not hit thy vitals,

or thy heart.

So can man himself be vital,

and of good heart,

APPENDIX C

THE PLANNING COMMISSION, GOVERNMENT OF INDIA;

SIXTH FIVE YEAR PLAN 1980-1985, INTRODUCTION
APPENDIX D

SELECTED LIST OF NONGOVERNMENTAL ORGANIZATIONS ACTIVE IN ISSUES REGARDING THE UNION CARBIDE CHEMICAL DISASTER IN BHOPAL, INDIA
Indian National Organizations

All India Drug Network
   C-14 Community Centre, Safdurjang Development Centre, New Delhi, 110 016

Bhopal Citizens Committee for Relief and Rehabilitation (Nagrik Rahat Aur Punaruas Committee)
   34 Asiana, Kohefiza, Bhopal 462 001, Madhya Pradesh

Cadre of Media Resources and Action (CAMERA)
   19 Harimal Somani Marg, Bombay 400 001

Centre for Education and Documentation
   3 Suleman Chamber, 4 Battery Street (Behind Regal Cinema), Bombay 400 039

Centre for Science and Environment
   807 Vishal Bhawan, 95 Nehru Place, New Delhi 110 019

Centre for Social Medicine and Community Health
   Jawaharlal Nehru University (JNU), New Delhi 110 067

Consumer Education and Research Centre
   Thakorebhai Desai Smarak Bhavan (Near Law College), Ellisbridge,
   Ahmedabad 380 006, Gujarat

Consumer Education Centre
   4 Sesha Vilas, 3-6-293, 1st Floor, Hyderguda, Hyderabad 500 029, Andhra Pradesh

Consumer Guidance Society of India
   Hutmet-J, Mahapatika Marg, Opposite Cama Hospital, Bombay 400 001

Dehli Committee on Bhopal Gas Tragedy
   C/O Lokayan, 13 Alipur Road, New Delhi 110 054

Dehli Science Forum
   B-1 2nd Floor, J-Block, Saket, New Delhi 110 017

Eklavya
   E1/208 Arera Colony, Bhopal 462 016, Madhya Pradesh
Employees Union Research Group
Union Carbide India Ltd., 17 Dalvi Building, Poibavdi, Parel, Bombay 400 012

Gandhi Peace Foundation
221 3 Deen Dayal Upadhyaya Marg, New Dehli 110 002

Kalos
55 Mamta-A, Appasaheb Marathe Marg, Prabhadevi, Bombay 400 025

Kerala Sastra Sahitya Parishad
Parishad Bhavan, Trivandrum 695 037, Kerala

Lokayam
13 Alipur Road, New Dehli 110 054

Medico Friends Circle
326, V Main 1st Block, Koramangala, Bangalore 560 034, Karnataka

Movements for Environmental Protection
54 Johnny John Khan Road, Royapettah, Madras 600 014, Tamil Nadu

Parisar
C/O Yamuna, I.C.S. Colony, Ganeshkhind Road, Pune 411 007

Parisara
7 Balaji Layout, Bangalore 560 084, Karnataka

Peoples United for No More Bhopals, Movement for a Safe Environment
19 June Blossom Society, 60A Pali Road, Bandra East, Bombay 400 050

Rashtriya Abhiyan Samiti, (National Campaign Committee)
C/O Vibuthi Jha, Advocate, 49 Shyamala Road, Bhopal 462 002, Madhya Pradesh

Society for Participatory Research in Asia (PRIA)
45 Sainik Farm, Khanpur, New Dehli 110 062

Urban Development Institute (Global Futures Network)
38F Maker Tower, Cuffe Parade, Bombay 400 005

Zahreeli Gas Kand Sangarsh Samiti Morcha
C/O R. K. Sharma, EWS-87 Dhobi Ghat (Behind Char Bungalows), Bhopal
462 002, Madhya Pradesh
International Organizations

Asia-Pacific Peoples Environmental Network
C/O Sahabat Alam Malaysia 37 Lorong Birch, Penang, Malaysia

Asian Regional Exchange for New Alternatives (ARENA)
A4 2F, G-Block, Hung Hom Bay Centre, 104-108 Baker Street, Hung Hom, Kowloon, Hong Kong

Australian Consumers Association
57 Carrington Road, Marrickville, NSW 2204, New South Wales, Australia

Bhopal Cyanide Relief Fund, Inc.
13847 E, 14th Street, Suite 118, San Leandro, CA 94578, USA

Bhopal Disaster Monitoring Group
C/O Peoples Research Institute on Environment and Energy 3F Baptist Kaikan, 7-26-24 Shinjuku, Shinjuku-Ku, Tokyo 160, Japan

Bhopal Trade Union Solidarity Group
C/O Transnationals Information Centre of London (TCIL) 54 Ayres Street, London SE1 1EU, UK

Bhopal Victims Support Committee
C/O Southall Monitoring Group, Top Floor, 50-52 King Street, Southall, Middlesex UB2 4PB, UK

Center for Investigative Reporting
4th Floor, 54 Mint Street, San Francisco, CA 94103, USA

Christic Institute
1324 N. Capital Street, Washington, D.C. 20002, USA

Citizens Commission on Bhopal
C/O Natural Resources Defense Council 122 East 42nd Street, New York, NY 10168, USA

Consumer Council of Zimbabwe
P.O. Box UA 582, Union Avenue, Harare, Zimbabwe

Consumers Union of US, Inc.
256 Washington Street, Mount Vernon, NY 10553, USA
Council on International and Public Affairs
777 United Nations Plaza, New York, NY 10017, USA

Division of Occupational Health and Safety
World Health Organization, CH-1211 Geneva 27, Switzerland

Engineering Section- Occupational Health and Safety Branch
International Labour Office (ILO), CH-1211 Geneva 22, Switzerland

Environment Liaison Centre
P.O. Box 72461, Nairobi, Kenya

Friends of the Earth International
1045 Sansome Street, San Francisco, CA 94111, USA

Grun Alternative Liste
Rathaus, Zimmer 170.2000, Hamburg 1, FDR

Highlander Center
Route 3, Box 370, New Market, TN 37820, USA

Industrial Crisis Institute
100 Bleeker Street, Suite 2B, New York, NY 10012, USA

International Centre for Law in Development
777 United Nations Plaza, New York, NY 10017, USA

International Coalition of Activists Against Environmental Damage Caused by Bayer
Hofstr. 27A, 5650 Solingen 11, FDR

International Federation of Plantation, Agricultural and Allied Workers (IFPAAW)
17 Rue Necker, CH-1201 Geneva, Switzerland

International Programme on Chemical Safety- Division of Environmental Health
World Health Organization, CH-1211 Geneva 27, Switzerland

International Youth Federation (IYF)
Klostermolle, Klostermollevej 48, Voerladegard, 8660 Skanderberg, Denmark

IOCU Working Group on Hazardous Technologies
International Organization of Consumers Unions (IOCU), P.O. Box 1045,
Penang, Malaysia
Kalos International
   Metron, Box 1213, Princeton, NJ 08542, USA

The Labour Institute
   853 Broadway, New York, NY 10003, USA

National Wildlife Federation
   1412 16th Street, N.W., Washington D.C. 20036, USA

Nongovernmental Liaison Service (NGLS)
   Palais Des Nations, CH-1211 Geneva 10, Switzerland

Pesticides Working Group
   C/O/ Legal/ Health and Safety Section- Agricultural and Allied Workers,
   National Trade Group of the Transport and General Workers Union, Headland
   House, 308 Grays Inn Road, London WC1 8DS, UK

PRA Associates
   1850 K Street, N.W., Washington D.C. 20006, USA

Rural Coalition
   20001 S Street, N.W., Washington D.C. 20009, USA

Trade Unions International of Chemical, Oil and Allied Workers (ICPS)
   45 Benezut Utca, 1068 Budapest, Hungary

Urban Environment Conference, Inc.
   C/O United Steel Workers of America, 815 16th Street, N.W., Washington,
   D.C. 20006, USA

Wahana Lingkungan Hidup Indonesia (Indonesian Environmental Forum)
   Jalan Suryopranoto, No 8, Jakarta Pusat, Indonesia

Workers Policy Project
   853 Broadway, Room 2014, New York, NY 10003, USA

World Commission on Environment and Development (WCED)
   Palais Wilson, 52 Rue Des Paquis, 1201 Geneva, Switzerland

World Environment Center
   605 Third Avenue, 17th Floor, New York, NY 10158, USA
APPENDIX E

PAMPHLET PRODUCED BY THE BHOPAL GROUP FOR INFORMATION AND ACTION (BGIA).
VOICES FROM BHOPAL
On the night of 2nd-3rd December 1984, 40 tons of toxic gas was released from a Union Carbide pesticides plant in Bhopal, India. In the immediate aftermath, 3000 died and over 400,000 others were exposed and have continued to die and suffer. Misery in Bhopal increases daily as victims begin to suffer the long term effects of toxic exposure and the consequences of damage to their immune systems which makes them prone to debilitating infections. Meanwhile, the struggle for justice continues. Victims continue to speak out about the need for proper rehabilitation programs and for punishment of Union Carbide.

The Union Carbide plant was set up in 1969 as part of the effort to bring Green Revolution prosperity through high yield agriculture that is dependent on heavy inputs of chemical fertilizers and pesticides. The plant was located in an already densely populated area despite city planning codes which require facilities handling hazardous substances to be located away from human settlements. Nonetheless, the plant was not designed to fully accommodate safety precautions, it was poorly maintained and negligently operated. On several occasions prior to the disaster, workers attempted to point out potential hazards but were ignored by the management which was intent on a cost-cutting drive.

The government failed to enforce regulations of safety standards at the Carbide plant because they remained convinced that the benefits of foreign investment and accompanying reliance on chemical agriculture would bring "development" to India. While there is, today, a general concern about the harmful sociological and ecological implications of such "development", the Government response to periodic developmental crises remains essentially symptomatic. Governmental response to the Bhopal disaster has been symptomatic at all levels. Medical care, job generation and housing issues have only been dealt with superficially.

According to a recent study, 70 to 80% of the population in severely affected areas and 40 to 50% in mildly affected areas continue to suffer from breathlessness, fatigue, loss of appetite, loss of acuity of vision, menstrual irregularities, anxiety, depression and a host of other problems. Damages to the respiratory, reproductive, nervous, musculoskeletal and immune systems of the gas victims have been documented in epidemiological studies carried out so far. The 1990 report of studies carried out by the Indian Council of Medical Research states that the death rates among the affected population is more than double that of the unexposed population. Significantly, higher incidence of spontaneous abortions, still births and infant mortality among the gas victims have also been documented in this report.

Despite these deteriorating health conditions, a proper line on medical treatment is yet to be available. Gas affected people continue to be given symptomatic treatment offering only temporary relief, if at all. While Union Carbide continues to withhold information on the effect of released gases on the human body and the means to deal with these effects, research projects sponsored by the Government of India have also yielded little towards a cure. Many observers suggest that there is a governmental will not to know what the released gases were or their long term effects as a way to avoid admission of the magnitude of the tragedy. Hiding the magnitude of the tragedy allows the government to both ignore immediate responsibilities to provide aid to victims and to ignore the need to change economic policies which promote investment into hazardous industries, particularly those operated by multinational corporations.

Another symptomatic response to the disaster has been the government's disproportionate emphasis on interim relief rather than on job generation. While the interim relief available since last June has significantly lessened the economic deprivation of gas affected people, its disbursement has been highly corrupt and inefficient. Further, the interim relief payments of Rs 200 per person per month will only
be given for three years. The government has made no long term plan to create jobs suitable for a permanently disabled population. Prior to the disaster, the majority of the victims earned their living through hard physical labour. Exposure to Union Carbide's gases has led to a substantial reduction in their capacity to work. Hence, there is an urgent need for provision of jobs to the gas victims in accord with their health condition. It has been suggested that a substantial number of gas victims can be employed to provide medical, educational and other services that are essential for the rehabilitation of the community.

A third symptomatic response spearheaded by the government has been a "Bhopal Beautification Plan" which legitimated the demolition of a larger number of houses in the areas adjacent to the Carbide plant. In June 1990, residents were given a few moments' notice before bulldozers rolled over their homes. They were not compensated for loss of property; further, the long process of compensation for gas exposure compensation was disrupted because identification of claimants is based on residential addresses. These unnecessary and illegal demolitions to beautify Bhopal occurred while gas affected people continue without access to clean drinking water, hygienic living conditions or pucca houses. These basic needs of gas affected people have been ignored despite clear documentation of gas induced damage to their immune systems which makes them susceptible to infections.

Meanwhile, the case against Union Carbide is yet to cross the preliminary stages of litigation. Currently, the Supreme Court is hearing the review petitions that challenge the validity of the February 1989 settlement between Union Carbide and Government of India. Unless the settlement is struck down, Union Carbide will be absolved of all civil and criminal liabilities in return for a sum of 470 million dollars. Conservative estimates have placed the cost of medical care and surveillance alone in the range of 600 million dollars. Further, it is clear that a settlement of 470 million dollars will not have any deterrent effect on the hazardous operations of big corporations. Among gas victims, faith in the legal process is not strong; the courts are seen to be part of the establishment that benefited from Carbide's operations. Victims forcefully argue that they would have been ignored completely had they not carried out sustained public protest, insisting that their lives not be sold in exchange for the glamour of Indian participation in global capitalism.

People's struggle in Bhopal has been strong and sustained since the gas tragedy. Victims and those who support their cause believe solidarity to be the only way to justice and to transformation of the institutional structures which caused the Bhopal tragedy. Solidarity is seen as the only way to insist that communities like those in Bhopal will not accept impositions of risk that serve the interests of multinational corporations. Solidarity against Union Carbide is the only path to a world without "Bhopals".
The night the gas leaked, I was sewing clothes sitting next to the door. It was around midnight. The children’s father had just returned from a poetry concert. He came in and asked me, “what are you burning that makes me choke?” And then it became quite unbearable. The children sleeping inside began to cough. I spread a mat outside and made the children sit on it. Outside we started coughing even more violently and became breathless. Then our landlord and my husband went out to see what was happening. They found out that some gas had leaked. Outside there were people shouting “Run, run, run for your lives.”

We left our door open and began to run. We reached the Bharat Talkies crossing where my husband jumped into a truck full of people going to Raisen and I jumped into one going towards Obaidullahganj. It was early morning when we reached Obaidullahganj. The calls for the morning prayers were on. As we got down, there were people asking us to get medicines put on our eyes and to get injections. Some people came and said they had made tea for us and we could have tea and need not pay any money.

Meanwhile, some doctors came there. They said the people who are seriously ill had to be taken to the hospital. Two doctors came to me and said that I had to be taken to the hospital. I told my children to come with me to the hospital and bade them to stay at the hospital gate till I came out of the hospital. I was kept inside for a long time and the children were getting worried. Then Bhairo Singh, a Hindu who used to work with my husband, spotted the children. He too had run away with his family and had come to the hospital for treatment. The children told him that I was in the hospital since morning and described to him the kind of clothes I was wearing.

Bhairo Singh went in to the hospital and found me among the piles of the dead. He then put me on a bench and ran around to get me oxygen. The doctors would put the oxygen mask on me for two minutes and then pass it on to someone else who was in as much in agony as I was. The oxygen made me feel a little better. The children were crying for their father so Bhairo told them that he was admitted to a hospital in Raisen. When I was being brought back to Bhopal on a truck,
we heard people saying that the gas tank has burst again. So we came back and went beyond Obaidullahganj to Budhni, where I was in the hospital for three days.

I did not have even a five paise coin on me. Bharon Singh spent his money on our food. He even hired a taxi to take me back to Bhopal to my brother's place. My husband also had come back by then. He was in a terrible condition. His body would get stiff and he had difficulty in breathing. At times, we could give up hopes of his survival. My brother took him to a hospital. I said that I would stay at the hospital to look after my husband. I still had a bandage over my eyes. When the doctors at the hospital saw me, they said "why don't you get admitted yourself, you are in such a bad state." I told them that I was alright. I was so absorbed with the sufferings of my children and my husband that I wasn't aware of my own condition. But the doctors got me admitted and since there were no empty beds, I shared the same bed with my husband in the hospital. We were in that hospital for one and a half months.

After coming back from the hospital, my husband was in such a state that he would rarely stay at home for more than two days. He used to be in the Jawahar Lal Nehru Hospital most of the time. Apart from all the medicines that he used to take at the hospital, he got medicines like Deriphylline and Decadron from the store. He remained in that condition after the gas disaster. I used to take him to the hospital and when I went for the Sangathan meetings, the children took him to the hospital. He was later admitted to the MIC ward and he never came back from there. He died in the MIC ward.

My husband used to carry sacks of grain at the warehouse. He used to load and unload railway wagons. After the gas, he could not do any work. Sometimes, his friends used to take him with them and he used to just sit there. His friends gave him 5-10 rupees and we survived on that.

We were in a helpless situation. I had no job and the children were too young to work. We survived on help from our neighbors and other people in the community. My husband had severe breathing problems and he used to get into bouts of coughing. When he became weak, he had fever all the time. He was always treated for gas-related problems. He was never treated for tuberculosis. And yet, in his post-mortem report, they mentioned that he died due to tuberculosis. He was medically examined for compensation but they never told us in which category he was put. And now they tell me that his death was not due to gas exposure, that I can not get the relief of Rs. 10,000 which is given to the relatives of the dead.

I have pain in my chest and I get breathless when I walk. The doctors told me that I need to be operated on for ulcers in my stomach. They told me it would cost Rs. 10,000. I do not have so much money. All the jewellery that I had has been sold. I have not paid the landlord for the last six years and he harasses me. How can I go for the operation? Also, I am afraid that if I die during the operation, there would be no one to look after my children.

I believe that even if we have to starve, we must get the guilty officials of Union Carbide punished. They have killed someone's brother, someone's husband, someone's mother, someone's sister - how many tears can Union Carbide wipe? We will get Union Carbide punished. Till my last breath, I will not leave them.
ABDUL ZAHOOR (30)
RAJUM RAOODULHA

I get swelling in my stomach. I become extremely uneasy and cry out in pain. Sometimes this happens all through the night. I am tired of getting x-rays done and the doctors say nothing about my disease. I have gone to all kinds of doctors, the big ones too. I have been to Sajad Nursing Home, the J.P. Hospital and to the Hamidia Hospital. I have even gone to the Hakims and Homeopathic doctors. But it has been like this. Pain, pain, all the time. I become weak, had body aches and fever for a long time after the gas, but earlier I didn’t have this pain in the stomach. They have done my medical examination but now they tell me I have been put in “B” category. I had shown them my medical papers. Still, I haven’t been able to work for the last two years and have stayed in bed all the time. I depend on my brothers for food and my treatment. Something has to be done for this pain in the stomach. I am getting the interim relief of Rs 200 per month, but that isn’t enough for my treatment. I have to spend 700 to 800 rupees on treatment every month. And yet there is no relief.

NATTHIBAI (55)
RAJENDRA NAGAR

My husband’s name was Dukhishyam. He got a lot of gas in him. On the night the gas leaked, both of us ran towards the forest. He remained sick afterwards. He used to get breathless, cough and his eyes would get very big. He could not see properly after the gas. Twice he was admitted to the hospital. Right after the gas leak he was admitted to the hospital. He was a little better when he came back from the hospital. The second time he was admitted, he never came back. He died in the M.I.C. ward. I gave an application for Rs 10,000 in interim relief, but they haven’t done anything about it yet. Last year, he died in Kunwar (autumn). They haven’t told me whether I will get Rs 10,000 or not. I gave them all the medical prescriptions of my husband with my application.

I stay sick. I have come back from the hospital on 13th of this month (November 1990). I was there for one and a half months. I never got breathless before the gas, I used to work as a labourer. Now I get badly breathless and my chest pains. I was in the hospital during the Festival of Lights. This gas has destroyed us completely.
AIFEEZA BI (30)
CONGRESS NAGAR, KAZI CAMP

Ever since the gas, my head aches 24 hours a day. I have pain in my stomach and sometimes I feel giddy. My daughter, Nasreen, can not see properly, can not thread a needle and she is only eleven. My other daughter, Sofia, also stays sick and she is eight. I have three children from before the gas disaster and after the gas I have aborted thrice. All three times it happened in the hospital. Once I was six months pregnant, the second time I was seven months pregnant and the third time I carried the baby for eight months. They were all born dead. All with black skin like the colour of coal and all shrunken in size. The doctors never told me why such a things was happening to me.

ASAD (14)
IBRAHIPURA

I get breathless and often I am down with fever. Also I cough a lot. I go to school but I can not study. I forget things easily and my eyes burn. I study in a government school. After the gas, for three years I could not write my examinations. I can not remember things. Ever since the gas, I am always taking medicines. Those doctors who were examining me, I told them that I have breathing problems. But they have sent this notice that says I've been put in "B" category.

SABRA BI (40)
CONGRESS NAGAR, KAZI CAMP

I have been in and out of several hospitals since the gas disaster. In 1986, I was told that they are registering claims of the gas victims. So I took my children and stood in the queue to get my claim form filled. It was a long queue and there were at least 250 people before me. When my turn came up, the fellow who was filling the claim forms said that he will not fill claims for children. He said only people over eighteen years could file claims. When I insisted, he asked me to put the medical prescriptions of the children along with their father’s claim form. But that did not work. Later, when people were receiving notices to get themselves medically examined, there were no notices for my children. So their medical examinations were not done.
I was in the hospital when the people who were carrying out the survey—the Tata Institute people—came to my place. They took down the names that were listed in the family ration card. But all the names were not there. The ration card was issued fifteen years back and only three of my six children were listed on it. When the claim forms were being filled, my daughter Afroz was twelve years old, Guinaaz was ten years old, Meheenaaz was nine years, Neelofar was seven years and the youngest, a son, Firdous, was two years old. The government fellows did not put any of these children's claims in their register.

BADRUDDIN (50)

PILBOGA

I was asked to report to the identification center on 23rd of last month (October 1990). There they told me that the names of my children that were on the notices did not match with the names they had on their records. Names of my two sons and one daughter were wrongly recorded. I went to the Collector's office to get the names corrected. I was made to go from one office to another. It took three days to get the names corrected. And my daughter's name is yet to be corrected. I showed them all her medical papers, even her affidavit, but they are yet to correct the name.

SHAMEEM BANO (30)

BUDHWARA

Three of my children have yet to file their claims. All three were born before the gas disaster. The oldest, Samad, is 12 years old; then Malik is 8 years old and the third son, Amjad, is 7 years old. When they were filling the claim forms, I told them to file the children's claims. But they said such young children can not file claims. "We will put these children's claims along with their father's papers," they said. But they did not even write down the names of these children. Earlier, when the survey people had come, I told them to put down names from the ration card. Our ration card is 20 years old. It does not have the names of all the children. I told those government fellows that my children have been left out. All they say is "We will see, we will see."

"If someone kills just one person he is put in jail for twenty years. And here, the Carbide officials have not been put behind bars for even twenty minutes. They should be hanged."
SHAKILA RANO (30)
JAI PRAKASH NAGAR

Right after the disaster, I was admitted to the Kastur Hospital. Then I was admitted to the Hamidia Hospital for a long time in the M.I.C. ward. The doctors told me that my x-ray pictures showed that my lungs were badly damaged. I had filed my claims and was called for medical examination. The medical examination, they said, was necessary to make my case strong for compensation. They did all kinds of examinations: they did blood tests, sputum tests, urine tests and also took x-ray pictures. I was once again admitted to the Jawaharlal Nehru Hospital after that. Now they sent me this notice which says I have been put in category "B". It says that I only suffered temporary injury due to the gas and I am alright now. Even now I cough so badly all the time, I throw up blood sometimes. I have pain in my chest. When I get admitted to the hospital, the doctors do not let me go home. "You are still very sick," they say, and ask me to stay on at the hospital.

RAMKISHAN (40)
PHUTA MAKBAR, CHHOLA ROAD

I used to work at the Formulation plant in Union Carbide's factory. I had been working there ever since the sixth month of the year 1973. When I joined, I used to work as a casual worker. For six years, I worked as a casual worker. They made me a permanent worker in the third month of 1980. I was working in the Formulation plant on the night the gas leaked. The tank of MIC which leaked was only 400 feet from the Formulation plant. When the gas started leaking, some people cried out "Run, Run" and we left our work and ran towards the west.

Later, the factory was closed down. There was nothing for me to do. The government offered me jobs but they were all away from Bhopal. I was given jobs in Mhow, Rajgarh and Indore, none in Bhopal. My wife had taken in a lot of gas and she was pregnant at that time. So I could not stay away from Bhopal. Now I work as a daily wage labourer. I get jobs 15 to 20 days in a month and make about 20 to 25 rupees in a day. There are quite a few Carbide workers who could not find employment after the factory was closed down. I personally know about one hundred of such workers. After the factory was closed, I was given six months salary as compensation, nothing else.

I was just a worker there, how could I know what poisons were stored in there? I was never told that there were such dangerous chemicals inside the factory. If I knew, I would not have worked in that factory. The plant used to smell awfully at times but we were just workers, how could we know? When we worked there, our eyes used to hurt and our skin itched but whoever knew that such a disaster could happen?
JAYA MANE (28)
RAJENDRA NAGAR

I get breathless when I walk and now my head aches so badly that I can not do any sewing or reading. The doctors had done my medical examination. But later they sent a notice which said they found me to be only temporarily injured. I do not know whether we can ask them to do another medical examination. I have started getting interim relief but the bank is quite far. I had to spend Rs 20 to go to the bank.

SHER KHAN (45)
CHHOLA ROAD

I work at the railway coach factory. I have been living in this house for the last fifty years. This year, they announced from a jeep that they would demolish the houses on both sides of the road. People in my community and the tenants who had rented shops were very troubled. Quite a few cried their hearts out. Those who protested got arrested. Some people who tried to argue with the government officials were beaten up by the cops. And the bulldozers went on demolishing house as we watched in silence and in sorrow. After my house was demolished, I was so sad I could not eat food for four days. It was raining then and my children were crying. I cried too.

I have made a tiny shelter out of whatever was left after the demolition. I still have the registration papers for my house. This house has been there for the last sixty years and they never told us that we had encroached upon government land. This anti-encroachment drive is a lot of bunkum. It was as if the government had declared war on the people. All day they would carry on the demolitions and at night they rested till they blew the bugle the next morning. They cut off the water connections, the electricity connections and turned us homeless. They have not given us any compensation or any land. First, we were attacked by Union Carbide gas and then by the government’s bulldozers. Where do we go?

MOHINI (32)
MAHAMAYEE KA BAUG

Our organization, the Bhopal Gas Peedit Mahila Udyog Sangathan started from a sewing centre. After the gas disaster a rehabilitation centre run by an organization was started in September ‘85 with government help. About 600 women used to be given sewing jobs from this centre. There were 30 of us employed who were
"We know that the struggle against Union Carbide will be a long one and we are determined to carry on with our struggle till justice is done."

employed for cutting cloth at the centre and this cut cloth was given to the women for sewing at their homes. In December 1986 this centre was closed down. All of a sudden the women who were dependent on the sewing job became jobless. The 30 of us decided that something must be done to get the centre reopened. So we, along with 600 women marched to the Chief Minister's residence. We went on several demonstrations and had to face the police on many occasions. In April '87, 225 of us were arrested and put in jail. It was a long and hard struggle. Most of us were quite sick due to the gas. During one demonstration a woman named Hamida Bi fell unconscious with chest pain and died 4 days later. We finally managed to get the centre reopened and now 2300 women are getting sewing jobs.

After we got the centre reopened our organization grew in number and we took up the issues of medical treatment and economic rehabilitation of the gas victims. We also campaigned against Union Carbide and organised rallies demanding punishment to the guilty officials of the company and adequate compensation for all gas victims. We opposed the unholy settlement between Union Carbide and Rajiv Gandhi's government. On five separate occasions more than 3000 women from the Sangathan have gone to Delhi and voiced our opposition to the settlement.

We have also filed a petition in the Supreme Court challenging the validity of the settlement and now it is being heard. Earlier in August 1988, we had filed a petition seeking interim relief from the Government. On 13th March 1990, the Supreme Court ordered the Government to pay Rs.200 per person per month to all the residents of the 36 gas-affected municipal wards of Bhopal for three years. This amount is being disbursed now but there are a lot of problems in the manner in which this is being done. We know that the struggle against Union Carbide will be a long one and we are determined to carry on with our struggle till justice is done.

SAHODRA BAL

LAKHERAPURA

My husband Shantilal died on 12th May 1990. After the gas, he had difficulty in breathing. He never went to work after the gas. He couldn't earn any money. The children earned something by doing odd jobs. I can not see properly and I get breathless. I can not do any work. Union Carbide is responsible for my husband's death. I should be given the relief money of Rs 10,000 and should get enough compensation so that we have enough to eat and get ourselves treated.
SHAHAZADI BAHAR (35)
KOLIPURA, BARKHEDI

I joined the Sangathan in 1988. I was looking for a sewing job. I went to a number of places all around Bhopal. Then one of my friends asked me to become a member of the Sangathan. She asked me to come for the Sangathan meetings and talk about my problems there. So I filled a form and became a member of the Sangathan. Now I am so closely attached with the Sangathan that when I do not go for the meetings, I miss it as people miss their dear ones.

The world is very selfish. I, too, joined the Sangathan with some selfish motive. I thought I could get some sewing job through the Sangathan. But though I have not been benefited, there are others who have. Quite a few people have got monetary relief of Rs 1000, Rs 3000 and Rs 750 per month. And now the provision of interim relief of Rs 200 per month per person is a big victory for the Sangathan. This has brought in a new hope and a new determination. We are certain that we will win this battle.

The Bhopal victims are entitled to compensation. We need hospitals, medicines, jobs, clean air and water. We have to have medical treatment centers in the community itself. The bigger things are, the more they create problems. Hamidia hospital is so big but we can not get treatment there, only those with money are treated properly. We need jobs that do not need hard physical work. I get breathless when I walk and can not see properly. Two of my daughters are being treated for tuberculosis.

They should not have allowed Union Carbide to set up its factory. When these companies want to set up some factory, they mention some product in the agreement (with the government) and they start producing something else. Then the people in the neighborhood do not get to know what is being produced. Workers in the factory are forbidden to speak to people in the community. Such factories should not be allowed in the first place. And even if they are allowed to be set up, the neighboring community must be consulted.

The officials of Union Carbides should be given the severest punishment. If someone kills just one person, he is put in jail for 20 years. And here the Carbide officials have not been put behind bars for even 20 minutes. They should be hanged. I am certain that the Sangathan will win the battle. The struggle for truth will be a success. Truth always wins, it only takes a little longer.

"The doctor in charge of the MIC ward has written on my papers that my lungs are badly damaged. I have to take 8 to 12 tablets in a day to be able to talk, move about or just breathe."
DINKAR RAO (16)

NAGAR NIGAM COLONY, KAZI CAMP

When the gas leaked, we were all sleeping. We started coughing and getting choked. I thought someone was burning red chillies in the neighborhood. But my mother said it was some kind of gas. She knew, she read a lot of books. She asked everybody to stay indoors but my father did not listen. He opened the door and went out to see. Thick clouds of gas filled the room. Our parents covered us up with a quilt from all sides. So we were little protected. But my parents took in a lot of that gas. That is why they fell so sick.

My father could not do any work after the gas disaster. He used to remain sick and in 1986 he died. My mother used to be sick also. Doctors took x-ray pictures and said her lungs have been badly damaged. Some doctors said she has got tuberculosis but we do not believe that. In 1986, she was admitted to the Jawahar Lal Nehru Hospital. She used to get breathless and used to cough all the time. She could not go to office to work. My mother died in February 1988 in the hospital. Since then, I have become a full time worker in the Sangathan.

We are opposing the settlement between Union Carbide and Government of India done in February 1989. The settlement would have meant that Union Carbide officials would have been let off without any punishment. We can not let this happen. Carbide’s officials must be punished. If these officials are let off easily, they will go on killing people and making them sick. What happened in Bhopal should not happen anywhere else.

SULEMAN KHAN (50)

ASHOKA GARDEN

I have been working as a booking agent in the Madhya Pradesh State Road Transport Corporation for the last 24 years. I was on duty right after the disaster and during Operation Faith when the Corporation’s buses were used to carry people who were running away from Bhopal. I started having serious health problems about a month after the gas leak. In May '86 I was transferred to Piparia, 150 kms away from Bhopal. There were no facilities for medical treatment of gas victims in the Piparia hospital. So I had to absent myself from my duty and come to Bhopal. They stopped my salary. I wrote many applications to get myself transferred back to Bhopal. More than 2 years later, they transferred me back but I am still not getting my salary.

I was admitted in the MIC ward in June '87 and remained there for more than three years. I was so breathless they had to put me on oxygen. The doctor incharge of the MIC ward has written on
"I was in the hospital during the Festival of Lights."  

GANGA BAI (63)  
RAJENDRA NAGAR  

I have started getting interim relief of Rs 200 per month. But there are lots of problems. To get my photograph taken, I would have to go to Indrapurit, which is twelve kilometers away. The bank was fifteen kilometers away in Bairagarh. My son took me on his bicycle to the bus stand and I had to change two buses to reach the bank. And I had to make three trips to the bank before I got the money. Now they have brought the bank a little closer. Even then I had to spend Rs 24 on an auto rickshaw. The banks are very crowded and the queues are long. Once I fell down on the ground while I was waiting in the queue.

SULEMAN (45)  
PUTLIGHAR, SHAHAJANABAD  

I am in Bhopal for the last 10 years. Before the gas disaster, I used to sell vegetables on a push cart. I have become too weak to work now. After I was exposed to the gas, I tried pushing the cart but I became so breathless it was impossible to move. Some time back, I went to sell vegetables but was so ill afterwards that I had to be admitted to the hospital. Five bottles of intravenous medicines were given to me because I was so sick. Since then, I have not tried to take the vegetable cart around. For a few days, I worked as a watchman but that too was difficult. Now I have given up. I stay in my sister's place, her family arranges for my food. All the treatment that I have taken until now has done no good. Factories like Union Carbide's should not be allowed anywhere in the world. Not even if they build it far from human settlements.

MOHAMMAD NAFFEE (25)  
BUDWARA  

My children are named Assu and Sharik. One is about 7 years old and the other is 6 years old. When the gas leaked, my elder son was eight months old; my younger son was born four months after the
disaster. Both of them have difficulty in breathing and they cough a lot. The doctor says they have got tuberculosis. They have been taking treatment for tuberculosis for the last four years. Even now they are under treatment. I get tablets and capsules for them from the hospital. Sometimes I have to buy capsules from the store; one capsule costs one and a half rupee. You tell me that one should not take drugs for tuberculosis for so long. But what do we know? We do what the doctor tells us. No one in my family ever had tuberculosis. Both my wife and me also have breathing trouble. Before the gas I used to spend a lot of time working at the bakery. Now I can't sit close to the oven.

**SHAHIDA BI (25)**

**NEAR BHARAT TALKIES**

A few months after the gas disaster, I had a son. He was alright. After that I had another child in the hospital. But it was not fully formed. It had no limbs and no eyes and was born dead. Then another child was born but it died soon after. I had another child just one and a half months back. It's skin looked scalded and only half its head was formed. The other half was like a membrane filled with water. It was born dead and was white all over. I had a lot of pain two months before I delivered. My legs hurt so much that I couldn't sit or walk around. I got rashes all over my body. The doctors said that I will be okay after the childbirth but I still have these problems.

**NARAYANI BAI (35)**

**MĀHAMAYEE KA BAUG**

This is the sixth time I have been admitted to the MIC ward. I have been here since the last month of 1985. When I feel a little better the doctors send me home but I can't stay there for long. My breathlessness become acute and my husband has to bring me back to the hospital. The doctors say that the gases have damaged my lungs badly. They say nothing can be done about my disease. Before the gas I had never seen the inside of a hospital. And now I have spent most of the last five years on this hospital bed. I used to work as an assistant at a day care centre and now I can not do any work. My husband

"If these officials are let off easily, they will go on killing people and making them sick. What happened in Bhopal should not happen anywhere else."
"What do these people in the Directorate of Claims have against me? Why don’t they want me to be properly compensated?"

Kaluram also cannot go to his job. He used to carry loads. My son works as a tailor, he is the only one earning in the family.

MOHAMMAD AIEEZ (22)

KUMHAR MOHALLA, VIDHAN SABHA

I am 22 years old and the notice for interim relief that came in my name said I was 46 years old. When I went to get my pass book made, they told me to get my age corrected on the notice. I went back to them two days later and they said if you pay us Rs 50, we will get the age corrected. Then they asked me to pay them this bribe after two days. My school examinations mark-sheet says I am 23. I have got certificates that have my date of birth and yet I am being harassed in this manner.

ABDUL JABBAR (56)

RAJENDRA NAGAR

I am the convenor of the Bhopal Gas Peedit Mahila Udyog Sangathan. I am a gas victim myself, my father died because of the gas. We in the Sangathan are fighting against a killer multinational and an apathetic government. Union Carbide is trying its best to evade accountability for the genocide it has committed. It is trying to wriggle out of the situation by using its wealth and its political power. The new government at the Centre seems to have taken a strong stand against Union Carbide. But the government has yet to take effective action for medical treatment of the gas victims. We have long been asking the government to set up a Medical Commission on Bhopal. The Medical Commission would concentrate on evolving a proper medical treatment for the gas affected people. The Commission should also look into the medical categorization that the Directorate of Claims has done. The government has to provide opportunities for people to become self-dependent.

People outside Bhopal seem to have forgotten the gas disaster. Earlier a lot of concern was expressed for the Bhopal victims but now that seems to have died down. Even today hundreds of thousands of gas-affected people continue to suffer from gas-related illnesses and people are still dying painful deaths. Yet most people seem to believe that the Bhopal issue is over. This is indeed unfortunate.
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APPENDIX F

I am delighted to have this opportunity to share some perspectives on what Union Carbide Corporation has been, and is, doing in the areas of health, safety and environmental matters.

Although it has been nearly a year since the initial shock of Bhopal, it is obvious that the issues raised by that tragic event will be with us for a long time. As Union Carbide chairman, Warren Anderson, observed in December 1984, the world has, indeed, changed for us all in the chemical industry.

As part of that change there must be a new and expanded agenda for health, safety and environmental protection. I would like now to consider some of the priorities that we at Union Carbide see on that agenda, and what we are doing to translate them into effective and ongoing action.

I offer my observations as someone who is also here to learn what others are doing and planning in these fields. While many legal questions remain about Bhopal—and those decisions are the responsibility of another forum—there are valuable lessons to be gained now by pooling our experience.

To review our experience since December, 1984, and describe some of the activities in which we are engaged, and to give you a better sense of the context in which we are moving, I would like to begin by updating you on important recent and ongoing developments at Union Carbide.

We have mounted a considerable relief effort for Bhopal, starting December 4th 1984, aimed at getting humanitarian relief to where it is needed in Bhopal, and we are persevering in getting more assistance to those who need it.
In mid-1985, Union Carbide announced a major corporate reorganization. Essentially, we have organized our businesses into two groups, with the strategic objectives of enhancing growth opportunities in our consumer and industrial products and services businesses, and of capitalizing further on current strong technological and market positions in our commodity, specialty and agricultural chemicals businesses.

A major restructuring program for implementing our strategy and improving our competitive position and financial performance is under way. While I will not go into all the details here, we are making considerable progress in simplifying operating relationships, increasing market-place coordination and achieving major cost reductions.

Linked with our restructuring program, top management is providing the leadership and committing the necessary resources for sustaining and building on high levels of health, safety and environmental protection throughout the company. There is considerable momentum from new and ongoing programs and we are already seeing some important results:

- We have reduced inventories of 36 of the most toxic chemicals at nine of our major locations by 74%.
- Air emissions for 23 chemicals have been reduced by 79% at our major locations.
- A plant-by plant, facility-by-facility risk assessment of hazardous and toxic materials and hazardous operations has been completed.
I will describe these and other aspects of our health, safety and environmental protection program more fully later. Suffice it to say there is ample evidence that we are maintaining the new performance levels demanded by chemical and other industrial producers. Our top priority must continue to be the safe operation of our plants, and we are committing the resources to see that the job gets done. Management has authorized $100 million to start new environmental and safety projects this year in addition to the $120 million of expenditures already ear-marked for 1985.

In short, it has been a challenging year for Union Carbide. While nothing can erase the tragedy, we can, and are moving forward. We are building on a notable history of achievement. Our new structure will enable us to exploit more fully our exceptional technological, engineering and scientific expertise, experience and resources.

Having made some hard business decisions, we are also dealing effectively with community and employee health, safety and environmental protection. There is still plenty of work to be done but we think that Union Carbide has a sound game plan.

As I have indicated, we are seeing concrete results from ongoing programs, and from programs and procedures that we have established over the past year. But there were also some very important immediate responses following last December’s tragedy that I would like to describe to you now.

To a great extent, these initial responses were dictated by the unique circumstances surrounding the event, the incredible communications difficulties that
we had to contend with and the nature of our long relationship with Union Carbide India Limited (UCIL).

Union Carbide Corporation owns 50.9 percent of UCIL because of certain exceptions for high technology products and a high volume of export sales granted under the Indian foreign exchange laws.

UCIL has long been one of India's premier companies. By the time it celebrated its 50th anniversary last year, it had 14 plants, 5 operating divisions, and over 9,000 employees, and posted sales in 1983 of $174 million. The company was staffed and run by highly qualified Indian Nationals and with good reason thought of itself as making an important contribution to the Indian economy.

As for the Bhopal operation, it would have made more sense from a business standpoint to import finished pesticide into the country, which is the way the pesticide business in India began. The formulating and manufacturing operations were started up, not to cut costs—in fact it cost more to make the product locally than to make it in the United States and ship it to India—but in response to growing pressures from the Indian Government to produce the material locally.

The government's agenda included more jobs, the introduction of new technology to the country and the development of Indian management and technical skills, and that is what it got as the Bhopal plant became a full-fledged manufacturing operation for the Indian economy.

Apart from the new technology that Bhopal represented, the start-up and operation also involved highly specialized training for a number of Indian Nationals.
This was not simply classroom training, but also hands-on training at domestic Union Carbide locations in the United States, and when the Indian operating staff returned to India to start up the plant our own people went along to help. It was a safe start-up and the Bhopal plant was adhering to prescribed safety procedures. In 1982 the last Americans involved in production went home.

The formulating plant was built in 1969 and stood all by itself, away from any concentration of dwellings or people. But at the time of the tragedy, a congested shanty town had grown outside the gate. People were drawn there by the economic activity and by the offer of free land from the government.

Then on December 3rd 1984, disaster struck. For a company that regards a single death associated with its operations as a calamity, the news was devastating.

Making matters even worse, from a crisis management standpoint, was the difficulty in getting any first-hand information. Part or this stemmed from distance, India is ten-and-a-half hours ahead of the United States, and there were also continual problems in reaching people on the scene with only two phone lines out of Bhopal.

Our first reaction was to instinctively do what we knew was right and make a moral commitment at once. We immediately communicated that commitment and made ourselves accessible to the press. We set in motion emergency relief measures for the victims, including an aid offer of a million dollars. Senior management formed a team to deal exclusively with Bhopal, which allowed the rest of our management people to concentrate on running the business. We quickly shut down the methyl isocyanate (MIC) operation at our institute, West Virginia plant and stopped
shipments from that plant. We dispatched to Bhopal a medical/technical team to
determine medical needs and investigate the incident.

Meanwhile, Warren Anderson, our chairman, flew to India personally to help
get discussions underway on immediate relief. Although Indian authorities curtailed
his mission, Warren’s trip signaled our intent to honor our moral and humanitarian
commitments.

The technical side of our investigation team had a two-fold task in going to
India: to investigate the how’s and why’s of what had happened and to see if its
findings had any implications for other Union Carbide operating facilities. It quickly
became involved in assisting in disposing of the remaining MIC at the Bhopal plant
which diverted effort away from the investigation itself.

The team completed the disposal task on December 22nd 1984, with the
conversion of the remaining MIC to pesticides slightly more than two weeks after it
arrived in Bhopal. The second task, the investigation, proved more difficult. It was
not until three months later, on March 20th 1985, and only after extensive analysis and
experimentation, that it was able to announce to the world what had happened in Tank
610.

A major reason for the delay was the team’s inability to talk promptly with
UCIL personnel who had witnessed the event. From the start, we were not in full
control of our investigation. The Indian Central Bureau of Investigation (CBI) had
taken over the plant on December 3rd 1984, and did not permit the team to enter the
plant until December 7th. Our only conversations with technical people were with the
plant manager and the MIC production manager, neither of whom was on duty on the
night of the incident. There was considerable red tape and delay in gaining access to
plant records and other documents, all of which were in the hands of the CBI.

Communications problems were a constant obstacle. For example, there were
extremely limited phone links from Bhopal to the outside world, so several times a
week the team leader had to fly six hours round trip to New Dehli to brief our people
in the United States via phone. These kinds of problems made it clear that our only
hope of finding out what had occurred would be to reconstruct the chemistry of the
event.

To do this, the team sought out every chemical clue available. As a start, it
analyzed samples of MIC process streams in the plant to determine their composition
and inspected quality control records from the Bhopal laboratory.

The most important information came from the tank itself. On December 20th
1984, with the permission of and cooperation with the CBI, the team sampled the tank
and obtained good core samples of the residue, which it shared with the CBI and
UCIL Research and Development Centre.

The team then had one week to pursue its investigation. With UCIL
researchers it succeeded in unearthing additional vital information, so that by the time
it departed for the United States on December 29th 1984, it knew the following:

- the general sequence of events immediately preceding the release,
- the fact that the reaction had not started spontaneously, one or more external
  contaminants had been introduced somehow into Tank 610, and
water and chloride ion had been involved in the reaction in Tank 610.

When the technical team returned to the United States on December 29th its task was threefold:

- propose the chemistry that could lead to the major components in the residue,
- replicate the reaction to form the components that we had identified, and
- find the route by which the initiating substance or substances had entered the tank.

Briefly it established that:

The major components found in the residue of Tank 610 can be produced by water, chloroform, iron, MIC, and a reaction temperature exceeding 200 degrees centigrade.

Water contamination of stored MIC initiated the chemical reaction. We do know that some 1000 to 2000 pounds (120 to 240 gallons) of water would have accounted for the chemistry of the residue. Although we cannot be certain how it got there, we have all but ruled out everything except a deliberate act. Although some parties have advanced a theory that the water in the tank came from a pipe washing operation and was rerouted through faulty valves, we rejected that theory in our, March 20th 1985, presentation or the findings as being highly improbable and nothing has been uncovered since that has changed our minds.

As the MIC reaction with water greatly increased the temperature in the tank, the presence of an abnormally high level of chloroform (the process solvent) at high
temperature resulted in the formation of chloride ion which caused rapid corrosion of the stainless steel tank. The iron from the corrosion catalyzed a further reaction. The rise in temperature accelerated both reactions, which also increased in violence with the further mixing of water and iron with the MIC.

Based on the heats of reaction, a reaction involving 40 percent of the MIC would have released enough heat to vaporize the remaining 60 percent.

The very rapid rise in pressure burst the rupture disc in the line to the safety valve and the safety valve opened at 40 psig, which it was designed to do. We believe that the safety valve stayed open for about two hours. In order to discharge most of the contents of the tank within two hours, the pressure had to average 180 psig and the maximum temperature reached was probably greater than 200 degrees centigrade.

Bhopal was definitely not a textbook investigation. The circumstances under which the team worked were unique and coupled with that, the complexity of the residue samples taken from Tank 610 made the investigation demanding.

We conducted more than 500 experiments to replicate the residue samples, pooling some 20 separate analytical techniques. Detailed analysis of 39 additional core samples subsequently taken from all parts of Tank 610, when it was unearthed in April of this year, confirmed our findings.

I might mention here that the 39 samples have undergone the same analysis at the UCIL laboratory in India. When our own study was completed we sent a technical team to India to help the UCIL people replicate the experiments, so the results are available now in India.
The findings of the report as to the chemistry of the event are essentially unchallenged, although unsubstantiated press accounts and purportive investigative reports have depicted scenarios with respect to the introduction of the water that differ considerably from our understanding. The Indian Government has yet to release the findings of its investigation.

In March, 1985, we released the findings of our investigating team, and at the same time our Chairman announced a number of initiatives and changes in the safety and environmental protection area that Union Carbide had already undertaken or planned. Among them were:

- an intensified monitoring procedures for hazardous materials,
- additional training for plant operators and other personnel,
- increases in safety audits,
- the formation of a new committee of Union Carbide’s Board of Directors to focus on health, safety and environmental affairs and the establishment of a top level management committee on risk assessment.

These are only the highlights of Union Carbide’s current health, safety and environmental protection activity but is an indication of the speed with which we moved in key areas to reassess our operations around the world and to implement programs and procedures for dealing with the results of that assessment.

What did our assessments show us? First they were reassuring. We rediscovered some basic strengths and confidence. We were, and continue to be, in
compliance with government regulations throughout our chemicals and plastics operations.

Next, we have good equipment, sophisticated safety controls and procedures, and well-trained people. We have state-of-the-art process technology which we have licensed on six continents, and at a ceremony earlier this year, 258 Union Carbide plants won awards for accumulating a total of 190 million man-hours of injury free work.

The effort was, and remains, intense. The reason for our effort is no secret—our credibility has been damaged, and we have to take steps to recover it. From the grassroots to the top, our people all understand that we have a mission every bit as critical to the Company's future as our financial performance. We must protect the reputation we have worked so hard to earn and we must do it with a dedication to risk management that is second to none in our industry with performance to match.

The bottom line is that we know we must have the confidence of the people in all the cities and towns where we have manufacturing operations and where we will want to build them in the future. And we will need the confidence of all the other constituencies whose opinions and attitudes are shaping the policy of the business environment for all of us in the chemical industry. Step one was re-evaluating all of our previous risk assessment work during a six month period of investigation and screening. We are confident that our data base covers the hazardous and toxic materials and the hazardous operations, everywhere that they exist.
In most cases, risk cannot be completely eliminated. Accept it or not, hazards are part of the chemical business. But the risks, even the moderate risks, can be managed and reduced, sometimes by simple changes in policy and procedure. That is one approach we have taken in following through the results of our risk assessment.

In some cases, we are reducing risk by consolidating operations and shipping points. In others, we are converting toxic products to less toxic derivatives before they leave the plant. We have simply ceased some operations altogether.

We are also reducing inventories of hazardous materials. As indicated previously, since last December, we have dramatically reduced inventories of the most toxic chemicals at our major locations. We are dealing with other less toxic chemicals in a similar way.

We are exploiting organizational setups to help manage risk. For example, a new centralized manufacturing services department for Union Carbide’s Chemical’s and Plastics group will help promote the sharing of information on the potential and actual risks involving hazardous materials. While this was not the central consideration in establishing the department, it is an added benefit that we are using in support of our risk management program.

We are also reducing chronic air emissions. The 79 percent reduction of air emissions for 22 chemicals at our major United States locations previously mentioned are not required by law or regulation but we are moving ahead anyway and in conjunction with the Chemical Manufacturers Association we have made
recommendations to Congress about expediting the rule-making in connection with hazardous air pollutants.

In effect, we are redefining our commitment to safety and environmental protection and to risk management—not to catch up with current standards but to anticipate the ones that we have reason to believe are coming.

We have also taken our Corporate Health, Safety and Environmental Protection function and strengthened it as well. Among other things, it will be responsible for tracking auditing of operating units and following up on identified deficiencies and the actions taken to correct them.

Our Corporate Health, Safety and Environmental Protection function will undertake reviews that will be communicated directly to the Health, Safety and Environmental Affairs Committee of the Board. 350 audits will be performed in 1985 and over 400 are scheduled for 1986, compared to 286 in 1984.

Our new Health, Safety and Environmental Protection Audit Program will be run by people with full time auditing responsibilities and who will perform independently of the operating divisions.

Our auditors will not only be looking at management performance in complying with government environmental, health, safety and product safety laws and regulations but will also verify that corporate and component policies, procedures and standards are being followed, including emergency response plans and efforts at promoting community awareness.
They will also be participating with divisional auditors in in-depth technical evaluations of process units employing hazardous materials. The large technology and equipment component to our program is only one part of the equation. People need the tools, but the tools alone will not do the job unless plant health, safety and environmental protection and risk management become a way of life for anyone who has anything to do with chemicals—making them, testing them, shipping them, handling them and using them.

With that in mind, our strategy at Union Carbide is to promote at our chemical locations the same kind of drive for perfection that works miracles on the production line. With the right incentives and with strong management commitment, we can have every operator working for our goal of no leaks, no episodes and no spills.

We have always been committed to safe operations. We have accelerated our efforts and what we are aiming for, and what we expect to achieve over the next three years, is a 30 percent compounded reduction in the number of episodic leaks and emissions at our plants and a 30 percent compounded reduction of permitted emissions of toxic materials.

We are also stepping up our efforts at plants and other operating facilities to ensure that good neighbors are informed neighbors as well. The events of 1984 highlighted the fact that questions of chemical safety are not confined within the plant. The community must be involved. People have a right to know about the chemicals we make and use and any hazards that they involve.
Beyond that, they need to feel confident that well-conceived emergency response programs are in place in the event of an accident. We intend to have revised emergency response plans in place at all of our plant locations by the end of 1984.

Many Union Carbide plant locations have extensive experience in coordinating plant-community emergency responses. We have a model program in the Taft Louisiana plant which is piggy-backed on the nuclear units in that area and we also have had extensive experience in the Kanawha Valley. We have recently dedicated a full-time employee to helping with that activity. We find that the close cooperation with the local governmental authorities is extremely important, and that in fact it is the local governmental authorities who ultimately have the responsibility for declaring an emergency and initiating emergency evacuation efforts.

The interdependence of the governments and business is particularly true in developing countries. Here tighter control on building permits and on the flow of necessary imports to build and sustain plant operations often make government and business partners to a degree not usually seen in industrialized countries.

This mutual dependence entails special responsibilities for both business and government. Business, for its part, should be as forthcoming as possible in disclosing its plans for plant processes and materials and should encourage its affiliates to act in a similar fashion. With such information and adequate resources, the government then can act in the best interests of its citizens to determine potential problems that could impact the community and work with business to develop appropriate emergency response plans.
One of the keys to effective emergency preparedness planning is a clear understanding and demarcation of responsibilities. Local governments should take responsibility for the overall coordination and execution of emergency preparedness.

These are some of the items and priorities on Union Carbide’s Health, Safety and Environmental Protection efforts. It has been a demanding year, but likewise a rewarding one. We have:

- addressed the needs and concerns following Bhopal,
- proceeded with reorganization and restructuring to become an even stronger company,
- maintained high employee and community health, safety and environmental protection standards, and
- initiated a comprehensive risk assessment and realized significant results from the strong risk management program, including major reductions in air emissions and toxic material inventories.

There are many challenges ahead but I am confident that we have the people, resources and the commitment to meet them (Browning, 1986).
APPENDIX G

CHEMICAL MANUFACTURERS ASSOCIATION PRESS

The chemical industry today announced a series of initiatives that, a spokesman said, will increase public access to hazard information about chemicals. Edwin Holmer, Chairman of the board of the Chemical Manufacturers Association, said the initiatives also will improve emergency response planning and training at the local level, and expand the industry's capability to provide direct assistance to fire-fighting, police and medical personnel responding to chemical emergencies.

Holmer, who also is President of the Exxon Chemical Co., said the initiatives are grouped under two new programs:

- Community Awareness and Emergency Response (CAER); and
- The National Chemical Response and Information Center.

The industry's immediate response to the tragedy at Bhopal was for each company to quickly—yet thoroughly—review its safety practices, Holmer told reporters. These reviews showed there is room for improvement by more effectively integrating our emergency response plans with those of the community, he said.

According to Holmer, chemical plant managers will serve as the catalyst in developing the CAER program. They will work with community emergency response officials, other local industries, and interested citizens in developing the programs. Plans will be actively communicated to the general public, emergency service personnel and employees on a continuing basis.

He said the CAER program has been developed around the concept that the public should have access to information on hazardous chemicals.
At a minimum, Material Safety DATA Sheets (MSDS) listing work place hazardous substances, and written hazardous communications programs developed by companies under the US Federal Occupational Safety and Health Act, should be made available to the public. MSDS provide detailed information on the hazards, properties and effects of chemicals.

The second industry initiative—the National Chemical Response and Information Center—will coordinate responses to requests for emergency and non-emergency information on chemicals, as well as training for emergency service personnel at the local level.

The Center will be built around the Chemical Transportation Emergency Center (CHEMTREC)—the industry’s 14-year-old transportation emergency hotline service. CHEMTREC provides information on chemicals to emergency service personnel—such as fire-fighting, police and rescue squads—during transportation accidents involving chemicals. It is recognized by the US Department of Transportation as the source of emergency information on hazardous materials involved in transportation accidents.

Four new programs will be added to this existing services:

- CHEMTREC will be expanded to provide 24-hour-a-day information to emergency service and medical personnel for non-transportation incidents.

- A major new service—CHEMNET—will provide expert on-site assistance to deal with transportation and nontransportation emergencies through a mutual-aid network of chemical industry and for-hire emergency response teams.
• The Chemical Referral Center will provide the public with a central contact point—using an 800 toll-free telephone number—for information on chemical hazards in non-emergency situations.

• Long-standing training programs for industry personnel will be expanded to include development of training materials for emergency service personnel outside the industry at the local level.

The CAER program is a coordinated public and private sector initiative to improve or establish integrated community response plans and communication networks to protect the general public during emergencies.

Chemical industry plant managers will volunteer to serve as the catalyst for this program, and will work with local emergency response officials, other local industries, and interested citizens. The CAER program plans will be made available to the general public, emergency service personnel and employees in order to:

• Review emergency plans now in existence.

• Develop plans if none exist.

• Integrate chemical plant emergency plans with existing community emergency plans to cover all types of emergencies.

• Communicate with and involve the local community in developing, implementing, and perfecting the plans.

The CAER program will be tailored to meet the specific needs of each community. An effective CAER program will identify:
• The key emergency officials, and define their roles, resources and concerns.

• What the risks are—their magnitude and type.

• What plans or planning exist.

• What needs to be done to address risks and initiate the overall plan.

• The most effective way to match risks to available resources.

• The potential weaknesses in existing plans for reducing risk, coordinating activities, and completing the plan.

• What changes are needed to consolidate individual plans with the overall community plan to improve existing plans, and to reach agreement on an overall coordinated plan.

• Whether the coordinated plan is in writing.

• Whether procedures have been established for periodically testing, reviewing and updating the plan, and raising community awareness.

• Whether the public is involved in the total community emergency plan.

• Whether emergency responders are suitably trained.

The National Chemical Response and Information Center will provide the public and emergency response organizations with information about chemicals, and advice or assistance during emergencies. The Center and participating companies will accomplish these objectives through four programs, viz.;

• CHEMTREC—the industry’s 14-year-old emergency response service will continue to provide information to emergency response personnel, and contact
the shipper to obtain additional assistance in incidents involving chemicals.

The service will be expanded to include non-transportation incidents.

- CHEMNET—in the event of serious transportation incidents, CHEMNET will provide on-site assistance through a mutual-aid network of industry and other emergency response teams. This program will operate through CHEMTREC.

- Emergency Response Training—this program will provide training materials to assist industry, fire-fighters and policemen in dealing with hazardous materials incidents. Currently, the Chemical Manufacturers Association conducts workshops to train industry personnel. This program will be expanded to include first-responder training materials. The objective of the first-responder training will be to reduce injury and environmental damage, as well as to identify sources of assistance for emergency service personnel.

- Chemical Referral Center (CRC)—the CRC will be a referral service for use by the public for information on chemicals and their hazards. The Center will provide a 800 toll-free telephone number, which will be used for non-emergency inquiries.

(Abraham, 1985)
APPENDIX H

GENERAL STATEMENT ISSUED BY THE CITIZENS’
COMMISSION ON BHOPAL, NEW YORK, JUNE 19, 1985.
Introduction and Background

The Bhopal tragedy that occurred in India, in December 1984, where the release of MIC and other chemical substances killed and incapacitated many thousands of inhabitants, is the worst industrial disaster in history.

While the full account of the Bhopal catastrophe, and who is responsible, has yet to be disclosed, several features stand out:

- No meaningful accountability has yet been imposed on those responsible for the Bhopal disaster. Both Union Carbide Corporation and the responsible government authorities have withheld or failed to provide essential information that could have facilitated proper treatment of surviving victims.
- The surviving victims are subject to continuing neglect and inadequate medical treatment.
- Tens of thousands of individuals are severely debilitated, and are presently unable or may never be able to resume their normal activities. Many victims and their dependents have lost their livelihoods and means of support.
- The Union Carbide Bhopal plant was expanded to produce MIC in a heavily populated, low income area. Most of the victims were poor people, living near the Bhopal plant, and were not employed by Union Carbide.
- The public's right to know was disregarded. The people in the surrounding community were not warned about the highly toxic nature of MIC and other substances manufactured at the Bhopal plant.
The management of Union Carbide Corporation followed double standards for industrial safety, which were much less rigorous in India than in the US. In addition, warnings by workers at the Bhopal plant and others were ignored by both the parent company and its subsidiary.

The chemical industry's response, to date, to the need for industrial safety has been very limited. Industry spokespersons have emphasized emergency response measures rather than the development and implementation of stringent industrial safety standards.

In response to the Bhopal tragedy, concerned citizens and organizations in the US have joined together to form a Citizens Commission on Bhopal to work toward justice for the Bhopal victims, as well as to address the issues posed by increasing use of high-risk technologies.

According to the Commission, there is an urgent need for:

- Prompt and adequate relief for the injured and the families those who died.
- A thorough and detailed investigation of the Bhopal disaster, and full disclosure of the findings to the public.
- Prompt and adequate financial redress for the injured, continued environmental and medical monitoring, and support for the Bhopal victims.
- An examination of occupational and environmental health and safety procedures and standards worldwide, based on the findings of investigations on the Bhopal tragedy.
New policies and laws dealing with the public and workers' right to know about high-risk technologies and hazardous substances, and the participation of workers and the public in decisions involving the use of such technologies and hazardous substances.

Stricter worldwide standards and regulatory schemes governing the manufacture, storage, transportation, trade, use and disposal of toxic chemicals.

The Commission, representing a broad spectrum of environmental, consumer and church organizations, trade unions and workers associations, and medical, legal and scientific groups and individuals, believes that there must be an independent evaluation of the Bhopal disaster. This is particularly necessary in the light of Union Carbide's recent statements that have attempted to deflect the responsibility for the release of MIC away from the parent company.

The Commission is concerned that as the chemical industry, national governments and international agencies are beginning to develop responses to the Bhopal tragedy, there has been almost no citizens involvement in their deliberations. Individuals in the chemical industry have referred to the Bhopal catastrophe as an isolated incident which could not happen again. However, the Commission contends that this assertion cannot be supported by fact and does not reflect the actual conditions. Today there are numerous plants and facilities throughout the world where highly toxic and dangerous chemicals are manufactured, used, stored, or disposed of, and where adequate steps have not been taken to reduce the risks. In
addition, industrial plants and hazardous facilities are sited near population areas
where the lives of large numbers of people are placed at risk without their having any
voice in assuming such risks.

Objectives and Activities of the Commission

The Commission will work toward the formulation of specific
recommendations concerning short-term and long-term steps that ought to be taken to
grant medical and other relief measures to the Bhopal victims. This is especially
important since the legal and financial implications of any remedial action have led, to
date, only to limited responses on the part of Union Carbide and the Indian
Government.

The Commission will urge that new policies, rules and standards be adopted by
the appropriate authorities to deal with the widespread danger of release of toxic
substances around the world. The Commission will also explore policies concerning
the issue of economic development and assistance vis-à-vis job dependence on the
production of industrial chemicals and other products.

The principal activities of the Commission will entail:

- Supporting prompt and effective relief and redress for the victims of the
  Bhopal tragedy.

- Facilitating the gathering and sharing of materials and information relating to
  the Bhopal disaster (the Commission itself may serve as a clearing-house for
  such information, ensuring that all groups, both at national and international
  levels, have adequate access to such information).
• Encouraging and supporting the dissemination of independent research on issues and areas of concern raised by the Bhopal catastrophe, such as research on existing health, safety and environmental standards, and ways of strengthening them.

• Increasing the involvement and participation of community, worker and other concerned groups in decisions relating to the manufacture, storage, transportation, trade, use, and disposal of toxic chemicals.

• Encouraging the development of programs relating to public education, worker training, and consumer awareness about toxic chemicals and hazardous products manufactured and used around the world.

• Assisting in the formulation of suitable demands, statements and recommendations, as well as suggesting policies relating to the manufacture, storage, transportation, trade, use and disposal of toxic chemicals.

• Advocating and urging the adoption of more effective local, national and international public policies, as well as institutional arrangements to address the concerns of the Commission.

An important lesson to be learned from the Bhopal tragedy is that business cannot continue as usual. Significant changes must be made in hazardous facilities and chemical plants the world over to avoid further disasters and tragedies. The Citizens’ Commission on Bhopal plans to work with all concerned parties, both in the private and public sector, to help bring about these changes (Abraham, 1985).
APPENDIX I

STATEMENT BY PARISAR (AN INDIAN ENVIRONMENTAL GROUP) ENTITLED LESSONS OF BHOPAL.
Conserving Nature and Natural Resources

No new sophisticated technology should be introduced before sufficiently adequate knowledge of its hazardous effects on the natural environment, especially the danger to human health and safety, is secured.

Technologies that by their very nature break ecological balances in nature, and/or cause illnesses or slow poisoning to people, should be rejected, or if in current use, be phased out and substituted by technologies that work with nature and promote the health and safety of people.

No industrial product should be freely introduced on a commercial basis before it is thoroughly tested for its biodegradability and nontoxicity. Products should be allowed to be put on the market only after it has been proved in a reasonably satisfactory manner that they do not pose a threat to the environment or man.

Legal and Administrative Measures

Law should place the mandatory responsibility for identifying pollution and/or health hazards of the industrial technologies and processes used, products marketed, and wastes disposed, on the shoulders of the concerned owners and management.

Law should require that the concerned owners and management install the most fail-safe measures known internationally wherever a threat to life is involved (either instantaneous or at a slow pace), whatever be the costs of such measures. For all such products and processes, it must be made obligatory for producers to contribute to R&D efforts to develop alternatives which will altogether avoid the ecological and environmental hazards inherent in the existing products and processes.
Law should make it the responsibility of the concerned owners and management to carry out continuous and effective public education programs for informing the workers and the people living in the area about the hazards they are exposed to, the contingency measures they must adopt in the event of accidents, their legal rights to claim full damages from the company, etc. The creation and maintenance of a safety belt around such production facilities must be made obligatory.

Failure to install adequate and the most up-to-date fail-safe protective equipment, failure to maintain such equipment continuously, and failure to operate such equipment in times of need, should be made a criminal offense, and culpability fixed on all concerned parties, including the highest management personnel, wherever the choice and employment of a life threatening technology is knowingly made.

Whenever and wherever the government permits the establishment of an industry which produces, uses, or generates as wastes, toxic products, the government as a corporation, as well as concerned persons such as ministers, civil servants and scientists or technical consultants, should be held responsible, both for failing to secure full knowledge of the environmental hazards involved, and also for failing to ensure that the most up-to-date and adequate safety measures are adopted.

In the case of negligence or failure to inspect and enforce compliance with safety measures, law should also fix criminal culpability on the concerned inspecting authorities, both for small scale accidents, as well as major catastrophes in all industries where life-threatening machines, technologies or processes are in use.
The Polluter Must Pay

Law should rigorously enforce the principle of "The polluter must pay."
Workers, employees and citizens should be legally entitled to claim damages for ill-effects caused by the operation of the concerned industrial establishment, or by the use of its products, or by the dumping of its wastes. It should be deemed sufficient evidence in law if a reasonable connection can be established between the pollution or hazardous effects suffered by the complainant and the operation, products or wastes of the industrial processes.

The same principle should hold true with regard to nature. The suggestion that the solution to Bhopal-type disasters is to locate such plants in uninhabited stretches of land must be rejected. Man and nature form a unity, and survival of man is vitally dependent on the maintenance of the ecological balance in nature. Nature everywhere is a single, complex, interacting web of non-living and living systems. Hence, there are no so-called "uninhabited stretches" of land on earth.

The first and foremost basic principle of our industrial and economic policies should be that each and every producer of pollution, in all its forms, must be made to bear its social and environmental costs in full measure. Satisfactory legal measures should be framed to implement this in practice.

Power to the People

The Bhopal tragedy (and other similar industrial disasters the world over in the recent past) could have been averted if responsible representative people's organizations had access to the relevant information, as well as the legal authority to
intervene in the situation at the Union Carbide Bhopal plant. For a long time, secrecy and non-access to information and data have protected the "anti-people" activities of the vested interests within the industrial business world and the bureaucratic machinery of the government. All across the world, events have repeatedly shown that governments by themselves have proved inadequate to intervene in time to prevent ecological disasters. Help must actively be sought from those sections of society whose lives and health are directly in danger, as well as from those who have a long-term scientific or cultural interest in "Spaceship Earth", viz. naturalists, biologists, ecologists, historians, artists, etc. All legitimately and genuinely interested parties, like the consumers, citizens, workers, scientists, artists, etc., should, by law, be given the legal status and power as members of the inspecting authority through accredited representative bodies.

Policy Regarding TNCs and the Establishment of Industries

TNCs dominate the worldwide industrial system today. They pose a serious threat to Third World countries because they act as models, and are frequently the collaborators of local industrialists. The people and the government must wake up to the grave threat posed by the profit hungry TNCs, who are more than willing to treat people in the Third World as dispensable material in their pursuit of growth and profit.

Third World countries should begin to ban all industrial processes and products which are banned in the developed nations. The life and health of citizens in developing countries is as sacred and inviolable as that of citizens in the industrialized nations.
Introduction of industrial products and processes involving toxic materials that pose potential environmental or human health hazards should be permitted only if it is incontrovertibly proved that their use is unavoidably and urgently needed for meeting the basic needs of the common people, and that too only to that extent. They should never be allowed in cases where satisfaction of secondary or tertiary needs are involved, and where viable alternatives are available or can be developed in the near future.

A procedure should be immediately instituted whereby it would be obligatory on the part of concerned governments and industrial establishments to publicly announce their intentions to introduce new technology, products, wastes, etc., or to set up industrial plants in a particular locality, and invite comments from public interest groups and individuals. The procedure should provide for a proper hearing of the representations made by such groups and individuals. The hearings should be open to all concerned parties and the press, and should be given adequate publicity (Abraham, 1985).
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