

THE PRESENT SITUATION

Introduction

This section discusses the various use-values of the Lakeside for different stakeholders. Many of the problems currently witnessed in the lake area may be attributed to the different actions of the stakeholders. The stakeholders are the government and its different agencies, private property owners, the municipality, DDCs, VDCs, and the tourists themselves. Each of these stakeholders has different interests in the Lake and its surrounding environment. The main problem in the Phewa Lake area is that of a deteriorating environment (including the lake water) (IUCN 1995b). To each stakeholder, the Phewa Lake area presents different use-values and thus their stake in its conservation becomes important. However, before proceeding to discuss the interests and impacts of different stakeholders in the Phewa Lake environment, it is useful to take note of the different use-values of the lake.

Use Values

Consumptive Use Value

Consumptive uses are not traded in the market but are directly consumed. The consumptive use values are important mainly for local residents, especially people in the VDCs, the local fishermen, and the local residents who use the lake for laundry and bathing purposes. In addition, although a negative form of consumptive use, many hotels, lodges, and other property owners around the lake are known to dump their sewage into the lake. This problem has been further aggravated as the entire city's storm drainage is discharged into the lake near the dam. The lake environment is gradually deteriorating and so is its consumptive use value.

Productive Use Value

The same lake resource is also used by different stakeholders to earn income by selling products or services. Productive uses are traded in the market. Some fishermen harvest fish to sell. There are many boat operators that charge people to ride their small boats on the lake. Except for the personal efforts and minimum costs borne by the fishermen and boat owners, there are no charges imposed for the use of this resource. Additionally, the many hotels, lodges, restaurants, and shops around the lake are indirectly dependent on the lake.

The quality of the lake environment by and large determines visitor satisfaction. Visitor satisfaction determines their willingness to pay for the various goods and services which are offered by the hotels, lodges, etc. Hence, deterioration in the quality of this resource has direct implications on the returns to investment in buildings, shops, etc. In addition, the productive use value also influences the flow of visitors to Pokhara and hence to the mountain areas.¹ If tourists to Pokhara decrease, the number of trekkers also decrease and hence this influences the employment and income of a large number of mountain people.

Non-consumptive Use Value

Perhaps the non-consumptive use value of the lake is the most crucial. Pokhara has become popular because of the lake and the gorgeous view of the Annapurna and Machhapuchhre *Himal*. Had there been no lake or view of the Annapurna and Machhapuchhre over Pokhara, tourism would most likely not have been a critical factor to this valley's development. Each year over 100,000 tourists visit Pokhara Lakeside for aesthetic and recreational reasons. Although these visitors enjoy the lake and view of the *Himal*, they are unable to take back what they consume, apart from in their memories, and hence this form of consumption is referred to as non-consumptive use.

¹ Most of the trekkers to the ACAP area have to stay over in Pokhara for at least one night.

Non-consumptive uses are important to the local residents as well. Many local Pokhara residents use the lakeside area to take morning or evening pleasure trips or simply to enjoy the relatively more pleasant atmosphere. The temple in the middle of the lake is regularly visited by many people. Most of these uses of the lake are directly consumed by the users and, since they do not have to pay and their use does not reduce the supply for others to consume, they are also a form of non-consumptive use of the resource.

Option and Existence Value

Many people know of Pokhara, the Phewa Lake, and its beauty. Although many have not visited Pokhara, they have the option to do so in the future and hence may be willing to pay to keep this option open for future use. Many would, perhaps, prefer (willing to pay) to leave the Lake Area in its pure natural state or see its condition improve, which gives rise to option and existence value.

Stakeholders in the Environment of the Phewa Lake

There are mainly five groups of stakeholders that have an interest in the Phewa Lake environment; namely, the local residents and private entrepreneurs; the government; political institutions and local bodies; professional institutions; and visitors.

Local Residents and Private Entrepreneurs

This category of stakeholders includes hoteliers, shopkeepers, and various other entrepreneurs who are benefiting directly by providing various services to the visitors to the lakeside. There are numerous private land owners in the area who have invested a considerable sum of money to build hotels, lodges, restaurants, and so on. There are numerous trekking shops, travel and tour operators, and shops of different kinds which have all benefited due to tourism in the area.

Property owners in the VDCs use the land for agricultural purposes. The flood plains are used for paddy cultivation. Agriculture is mostly subsistence in nature and is least affected by tourism. Tourism development in urban areas has also affected land values (increased) in the VDCs. Additionally, there is always the speculation that tourism development will some day extend to the VDCs and benefit the people. This speculation has led to land hoarding on and around the lake shore.

Also included in this category are local residents who are not directly benefiting because they do not have any enterprises but whose actions have negative effects on the environment of the lake area, e.g., people residing around the lake area. These local residents also value the lake for its amenities and recreational values as well as the temple situated on the lake. Fishermen depend on the lake for their livelihoods.

Pokhara is also the gateway to the Annapurna Conservation Area and Upper Mustang. Each year many tourists, over 50,000, trek in the remote mountains. Trekking benefits

a large number of the rural mountain people by generating jobs for porters and, therefore, income. Many have invested in tourism by building lodges and tea houses.

Government

There are many government agencies that appear to own some part of the Lakeside area or have some legal authority in carrying out different activities in or around the lake. The Ministry of Water Resources (MWR) is entrusted to be the guardian of water bodies in Nepal and hence, legally, MWR owns the lake (Water Resources' Act 1992).

The Ministry of Forests (MOF) owns large tracts of forested area around the lake. The Phewa Watershed is subject to the Forest and the Soil and Water Conservation Acts. The Ministry of Agriculture has been carrying out fish research for fishery development for quite a long period (Aquatic Life Act 1961).

The water that drains out of the dam after it is used for generating power belongs to the Department of Irrigation (DOI) which operates and maintains the dam and its canal for irrigation purposes. Nepal Electricity Authority (NEA) uses the lake water to generate electricity. The Department of Tourism (DOT) promotes the lake as a major attraction and recreation area for tourists. The Ministry of Finance is also a stakeholder since tourism generates large tax revenues from various goods and services that tourists purchase in the lakeside area.

Political Institutions at the Local Level

The District Development Committee (DDC), Pokhara Municipality, VDCs, and Ward committees are mandated to oversee and undertake local development work. At the same time they are empowered to take action on the conservation of natural resources. Part of the lake area is within the Pokhara Municipality and, given that the lake is a tourism asset, theoretically it would be in the interests of the Municipality, or the Ministry of Finance, to protect this asset so that earnings increase. Although the Municipality has the responsibility (garbage collection mostly), its authority over the lakeside area that falls within its territory is not clear. The Municipality Act 1991 empowers the Municipality to take necessary measures to manage garbage collection and disposal and pollution control in addition to enforcing building norms, rules, and regulations as part of the lake area is inside Pokhara Municipality.

Six VDCs adjoining the lake also have equal rights to develop their areas according to the VDC Act 1991. Since the DDC is the main coordinating agency for all VDCs, it is empowered by the DDC Act 1991 to have authority over Phewa Lake.

Professional Institutions

The stakeholders included in this category are various professional institutions which are promoting individual and group interests. The Hotel Association of Nepal (HAN),

Trekking Agents' Association of Nepal (TAAN), Pokhara Chamber of Commerce and Industry (PCCI), Hotel *Byabasai Samiti*, Pokhara Tourism Committee, and several NGOs fall into this category. These professional institutions are concerned about deterioration in the environment of Phewa Lake as it is contrary to their professional interests.

Visitors

Finally, there are the visitors who come in large numbers from all over the world to visit Pokhara, it being the second largest tourism destination in Nepal after Kathmandu. The private sector provides food, accommodation, and other services to the tourists and they profit from this business. Poor amenities and recreational values, resulting from deterioration in the environment, can lead to visitors' dissatisfaction and a gradual decline in the visitation rate over time. This can result in reduced earnings in the tourism industry and loss in revenue to the government and other bodies that depend on tourism. Tourism is the largest foreign exchange earning industry in Nepal, and it provides direct and indirect employment to a large number of people.

In conclusion, therefore, there are many stakeholders who have different interests in the lake. The conservation of the lake is important to all these stakeholders.

Major Problems and Issues

Pokhara has grown rapidly over the years. Being an important tourist destination, people have invested heavily. Many have migrated to the city from the mountain areas. In the lack of a coordinated land-use plan and rigorous implementation of the same, construction activities have boomed in a haphazard way. The city is finding it increasingly difficult to make adequate provision for different services such as water, garbage collection, sewage system, and so for a growing population. The major problems and issues arising from development activities in the lakeside area are briefly discussed below.

Lack of Well-defined Property Rights

What constitutes the physical area of the Phewa Lake has not been defined and officially demarcated. In 1974, the Phewa dam collapsed. This reduced the volume of water and as the shoreline receded it exposed a large area of land. Some of this land appears to have been immediately registered by individuals as private property with the District Land Office, following the land-use survey carried out around that period. When the dam was constructed again the water level rose to 94.7m, an advance on the previous dam height of 93.7m. The locals lodged a petition in the Supreme Court to reduce the water level to the previous level and the court granted this petition². To assert their individual property rights, some owners even demarcated their property by

² There are aerial photographs of the lake taken prior to the collapse of the dam which can help to verify the water level and demarcate the lake area. See IUCN(1995a) for details.

establishing concrete pillars, which are now submerged in the lake waters, after the dam was reconstructed and the water level rose. About 2.15 hectares of land are currently submerged under water. The dispute over property rights in the submerged lake area still continues.

Planning and Loose Enforcement

Pokhara was declared a municipality in 1958, but the institution started to function only in 1965. Rapid urbanisation took place, especially after it became the regional headquarters of the Western Development Region in 1974. The population of Pokhara City increased from an estimated 20,611 in 1971 to 95,311 in 1991. This growth is largely attributed to the increase in tourism in the city.

A Physical Development Land Use Plan was prepared as early as 1973. This Plan covered the entire valley and included other lakes in the Pokhara Valley besides Phewa. The area around Phewa Lake was designated as a conservation area. Baidam was designated as a special conservation area and various restrictions on construction activities were established. Special regulations were formulated to protect the natural beauty of Baidam area and also to restrict construction activities to vernacular building style. A Town Development Committee was established to implement this Plan. Despite the plan, building codes and regulations have not been properly enforced. This problem of violating rules was further exacerbated during the political change that took place in the early 90s when many individual property right owners took advantage of the political confusion and blatantly began to disobey the regulations. Haphazard construction activities that violate many of the norms continue to take place to this day (see Box 2).

There is growing concern that the amenities and recreational and biodiversity values associated with the lake are deteriorating rapidly, and this is beginning to affect the returns on investments made by locals to provide goods and services to tourists. The lakeside area is essentially a tourist area and many people provide different services to tourists for their livelihood. Loss in amenities and recreational values deters tourism and consequently affects the livelihoods of the people, as well as those of other stakeholders, directly or indirectly.

Unplanned and Unguided Tourism Development

Tourism entrepreneurs feel insecure about their future due to the government failure to improve the situation of tourism in Pokhara and also due to lack of a clear-cut tourism policy with respect to the lakeside area. The situation is further compounded since many people operate without adequate knowledge and illegally in this business. Maintaining standards is a problem.

Unhealthy competition exists in the travel and tour sector. Out of the total of 98, about 68 travel and tour operators are operating illegally. The Tourist Information Centre

Box 2

Institutional Arrangements for Phewa Lake Conservation and Management

There are several authorities at the national level that play a role in the conservation of Phewa Lake. Due to their diverse responsibilities there is no appropriate institution to take care of the lake area at the local level. The Ministry of Water Resources is the lead agency responsible for managing all the water bodies within the country. Due to such a mandate of the Ministry, when it comes to conservation and management of the lake at the local-level, the water bodies are seen to be no-one's property. There is no specific authority responsible for their integrated management and conservation nor to determine the role and responsibilities of the VDCs, wards, and user group committees adjoining the lake. For the long-term conservation of Phewa Lake there is a need to look to the future and, therefore, local-level institutional arrangements for Phewa Lake management are needed.

Establishing institutions at the local level for the conservation of Phewa Lake cannot be translated into reality without the support of a strong legal framework. Until 1990, the building byelaws in the Lakeside area were regulated and enforced by the Municipality, Pokhara Town Development Committee, and Pokhara Valley Town Development Committee. After 1990 and the arrival of democracy, people were not prevented from engaging in illegal activities. Law enforcement was weak and existing regulations were ignored, partly due to the government's failure to make decisions at the right time.

Source: IUCN Action Plan 1995.

(TIC) has closed down 36 unauthorised reservation offices. According to one estimate, only 20 per cent of the total business is conducted by authorised agencies while 80 per cent is carried out by unauthorised agents. Moreover, the unauthorised firms cut prices to attract tourists to their outfits. A similar situation is said to prevail in the trekking business. Monitoring has been a problem, since the DOT cannot monitor the illegal agents.

Construction and Conversion of Residential Buildings

The construction regulations of the Town Development Committee (TDC)³ specify that no construction activities are allowed within 200 metres from the centre of the road in the Phirke to Khohare area. Likewise, no construction is allowed along the road adjoining the lakeside. In 2051 BS, TDC empowered the municipality to approve, oversee, and regulate the planning and design of buildings. The institutional mechanism to enforce this, however, remains ineffective.

Local people feel that unauthorised construction around the lake is due to government inaction. Local government officials complain that there is no coordination between the TDC and Regional Offices of the Ministry of Housing, Pokhara Municipality, and Pokhara Urban Development Authority. Authorities are not clearly defined.

The Department of Tourism building under construction near the lake in the restricted zone is a clear violation of its own TDC construction code which prohibits construction

³ TDC on the other hand is a policy-making body and the decisions of TDC (38 members and one member secretary) are to be implemented by its member secretary.

in some selected areas. Construction activities by private property owners below the Tal Barahi Chok and Khahare Road are in process because land acquisition has been a major problem and there are numerous (at least 12) owners. It was learned that these owners are willing to provide the land but only if they are compensated for it at the current market prices. Local people feel that no construction should be allowed within 100 metres from the lake shoreline.

One of the main reasons for the increased number of hotels and lodges has been the conversion of residential buildings into hotels and lodges. Strictly speaking this is not permitted by regulation. The TIC has stipulated criteria for tourist class hotels which include a minimum of 10 rooms, three bathrooms, parking area, and certain sanitary facilities. However, most of the hotels do not meet the criteria. As of now (September 1996), the TIC had recommended 100 additional hotels for registration in addition to the 200 lodges and hotels that already exist (about 4,500 beds).

It was pointed out during the discussions that the TIC is not paying adequate attention to this problem. Those duly registered complain that the TIC is harassing registered hotels and lodges but is ineffective in regulating the unregistered ones. Ironically, the tax office is collecting taxes from unregistered lodges as well.

Inadequate Infrastructural Facilities

Rapid urbanisation is exerting increasing pressure on the limited infrastructural facilities of Pokhara. There is no provision for sewage disposal in Pokhara. Household waste water is either left open or drained into small and narrow ditches along the roadsides. Only about 35 per cent of the houses have septic tanks but, due to poor construction quality, many of these leak and seep directly or indirectly into the lake.

The water supply in Pokhara is of poor quality and inadequate. Many of the hotels and lodges are also connected to this same water system. Most of the tourism outlets serve boiled and filtered water to their visitors. Mineral water can be purchased in bottles.

Pokhara has heavy rainfall and winter months also witness rainfall. A storm water drainage system was recently constructed under the Tourism Infrastructure Development Project (TIDP) to address this problem. The storm water drains into the Phirke Khola which ultimately drains into the Phewa Lake. In addition, many people in the town have connected their sewage systems to the storm drainage system which drains directly into the lake.

Another major area of concern for environmental deterioration is the management of solid waste and garbage disposal. As in other cities in the country, Pokhara is also having difficulty finding an appropriate dumping site. It was learned that previously 'Rato Pahiro' was being used as a dumping site and that it would last for about 100

years, but, according to the sources in the Municipality, this site has been abandoned due to conflicts between political parties. 'Shanti Ban Batika' was identified as an alternative site, but had not been used as of September 1996.

The area below 'Bheda Briddhi Farm' in Ward No. 18 close to the Seti bridge is also being proposed as a dumping site and TIDP has shown an interest in supporting the development of this site. But little progress has been made so far. There is growing resistance from the local people to the site being used for dumping garbage.

Many hotels and lodges are reported to pump sewage directly into the lake. They also use the lake water for a variety of purposes. Opinions vary between HAN and the local people regarding pumping sewage into the lake by the hotels. The HAN president indicated that most of the hotels have septic tanks and sewage is not directly released into the lake by the hotels. Even if this were true, seepage from the septic tanks is known to occur.

Other lake polluting factors are wallowing pigs and buffaloes. Presently, the lake is also being used by local people to wash laundry. Local people have been using the lake to wash clothes for a long time. Alternative arrangements have not been made for them. HAN indicated that a request has been made to the municipality to check this activity, but so far no action has been taken. The municipality attempted to impose a fine of Rs 500 on anyone using this lake for laundry, but this rule has never been effectively enforced. In essence there are no norms regarding various 'dos and don'ts'.

Biodiversity and Poor Watershed Management

Phewa Lake is an important habitat for a wide variety of aquatic life, and it supports six floating, seven submerged, and three emergent rooted aquatic plant species and 22 different native fish species. Some migratory birds also take refuge in this area. The area around the lake, especially Rani Ban, Pumdi Bhumdi, and Panchase, offer good bird-watching sites and are rich in flora and fauna. Presently, however, pollution is threatening the aquatic life and ecology of the lake. Other human and tourism-induced activities are also threatening the biodiversity of the lakeside area as well as its vicinity.

There are upstream problems as well. Harpan *Khola* which feeds Phewa Lake appears to have received little or no attention so far. This river meanders through a vast area over the sedimentation it has deposited over a long period of time. Normally, a small river, it becomes huge during the monsoon. Phewa Lake bed is rising due to the sedimentation carried by the river, but measures to control this have not been taken, despite the studies that have been conducted (IUCN 1995b). Vast amounts of sediment load are annually carried into the lake, thus raising the lake bed and causing the size of the lake to shrink.

Institutional Gap

The Municipality, being a political entity, has not been effective in enforcing the rules and regulations. The problem was further compounded when TDC implemented IUCN recommendations even without their approval by HMG and considering that they also were in conflict with TDC regulation 1974. IUCN has created confusion in the implementation of TDC standards according to the TPIO officials. Local officials suggest that Guided Land Development (GLD) is necessary for the Baidam area as part of the land-use plan for which TDC formed a sub-committee, but the ward chairman did not approve the plan.

It was reported that local people took the initiative by forming the *Pardi Tole Sudhar Samiti* – a local institution – to regulate the hotel business by controlling unhealthy competition. It was functioning for eight years and meetings were held every week. The committee was dissolved when some entrepreneurs did not comply with the agreed norms. Since most hotels and lodges are not associated with HAN and the Pokhara Tourism Committee, it became difficult to enforce the rules and regulations.

At present, two parallel hotel organizations exist. They are HAN and Hotel *Byabasai Samiti*. The latter was established two to three years ago and the reason given was that HAN was unable to represent the interests of all the hotels and lodges. Some hotels are members of both these institutions. This split is due to party politics and divergence in interests, personalities, and so.

Lack of a Participatory Approach in TIDP

According to the local people, the Tourism Infrastructure Development Project (TIDP) (see Box 3) raised people's expectations during the preconstruction survey by asking if they would attach their septic tanks to drainage that was being constructed. According to the local people they were given the assurance that a separate sewage system would be constructed. But there was no provision for this in the project. People have connected their sewage systems to the storm drainage. Even storm water drainage is left incomplete at the dam site due to disputes between the people and the project and also due to a financial crisis (as of October 1896). Local people want the drainage system to be continued beyond the dam site and the construction of settling basins. The project has not constructed the settling basins as promised.

Poor Quality of Tourist Services

The local entrepreneurs indicated that the main complaints regarding services were concerning inadequate provision of hot water, differences in hotel tariffs, and untrained and inhospitable guides. The local hotel operators' reaction to this was that this is due to high expectations, especially on the part of Indian tourists who come without prior bookings and seek low cost accommodation. However, if visitors pay the hotel or lodge tariffs for the services advertised, the hotels and lodges should be able to provide such

Box 3

Tourism Infrastructural Development Project

The immediate output of the ADB study has been a US\$ 10.4 million, ADB-funded Tourism Infrastructural Development Project which seeks to upgrade some of the tourism infrastructure in Pokhara, Kathmandu, and Gorkha with a view to improving the quality of tourist products available at these destinations. This five-year project, being carried out under the aegis of the Department of Tourism, aims to upgrade the Pokhara airport and the Pokhara-Sarangkot access road and to carry out environmental improvement of the Pokhara and Gorkha conservation areas, specifically in the vicinity of Ram Krishna Ganesh Tole and the lower area in Gorkha. The development of a small Phewa Lakeside footpath and garden is another activity being undertaken by the project. Two tourist service centres, one each in Kathmandu and Pokhara, will be constructed, and the physical facilities at the Hotel Management and Tourism Training Centre (HMTTC) will be upgraded.

One interesting aspect of this project is the development of a model ecotourism circuit on the Pokhara-Ghalegoan-Siklis trekking route. The ecotourism project seeks to improve trails, provide alternative sources of energy, such as mini-hydro and kerosene, conserve and preserve cultural and natural resources, and pave the way for local communities to benefit from tourism. Community-managed lodges and campsites and handicraft promotion will be focussed upon as direct income-generating activities for local people, whereas broader linkages among resource bases and tourism will be a long-term goal.

services. The tourists and local entrepreneurs expressed the opinion that the services provided by the Tourist Information Centre (TIC) were very poor.

More than fifty per cent of the hotels and lodges are run by the operators on a rental basis and the rest are operated by the owners themselves. The HAN president, however, is of the opinion that only four to five per cent of the hotels and lodges are owner operated. Entrepreneurs who rent property to provide services to tourists seem to be more concerned with the deterioration in the environment since it affects their incomes, as a result these operators are motivated to maximise short-run profits (and hence give poor services), and this has led to a lot of undercutting of prices. Property owners are less concerned with the environment as long as their rents are duly paid.

According to the Travel and Trekking Agents' Association of Nepal (TAAN) regulation, a minimum of Rs 200 is to be provided to porters as daily wages, but unauthorised agents pay only about Rs 150. There is a big discrepancy in the wage rates offered to tour guides by authorised and unauthorised trekking agencies. The services provided also differ accordingly and many tourists have been known to file complaints about the poor quality of services provided by illegal agents.

According to the TIC office, unauthorised operations can be closed by the local tourist police. However, there is a shortage of manpower and there is no provision for permanent, local tourist police. The TIC is of the opinion that revisions in the Tourism Act 2035 are needed to make monitoring more effective.

One of the weaknesses identified in the trekking business is the lack of trained manpower. The three-week training course provided by the government for training guides is not sufficient to produce good quality manpower.

Problems such as poor services at the airport and bus park have been among the principal complaints of many tourists. Insecurity with respect to luggage is also on the rise at the airport and bus park. Tourists are known to lose their luggage at the airport and generally no effective action is taken by the authorities. At times tourists have also been known to make false complaints with regard to lost luggage, which creates problems.

There is a conflict between *Prithvi Rajmarg Byabasai Samiti* and the tour operators regarding travel by Nepalese citizens in tourist coaches. The tour operators expressed the opinion that Nepalese citizens should also be allowed to ride the tourist coaches if they are willing to pay the bus fare. The *Prithvi Rajmarg Byabasai Samiti*, on the other hand, opposes this and insists that tour operators should not allow Nepalese citizens to use the tourist coaches.

Some feel that construction of a road to Sarangkot has had a negative impact on the local community. Before the construction of the road, visitors would spend the night at Sarangkot and thus benefit the local community. However, now, due to the road, visitors do not stay overnight and thus the local community has lost business. The benefits have shifted from the Sarangkot community to the lodges and hotels in Pokhara and to those who rent out vehicles to the visitors to travel to Sarangkot.

Weak Linkages with the Local Economy

Tourism linkages with the local economy are also poor. Some broad linkages between the tourism sector and the local community can be discerned from the following information collected from various sources. The demand for meat is increasing in the valley and part of this demand originates from the tourism sector through different hotels, lodges, and restaurants. The most common meats in demand are goats, buffaloes, and chickens. Goats are imported from neighbouring hill districts and the *Terai*. Some are imported from western UP, Haryana, and Rajasthan via the western *Terai*. A local supply of meat meets only about one-third of the demand and the rest is imported. Bulls (70%) are imported from various *Terai* districts and India. Milk is supplied by the dairy and surrounding areas but not from Pokhara. Most farmers continue to raise local varieties of cattle for milk production. Buffaloes used for milk production are mostly imported from India. The demand for chickens and eggs is met almost entirely by producers from Chitwan and Nawalparasi and only a small percentage of this demand is met from local production.

A large percentage of the demand for fruit (70-80%) is met through imports from India (UP, Bihar, West Bengal and Maharashtra). Grapes are mostly imported from Nasik and bananas from Bihar and West Bengal. Pineapples are imported from Silgadi and some from local areas. Mangoes (75%) are imported from India. Most oranges (90%) are produced domestically and off-season oranges are from Nagpur, India. Apples from Jumla are also becoming available in Pokhara. Mustang apples are also available from Bhadra to Kartik (August to October), but the supply is small. Lemons mostly come

from Dhading and Tanahu. In total, about 25 per cent of the fruit supplies in Pokhara Valley come from domestic sources and production from and around the Pokhara Valley fulfills a small percentage of the total fruit demand.

Although vegetables are sold all around the Valley, about 40 per cent of the total supply is imported from India. Large quantities of onions and potatoes are imported from India. About 60 per cent of all green vegetables come from India. Cauliflowers, cabbages, gourds, beans, tomatoes, aubergines, lady fingers, etc mostly come from India. The remaining 40 per cent of the valley's vegetable supply is met by crops from different parts of Nepal; namely, from the Palung, Charuandi, Dhalkebar, and Lahan areas. About 20 per cent of the vegetables come from neighbouring areas such as the Pokhara Valley – Bahumara, Malepatan, Parsyang, Baidam, Masbar, Chhimedanda, Majheripatan, Kristi, and Kalikasthan. The valley itself has the potential for cultivating off-season vegetables on a large-scale and could be almost self sufficient in vegetables. Currently about 1,200 *thelas* (hand carts) are in operation as vegetable stalls throughout the valley.

The vegetables from Dhading and Tanahu account for 25 per cent of the local market. The vegetable suppliers are running a cartel, thereby affecting the prices in local markets. Some entrepreneurs from Dhading have started supplying vegetables wholesale. If these entrepreneurs succeed, it may affect the cartel practice.

In recent years, there has been an increasing flow of Kashmiri goods into souvenir shops. Tibetan goods are also sold as souvenirs. Promotion of such imported items does not help the local economy in terms of income and employment.

Analysis of the Problems of Phewa Lake

The core problem of the lake area is the lack of responsibility and accountability on the part of various stakeholders. This seems to have come about largely due to the lack of institutions to plan and monitor the impacts and implications of the activities of different stakeholders on the environment of the prime common resource, namely the lake.

The Phewa Lake environmental resource can be considered to be a common property resource. Unrestricted access to the resource system by all those who care to use it is a basic characteristic of a common property resource. As a result of unrestricted access, some adverse interaction takes place between users of the system, leading to externalities. This implies that appropriate management of the resource can be exercised if access can be denied when an adverse interaction takes place. On the contrary access need not be denied if adverse interactions are not created by users. Therefore, if any one of the above two conditions were to be fulfilled, there would be no common property resource problem.

Unfettered access has already been discussed above, and this problem is shared by many natural resource systems. The problem has often been stated as 'everyone's

Box 4

Who Authorises and Regulates Building Construction in and around the Phewa Lake Area

Local people feel that unauthorised construction around the lake area is due to lack of government action. Local government officials complain that there is no coordination between the Town Development Committee (TDC) and the Ministry of Housing and Urban Development. What these two latter agencies are authorised to perform was not clear to the people. TDC was empowered by the municipality to authorise and regulate construction in the area, chaired by the Mayor of Pokhara. Construction is prohibited within 200 metres from the centre of the road along the road from Phirke to Khahare. Monitoring was to be carried out by the member secretary, a junior government official. The municipality being a political entity has not been able to enforce standards effectively. The TDC, on the other hand, is a policy-making body and the decision of TDC (38 members) is to be implemented by the TPIO, which is understaffed. The TDC itself has built a new Visitor Information Centre in the restricted area. The outlet for the storm drainage recently constructed by TIDP is another example of gross violation of construction norms.

property is no one's property,' which conjures up an image of helplessness among the users with respect to management of the resource. This situation encourages the tendency to overuse or even destroy the resource or to use it rapidly beyond its regenerative and assimilative capacities. In the process some users (firms, exploiters, or stakeholders), especially the private sector, tend to over invest to use the common asset, the result being diminishing returns to the inputs invested by different users.⁴

Exploiters (stakeholders) of the common resource have little incentive to conserve it. The owners of hotels/lodges on the lakeside discharge their waste into the lake's waters. An individual discharge will have negligible effects on water quality, but the combined total effect is polluting the lake. No user is willing to bear the cost of installing an individual treatment system since, by doing so, there is no guarantee that other firms will not discharge their waste into the lake. Nor is there any possibility, under the existing property rights' ownership pattern, of enforcing regulations, since there is no appropriate authority that can exercise management. This action has created adverse interaction among users.

In the Phewa Lake Environment, there is a clear divergence between the social optimum use and present use of the resource. This situation can be illustrated with the help of a diagram. To simplify matters, assume that the Lake Environment is being used by tourists only, the output being measured in, for example, visitor days (X), the production of which incurs a cost represented by $TC(X)$ on the tourism industry. The total cost curve is a steep curve indicating that costs are increasing rapidly to generate incremental output associated with the common property resource. Generating additional output becomes more and more expensive, i.e., the marginal cost increases with crowding and pollution and a decline in quality of the resource stock. Visitors are willing to pay (WTP) which is represented by $WT(X)$ and each facility that caters to tourism generates revenue

⁴ See for example Hardin (1968) for an introduction to the concept and its analysis. Common property resource problems are analysed in Howe (1979); Clark 1980; Dasgupta and Heal 1979).

Box 5

Conflicting Use Values of Phewa Lake Environmental Resources

Presently, many lodges use the lake for laundry, local people also use it for bathing. Tankers also collect water from the lake to sell. Buffaloes' wallowing and grazing activities are other activities carried out in and around the Phewa Lake Environment. According to HAN, the municipality does not control such activities. The municipality argues that local people do not support the initiatives and actions taken by the municipality. Local people argue that they must have an alternative, if they are to abandon the use of the lake area. Once the municipality introduced a penalty of Rs 500 for those caught bathing and washing clothes, but could never be effectively enforced. An alternative site for bathing and laundering could be developed below the dam site on the Burundi *Khola*, but this suggestion from local people does not appear to have been taken seriously. Such conflicting uses of the lake environment are affecting its tourism value.

represented by $T(X)$. All firms (hotels, lodges, etc) are assumed to be profit maximisers. These firms can be assumed to produce the output (X) at the same marginal cost (or else they would not be in business) and face similar prices. The $WT(X)$ is increasing at a diminishing rate implying that the willingness to pay declines as the product quality falls (visitor satisfaction).

The social optimal output level occurs where the marginal cost (slope of $TC(X)$) of producing X' equals the price, i.e., the willingness to pay (slope of the $WT(X)$). If the output X' were to remain at this level, society benefits to the extent of the difference between the unit price and unit cost to produce X' (equals the distance AB). The benefits, AC , accrue to the consumers (visitors) and CB to the producers.

However, under the common property resource regime, such an optimal level of output cannot be produced. Common property resource implies there are no barriers to entry and new producers are relatively free to enter the industry, to build more hotels or lodges; or even convert houses to lodges, because the new firms also wish to make profits. The output expands quantitatively (more visitors can possibly be accommodated). In the diagram, therefore, the output expands to X_e , and per firm profit drops. In this situation, the benefits to society (both consumer and producer surplus) decrease. (Note the length of the AB vs $A'B'$). Firms will continue to enter the industry as long as total revenue exceeds total cost, which may not however, lead to maximisation of social benefits. Producers profits are completely eliminated at X_e .

If it is realised that there are other users (local community) who also seek benefits from the lake, other than the tourism industry, the situation depicted above becomes worse and greater pressure is put on the lake to meet various demands. This situation leads to over production of low quality output and excess investment, thus making production costs higher than they would be if the socially optimal output levels were to be produced.

Another problem associated with the common property resource is congestion. Congestion occurs when there is mutual interference among different units using a common facility. Interference can be physical in nature (one building blocking the view

of another). In such a situation, production of output (visitor satisfaction) becomes interdependent, leading to externalities, in which case, willingness to pay decreases with crowding.

The issue related to this common property resource is the pollution and assimilative capacity of the Phewa Lake. The area around the lake and the lake waters serves as a common property resource for waste disposal. Historically, all parties have been free to dump waste and construct any type of building they want (as has been done by the Department of Tourism and the Police) and disrupt the scenery. In recent times, people have even connected their septic tanks to the storm drainage system which empties into the lake. The increasing use of the lake water for washing clothes is another example. Upstream, the runoff from farm lands that carries fertilizers and pesticides is another example. With hundreds of polluters it has become almost impossible to attribute pollution to any one party.

Resolving the tragedy of the commons is seldom an easy task. The tragedy itself results from perfectly rational behaviour on the part of individuals. For example, to maximise profits, hotel owners discharge sewage directly into the lake and ignore the fact that it contributes to pollution. Currently, they have little incentive to control pollution because they perceive an excess of private profit over social /communal costs. The costs of any new construction activities in and around the lakeside, while resulting from the expansion of cheap housing in the suburbs, are borne by the lodges makers, profits accrue to the developers while the costs are communalised. As a result of this, the investment in buildings (lodges, hotels, shops, etc) is higher than it should be.

The tragedy of the commons constitutes perhaps the most powerful bias against environmental, economic, and social sustainability, and over time this can spread to larger areas. Government institutions capable of dealing with common property problems are often weak and subject to *ad hoc* political influences. The ineffectiveness of the Municipality in exercising its power to protect the environment is a case in point. The management of natural and environmental resources (i.e., the lake) is subject to the decisions made by various actors at various levels which, in turn, affect the quality and quantity of the lake's environment.

How best to govern the natural resources used by many individuals is not always easy to resolve. There are cases in which government interventions to manage such resources have succeeded and cases in which they have failed. Likewise, evidence also indicates that there have been successes and failures when private parties have been involved in the management of common property resources. Furthermore, community organizations/institutions have also been able to govern the resources with a reasonable degree of success over long periods of time. Those advocating the private property approach presume that the most efficient use pattern results from dividing the right to access and control of such resources. While it is difficult to establish and enforce private property rights in the case of lake resources, this does not necessarily imply that common property

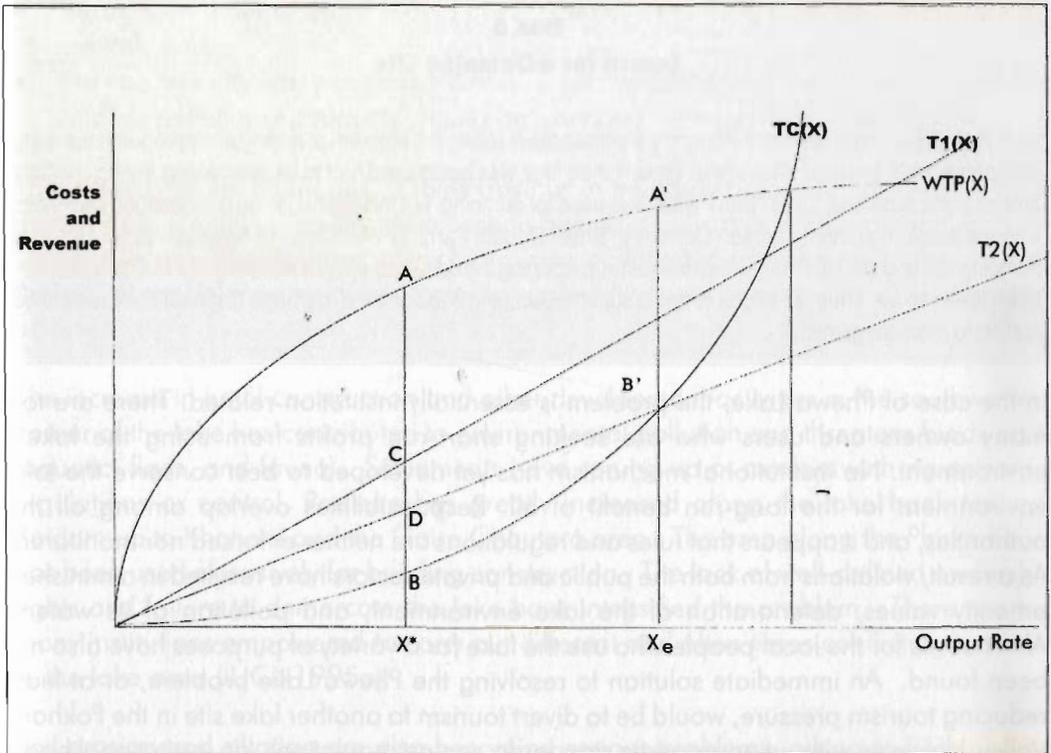


Figure 1: Divergence between Social Optimum Use and Present Use of the Phewa Lake Environment

resources should cease to remain common property and that private property should in such circumstances be encouraged. Privatisation can also mean assigning the exclusive right to a single individual or firm to harvest a resource (say fish) from the system. Evidence that nationalisation of common property resources can lead to improved management has not been forthcoming in Nepal; for example, in the case of forest nationalisation in 1956. When everyone has free access to resources no one has the incentive to manage or conserve them for future use, i.e., 'Everyone's property is no one's property'.

Uncertainty and a myopic time horizon compound the difficulties associated with common property resources. Resources and environmental problems are typically dominated by uncertainties of different kinds. The private sector generally prefers an immediate harvest to maximise profits which can lead to overexploitation (e.g., property owners) as future supplies (profits) are not assured. In the face of such uncertainty, convincing the local people to accept concrete changes in their behaviour may be difficult indeed. Note that any degree of uncertainty results in increased future discounting, usually known as risk discounting, with implications on sustainability. Common ownership of resources, future discounting, and the effects of uncertainty are powerful sources of social and economic biases against sustainability. Often, these mutually synergistic biases are ignored in the decision-making process as in the case of the Phewa Lake, which is governed by multiple acts often conflicting each another.

Box 6

Search for a Dumping Site

As in many other main cities in the country, Pokhara too is facing the problem of finding an appropriate dumping site for the city's garbage. The site at 'Rato Pahiro' that was being used had to be abandoned due to conflicts among political parties. Later, 'Ban Palika' was used for dumping, but this too had to be discontinued as conflict with the stadium authority arose. Currently, 'Bhedi Briddhi Farm' in Ward No. 18 has been proposed as a dumping site and the TIDP has shown interest in supporting the development of a dumping site, but no action has been taken so far. Thus, as efforts to find a suitable dumping site continue, garbage disposal continues to be subject to mismanagement.

In the case of Phewa Lake, the problem is essentially institution-related. There are too many owners and users who are seeking short-run profits from using the lake's environment. No institutional mechanism has yet developed to best conserve the lake environment for the long-run benefit of all. Responsibilities overlap among all the authorities, and it appears that rules and regulations are neither enforced nor monitored. As a result, violations from both the public and private sectors have resulted in diminished amenity values, deterioration of the lake environment, and pollution of its waters. Alternatives for the local people who use the lake for a variety of purposes have also not been found. An immediate solution to resolving the Phewa Lake problem, or at least reducing tourism pressure, would be to divert tourism to another lake site in the Pokhara Valley. However, without appropriate standards, zoning regulations, an institutional body, and other issues that have emerged in the case of Phewa Lake, the other lakes may also face the same fate. Details are discussed in the recommendations' section.