

---

## ENVIRONMENTAL COMPLIANCE AND ENFORCEMENT: A CASE OF NEPAL

OLI, KRISHMA PRASAD

Chief, Environmental Planning Program, IUCN, The World Conservation Union, P.O. Box 3923, Kathmandu, Nepal

### SUMMARY

This paper deals with the present status of environmental compliance and enforcement in Nepal. It presents the current environmental situation and reviews the international legal instruments of which Nepal is a party for environmental conservation.

It also demonstrates Nepal's compliances with various international treaties and their adoption in domestic law. Institutional aspects for environmental compliance in Nepal are discussed and some of the institutional problems are identified. National legal instruments for environmental compliance and enforcement are analyzed. Factors for successful compliance with national and international instruments for environmental management, effective enforcement is a prerequisite. This article provides some of the background necessary to understand the international and national legal instruments to be complied with and enforced by His Majesty's Government of Nepal from mid 50s to early 1990s.

### 1 BACKGROUND

One of the least developed landlocked countries in the world, Nepal is situated between the two Asian giants, China in the North and India in the south, east and west. It has an estimated per-capita income of US \$170 with gross domestic product (GDP) growing at the rate of 3%. The population growth is estimated to be 2.5%. While considering this population growth and GDP of 3%, the country's economy has been stagnant leading to several hardships and social and environmental problems.

The official estimated poverty incidence rate is about 50% and this is increasing. Poverty rate and major socio-economic indicators have concluded that Nepal will face formidable challenges for attaining higher growth and improved standards of living for its 20 million inhabitants.<sup>1</sup>

Nepal is characterized by widespread poverty, high population growth, poor infrastructure development in the hills and mountains and unskilled labor force. This has exacerbated its desire to be transferred from a subsistence - agrarian economy to a modern commercialized one. With poor economic base and institutional capacity, the development challenges are indeed formidable.

Despite challenges, there are some positive indications that Nepal could make rapid strides for development, provided there is a strong will and commitment to do so. This demands international, national and local level compliance, implementation and enforcement of desirable actions for the respective areas. Compliance is also needed in order to assist Nepal fulfil its global commitments to the environment from the developed countries.

Nepal is famous for its Himalayas, biodiversity and cultural sites. The country has a total surface area of 147, 181 sq. km. about 0.1 percent of the total world's land surface and comprises over 2 percent of the world's flowering plants. The existing land use is shown in Table 1. There are an estimated 5400 vascular plants including more than 700 medicinal plants.<sup>2</sup> The country is unique for its climatic and physiographic condition. It has tropical climate to tundra towards the

Himalayas. Because of its wide climatic and altitudinal variation from lower than 70 m to the highest peak on earth, it has the largest natural sanctuary in Asia and perhaps in the rest of the world. There are an estimated 200 species of mammals, 858 species of fish and 614 species of butterflies.<sup>3</sup> The total species may be more than what has been recorded because many

**Table 1. Land Use in Nepal**

	Sq. Km.	%
Forest land	55,180	37.4
Shrubland and degraded forest	7,060	4.8
Grassland	17,450	11.8
Farm land	30,520	20.7
Snow and ice cover	22,460	15.2
Water body	4,000	2.7
Uncultivated inclusion	9,980	6.8
Others	630	0.6
<b>Total</b>	<b>147,480</b>	<b>100.0</b>

Source: Land Resource Mapping Project (1985/86), HMG, Nepal.

plants and animals have yet to be identified. In order to conserve and protect this biological diversity, an estimated 14% of the total land mass of the country has been declared as protected area and National Parks. There are an estimated 2150 heritage sites within Nepal.

Nepal is rich in water resources. An estimated 18% of the total annual precipitation is turned into snow. It has abundant water resources in 22,500 sq km of snow and ice cover which provides perennial source of water for the major river system. There are 80 glaciers, 17 glacial and 40 Oxbow lakes, 11 hot springs.<sup>4</sup> Presently, 6000 big and small rivers carry an estimated 174 billion cubic seconds of water run-off into the Indian plains from Nepal.<sup>5</sup>

While there still is a wide ecological system operating independently in Nepal, the increased human pressure is a serious threat for its conservation. Therefore, environmental compliances and enforcement is needed. The government's policies are also geared towards reducing widespread poverty, combating threats to the environment and promoting social equality, democracy and human rights.

## **2 Introduction**

Nepal is in the midst of a number of fundamental changes. As stated earlier more people are added each year than ever before. Similarly human activity has been increased greatly which has had a greater impact on environment. The vegetation and other species are going extinct at an unprecedented rate.

After the establishment of multiparty democracy in 1990, there is a political sensitization within the people. This sensitization process is increasing. As a result, people are becoming more conscious about the environment. It is now widely accepted that the important wealth of the country is contained in biological diversity, living natural forests, the Himalayas and the plains. Mountains, wetlands, habitats and natural services to the agricultural system such as nutrient recycling and other environmental factors are regulating through the ecological process and are contributing towards maintaining the production system.

Many of the biological resources found in Nepal have a high market value. Their sustainable use could help the rural people as well as the country. Effective management system can ensure that biological resources not only benefit us, but in fact increase while they are being used. This provides the foundation for sustainable development and secures national economics.

In this direction, the world charter for nature emphasizes the right of species to survive. Because the diversity of life is important for the functioning of ecosystem and provides the genetic foundation for adaptation to the future changes, it is important to protect them.

Presently, countries are tied up closely by the economics and trade. They are however divided by inequity. Sustainability of any country depends on the stabilization of its population growth at which it is balanced with its resources. But this is not easy to achieve in a country like Nepal. Therefore environmental compliances and their enforcement seems very crucial.

In the following section of this paper an attempt is made to investigate and discuss the measures taken by Nepal towards environmental compliance and their enforcement in the environmental management. A case study of Phewa Lake in Pokhara Valley of Nepal on lack of compliance and poor enforcement of legal instruments is presented.

## **3 Measures taken towards Environmental Compliance and Enforcement**

For the past decade, we have been subjected to a wealth of information regarding environmental degradation in Nepal. The degradation was largely due to deforestation which is often seen to be the terminal problem unless some drastic action is.<sup>6</sup> The World Bank in 1980 calculated that if the present rate of deforestation continues, all accessible forest in the hills of

Nepal will disappear in 15 years, i.e. by 1995 and in Terai within 25 years, i.e. by 2005 (cited by Gilmore 1992, from Manandhar 1980). We are now completing 1995 and only 10 years are left to reach 2005. New trends of forest rejuvenation process are emerging unlike the prediction made by The World Bank. The commonly perceived view is often misrepresented and there are certain local level mechanisms for the sustainable use of natural resources which has kept the forest and the entire ecosystem intact.

Over the past decade, the response to environmental management in Nepal has been positive. Although it is based on solving crises, the trend is to establish compliance according to what the local needs are and the national and international community have taken initiatives in environmental conservation. This compliance, however, does not necessarily involve the formulation and promulgation of legal measures for environmental conservation, but a voluntary commitment toward environmental protection and conservation. This is accelerated through the governments' commitment and its responsibility towards conservation.

While the government's trend is directed towards environmental management, several commercial industries were also established. Most of them are environmentally unfriendly and are seldom prepared to comply with the legal instruments despite legal requirements and practically adopt them due to their cost implications. Therefore there remains a considerable skepticism in order to comply with the legal instruments applicable to such group of environmentally unfriendly activities.

The industries are established in the urban centers where the majority of the people live. Pollution levels have been significantly increased. The government has recently developed strategy to move the industries away from the urban centres. This strategy is quite attractive and complies with the environmental policies, however, due to practical implementation problems such as the rise in transportation cost and government's inability to make subsidies for transforming industries to the specified area, some of the policies are not complied with in reality.

The environmental compliance is a "win-win" approach and in the rural areas it is highly appreciated. Nepal has undertaken various measures both for environmental compliance and enforcement. The treaties, agreements, memoranda of understanding signed at various international conventions, the legal commitments at the national level are all geared for environmental compliance. The command and control regulations with respect to the environmental conservations have been in practice for many years in Nepal. Particular to forest conservation, the government has established legal provisions and been enforcing them through its own mechanisms and prosecuting in the court for serious breaches. Despite this, there are enforcement cases. Traditionally a comfortable accommodation between the regulators and the regulated is reached, with low penalty and rare "enforcement."<sup>7</sup> Government is under-resourced and incapable of prosecuting except in extreme circumstances. Compliance is thus "negotiated." Therefore environmental compliance and enforcement in Nepal has to experience many ups and downs from policy formulation to the enforcement level.

### 3.1 National policies

The increasing rate of development has resulted in previously unseen threats to the environment. Population growth, resource consumption and technological changes are responsible for these unseen threats. The problems are not confined within the political boundary. The deterioration of environmental quality pervading through wider areas is threatening the regenerative ecosystems. The fundamental link between environmental protection and economic

development and threatened ecosystem was first officially recognized at the 1972 declaration of the United Nations Conference on Environment and Development (UNCED, 1972). This declaration assisted in the establishment of United Nations Environmental Program (UNEP).

Since the Stockholm Declaration, various strategies for the environmental management were developed. As a result the World Conservation Strategy (WCS) was endorsed and guided the formation of the National Conservation Strategy (NCS). Nepal complied with the preparation of the Strategy and finally in the year 1988 it was endorsed by His Majesty's government (HMG) of Nepal.

Since then, His Majesty's Government of Nepal's policy on the environment has been broadly stated in a number of documents. The environmental concern has also been augmented in the constitution of the kingdom of Nepal. Consequently the Eighth five year plan of Nepal (1992 - 1997) accentuated direct participation of the people in the management of natural resources and in the implementation of environmental programs.<sup>8</sup> It also appealed to the incorporation of preventive and mitigatory measures in the planning stage of development projects, and for the integration of a comprehensive legal frame work for environmental concerns into development process. For the development of appropriate pollution standards and guidelines, a series of studies is proposed. The conservation and promotion of Nepal's Natural and Cultural Heritage is emphasized.

At the time when the eighth five year plan was being implemented, His Majesty's Government of Nepal took another policy initiative for environmental management. Nepal Environmental Policy and Action Plan (NEPAP) was prepared and endorsed by Environmental Protection Council of Nepal.<sup>9</sup>

Thus there seems to be a growing awareness among policy makers and the people on the injurious effects of environmental degradation. The implementation of a series of National, Sectorial and Subsectorial plans and programs and creation of number of conservation related institutions clearly indicates Nepal's commitment towards environmental conservation.

The Agenda 21 adopted by the United Nations Conference on Environment and Development held in Rio-de Janeiro in 1992, outlines the strategies to halt and reverse the effect of environmental degradation "in the context of increased national and international efforts to promote sustainable and environmentally sound development in all countries." It recommends a wide range of policy strategies and actions encompassing major environment-related issues that member countries need to address from the National and International perspective. As far as practicable, Nepal has addressed the issues raised in Agenda 21 that are of particular relevance to Nepal.

### 3.2 Legal system

The adoption of international policies in domestic environmental management is a step toward environmental compliance. As the policies are adopted, the national legal systems are also forged accordingly. International environmental law and the domestic law are interwoven to the extent it is desired. This happens due to the increased interrelationship between countries in their trade industrialization and concerns of international communities towards unimpaired environment. The international legal instrument provide norms, standards which can be adopted by states as a guide to national law and policy making.

The constitution of the kingdom of Nepal 1990 conforms with the aforementioned policies. Article 26 clause (4) reads that "the state shall give priority to the protection of environment and also to the prevention of its further damage due to physical development activities by increasing the awareness of the general public about arrangement for the special protection of the rare wildlife, the forest and the vegetation." Thus the state has committed

to environmental management. Prior to this constitution, there were sectorial laws and bylaws covering wider areas of environmental conservation, though they were not part of a single environmental act.

Legal instruments for environmental management with binding obligations commonly have originated from international level as treaties, local customs and needs. The treaties were signed and ratified. The most desperate and practical ones needed for the country are adopted after ratification.

In 1958, Nepal participated for the first time in the multilateral negotiation of the law of sea held in Geneva. It ratified only one, "the Geneva Convention on the High Seas" in 1963 and signed all 4 Conventions by reason of the fact that ratified treaties are only legally applicable in the domestic law. Since the inception of environmental management policy and treaties, Nepal has complied with and enforced them at the domestic level. However, there are a number of legal measures for the ratification and implementation of the treaties through the national legal system in Nepal.

The procedures are related to constitutional provision and statutory implementation measures. Under the constitution of the kingdom of Nepal Article (126) the treaty that requires ratification, accession to, acceptance of or approval of a majority of two-thirds of the members of lower and upper house in the joint sitting of the parliament. It is also necessary to get approval for any treaties including natural resources, their distribution and their uses according to article 126 clause (2), subclause (d) of the constitution. Any treaties of ordinary nature which do not affect the nation extensively, seriously or in the long term, the ratification of, accession to, acceptance of or approval of such treaty or agreement may be carried out at a meeting of the house of representatives by a simple majority of the members present. The examples of such issues are that the biodiversity and climate change conventions which are passed by a simple majority. This explains that the legal system is evolved in Nepal in conformance with international legal instruments in environmental conservations. The ratified treaties are implemented through national legal instruments.

After the treaties have been approved or acceded to through the parliamentary process, the next step for the state is to incorporate and internalize the treaty obligation into the domestic laws. The Nepal Treaty Act of 1991 determines the inclusion of the treaties in which His Majesty's Government of the Kingdom of Nepal is a party in the domestic law to the level where the treaties are inconsistent to the Domestic Act Section 9 (1) of Treaty Act 1991. The Act provides primacy of international treaties over the National laws. The Act also stipulates the procedures in section 9, subsection 2, in treaties which are not ratified, approved or acceded to by the parliament, creates any additional obligations, His Majesty's Government of Nepal should initiate the proceedings toward enacting law soonest. Upon approval from the parliament, the government is required to compulsorily publish those treaties which are ratified, acceded to, approved or accepted. It is also required to publish these treaties in Nepal gazette within 60 days of ratification, accession, acceptance or approval.

Although Nepal has no uniform approach to the adoption of treaties into the municipal law, there are some methods which are followed here. For example, statutory incorporation of the whole text with or without reference to the international treaty, partial incorporation or adjustment of treaty provisions in a statute without giving reference to the treaty and incorporation of a treaty provision in delegated legislation without giving reference to the treaty may be followed.

There are a number of cases in which treaties have been incorporated through statutory merger. For example, The Vienna Convention on Diplomatic Relations entered into force. The provisions of this treaty were incorporated into the Foreign State and Diplomatic Representative Facility and Immunity Act 1970. Similarly, for the establishment of the International Center for

Integrated Mountain Development (ICIMOD) in Nepal, it included its agreement under the Act of 1983. This Act was promulgated with reference to the agreement reached between His Majesty's Government of Nepal and UNESCO on September 30, 1981 in Paris on the establishment of the International Centre for Integrated Mountain Development.

From the above, it seems that International Treaties, and agreements relating to Environment and other matters are transferred to the municipal law in Nepal through statutory construction and through the constitutional provisions stated in section 126 of the Constitution of the Kingdom of Nepal. It is, however, important to note that Nepal is not yet matured to fulfil the obligations arising from the treaties. It has committed to implement major areas which have compliance and enforcement provisions.

With respect to the status of treaty provisions in the National Courts, the unincorporated treaties in the domestic law have no formal standing before the court.

### 3.3 Nepal's adoption of international treaties and conventions related to environmental management

Nepal is a member country of the United Nations. Nepal has membership in regional organizations such as South Asian Association for Regional Cooperation (SAARC), South Asian Cooperation Environmental Program (SACEP) and International Center for Integrated Mountain Development. These affiliations and domestic initiatives have made Nepal a party to a number of international environmental instruments.

Nepal has become a signatory to a number of treaties relating to Environmental Conservation (the protection of biodiversity, habitats and national heritage). There are four major treaties of which Nepal has strong commitments. They include:

- Convention on Wetlands of International Importance especially as waterfowl habitat (Ramsar Convention, 1975).<sup>10</sup>
- UNESCO Convention Conferring the Protection of the World Cultural and Natural Heritage (World Heritage Convention, 1972).
- Convention on the International Trade in Endangered Species of wild fauna and flora (CITES), 1973.<sup>11</sup>
- U.N. Convention on Biological Diversity (1992).<sup>12</sup>

With respect to compliance with the above international environmental conventions, Nepal has acceded to The World Heritage Convention on 1973, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) on 1975, Ramsar Convention on 1988<sup>13</sup>, and Convention on Biological Diversity on 1993. Besides these Nepal has ratified Vienna Convention, Montreal Protocol and Climate Change Convention in 1994. From the above it is apparent that Nepal has compliance on Environmental Management at the International Forum.

However, although Nepal has acceded to a number of treaties, conventions and protocols, with respect to national law, His Majesty's Government of Nepal has not yet satisfactorily recognized the optimal fulfillment of their obligations. Legal instruments adopted to date to meet the above are briefly explained below.

### 3.4 National legal instruments for environmental compliance

#### 3.4.1 Wetlands conservation

The Ramsar Convention is an intergovernmental treaty providing a framework for international cooperation for the conservation of wetland habitat. The broad objective of this convention is to reduce the loss of wetlands and to ensure their conservation. It entered into force in 1975 with seven parties. At the end of 1992, there were 71 contracting parties. In Nepal, the notion of conservation of wetland habitat was entered into force after the promulgation of Aquatic Animal Protection Act 1961. This Act has recognized the value of wetlands and aquatic animals. With increasing human population, the fragile hills, mountain and watershed areas began to degrade leading to floods, siltation, heavy soil erosion, water logging and salinity in the irrigated areas. To nationally tackle this problem and for proper management of Watershed, Soil and Watershed Conservation Act was enacted in 1982.

This Act empowered His Majesty's Government of Nepal to declare any area which needs immediate conservation as protected watershed area limiting the hostile activities within the area. The Act also discharged responsibility to the conservation officer *inter alia* in protecting vegetation in landslide prone areas and revegetation, regulation of environmentally friendly agricultural systems and where needed construction of checkdams, embankments, retaining wall and terrace improvement in the hills. After the enforcement of the Act, several watershed projects were implemented with varied degree of success.

In addition to the above, the corollary to the Ramsar Convention, National Parks and Wildlife Conservation Act 1973, Water Resources Act 1992, Electricity Act 1992 were promulgated and enforced. The National Parks and Wildlife Conservation Act 1993, has defined wildlife and ascertained the list of protected wildlife. The fourteen national parks and protected areas of Nepal are complementing for the protection and conservation of waterfowls and their habitats. Punitive measures have been arranged through the Act for the illegal acts performed within the area.

The Water Resource Act 1992 provides the ownership of water resources within the Kingdom of Nepal. For the use of water bodies the act strives to minimize environmental damage to wetlands, lakes and rivers through environmental impact assessment studies. The act also empowers His Majesty's Government of Nepal to fix necessary quality standards of water resources for various uses and preventing pollution in water bodies. Similarly, the Electricity Act 1992 forbids negative impact on the environment while generating electricity.

These legal measures are promulgated and enforced with a view to conserving wetlands and allowing their further augmentation. After the convention, "Koshi Tappu" in the eastern plains of Nepal was designated as a wetland site. Although a single site is insufficient while many wetland areas of the countries are considered, this site, however, was a start. These legal initiatives have contributed to the protection of wetland fauna and floras. They are, however, by far insufficient and there is a considerable scope for further expanding the wetland conservation legal instruments.

#### 3.4.2 Heritage conservation

The World Heritage Convention entered into force from 1973. The concerning parties to the Convention recognized that "deterioration or disappearance of any item of cultural or natural heritage constitutes a harmful impoverishment of the heritage of all the nations of the world and, furthermore, asserts that parts of the cultural or natural heritage are of outstanding interest and, therefore, need to be preserved as part of the world heritage of mankind as a whole"<sup>14</sup>.

The convention is an inducement to the nations to take long term perspective in protecting the environment.<sup>15</sup> After the approval of the Treaty on Heritage Conservation in Nepal, Seven Cultural and Natural Heritage Sites have been inscribed in the world heritage list.

For the conservation of natural and cultural heritages, Nepal has been successfully fulfilling its obligation through the promulgation and enforcement of Ancient Monument Act 1956, National Parks and Wildlife Conservation Act 1972, King Mahendra Trust for Nature Conservation Act 1982 and Forest Act 1993. Nepal's Natural Heritage is protected under National Parks; the Royal Chitwan National Park and Sagarmatha National park are world heritage sites where natural heritages are protected. In addition, there are 5 cultural heritage sites listed in world heritage sites lists. The Ancient Monument Act 1956 contains regulatory mechanism to ensure the protection and conservation of cultural heritage and to restrict the National or International trade of Archeological and Antique objects. This Act remained long before the heritage convention. The Act has empowered His Majesty's Government of Nepal to confiscate ancient monuments located in private property. Similarly, for other natural heritages conservation, King Mahendra Trust for Nature Conservation Act 1982 and Forest Act 1993 has empowered community and His Majesty's Government of Nepal. The promulgation and enforcement of these Acts is significant in complying legal obligation under the Heritage Convention.

#### 3.4.3 Convention on the International Trade In Endangered Species (CITES)

Nepal became a contracting party in this convention in 1975. This convention provided for the international coordination of trade and control of wild fauna and flora whose conservation status is unfavorable through the acceptance of obligations under international law. The objective of the treaty is to arrest, reduce or eliminate the international trade in those species whose numbers or conditions suggests further removal of individuals from its natural habitat and the activities that would be detrimental to the species survival.<sup>16</sup>

Prior to the convention, on the control of trade of wild fauna and flora, National Parks and Wild Life Conservation Act 1973 was enforced in Nepal. This provided a regulatory mechanism to conserve endangered species and their habitats indirectly restraining the trade of such species. Hunting of such animals are circumscribed. The Forest Act 1993 further emphasized the control and management mechanism of forest species and endangered fauna and flora.

#### 3.4.4 The convention on biological diversity

The objectives of the biodiversity convention was to conserve the flora and fauna useful to human being and for the Sustainability of ecosystem. It is also important for the maintenance of life supporting systems of the biosphere. The Nepalese parliament ratified the convention on 1993 and has taken policy and legal measures for the conservation of biodiversity in compliance with the convention. As has been explained earlier, the National Conservation Strategy Implementation Project run jointly by IUCN, The World Conservation Union and the National Planning Commission of Nepal and Department of National Parks and Wildlife Conservation are the leading agencies toward developing policies relating to the biodiversity conservations. As regards the legal instruments, Aquatic Animals Protection Act 1961, National Parks and Wildlife Conservation Act 1973, Water Resources Act 1992 and Forest Act 1993 are promulgated and enforced. There is sufficient legal ground for the conservation of aquatic and other forms of biological diversity both in *ex-situ* and *in-situ*.

The Aquatic Animals Protection Act of 1961, provides legislative insulation for the habitats of aquatic life and provides punitive actions to the culprit involved in the poisoning of aquatic life, by using explosives into the water source of aquatic life origin. Similarly, the National Parks and Wildlife Conservation Act 1973 prohibits *inter alia* hunting, building houses and any

structure, cultivation, grazing, watering domesticated animals and birds, mining and firing any site or sites within the protected area. The Forest Act 1993, has empowered department of forest and Department of National Parks, a lead agency for the conservation of biodiversity.

The compliance for the enhancement of the environment by His Majesty's Government of Nepal in devising legal instruments is appreciable. The legal provisions to a large extent are enumerated from the needs. They are also evolved to attract funds for the conservation of resources.

Several provisions under the conventions are, however, inequitable for the poor countries. When it comes to the equitable benefits, as a result of the compliance of treaties and conventions for environmental management, the developed countries are mostly benefited. Countries like Nepal have no basic infrastructure to work with the genetic resources. It has an indigent research facility, access to technology and limited scientific coordination. There is potential benefit to be gained as a result of environmental compliances. Presently, however, these gains are confined.

Efforts to conserve biodiversity include the establishment of National Parks and Protected Areas. The system of National Parks and Protected Areas helps to conserve biodiversity *in-situ*. Presently, there is an estimated area of 29, 273 km<sup>2</sup> under National Parks and Protected Areas. However, outside the protected area, efforts to conserve endangered species are very low, with the exception of one Zoo for *ex-situ* conservation even the National Park System are not well harnessed. Despite environmental compliance at the international and national level, there has been limited action to properly monitor biodiversity programme in Nepal.

#### 3.4.5 Other treaties and conventions

Nepal is a party in other agreements and treaties. The Geneva Convention on High Seas had took place in 1958, in which Nepal became a party in 1965. Treaty on Banning Nuclear Weapons Tests occurred in 1963 and Nepal became a party in 1964. Treaty on Principles Governing the Activities of States in Exploration and Use of Outer Space Including the Moon and Other Celestial Bodies was made in 1966, in which Nepal became a party in 1967. Treaty on the Nonproliferation of Nuclear Weapons was made in 1968, Nepal became a member, in addition to the above treaty, on prohibition of the emplacement of nuclear weapons and other weapons of mass destruction of the seabed and ocean floor and the subsoil thereof was signed in 1971 and Nepal became a party in 1972. Similarly, the Agreement on International Tropical Timber, the Bangkok Agreement on the Network of Aquaculture Centre in Asia and the Pacific was reached in which Nepal became party in 1990. A Majority of these treaties listed above are applicable to the countries situated near ocean, or having nuclear facilities, and having highly advanced form of technology. For example, Nepal has not ratified them as yet. They may be ratified when deemed necessary. As many of the above treaties are applicable in the activities of states involved in exploration and use of sea, space and nuclear weapons and those also are afraid of other human beings, it does not seem necessary for Nepal to develop a National Act incorporating these principles as yet.

The rapidly expanding international and national legal instruments are certainly a positive move towards greater environmental conservation. The incorporation of the various provisions within the national legal system has shown Nepal's sincere commitment to safeguarding the deteriorating environment.

For example, in trying to foster the international treaties, one of the most important character, is the ratification of international treaties within national systems. In order to control the spread of the plant disease through the seeds, root stock and any other forms of stem countries within the South Asia and Pacific Region an agreement was reached in 1956 and Nepal became a party in 1965. Consequently, to comply with the treaty Nepal promulgated Plant Protection Act 1972.

#### 4 Institutional Aspects

Parallel to the growth of environmental management and regulatory provisions, decision-making structures are also needed. This demands efficient institutional systems for formulating policies, strategies, plans and programs. At the same time, constitutional arrangements are also required for the development of institutions. The constitution of the Kingdom of Nepal 1990 has established a Natural Resources and Environment Committee in the House of Representatives. This is one of the highest institutions established by the Constitution of Nepal to oversee and legislate environmental matters.

The National Planning Commission is the apex body for finalizing environmental and development planning in Nepal. Within the Commission there is an Environmental Protection Division functioning as a division and serving as a secretariat for the Environment Protection Council (EPC). It was established as a subsidiary organ of the National Planning Commission. It was established in 1992 under the Chairmanship of the Prime Minister with representation from 12 Ministries of Government; the Natural Resource and Environment Committee of the House of Representatives, the National Planning Commission, nongovernmental organizations, and the Federation of Nepalese Chamber of Commerce, and industry.

Many national institutions play important roles in lawmaking, policy-making, research, monitoring and supervision. The major institution created to specifically address environmental issues is the Environmental Protection Council (EPC) and Ministry for Population and Environment. The latter has not yet been given its clear-cut mandate because this is a newly created institution.

With respect to environmental compliance and enforcement, the council has initiated important activities over the past 3 years. Through its initiatives His Majesty's Government has ratified the UN Convention on Biological Diversity and Convention on Climate Change, Vienna Convention on the Protection of Ozone Layer. In addition, with the same initiation vehicular emission standards have been determined and an attempt was made for its enforcement.

In addition to the apex institutions, there are line ministries which are also responsible for planning, implementation and enforcement of environmental instruments. As has been explained earlier, the Ministry for Agriculture, Ministry for Forest, Ministry for Industry, Ministry of Water Resources and Ministry for Transport, Ministry for Local Development and Ministry for Population and Environment are major institutions for the implementation of legal instrument for environmental conservation in Nepal. Although directly or indirectly all the above Ministries are involved, Ministry of Forest and Soil Conservation, Ministry of Industry and Ministry of Housing and Physical Planning have set up environment planning units to oversee environment related polices and programs. These line agencies have their respective linkages at the regional, district and village level for planning and implementation.

With the exception of the council and the Population and Environment Ministry, the mandate of other institutions is to carry out development related works. The mandate of the Population and Environment Ministry is not yet clear. All the institutions have been usually underfunded in relation to their scope and mandate, despite efforts being made to improve the situation. A concept for raising funds to address environmental problems has been proposed. As a result, an environmental fund has been established within the EPC but the operations mechanism has not yet been decided.

Besides, underfunding the institution also suffers from isolation. There is lack of interinstitutional coordination. Much more acute, however, has been the lack of institutions' commitments to the pursuit and enforcement of Acts and bylaws. For example, a series of seminars and workshops are arranged and policy documents for environmental conservation

are prepared but the implementation and enforcement cannot be considered satisfactory. This is basically due to inadequate foresight and understanding of the long-term benefits of environmental protection by the concerned institutions.

Proposals for the establishment of new institutions to deal with the environment have frequently been mooted. The National Commission for the Conservation of Natural Resources (NCCNR) was established pursuant to the soil and watershed conservation Act of 1982, which has been floated and refloated. Another recent proposal includes the creation of Environmental Planning and Monitoring Cells within each institution. There are also *ad-hoc* inter ministerial commissions and independent expert review missions. Despite these, the tortuous process of improving environmental policy and enforcement, little progress has been made, re-enforcing doubts on the addition of new institutions. In the existing institutions paring of bureaucracies and funding remains problematic. This means low cost approaches are favored. These elements are evident in the reluctance of practical enforcement by the institutions.

## 5 ENFORCEMENT

Enforcement is one of the major problems of effective regulation. In a situation where the laws, bylaws and regulatory mechanism are not observed, these are ineffective. Why these are ineffective has been seldom reviewed and necessary amendments made. The national laws pertaining to the international conventions, treaties and agreement are available within Nepal. For example, Aquatic Animal Protection Act 1961, mandates conservation of aquatic life. The Act prohibits illegal killing and trapping of aquatic life. In practice there are cases in which fresh water fish are harvested using poison, electrical devices and trapping. So far, since 1961, not a single case of poisoning fresh water aquatic life has been filed. Similarly, Ancient Monument Act 1956, National Parks and Wildlife Conservation Act 1973, Forest Act 1993, are all enforced by the government. These acts are enforced through injunction and culprits are prosecuted. Despite a few odd cases, legal violation is usually unnoticed. The government or the enforcing agency prosecutes in the courts only for the serious breaches.

With respect to enforcement of municipal law, traditionally a harmonious relation between the enforcing agency (regulator) and the regulated has existed in the management of environmental resources with bribes and taking low punitive actions in Nepal. Compliance has been "negotiated" and government, departments or enforcing agencies are under-equipped. This traditional practices have led to lawlessness and violation in environmental protection spheres.

The present agenda of Nepal is economic development and creating employment opportunity for the people. This has forced environmental concerns into a back side. In recent years the trend, however, has changed and the environment is becoming a public concern. As a result, certain legitimate complaints are beginning to be made by the people in response to the violation of law at the local level.

The difficulty in enforcement is that it remains in the hands of government. It makes standards and enforces them through the organization mentioned earlier. The governments regulatory agencies are funded through the government, and such regulators are "free riders". They are the ones who know the legal repercussion and therefore, best know how to violate. That is why this group of people along with the politicians are harvesting the environmental resources free of cost and are exerting power over the people. One who violates the law cannot enforce it correctly. The legitimate concerns of the people are deprived in major cases. Almost everything is politicized and there is little that an individual can do for the enforcement.

With respect to enforcement of different acts related to cultural and natural environmental protection, conservation parties, the “regulators” and “regulated”, have mutually accepted the level of destruction above which it becomes transparent to all the people. Up to that level, whatever distracting activities occur, legal measures are violated. The government inspecting bodies seldom operate there.

The obligations to enact measures to prevent the above is a vital part of an enforcement system. Domestic legislation is providing greater details such as reaching to resource user groups level and even specifying the rare and endangered species and subordinate legislation covering what to harvest, when to harvest, the quality to be harvested and under what conditions. Enforcement, however, remains a weakness. A case study of Phewa Lake pollution in the mid-western region of Nepal is shown in the Annex which explains good environmental compliance informing laws, bylaw and a complete unwillingness of their enforcement.

Control of trade in endangered species under an international permit system is a technique employed in the Convention on International Trade in Endangered Species, and municipal laws are enacted. Similarly, important cultural heritages are not allowed to trade outside the country of origin. However, due to high economic incentives in such articles by the citizen of wealthy nations, legal measures are violated and enforcement remains weak.

At the international and national level, enforcement broadly seems to be weak. This shows that the laws are only enforced on poor and weak sectors of the world community. Enforcement can be seen at the local level, where traditionally the laws are self enforcing. It is the individuals who take the measures required by regulations under such situations. All they need is to be convinced that the measures are right and necessary in their own interest, their country's interest and the wider interest of international community<sup>17</sup>. This is especially important in resource conservation areas.

## 6 Conclusions

After 1950, Nepalese Constitution and legal system has undergone many changes. During this period, Nepal has signed on many international and regional treaties, protocols and agreements. In Particular to environmental conservation and management, Nepal has clear commitments to the treaties which are ratified and has incorporated into the national legal system. These initiatives has resulted in Nepal becoming a part and parcel of implementing international obligations.

In order to monitor and follow-up to the legal instruments applied to environmental conservation, a strong institutional base is very urgently needed. Most of the institutions are of recent origin. Therefore, in many cases when enforcement is thwarted, it is due to: a) poor institutional infrastructure; b) lack of institutional decentralization; and/or c) shifting responsibilities from one institution to the other which does not fulfil the obligations in reality.

Since the establishment of treaties and the promulgation of national legal measures to comply with the treaties, the list of rare and endangered species has been prepared. The difficulty however, is that whether the aforementioned species are still endangered or rare is never scientifically monitored. Thus surveillance of the legal instruments both internationally and nationally are lacking.

Similarly, during the signing of international treaties, few sites are included for example, Ramsar Site Koshi Tappu in Nepal and became the international site, despite many more important sites that need to be included in the list. The parameters for a site to be an international site needs to be carefully examined and where needed more than one needs to be included.

For the conservation of cultural and natural heritage, each party is required in so far as possible *inter alia* to incorporate requirements into comprehensive planning. This in many situations is lacking. For example, there are several world heritage sites in the Kathmandu Valley which need to be placed in the list of world heritage in danger.

The national institutions for implementing legal instruments such as The Natural Resources and Environment Committee in House of Representatives, the Environmental Protection Council (EPC) and line ministries have existed in Nepal. Some establishments are older than the others. These institutions suffer from lack of training, initiatives and other resources and, therefore, have remained defunct.

Despite Nepal's obligations under Convention on International Trade of Endangered Species (CITES), the poaching and trade of rare wildlife specimens continues unabated. There is ample evidence that rhinos and tigers are killed, and bears are illegally hunted for their hides and bile, which are smuggled to Hong Kong and, ultimately, Taiwan. Similarly, there is no reported case of the prosecution for the breach of violating Aquatic Animals Protection Act 1961.

From the analysis, it is apparent that compliance with international commitments is highly ineffective in Nepal. Enforcement at the local level is considered so poor that the enforcement problem makes compliance low. There is no single legal instrument for protecting degrading environmental situation. This shows poor enforcement and surveillance both at national and international level of the legal instruments.

Finally, it is important to note that Nepal has commitment to environmental conservation. An analysis of the monitoring procedures for the implementation of national legal instrument suggests that the existing regime is not efficient enough for the enforcement of the treaties signed at the international level and measures taken in the municipal law. Strong surveillance and enforcement is required to comply with the environmental conservation if the legal instruments are to be made meaningful.

## REFERENCES

1. National Planning Commission, His Majesty's Government of Nepal and Ministry of Foreign Affairs, Government of Finland (1995). Identification for an Environmental Sector Program under cooperation between Nepal and Finland. Draft Report., Singha Durbar, Kathmandu, Nepal.
2. Shresta, T.B. and Shakya, P.R. (1993). Human Impacts on Biodiversity in Nepal Himalaya. Paper presented at XV International Botanical Congress. Yokohama, Japan.
3. Shresta, A.P. (1991). Water Resources and Energy. In: Hydropower in Nepal: Issues and Concepts of Development Resources, Kathmandu, Nepal.
4. Sharma, C.K. (1992). River Systems of Nepal. Nepal Heritage Conservation Society, Kathmandu, Nepal.
5. Dhungel, S.K. (1995). Aspects of Wild Life Conservation in Nepal, Past and Present. In: Green Energy, Summer Issue 1 (I). 5-8 pp.
6. Gilmore, D.A. (1992). Not seeing the trees of the forest. A reappraisal of the deforestation crises in two hill District of Nepal. In: Reading in Social Forestry and Natural Resources Management in Nepal. Messerschmidt, D.A. and Navin K. Rai (ed). Research Support Series No. 10. His Majesty's Government, Ministry of Agriculture - Winrock International. Policy Analysis in Agriculture and related Research Management. Institute of Forestry Project, Institute of Forestry, Pokhara, Nepal.
7. Gunningham, Neil (1994). Beyond Compliance Management of Environmental Risk. In: Environmental Outlook Law and Policy. Ben Boer, Robert Fowler & Neil Gunningham (ed). The Federation Press, Australian Center for Environmental Law, 254-278 pp.
8. National Planning Commission (1992). The Eight Plan. His Majesty's Government of Nepal, Singh Durbar, Kathmandu, Nepal, 85-99 pp.

## ANNEX 1

### CASE STUDY

#### The Environmental Problems of Phewa Lake in Nepal

##### 1 Background

Pokhara is one of the most rapidly growing cities and also the second most visited tourist place in Nepal. Because of its natural beauty with spectacular views of Annapurna Himalaya range and with Machhapuchhre peak standing very close by (only 28 km), it is a popular tourist destination. Apart from the views of mountain from Pokhara, it is also famous for its Phewa Lake.

##### 1.1 Location and size

Phewa lake watershed is located in south western corner of the broad Pokhara Valley (28° 7' N to 28° 12' N latitude and 84° 5' E to 84° 10' E longitude) which falls on a relative subsidence zone in between the Greater Himalaya and the Mahabharat Range. Administratively, this watershed area is spread over, partially or fully, the jurisdiction of six Village Development Committees (Sarangkot, Kaskikot, Dhikurpokhari, Bhadaure Tamagi, Chapakot and Pumdi Bhumdi) and the south western part of Pokhara Municipality under Kaski district (Watershed Area). The watershed area forms an unique geographical entity and represents the typical characteristics of the mountain environment. It covers an area of approximately 123 km<sup>2</sup> and the length and width of this east west oriented watershed is about 17 and 7 km, respectively. Out of this total area, 4.43 sq km surface is under Phewa lake water. The average recorded depth of the lake is 8.6 m with its maximum depth of 19 m.

The Lake is a northwest-southeast running valley. It lies about one kilometer southwest of Pokhara Town at an altitude of 793 metre although the lake level varies seasonally depending on the withdrawal of water for power generation 1,000 Kilo Watt (KW) and irrigation purpose and water inflows. It extends about 4 km northwest to southeast and it is about 2 km at its widest and only a 100 metre at its narrowest. The surface area of the lake is about 443 hectares. The reservoir storage capacity is 46 million cubic meters.

##### 1.2 Landform

The landform of the Phewa watershed is formed by complex and rugged ridges and spurs and valley bottoms. The hill terrain and valley bottoms stand out as distinct features in the landscape. The hill system is criss-crossed by a number of irregular ridges and spurs.

The south facing slopes of watershed are comparatively gentler (around 30 to 50 percent) than the north facing slopes (above 50 percent). Panchase is the highest site (2,508 m) of the watershed. The lake was obviously formed by the damming up of the tributary system by the overflow of superficial gravels along the main Seti Valley. Phewa lake has been enlarged by damming for irrigation and power generation. Harpan Khola draining Phewa Lake makes a sharp southeastern turn on meeting the western edge of the plain and now joins with another stream called Phurse Khola, the tributary of Seti.

### 1.3 Climate

The Phewa watershed area falls in humid subtropical monsoon region. It is characterized by moderate temperature (mean temperature peak in July-August 25.5 °C and falls to minimum in January 13.2 °C, heavy monsoon rainfall (the mean total annual rainfall is 3,710 mm) and distinct seasonal variations.

### 1.4 Wild and aquatic life

There are 17 different types of native fish and 4 different exotic fish, 6 species of amphibians, 14 reptiles species, 104 species of birds and 34 species of mammals in the Phewa lake watershed area. Out of 104 bird species, 14 are migratory and others are residents.

### 1.5 Land use

Pressure has greatly increased along the lake bank east of the dam of the lake. Rough roads and poorly constructed small houses have been built, except on land acquired by the government. Similarly, the area along Phirke Khola has been extensively used for building construction. Government buildings, such as the Municipal Guest House and the Armed Police Office and Quarters, as well as squatter settlements, are located near the Phirke Khola area.

In spite of the standards fixed for urban growth in the area of the lake, uncontrolled construction has increased since the 1989 Movement for Democracy. Urbanisation is increasing throughout the Pokhara Municipality and Phewa lake area and has negatively impacted on facilities such as drinking water, roads and the drainage system. Growing urbanisation has also adversely affected the urban area amenities and tourism around Phewa lake by causing noise pollution, narrowing of the pathways, water pollution and uncontrolled sewage. Unsightliness has also increased due to man-induced process.

Local people claim that the increase in hotel construction and other development activities in the southwestern part of the lake (except Raniban), in Anadu and the area to Simle and beyond, has contributed to the lake pollution and caused wildlife habitats to deteriorate. In addition, the pressure of development has had a negative effect on land use in areas near Phewa Lake and has begun to adversely affect tourism.

Settlements are irregularly and unevenly distributed. The site locational patterns of the settlements are mainly determined by topography and such factors as water availability for drinking purpose than other climatic and cultural factors.

### 1.6 Socio-economy

The watershed area is one of the densely populated areas in the hills. The total population of the watershed was 31,578 (excluding town population) in 1991. The town population is estimated to be more than 3 times of the watershed area. In this total, the percentile share of male and female is 49.7 and 51.3 per cent, respectively. The average family size is six as shown by the socioeconomic base-line survey of Phewa watershed. The population density accounted for 258 persons per km<sup>2</sup>. This density further accounted for agriculture and forest land that is 912 and 586 persons per km<sup>2</sup>, respectively. The average population growth rate is about 3.84 percent. This rate of growth is relatively higher compared to other hill areas of Nepal. It is particularly due to the score of highest growth rate by Pokhara Municipality among the various Municipalities of the country. In fact, it is due to the highest influx of people into Pokhara from hill districts of the region.

Variety of caste group of people settle there. Brahman is the dominant caste group (about 48%), followed by occupational castes (27% Damai, Kami and Sarki), Gurung (14%), and others (11%). About 50 % of people in the watershed are literate, with the male literacy rate approximately double to females. The level of literacy is low among the socioeconomically backward groups.

The predominant occupation is agriculture (about 85%) followed by service (mostly outside the country), small business activities and both agricultural and construction labor. Agriculture includes both crop farming and animal husbandry. Business activities are mostly confined to the lake-side and along the trekking routes. In recent years, tourism has become a major industry, supplementing about 16% of the economy.

## **2 Environmental Compliance and Enforcement**

Lake shoreline or the area occupied by Phewa Lake has not been defined and officially demarcated. The alluvial plain created through sedimentation process of Harpan Khola at the entrance which provides the main inflow of water into the lake once had been submerged. Aerial photographs taken in 1971 by Airmap (Italy) clearly shows that the area covered by the Phewa Lake was much larger than what it is today. Attempts to define the lake area were made in the past, but collapse of Phewa dam in 1974 which drained off much of the lake reservoir reduced it into much smaller in area. The receding lake's shoreline which was exposed in land was registered by adjacent landowners in their name by providing bribe and political pressure to the government officials. This problem was further cropped up during the cadastral survey carried out in 1975 which registered even land submerged previously under water, thus converting previous lake area from public to private ownership.

There are claims and counter claims for ownership of land, which is now submerged. Once the present dam was completed in 1978 and water restored in the lake reservoir, many people have made claims for the compensation of land submerged under lake water, it is learned from the Irrigation Department office in Pokhara. Although legally the ownership is with the ministry of water resources, the land ownership dispute of the lake created by the cadastral survey in 1974 remains to be solved. This problem was created due to malfunctioning, political distrust and corrupt behavior of both people and civil servants responsible for carrying out the land survey and issuing land certificates. This has also happened due to government departments overlapping and inconsistent legal provision, resulting the deteriorating conditions of the lake.

With respect to the inconsistent legal provision, the Municipality Act of 1991 empowers Pokhara Municipality to take necessary measures to manage garbage collection and disposal, and pollution control from the lake shore. The Act also makes provisions for enforcing building norms, rules, regulations and the ability to take punitive action against defaulters. Town Development Act 1988 allows the town development committee to enforce land use and building regulations, and implement physical development plans and programs. The Town Development Committee also has the authority to take punitive action against those who ignore the regulations, and violate the norms and standards set by the committee. Since six Village Development Committees (VDCs) apart from the Pokhara Municipality touches the boundary of the lake, Phewa lake is subjected to the Committees authority derived from Act of 1991. Since the District Development Committee (DDC) is the main coordinating agency for all Village Committees in the district, Kaski the District Committee also has authority over Phewa Lake deriving from the Act of 1991. Phewa Watershed is subjected to the Forest Act, Soil and Water Conservation Act, Water Resources Act, and both the District and Village Committee Acts, Municipality Act, Town Development Act, Aquatic Life Act, 1961, thus each agency operating under their own legal

mandate and caring little for others. This situation is continuous and is one of the major causes for environmental noncompliance and poor legal enforcement in the watershed. This resulted in the development of uncontrolled urbanisation and inconsistent land use.

For the regulated growth of Pokhara, in 1973 Physical Development Plan was prepared. This was adopted by His Majesty's Government of Nepal. Consequently, Pokhara Town Development Committee was established under Town Plan Implementation Act 1972 for implementing the plan.

Political upheaval of 1979/80, and political change of 1989 completely destroyed the remnant of respect for land use, and building rules and regulations regarding the lakeside area. Random and haphazard construction activities have taken place in these areas and along the lake side, now culminating into a rapidly deteriorating environmental condition of the lake and its environment. The same people who were against the spirit of 1973 plan regarding the lake side conservation concept, have now come up with the support for that concept. From 1973 to 1995, much water has flown through Phewa lake and land use in the lakeside area and the Pokhara valley has undergone many changes, but so far no serious effort to review and implement the 1973 plan has been undertaken. It was completely encapsulated and ignored. This clearly shows the government's unwillingness to comply with the environmental problems and enforcement.

With respect to the lake water pollution and poor solid waste disposal system, over the past few years, Phewa Lake and its adjoining catchment areas have experienced few marked changes in terms of environmental quality. In these areas tourism facilities have been established. But serious environmental issues such as lake water pollution and solid waste disposal problems have emerged. Although systematic monitoring of lake water quality is lacking, a recent study indicates that water quality in Phewa Lake is deteriorating due to increase in biological contamination.

The density of fecal coliform bacteria ranged from 39-123 organisms per 100 ml of water, indicating fecal contamination. The major sources of pollution are sewerage, disposal of solid wastes, clothes washing, runoff from the farm land (nutrients) and sediments. The lake water is contaminated mainly from the direct discharge of sewerage (domestic, urban & hotel/restaurant) via the drains, and storm water sewers.

Domestic waste water including overflow from septic tanks, is found to be directly discharged into the lake, especially from the hotels and restaurant. Phewa Lake is also polluted due to wallowing of pigs and buffaloes, cloth washing by hotels, restaurants and local households. It is estimated that more than 100 kg of soaps and detergents are daily used for washing into the lake. In addition to the lake water pollution, the drinking water, from natural springs and wells in the nearby areas are also found to exceed the World Health Organization (WHO) standards and unfit for human consumption.

The improper management and haphazard disposal of solid waste is a serious concern especially in the urban areas and around the Phewa Lake. There is a lack of statistics on the total waste generation. However, it is estimated that approximately 125 metric tons of solid waste is generated per day in the Pokhara municipality. There is no effective solid waste disposal and management system. The local communities usually dispose solid wastes into water bodies. The overland flow may carry the toxic chemicals to the water bodies, thereby it is likely to enter the human food supply, thus presenting a potential hazard for human health.

Despite legal mandates to various agencies for regulating the lake environment, the lack of a single institution responsible for managing the lake has been the major problem. No efforts have been made at any level, central or local, to address the issue of lake water pollution and solid waste management problem, despite concerns that have been expressed time and

again by people and authorities at local and central level for the deteriorating condition of lake and its environment. This clearly indicates lack of compliance and enforcement of legal instruments for environmental conservation at the local level.

In addition to the poor attention paid for lake's pollution control the biodiversity conservation around the lake has received little attention. Phewa lake is recognized as an important habitat of a wide variety of aquatic life. There are 6 floating, 7 submerged, 3 emergent rooted aquatic plant species, and 22 different native fish species. Wild geese used to be abundant in the western part of the lake. Migratory birds arriving annually used to enhance the biodiversity of lake and its surrounding areas. Presently, however, modern development activities have alarmingly disturbed the ecology of the area which threatened the aquatic life due to lake pollution. The human induced activities are becoming incompatible for the existence and survival of aquatic life, birds and other gifts of nature in the lake and its vicinity.

Similarly, areas around Phewa Lake especially the Rani Ban and forests of Pumdi Bhumdi are undoubtedly heavenly gifts. These areas are important for bird watching and study of flora and fauna. These areas have wide range of vegetation species. In addition, as mentioned in the earlier section, Panchase provides unique opportunity to conserve wildlife and rare plant species of mid-mountain region in Nepal. If the environmental situation of Phewa Lake is to be improved, attention to the conservation of biodiversity within immediate hinterlands should be the first priority and that there should be environment compliance and enforcement of legal instruments existing within the country.



