

## ENVIRONMENTAL COMPLIANCE AND ENFORCEMENT THROUGH PUBLIC LITIGATION IN THE GODAVARI AREA IN NEPAL

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### 1 BACKGROUND

The main village of Godavari is situated at the base of Phulchowki mountain, approximately 16 kilometers from central Kathmandu. Phulchowki mountain is the highest peak in the Kathmandu valley, ranging from 1525 to 2765 meters, covering an area of approximately 50 square kilometers. "Godavari" may refer generally to the entire area surrounding the Phulchowki mountain, but more specifically it refers to the villages within the boundaries of the Godavari Village Development committee. Godavari is also the home of the Royal Botanical Gardens, the National Herbarium and the National Fisheries.

#### 1.1 Environmental Background

One of the most impressive features of Godavari is its wealth in terms of biodiversity. Godavari is one of the last remaining mid-hill forest regions in Nepal. Experts have concluded that Phulchowki hill is the only subtropical, broad-leaved forest in the country which is still worthy of protection.<sup>1</sup> The precious ecosystem of the Phulchowki mountain forest harbors an abundance of flora and fauna. As reported by the International Council for Bird Preservation, "*Phulchowki's forest is remarkable for its floral diversity with 571 angiosperms, two gymnosperms, and 80 species of ferns and fern allies recorded.*"<sup>2</sup>

There are 256 different species of birds in Godavari, 17 of which are endangered in Nepal, and 6 of which are considered threatened species worldwide. To put these figures into perspective, it should be noted that in all of North America there are 665 species of birds. Nepal, the size of one state in the United States of America, has over 800 species. Kathmandu valley has over 400 of Nepal's bird species, and over half of these are found in Godavari. In this light, Godavari is truly a bird sanctuary unlike any other in the world.

The Phulchowki hill forests also provide habitats for a number of rare butterfly species, such as the Sikkim Hairshreak, the Pale Hockeystick Sailor, the Blue Duchess, and the Naga Hedge Blue. In terms of larger mammals, Godavari boasts of leopard, Himalayan black bears, barking deer, Jungle cats, martens and mongoose. Additionally, in recent years, spiders and insects with important scientific value have been found in Godavari which were previously unknown to mankind.<sup>3</sup> The Godavari of years past was renowned for its plentiful water source. Deforestation, erosion and industrial activity have greatly diminished the water carrying capacity, and have severely degraded the quality of the available water which remains. Local people rely on the river fed by Phulchowki mountain for their domestic and agricultural water requirements.

#### 1.2 Cultural Heritage Background

Godavari hosts a number of significant cultural and religious sites. One such site is "Naudhara", the nine natural water taps at which people have historically gathered to collect water and to bathe. The Bhagwati temple is of extreme importance to the Hindu religion. Every

twelve years, Hindus from around the world make a pilgrimage to this special temple, and the people of the Godavari villages hold it in very high regard. There is also another temple, devoted to Shiva, as well as a pond with cultural legendary significance.

Aside from the temples and religious value of the area, the pristine natural beauty of the Phulchowki mountain and lush greenery of Godavari forests provide further cultural importance. The Royal Botanical Gardens of Nepal are located in the center of Godavari, as well as a tree-planting site for foreign dignitaries. Thus, the area is of great appeal to tourists as well as being a place of national pride. The National Fisheries, National Herbarium, and Royal Botanical Gardens also serve as research and educational centers for scientists, botanists, biologists, and students from the Kathmandu valley and elsewhere in Nepal.

## **2 ENVIRONMENTAL IMPACTS OF INDUSTRIAL ACTIVITIES**

### **2.1 Deforestation**

The rate of extraordinary rapid environmental degradation and resource depletion in the Godavari area is greatly attributed to the industrial operations of the Godavari Marble Factory and the Himalayan Brewery. The marble factory has been in operation for over sixty years, but until the mid-1970's, only small scale mining and extraction was performed. In the past two decades, the marble factory has drastically increased its production, especially by expanding its extraction of boulders and aggregates to meet growing construction demands of the Kathmandu valley. Perhaps the most visibly striking impact of the quarry is the enormous scar on the face of the Phulchowki mountain. Amidst the beautiful green hills, in the center of Godavari, there now stands an offensive red gash in the mountain. What once provided an exceptional view of lush forest, is now a shamefully disgraceful view from all points of interest in Godavari.

The marble quarry has severely damaged the lower slopes of the Phulchowki mountain. The quarry has caused severe deforestation of the surrounding hills, which has in turn deprived the villagers of their fuelwood supply, and contributed to soil erosion and runoff problems which are particularly threatening during the monsoon season. Another consequence of the deforestation is the threat it poses to biodiversity. The endangered species of birds, butterflies, plants, and other flora and fauna found in the Godavari forests are being pushed further toward the brink of extinction as the deforestation continues.

### **2.2 Water Supply and Quality**

The water supply in Godavari has been steadily decreasing, directly corresponding to the increasing industrial activities of the marble factory. The factory consumes a great amount of the local water supply for the operation, cooling, and cleaning of its equipment. The deforestation and erosion of the hills that has been caused by the quarry decreases the carrying capacity of the watershed, and increases the red-soil runoff which contaminates the river and adversely affects the irrigation of the local villagers' crops.

The depletion of the water resource in Godavari is most clearly evidenced by the fact that of the nine taps at Naudhara, only four remain flowing, and even this is only a mere trickle compared to the water flow ten years ago. The blasting and mining is directly disrupting the natural faults which lead to the water source.

The Himalayan Brewery is also consuming vast amounts of water. The studies which have been undertaken to date have contradictory findings with regard to the comparative consumption of water between the brewery and the marble factory. In any case, however, the marble factory presents a direct threat to the source itself. The main threats of the brewery are consumption and contamination by the discharge of effluents. The latter may be controlled and monitored, whereas irreparable harm will be suffered if the source itself is damaged. Further research should be undertaken to ascertain the true relationship between these two industries and the depletion of the water resources of Godavari.

In addition to water supply, the marble factory and the brewery are degrading the water quality. As mentioned above, rain washes red-soil runoff and limestone dust from the quarry and factory premises directly into the river, seriously contaminating the source of water used by the majority of the local people for irrigation, drinking, cooking and cleaning. The stream waters used for the irrigation of approximately 3000 hectares of local crops are of such high silt content that the soil fertility and productivity have drastically declined<sup>4</sup> and the crops are often plastered over, destroying entire harvests. The factory constructed settlement ponds on the premises when pressured to control the harmful effects of the calcium-carbonate sludge that the factory was discharging into the river. However, the ponds did not function properly, and the factory has not been forced to employ effective treatment methods or technologies. Contributing even further to the degradation of the water quality is the lack of sanitation facilities for the 300-400 laborers employed at the factory, who live near the quarry premises, and urinate, defecate, and dispose of garbage in the river upstream of all the local villages. The effluents discharged by the brewery also present a critical threat to the local villagers. To date, the brewery has not installed any form of treatment plant and is discharging its effluents directly into the river.

### 2.3 Noise Pollution and Blasting Dangers

One of the most directly intrusive impacts of the marble factory is the noise that emanates from the drilling, crushing, and blasting activities. The drilling is usually constant throughout the day, and frequently throughout the night as well. It is undeniably heard throughout St. Xavier's boarding school, which is situated directly at the base of the hill on which the quarry is located. The drilling also resounds throughout the nearby villages of Kitini and Manidanda, as well as the small village surrounding the Godavari pond. Local villagers cite the noise from the quarry as one of their foremost complaints.

Blasting occurs periodically throughout the day, but has been observed to occur as frequently as 22 times in a period of three minutes. The blasting not only exacerbates the noise pollution, but also sends boulder fragments flying into the school grounds at St. Xavier's and nearby villages. School officials from St. Xavier's have reported that soccer ball sized rocks weighing up to twenty kilograms have been found on school premises, and often the rocks are projected with such force that they actually pierce the roof of the school buildings.

### 2.4 Air Pollution

A related impact of the drilling, blasting, stone-crushing, and truck transport to and from the marble factory is the increase in air pollution. Clouds of dust can be seen throughout the day as the drilling proceeds, and particularly when blasting occurs. The dust and air pollution are also among the most frequently cited complaints of the local people.

The foregoing presents a brief overview of the extreme importance of Godavari in terms of environmental issues. Continued deforestation of the Godavari mid-hill range will threaten biodiversity and the survival of a significant number of threatened species of birds, butterflies, insects and wildlife. It will also deplete the water resources of the area. This poses a critical

threat to the populations of the local villages that depend on the water supply to irrigate their crops and which often it constitutes their entire means of survival. Industrial consumption and contamination of the water in Godavari is a blatant case of environmental injustice for the impoverished village communities. Furthermore, without being given a meaningful voice, the local people will inevitably be forced to live with the noise, dust, unsanitary conditions, and blasting dangers which have invaded their lives since industry has arrived in the community. Finally, the cultural and religious value of Godavari's Royal Botanical Gardens, Naudhara, and the Bhagwati temple (site of the twelve year mela), will similarly suffer from the depletion of water, the loss of biodiversity, and the severe degradation of the natural aesthetic beauty of the Phulchowki mountain and surrounding hills.

### 3 PUBLIC OPPOSITION AND GOVERNMENTAL ACTION

A number of non-governmental organizations and advocates from Kathmandu, as well as several local clubs in Godavari, have launched efforts in the past to restrict the industrial development in Godavari and protect the environment. Despite the fact that these efforts have been ongoing for many years, none of these efforts, have resulted in any significant change in the industrial activities. The environment is still being exploited and degraded at an exponential rate. One of the aims of this case study is to identify the reasons why such efforts have not been effective.

#### 3.1 Public Opposition

At various times in the past decade, different groups have spoken out against the industrial operations of the marble factory.<sup>5</sup> Street rallies and processions were organized by non-governmental organizations and advocates. Over 20,000 signatures were gathered for a petition ultimately delivered to the Prime Minister demanding closure of the quarry. A large number of organizations in the Kathmandu valley joined together to form the short-lived "Save Godavari Coalition," which discussed issues and strategies related to opposing the marble factory.

#### 3.2 Governmental Action

The government did respond to the pressure it received to act in Godavari. Altogether, the government set up three Task Forces. The first Task Force was set up in 1989 by the Ministry of Forests and Soil Conservation. The second one was set up in 1990, again by the Ministry of Forests and Soil Conservation. The last and most recent one was set up in June 1993 by the Council for Conservation of Natural and Cultural Resources. Each of these Task Forces has recommended that the marble factory be closed. The 1993 Task Force study and report is the most comprehensive, and its recommendations are also very practical. The majority of the Task Force members recommended that the operation of the marble factory should be stopped by the fiscal year 2050-51, (1994-1995) and the Himalayan Brewery should build and install a waste water treatment facility within six months of submission of the Task Force report to the government. However, even five years after the recommendation of the Task Force the Marble Factory has not yet been closed and the Brewery has not yet installed a waste water treatment plant.

### 3.3 Writ Application

LEADERS Nepal, a non-governmental organization, filed a writ in the Supreme Court of Nepal against the Godavari Marble Industry, the Ministry of Industry and Cabinet Secretariat and others, seeking closure of the marble factory in May 1989. The Court handed down the verdict on 31 October 1995. In its decision the Court did recognize that effective mitigation and corrective measures had not been taken for environmental conservation. However, the Court did not order closure of the marble factory. Rather, it issued an advisory directives to the Ministry of Industry, Cabinet Secretariat and others to enforce the Mines and Minerals Act, 1986, enact legislation for the conservation of air, water, and the environment, and take appropriate measures for the conservation of the environment of Godavari area. The Supreme Court observed:

“That there is no doubt that the petitioner has a concern for environment. As environmental conservation is a matter of public concern and interest, it does fall under public interest. Therefore, the petitioner undoubtedly has a meaningful relationship with the issue. As the present constitution under its Article 88 (2)<sup>6</sup> has established public interest as a fundamental right, whether the petition has locus standing is no more an issue.

Right to life includes right to clean and healthy environment. In order to conserve the environment, it is essential to enact a special legislation and implement it effectively. No human activity can be properly managed or regulated if the legislation is lacking. Legislation is also indispensable to define environmental offense and crime and make provision for punishment. The court cannot penalize, or pass an order for the closure of an industry in the absence of relevant legislation. As the existing legislation are scattered, inadequate and ineffective, a legislation which covers every component of environment needs to be enacted.

When the Executive does not enforce the legislation enacted by the Legislature, it cannot be said that the Executive has been willing to work as per the intent of Legislature. Although the government has considered trivial matters, it has not taken into account the Directive Principles of the constitution and national and international public opinion. It is therefore imperative to enact an environment protection legislation, as soon as possible, in order to put the anomaly concerning this issue to an end and to give practical shape to national and international obligation related to environment.

There is no doubt that industry is the foundation stone of national development. The nation and society both need development, but it is essential to maintain environmental balance and operate industries. It is necessary to strike a balance between priority to environmental conservation and providing continuity to development activities.

Initially, curative and regulatory measures need to be adopted for the mitigation of negative environmental consequences. If goals of conservation are not achieved by such measures only then polluting activities should be brought to a halt. Development is for the benefit and prosperity of human beings. Therefore, human life is an end, development being the means to live happily. Human beings cannot lead a decent and healthy life in a polluted environment. This fact should be kept in mind while adopting measures to prevent environmental degradation.”

It was observed that the the Department of industry had provided the land to the industry by a lease agreement between the two parties. The lawyer of the petitioner also raised the issue that the government can terminate the agreement if it feels that it is necessary in the public interest. His plea was that the Court should issue a mandamus directing the government to revoke the license given to the industry on broad public interest. However, the power given to the government to revoke the license is discretionary. Thus, the Court cannot compel the government to exercise its discretionary authority. Mandamus is issued to fulfill legal duty. As the applicant is not able to show which Section of which Legislation provides for such a duty of

the government, writ of mandamus cannot be issued. But, as no effective and satisfactory curative measures have been taken for the conservation of such a sensitive and humane matter of national and international significance as the environment of the Godavari area, the Court issues this directive to the respondents to enforce the Mines and Minerals Act 1985, enact necessary legislation for the protection of air, water, and environment, and undertake appropriate measures for the conservation of Godavari area.

However, even after almost three years since handing down of the verdict, the government has not enforced the Mines and Minerals Act 1986 yet.

#### **4 INTERNATIONAL ENVIRONMENTAL COMMITMENTS**

Nepal is party to about 20 international environmental treaties. The most relevant and important among these treaties for Nepal are the:

- 1971 Convention on Wetlands of International Importance Especially as Waterfowl Habitat.
- 1972 Convention Concerning the Protection of World Cultural and Natural Heritage.
- 1973 Convention Concerning the International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- 1985 Vienna Convention on the Protection of the Ozone Layer.
- 1989 Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.
- 1992 Convention on Biological Diversity.
- 1992 Convention on Climate Change.
- 1994 Convention to Combat Desertification.

The membership of these treaties carries certain obligations that exert some influence over environmental policy. A strong national commitment and complementary legislation are needed to make such international environmental instruments truly effective. The implementation of these treaties at the national level is very weak, mainly because no specific policy has been formulated and no domestic legislation has been enacted to do so. The government seems to ignore international environmental treaty obligations by not formulating necessary policy and legislation for the implementation of international treaties. Very superficial policy and legislation do exist for the implementation of some of the above mentioned conventions. The Nepal Treaties Act 1991 categorically requires the government to enact legislation, if so required, for national implementation of the convention to which Nepal is party. Despite such a clear legal requirement, specific legislation for the implementation of conventions such as CITES lacks mechanisms for ensuring compliance and enforcement of international environmental obligations.

#### **5 COMPLIANCE<sup>7</sup> AND ENFORCEMENT**

This case study illustrates the degree of environmental enforcement in Nepal. It is not that there was or are no environmental requirements. Industrial facilities and their activities are regulated by the Industrial Enterprises Act, 1992. In 1989, when the writ was filed in the Supreme

Court, the Industrial Enterprises Act 1982 was in force. Under Section 15(d) and (e) of that Act, the government was empowered to issue directives to industries in relation to environmental pollution and protection of the public interest respectively. Any directives issued by the government were binding. In case of noncompliance of any directives, the government was even empowered to close down such industry.

One of the basic conditions in almost all of the licenses issued since the mid 1980's is to control pollution. This is a broad responsibility imposed on any industrial facility by the license. Owing to various reasons, monitoring of pollution caused by various industries is very weak. Had the government monitored the marble factory's failure to control pollution and exercised powers under section 15 of the Industrial Enterprises Act 1982, industries such as the Godavari marble factory would have either been forced to control the pollution they caused or been closed down long ago.

Various questions arise from the state of the environment in the Godavari area, and the movement's and the judiciary's effort to resolve the issue. In spite of establishing the three Task Forces in a span of four years, why did the government not issue an order to close of the Godavari factory? Why did the government not issue any directives under Section 15 of the previous Industrial Enterprises Act 1982? Despite its finding that the Godavari Marble Factory is polluting the Godavari area, why did the Supreme Court not order closure of the factory or impose stringent environmental impact mitigation requirements? Why have water quality standards not been developed under the Water Resources Act 1993 for sensitive areas like Godavari? Why has any action not been taken against the marble factory and Himalayan Brewery by the Department of Industry after promulgation of new Industrial Enterprises Act (IEA), 1992?

Pollution control provisions and economic incentives are within the scope of the Industrial Enterprises Act. These provisions have not yet been exercised in cases of existing facilities, however. Although the Industrial Enterprises Act provides tax incentives, rarely has any industrial facility availed itself of the tax incentives which can be obtained for the money spent on pollution control processes or equipment. It is surprising and disappointing that neither the Department of Industry nor any other government agency has taken any measures to enforce compliance with environmental requirements and improve the quality of the Godavari area's environment. It is said that the Marble Factory has reduced extraction and sale of boulder for the last couple of months and therefore there is less environmental degradation in the area. However, the factory has not taken steps to clean up the past pollution it has caused, and the Brewery has not taken any pollution prevention and environmental mitigation measures.

### 5.1 The Environment Protection Act 1996

The government enacted the Environment Protection Act in 1996 and promulgated the Environment Protection Regulations in 1997.<sup>8</sup>

The main reason given by the government for tabling action while the Environment Protection Bill was in the parliament was the directives of the Supreme Court. The potential scope of the Act is broad. It is apparent from the definition of the key terms such as "environment", "environmental impact assessment", "pollution prevention and control" and "biodiversity".

Provisions relating to the prevention and control of pollution, for the first time in the Nepalese legal regime, make causing pollution or allowing such pollution to be caused a punishable act. Under section 7(1) of the Act, proponents are required not to cause pollution or to allow pollution to be caused in a manner which is likely to have significant adverse impacts on the environment or to harm human life or public health, and not to emit or discharge sound

or radiation from any machine, industrial enterprise or from any other place above the prescribed standard. However, there is no time limit for the government to set environmental quality standards and to enforce them.<sup>9</sup> Other government agencies are also empowered by this Act to impose appropriate conditions or to prohibit any activity that has caused significant adverse effects on the environment or which is likely to cause significant adverse impacts on the environment.<sup>10</sup> If these provisions coupled with others relating to concessions and incentives<sup>11</sup> are enforced properly, existing industrial facilities will be more willing to comply with the requirements of the Act and there will be little danger of them losing their comparative advantage and competitiveness.

Ironically, the Act contains only one section dealing with pollution and this sole section aims to prevent and control pollution of air, water, land and noise pollution. It would not be incorrect to say that the new regime reflects a blatant breach of a commitment to sustainable development and a disregard of environment conservation and the precautionary principle. Ensuring compliance and enforcement of such a legal provision which is all encompassing and at the same time very limited will be an uphill task.

Although waste is defined in the Act to include liquids, solids, gases, sludge, smoke, dust radiation or similar other substances or materials disposed of in a manner which is likely to degrade the environment, it is not clear whether any operation for its disposal, recovery or treatment will require a license from MOPE or any other ministry. It is unlikely that the production, treatment and disposal of waste will be more highly regulated than at any time in the past. This obviously will not have any severe cost implications for industry or the individual waste producer. This is contrary to the Act's apparent aim to enforce the "polluter pays" principle so as to encourage the minimization of waste and the prevention of pollution.

Ironically the legislation does not include any measure for voluntary compliance programs. In only one place an environmental management system has been mentioned in the Environment Protection Regulations 1997. Voluntary environmental management systems are one of the mechanisms for compliance promotion, which the law has failed to ensure. However, Wasserman maintains that:

*"Experience has shown that promotion alone is often ineffective. Enforcement is important to create a climate in which members of the regulated community have clear incentives to make use of the opportunities and resources provided by promotion. However, experience in several countries has also shown that enforcement alone is not as effective as enforcement combined with promotion."*

*Promotion is an important element of most enforcement programs. Compliance promotion includes: providing education and technical assistance to the regulated community; building public support; publicizing success stories; providing creative financing arrangements; providing economic incentives; and building environmental management capability within the regulated community.<sup>12</sup>*

Taking into account the costs and resources imposed by regulation and the rate at which the processes and procedures are increasing, the Act empowers the government to provide additional incentives to any industry, occupation, technology or process which has positive impacts on environment conservation. It is likely to lessen the burden of various industries which have to adopt pollution control measures and comply with environmental quality standards to be determined under the Act. This will certainly further a new relationship with industry involving cooperation in initiatives to improve environmental performance and therefore the quality of the environment. This is obviously good news and will be an incentive for those companies that do take their environmental performance seriously.

Any person who contravenes any of the provisions of the Act, or the regulations or guidelines issued under the proposed Act, shall be punishable with a fine of up to Rs. 50,000 (US \$ 750). If a proposal is implemented without the approval of MOPE or the relevant government agency, or the person implementing the proposal is not complying with the conditions of the approval or license, the authorized officer is empowered to close down that activity and may impose a fine of up to Rs. 100,000 (US\$ 1,500) on such person or organization. The penalties are too meager to create any deterrence effect. However, giving any person power to close down development activity or industrial facilities without resorting to other penalties first is not a fair practice and is likely to be abused in the Nepalese context. At the same time, contrary to the practice in many countries, a penalty on a daily basis has not been introduced. To aggravate the situation, the Act does not contain any specific provisions whereby directors, secretaries and officers of companies could be held personally responsible for environmental offenses committed by their company.

Wasserman notes that:

*Deterrence is a principle that is fundamental to all enforcement programs. "Deterrence" is the creation of an atmosphere in which many choose to comply rather than violate the law. Four interrelated elements are needed to create deterrence:*

- *A credible likelihood that a violation will be detected.*
- *A swift and certain response by government or others*
- *Appropriate consequences in the form of sanction or penalty*
- *The perception that the above conditions exist.*<sup>13</sup>

Unfortunately, the above mentioned elements do not exist in Nepal and the Nepalese legal system.

It is apparent that there is a wide gap between the existing regulatory framework mechanisms and their enforcement. If certain mechanisms are not developed at this stage, it is very likely that all efforts - be they governmental or non-governmental - will be futile. It is the most appropriate time to come up with various mechanisms for environmental compliance and enforcement, as Nepal is currently in the stage of developing environment protection legal regime. Nepalese lawmakers, policy makers, administrators and members of academia need to realize the importance of the principles of environmental compliance and give them due recognition in the Nepalese environmental legal regime.

## **6        LOOKING TOWARDS THE FUTURE**

It is not too late to take actions to promote environmental compliance and enforcement. In addition, it is a crucial time to equip environmental legislation with various environmental compliance and enforcement mechanisms that will facilitate implementation and enforcement of environmental requirements. The following is a list of approaches which need to be adopted in Nepal's existing legal provisions related to environment conservation, and environmental conservation legislation to be enacted in future to enable and ensure effective environmental compliance and enforcement:

- Creating environmental requirements that are clear, precise, without ambiguity and enforceable --
  - General requirements applicable to all regulated industries;
  - Industry-specific requirements; and
  - Stringency and Feasibility.
- Stating clearly who is subject to the requirements and clearly stating roles and responsibilities --
  - Which government entity or entities will be involved?
  - To what extent should a program make use of citizen and other non-government recourses?
- Promoting compliance in the regulated community.
- Involving the the public in environmental decision-making from an early stage.
- Monitoring compliance.
- Responding to violations including the tools to remedy past and prevent future environmental problems.
- Providing sanctions sufficient to deter future violations and providing an appropriate penalty for the past noncompliance.
- Devising suitable economic incentives --
  - Fees;
  - Tax Incentives; and
  - Pollution Taxes.
- Setting an institutional framework for effective implementation of environmental requirements.
- Creating an appropriate institution for redressing of grievances.

In addition to aforementioned approaches, the public can play an important role in promoting compliance. Public support helps in creating a social ethic of compliance. The public should serve as watchdogs who alert officials to noncompliance. In addition to providing the government with the tools it needs to enforce the law, it is important to also empower citizens to enforce the law as well.

If the Nepalese government is sincere about effective implementation of environment conservation and pollution prevention and control related provisions scattered in about 30 pieces of legislation and the Environment Protection Act 1996 and the Environment Protection Regulations 1997, it should go forth with review of its legislation in light of principles of compliance and enforcement and include the various mechanisms through amendment to those pieces of legislation. Equal emphasis needs to be given to training and developing expertise of environmental inspectors, customs officer and other government administrators. Unless the above mentioned approaches are incorporated in environmental policies and legislation and effectively implemented, the conservation community will have to resort to the courts for ensuring environmental compliance and enforcement again and again.

## REFERENCES

- 1 International Council for Bird Preservation (1991), Conservation Project for Phulchowki Mountain, Nepal.
- 2 Carol Inskipp (1989), Nepal's Forest Birds: Their Status and Conservation, International Council for Bird Preservation, 73.
- 3 HMG, Council for Conservation of Natural and Cultural Resources (1993). State of Godavari Area Environment: Investigation Report, 27-28.
- 4 The declining fertility and productivity results primarily from the calcium-carbonate content of the water discharged by the factory. Growth is prohibited because the calcium-carbonate blocks sunlight, and prevents aeration and respiration of the soil and crops. Simple pH testing can be performed to monitor the levels of calcium-carbonate in the water downstream from the factory. Between 6 and 8 pH is considered a reasonably safe level, but over 10 pH is not safe.
- 5 It should be noted that few groups have opposed the brewery, although it has always presented a serious threat to the water resource, and thus has been a primary concern of the local people. The concentration of opposition efforts against the marble factory, rather the brewery, can be attributed to the extensive deforestation, noise pollution, dust and air pollution, blasting dangers, and visible hillside degradation that are caused by the factory.
- 6 Article 88(2): The Supreme Court shall, for the enforcement of the fundamental rights conferred by this Constitution, for the enforcement of any other legal rights for which no other remedy has been provided or for which the remedy even though provided appears to be inadequate or ineffective or for the settlement of any constitutional or legal question involved in any dispute of public interest or concern, have the extraordinary power to issue necessary and appropriate orders to enforce such rights or settle the dispute. For these purposes, the Supreme Court may, with a view to imparting full justice and providing the appropriate remedy, issue appropriate orders and writs including the writs of Habeas Corpus, Mandamus, Certiorari, Prohibition and Quo Warranto.
- 7 "Compliance is a state in which environmental requirements are met and maintained". Cheryl E. Wasserman (1996) "Building International Networks, Cooperation, and Capacity for Environmental Compliance and Enforcement : A Progress Report", in Proceedings of the Fourth International Conference on Environmental Compliance and Enforcement, Vol. I, April 22-26, Chiang Mai, Thailand, 114.
- 8 The Environment Protection Act and The Environment Protection Regulations came into effect on 24 and 26 June 1997 respectively.
- 9 Up till April 1998 MOPE had not taken any initiative to develop any environmental quality standards. As long as environmental quality standards are not developed and enforced, provisions relating to pollution prevention and control will remain dormant. The Ministry of Industry and the business community would like to see that the environmental quality standards are not developed and notified in the gazette in the near future.
- 10 Environment Protection Act 1996 s. 7(2) (Nepal).

- 11 See discussion on incentives and penalties, *infra*.
- 12 Wasserman, above, note 7, 120-121.
- 13 Wasserman, above, note 7, 116.