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Mountain Tourism for Local Community Development in Nepal

A Case Study of Phewa Lakeside, Pokhara

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A Case Study of Phewa Lakeside, Pokhara

Kamal Banskota
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Preface

The present report is the result of a series of studies conducted as part of the second phase of the NORAD-funded project entitled Mountain Tourism for Local Community Development. One of the major objectives of the Project was to develop training modules and materials on mountain tourism for local community development for policy-makers, programme managers, private sector agencies, and local community-based entrepreneurs and impart training to these audiences on a pilot basis. As part of the Project several of thematic studies and manuals have been prepared.

This Discussion Paper is the second of three case studies from Nepal that focus on the concerns of mountain tourism and its promotion for local community development in Upper Mustang, **Phewa Lakeside in Pokhara**, and Syaphrubesi, Langtang. These three studies throw light on the problems as well as the prospects of mountain tourism for local development in three different ecozones of Nepal. The Phewa Lake study brings out the need and importance of a participatory institutional framework to deal with common property resource problems, namely those of pollution of the lake and the problems of encroachment and incompatible land use, all related to the development of tourism in the area. Phewa Lake is a prime tourist asset for Pokhara, but it is rapidly deteriorating due to the lack of a focal institution responsible for the management of the environmental resources of the area. The Upper Mustang case (the first study in MEI 98/1) highlights the problems of environmental, economic, social, and infrastructural linkages of tourism in an area where high-yielding tourism is being promoted under the aegis of a non-government organization and where tourism could play a leading role in the integrated development of the area. Syaphrubesi, in Langtang (the third study in MEI 98/3) is an area in which the initial impacts of tourism are becoming evident. The Syaphrubesi study primarily assesses the programmes introduced under the Quality Tourism Project that help improve the environmental, economic, and human resource development linkages with tourism, and it provides a number of lessons of relevance to other areas. In all cases, the attempt is to highlight the scope for community action that would contribute to local development through the promotion of environmentally friendly tourism. The studies were carried out as part of the development of training material for different target audiences under the Mountain Tourism for Local Community Development Project.

We would like to thank the Centre for Resource and Environmental Studies (CREST), our collaborating institution in the Mountain Tourism for Local Community Development Project in Nepal, particularly Dr Kamal Banskota and Bikash Sharma, for undertaking this study.

On behalf of ICIMOD, Dr. Pitamber Sharma is the Project Coordinator as well as the technical editor of this paper.

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Abstract

This case study examines, the 'tragedy of the commons' as it is played out in the case of Phewa Lakeside, which is rapidly deteriorating through an excess of exploitation, and because there are too many actors planning its future at cross purposes. This interesting and enlightening narrative assesses the current deteriorating structure and lack of focus and provides valuable insights and recommendations for the future of tourism in this picturesque spot. It examines all the unfortunate happenings to this lake both naturally and human-induced, as well as services provided to tourists in the context of quality. Several conflicts are apparent conflicts which, if not tackled with alacrity, could culminate in another environmental disaster and the end of a very valuable natural asset.

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Part One

Introduction and Study Methodology

INTRODUCTION

Mountain Tourism in Nepal has brought both positive and negative changes in mountain areas where it is practised. These changes are manifested in nature and environment, in the economy, and in the social and cultural patterns of mountain people. Although negative impacts have also occurred, by and large evidence indicates that positive changes outweigh negative ones. Moreover, the potential for developing tourism in mountain areas is enormous. If properly guided, tourism development in mountain areas can help alleviate poverty and conserve the fragile mountain environment.

However, mountain tourism development (MTD) requires intervention on several fronts simultaneously. Previous studies carried out by CREST for ICIMOD have identified several important issues in the context of MTD.

- A major problem in mountain tourism is the result of a lack of vision and appreciation of the value of the natural resources essential for tourism development. This lack of vision has led to unsustainable tourism practices in mountain areas.
- The conditions under which tourism could be made to play a role in mountain development and the policy environment conducive to such a role remain unexplored.
- In general there has been no spontaneous impact of tourism on the major development concerns in the mountains; namely, poverty alleviation, environmental care and regeneration, and empowerment of local communities. Therefore, deliberate efforts and programmatic interventions needed to be made to link tourism to these concerns.
- Mountain tourism has been entirely demand-led and supply-side planning and management (attraction, promotion, information transport, and services) have been completely ignored.
- This situation has resulted in poor links between mountain tourism and the economic base of mountain areas, resulting in a substantial amount of income from tourism accruing to local communities leaking out of the area.
- Mountain tourism has so far only relied on trekking tourism and there is scope and need to develop new tourism products based on the natural and cultural resources. There is an urgent need to develop and diversify mountain tourism to benefit a wider mountain community.
- A felt need to make the different actors in the tourism policy-programme-action continuum aware and sensitive to the issues of sustainable mountain tourism was perceived.

Based on the findings of the previous studies, thematic areas have been identified in which broadening the knowledge, awareness, and sensitisation with respect to sustainable mountain tourism were required. Some of these areas have been described below.

- Operationalisation of the considerations of carrying capacity in the local context
- Elucidation of the environmental, socioeconomic, and related impacts and implications of tourism and approaches to mitigating negative effects
- A process of participatory planning and the development of institutions for tourism in local areas and communities to manage the same
- Identification of the needs of human resource development at different levels in order to maximise the benefits from mountain tourism
- Development of materials and modules incorporating the above for the training of personnel at different levels of the tourism policy-programme-action continuum.

In other words, institutions at different levels, especially at local level where consumption takes place, are urgently required.

OBJECTIVES

As stated in the terms of reference, the main objectives of the present study are as follow.

- To broaden the understanding of the impact and implications of different types of mountain tourism on different eco-zones
- To use the outputs generated to develop training modules and materials on mountain tourism for policy-makers, programme managers, and the local community

CASE STUDY AREAS

To achieve the above objectives the study has been carried out in two phases. In the first phase, micro case studies to understand in detail the carrying capacity issues and their implications for Mountain Community Development (MCD) and MTD in the context of Himalayan Environmental Resources (HER) or natural resources were discussed. In the second phase, the training manual was to be developed after the first phase study had been completed. The micro case studies were carried out in three areas; namely, Upper Mustang, Phewa Lake Side, and Syaphrubesi.

Although the specific issues to be addressed are presented in the respective case studies, the main focus of these studies is on general background, tourism assets, and an assessment of environmental, economic, and social impacts and implications. An attempt is made to operationalise the carrying capacity concept at the local level and identify gaps in the action plans already developed for the areas (Lomanthang and Phewa Lake) and make recommendations.

Phewa Lakeside

Pokhara is a destination for a small number of tourists, as well as being the gateway to the entire Annapurna Area and the Upper Mustang area. The lakeside has great potential

for development into a resort destination. The lake is the major tourism asset of the area. At the same time, the lake also serves community needs in a variety of ways. However, with a growing population as well as the increase in restaurants and hotels, the lake is being mismanaged. IUCN has carried out extensive research and has recommended 23 different actions to be undertaken to promote sustainability. Despite these studies and recommendations, there appears to be no clear identification of the roles and responsibilities of the various local institutions – from user groups to the government. Until and unless the various institutions are identified and their roles and responsibilities understood, it will be almost impossible to introduce any sustainable management system for Phewa Lake.

METHODOLOGY

Sustainable Development

Environmental sustainability (ES) implies sustainable levels of both production (sources) and consumption (sinks). The priority of development should be improvement in human well-being – poverty reduction; increased literacy; and reduced hunger, disease, and inequality. However, these goals cannot be achieved unless ES is the baseline. Although environmental sustainability continues to be a major issue of this debate, there is increasing consensus that, besides environmental sustainability, economic and social or institutional sustainabilities are also important in achieving sustainable development. The very life support system has to remain intact to improve the well-being of the people. However, it is the people who need to take the action and, hence, environmental sustainability without the involvement of the people is not meaningful. It has been realised that improving the well-being of human beings cannot be seen in isolation from the maintenance of a clean and healthy environment and without improving social relationships between individuals.

There are four kinds of capital; namely, natural, human, physical (or man-made), and social. ES requires a definition of natural capital and its maintenance. Natural capital is defined as the stock of environmentally-induced assets which provide a flow of useful goods and services, and sustainability implies the maintenance of these assets. Economics has paid little attention to natural and social capital, and today it is becoming more and more evident that the limiting factor to economic development is natural capital, which has become scarce.

Environmental Sustainability

The definition of ES has to be based on the maintenance of natural capital, hence the input/output rule (source and sink). Thus, on the output side, waste emission from a project or action being considered should be kept within the assimilative capacity of the local environment, without unacceptable degradation of its future waste absorptive capacity or other important services. On the input side, harvest rates of renewable resource inputs should be within the regenerative capacities of the natural system that

generates them. Both these principles also provide the scale of the environment, and economic activities should not expand beyond the scale of the environment, as dictated by the input and output rules.

The scale of the human economy has exceeded the regenerative and assimilative capacities of the environment. Both sources and sink functions are becoming more limited than ever before. Economic growth cannot be considered to be infinite as it is a function of throughput. Throughput, or the flow of materials and energy from the environment for use by human beings, is then returned to the environmental sinks and wastes (Goodland 1995, Munasigne and Shearer 1995). Throughput growth translates into increased rates of resource extraction and pollution, and this scale has exceeded environmental capacities. Human activities have become unsustainable as populations are living off inherited and finite capital, and the losses are not being taken into account. Hence, with regard to environmental sustainability it is essential to:

- encourage growth of natural capital by reducing the current level of exploitation;
- relieve pressure on natural capital by expanding cultivated natural capital; and
- increase the end-use efficiency of products and extend the life cycle, durability, and recyclability of products in order to improve overall efficiency.

Environmental sustainability seeks to improve human welfare by protecting the sources of raw materials used for human needs and ensuring that the sinks for human wastes are not exceeded. All human economic subsystems must be kept within the scale of the overall ecosystems. This means that, on the sink side, all waste emissions must be within the assimilative capacity of the environment and, on the source side, harvesting rates of renewable resources must be kept within regenerative rates. Economic and social sustainabilities thus depend on environmental sustainability. What is needed in the face of uncertainty and risk is to use the precautionary principle – be conservative and exercise prudence.

Economic Sustainability

Economic sustainability can be defined as maintenance of capital: *“the amount one can consume during a period and still be as well off at the end of the period.”* However, when environmental, human, and social capital are also considered, this definition of capital provided by Hicks needs to be extrapolated upon (Goodland 1995). Clean air, forests, soils, and so on are forms of natural capital which can deteriorate. Life-supporting systems are shrinking as economic growth expands. The life support system and nature’s sink functions are finite and cannot expand with economic growth. As a result, the scale of the environment in terms of life support and its sink function is finite and this needs to be taken into account. Economics has a tremendous difficulty in evaluating natural capital, intangibles, and inter-generational and common access resources. The precautionary principle should be used routinely and should err on the side of caution in the face of uncertainty and risk. Today this definition would have to incorporate

a much wider definition of capital-beyond human-made capital- and should be able to brace all three forms of capital (natural, social, and human).

Man-made capital is not independent of natural capital. The issue is whether the extra productivity in man-made capital outweighs the extra natural capital used in the production of man-made capital. To say man-made capital is more productive than natural capital, i.e., environment, is to ignore the multiple functions of the environment. Life support and waste assimilative functions are not substitutable. Hence, improvement in living standards can only be achieved by increasing natural capital. Development and environment (natural capital) are thus to be viewed as complementing assets in order to ensure economic sustainability, especially in the early stages of development. Although the degree to which man-made capital can be a substitute for natural capital and vice versa (or between development and the environment) tends to increase with the level of development, they can be substituted for each other only up to a limit and only for certain environmental functions. Hence the need to identify the limiting factors to economic sustainability and the scope for dealing with them through management and technology become important.

A short-time horizon and, hence, a high discount rate is another central issue of concern for economic sustainability. A high discount rate discourages investment with long-term benefits (forestry projects) and promotes projects with greater short-run benefits but long-term costs. The implications of a high discount rate on sustainability are obvious, given the fact that policy planners rely on the discount rate as a policy tool for two dissimilar needs; namely, scale of investment as well as selection of most profitable projects (allocation). While lowering of investment is desirable for environmental projects, it is often based on the rate of return on sustainable use of capital. A poverty alleviation strategy is the key to encouraging sustainability, as it encourages policy-makers to discount less on future returns relative to present returns. Failure to grant property rights over resources is another limiting factor that has led to a short time horizon. The above issues underlying economic sustainability call for integrating economic and environmental policy actions in the decision-making process at different levels. Policy-makers, at the very least, need to be aware of these issues.

Social Sustainability

Social capital is created by establishing new relationships between individuals to facilitate collective action. Shared learning, the devolution of responsibility and mutual trust; the establishment of rules; how activities are undertaken, monitored, and enforced; and so on are forms of social capital. Social capital seeks to improve the ability of a community to make decisions, widen their choices, and improve their capabilities. Social capital implies the need for voluntary collective action and is, thus, about societal laws and regulations and the willingness of the society to obey them; and this can include coercion, delegation of authority, representation and voting, and direct participation. The different forms of collective decision-making by societies are through participatory institutions

where individuals act not in their self interests but in the interests of their community. Participatory institutions play an important role in social capital formation. How to promote and how to accumulate collective decision-making, public action, institutional capability, political participation, and leadership through all the intangible attributes of social capital, become important components. While people have good ideas about how to accumulate the other three forms of capital, there is lack of knowledge about accumulating and developing social capital. It is being increasingly realised that development programmes, including those related to resource conservation, need to address the diverse needs of local communities and individual experiences in order to achieve sustainability and self-reliance. The need to reduce poverty, promote employment, and bring about social integration to build civil society has already been formalised through an international consensus (World Summit on Social Development 1995). Like all other capital, social capital also depreciates and requires maintenance and replenishment through participation and is necessary for social sustainability.

In the formation of social capital, three processes appear crucial; namely, social experiment, social innovation, and social learning. Projects and programmes need to be treated as experiments which aim to test the viability of development options. Social experiment recognises that the process of development has to be found from within a given society but can vary across societies. Enough time has to be given for the experiment to work so that the society is able to deal with unpredictable options. This process inspires the society to set the stage for social innovations (Banuri et al. 1994).

Social innovations are experiments carried out by the society, within the context of their own values, traditions, and norms, which, in turn, enable them to develop their own solutions to emerging problems. Social innovations must also embody the principles of diversity, space, transparency, accountability, and equity. Finally, social learning requires that the society should take direct responsibility for the design and implementation of programmes and should also be allowed to set the conditions under which the activities are expected to proceed (empowerment).

Carrying Capacity

At the heart of sustainability lies carrying capacity. Carrying capacity is a complex terminology and, for operational purposes, could be defined as the 'maximum use of natural and cultural resources by the community and tourism of a given geographical area for Mountain Community Development (MCD) and mountain tourism development (MTD) without adverse impacts on the sociocultural, economic, or biophysical environments' (Figure 1). In other words, carrying capacity can be simplified to consist of three interrelated dimensions; namely, the environment, the economy, and the social and institutional aspects. However, there are difficulties in operationalising this concept and simplification becomes essential; hence, a critical factor approach is needed. The critical factors are meant to be crucial variables, the presence (success factors) or absence (failure factors) of which is vital for the attainment

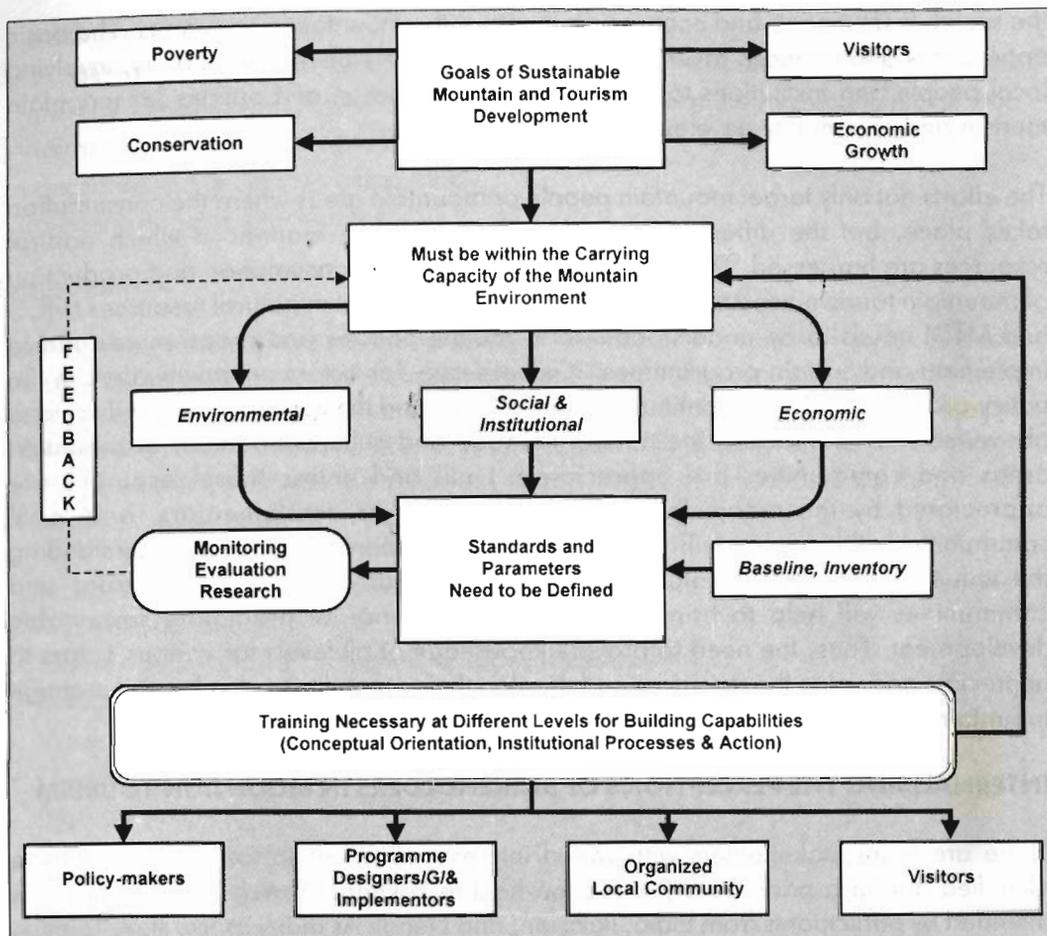


Figure 1: Essentials of the Carrying Capacity

of at least one element or object of sustainability and which also affects other aspects of sustainability. Thus, critical factors are those which need to be changed from their current stage, or, alternatively, conserved or protected in their current state, in order to increase the carrying capacity of the environment on the basis of predetermined standards. Critical factors can have negative or positive effects on both community and tourism and hence on natural resources. Negative factors (failure factors) result in overall deterioration in the state of MCD, MTD, and natural resources, whereas positive factors (success factors) improve their current state. The basic idea is to identify the most critical environmental, economic, and social factors and evolve a range within which changes brought about in these aspects will have the potential of being acceptable to policy planners and the concerned community at large and also contribute to the comprehensive process of mountain development.

Since people are a major component in the mountain environment, carrying capacity goes beyond the confines of the natural environment and includes, among other things,

the social, institutional, and economic aspects of the mountain populations. The basic approaches and methods taken in the case studies have been participatory; involving local people and institutions to assess the crucial issues in and options for mountain tourism and community development.

The efforts not only target mountain people or mountain areas where the consumption takes place, but the different levels that determine the manner in which natural resources are harnessed. The various actors involved in consumption and production of mountain tourism need to be identified and their interest in natural resources (MCD and MTD) needs to be understood. To formulate policies and programmes and to implement and sustain programmes, it is necessary for actors or stakeholders in the policy-programme-action continuum to first understand the modern concept discussed above, so that at all levels the natural heritage and cultural traditions of mountain areas and communities are appreciated. Until and unless these resources are appreciated by the actors (policy-makers, designers, implementors, and local communities), their value will not be understood. Appreciating and understanding the value of the unique natural and cultural resources of mountain areas and communities will help to bring about a better chance of promoting sustainable development. Thus, the need to provide knowledge at all levels for various actors to appreciate and value the resources and develop their capability to plan for and manage mountain tourism development.

INTERNALISING THE PERCEPTIONS OF STAKEHOLDERS IN MOUNTAIN TOURISM

There are many stakeholders with varied interests in mountain tourism. These were identified during a participatory workshop held in Pokhara (March 1996) which was attended by participants from India, Pakistan, and Nepal. As many as five stakeholders, as well as their interests in MTD, were identified. These were: the government, both national and local; local and national entrepreneurs; NGOs and INGOs; local people and communities; and visitors. Each of these five major stakeholders has different interests in mountain tourism development, and their perceptions need to be internalised in the tourism policy-programme-action continuum. The major interests of each stakeholder were identified and factors that influence their interests were discussed.

Government

The interests of the government (national as well as local) were identified as maximisation of real tourism benefits for sustainable mountain development. It should be emphasised here that the word **real** is being used to capture a wide range of issues that falls within the purview of any government, e.g., security, law enforcement, conservation, and protection¹. In order to maximise real tourism benefits for sustainable mountain development, the following development aspects become important for the government:

1 The provision of these and similar services by the state is assumed in order to bring better focus to the study

- revenue generation,
- conservation and protection of (tangible and intangible) natural and cultural assets,
- poverty alleviation (employment generation, equitable distribution, economic growth),
- infrastructural development,
- decentralised decision-making, and
- human resource development.

Entrepreneurs

Some of the main interests of entrepreneurs, whether at the national or local levels, however, were the same, i.e., profit maximisation. Thus, in this context, mountain tourism development was not a spontaneous phenomenon but depended on a host of factors, in the absence of which entrepreneurs would not be willing to invest. In the context of the Hindu Kush-Himalayas, the following factors were identified as important to the stakeholders in the interests of profit maximisation.

- Investment opportunities, awareness of and development of new tourism products and diversification
- Conservation and/or protection of tourism assets
- Infrastructural development
- Increased visitor numbers or visitor nights
- Marketing and promotion of tourism destinations and products
- Support services
- Training and skill development
- Conducive investment opportunities
- Policy facilitation

NGOs/INGOs

NGOs and INGOs have played an important role in organizing poor people, building capabilities, mobilising local resources, conservation, and in poverty alleviation. As a result, the interest of NGOs and INGOs was identified as maximisation of tourism benefits at local level. In order to achieve this the issues listed here are necessary.

- Social mobilisation or organizational empowerment
- Generate awareness and capability (skill) to be self reliant
- Local resource mobilisation
- Community services
- Availability of credit

Local People

Local people become the centre of mountain tourism development. Unless the living conditions of the local people improve, the achievement of sustainable mountain tourism

development is unlikely. The interest of the local people is to **maximise tourism benefits locally** which requires that the following issues will also be addressed:

- conservation/protection of assets,
- employment and income generation,
- community development, and
- empowerment of local communities.

Visitors

All four of the above-mentioned stakeholders are on the supply side of tourism. Visitors complete the tourism picture by being on the demand side. The interest of the visitors is **to maximise satisfaction**, which becomes possible only if there are adequate facilities and the services are of good standard. There also has to be adequate infrastructural development and the cost should be reasonable.

The five stakeholders were further grouped into three in view of the training modules that had to be developed in the context of mountain community and mountain tourism development. The three groups are:

- i. **policy planners:** government, NGOs/INGOs, entrepreneurs;
- ii. **programme designers and implementors:** government, GOs/INGOs, entrepreneurs, CBOs; and
- iii. **CBOs:** local government, organized communities, and entrepreneurs.

No separate training module is required for the visitors, but their interest must be understood by the other stakeholders so that visitors are able to maximise satisfaction. Hence, three sets of training modules for the first three groups of stakeholders will be developed.

TRAINING NEEDS

The training needs to cover a wide variety of areas but, after extensive discussion, three broad areas of training were identified for each of the stakeholders. These broad areas of training are discussed below (see Figure 1).

Conceptual Orientation

A great deal of awareness building on the meaning and use of concepts at the policy and programme levels has become necessary. Much of the effort in conservation of natural and cultural assets begins by realising their values, as these are essential for developing a vision on sustainable mountain tourism development. As will be discussed later, the need to assess carrying capacity is essential in this exercise and carrying capacity, being as complex as it is, needs to be simplified and modified over time in light of management objectives. Certain attributes of nature are best preserved if they are left

untouched because they are extremely scarce. In short, there is still a great deal to learn about nature and, in many places, a great deal of damage has already been done. Therefore, prudence must be observed and planning and management must be carried out by setting reasonable standards, limits, and so on.

Institutional Process

Organizing local communities, designing rules and regulations, and enforcing them are important aspects of institutional development. Without institutions, the management of sustainable mountain tourism development is not possible. However, centralised institutions cannot fulfill the task of managing development at local levels. While central-level institutions are necessary for policy and programme formulations, these policy and programme formulations need to be sensitive to local needs. Institutional linkages and coordination become vital in programme implementation. Local institutions cannot be expected to carry out too many tasks just as central-level institutions cannot fulfill others. NGOs and INGOs have become an effective force at the local level. Hence, from crafting local institutions to developing coordination among institutions at different levels, all are important in the institutional process.

Actions

Finally, plans and programmes can be formulated, but history has shown that implementation in Nepal has been weak. Actions need to be effectively orchestrated within the context of needs, capacities, and resource endowments or the comparative advantages of local areas. Complementary actions for mountain community and tourism development become essential. Providing quality services to visitors, managing the natural and cultural assets, and developing new products are equally important in this matter. Linking actions to financial institutions, developing trained manpower, and developing guidelines are other attributes essential for successful implementation. Research, evaluation, and monitoring can provide valuable inputs to policy-makers and planners to guide sustainable mountain and tourism development.

Part Two
**Case Study of
Phewa Lakeside, Pokhara**

INTRODUCTION

Introduction

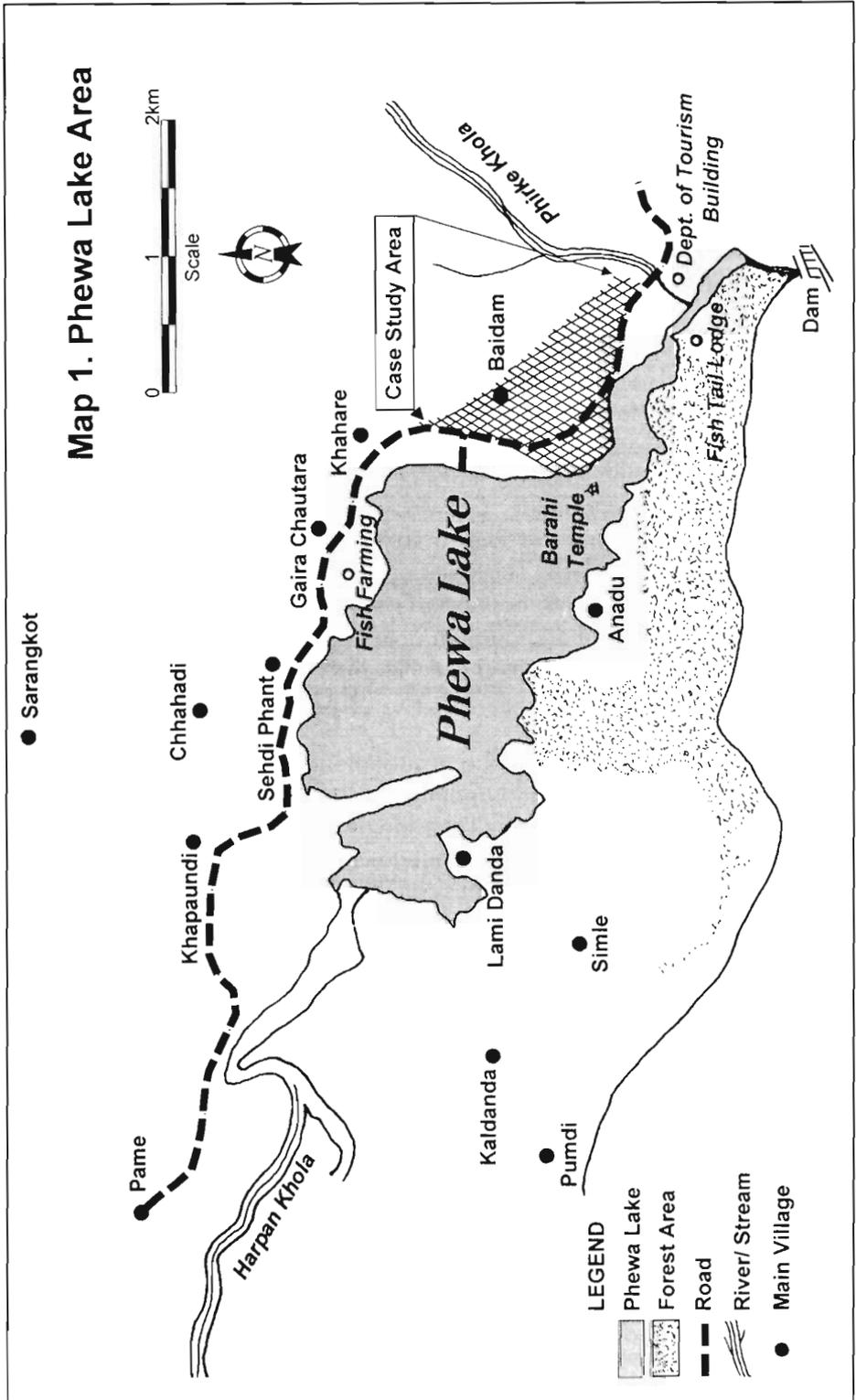
The natural and scenic beauty of Pokhara has attracted many visitors from different parts of the world. The panoramic view of the Annapurna Himalayas and the majestic peak of Machhapuchhre, along with the Phewa Lake, contribute to Pokhara's unique natural beauty. The local economy has also benefited from the inflow of tourists and the private sector has invested heavily to cater to tourists' needs. Pokhara is a rapidly growing city and the second tourist destination in Nepal after Kathmandu. The growth of tourism in Pokhara, and especially in the Lakeside area, in particular Ward Number Six of the municipality (Map 1), has rapidly changed the lifestyle of the people and their surrounding environment. A second factor that has contributed to Pokhara's growth may be attributed to it being the Regional Headquarters of the Western Development Region.

The development, including tourism, that has taken place in Pokhara has, however, been unplanned and spontaneous. Growing urbanisation and unplanned tourism development activities around the Phewa Lake have negatively affected the lake's recreational and amenity values. The deteriorating lakeside environment in physical terms (narrowing of the pathways, haphazard construction, and uncontrolled dumping of sewage in the lake) and the degradation of the assimilative capacity of the Lake are two major man-induced (development) activities that are impacting the environmental carrying capacity.

Concerns about the deterioration in the environment of the lake and its surrounding areas have been expressed time and again. Despite the various studies carried out to address the problems of managing the Lakeside and its watershed and tourism-related activities, adequate action is still to be undertaken. A high-level team headed by a member of the National Planning Commission (NPC) visited Pokhara in 1993 to assess the problems of the environment of the lake and Pame Road adjoining the lake in the north. This resulted in the preparation of the Phewa Lake Environment Conservation Guidelines with support from the International Union for the Conservation of Nature (IUCN). The study was carried out in a participatory manner by consulting various local people, local bodies, and different government institutions and guided by an environmental steering committee under the Kaski District Development Committee Chairman. However, an institutional mechanism to implement the action plan and manage the Phewa Lake area has yet to be developed.

For the purpose of the present study, a segment of the Lakeside area from Tal Barahi Temple to Khahare was selected (Map 1). This is the area most heavily used by tourists and hence is representative of tourism impacts and implications on the environmental, social, and economic carrying capacities of the Lakeside area. The study team visited the site for about a week during which periodic discussions were held with a wide range of people and institutions. A participatory approach (See Box 1) was applied to generate

Map 1. Phewa Lake Area



Box 1

Institutions Contacted

Appointments were arranged with various institutions to discuss the different issues related to the Lakeside area. The discussions were held in an informal manner. It was not possible to bring all members of the institutions together because all were not able to give time. Cross references were made while discussing the issues with members in individual meetings. The following institutions were contacted.

- Chairman, Pokhara Chamber of Commerce and Industry
- Lecturer, Prithvi Narayan Campus
- Proprietor, Hotel Yak
- President, Hotel Association of Nepal, Pokhara Chapter
- Mayor, Pokhara Municipality
- Member, Pokhara Valley Town Development Committee
- Experienced Tourism Professional
- Pokhara Tourism Promotion Committee
- Hotel Dragon
- Secretary, Trekking Agents of Nepal, Pokhara Chapter
- Pokhara Tourism Promotion Committee
- Hotel *Byabasayi* Committee
- Chief, Tourist Information Centre, Pokhara
- President, Nepal Association of Travel Agents, Pokhara
- Member Secretary, Pokhara Valley Town Development Committee
- Visitors

information on a wide range of issues related to the Lakeside environment, tourism impacts and implications, role of existing institutions/stakeholders and their concerns, institutional coordination and linkages, existing gaps and shortcomings in the functioning of these institutions, and perceived roles of different actors and institutions. The list of persons and institutions contacted/interviewed is provided in Annex 1.

General Background and Tourism Assets of the Study Area

General Features

The Phewa watershed is located in the southwestern corner of the Pokhara Valley at an altitude of 793 masl. Geographically, the area is spread over six Village Development Committees (VDCs) (Sarangkot, Kaskikot, Dhukurpokhari, Bhadoure, Tamagichapakot, and Pumdi Bhumdi), covering an area of approximately 123 sq. km. The length and breadth of the east-west oriented watershed is about 17 and seven kilometres respectively. The water level varies seasonally, depending on the withdrawal of water for power generation by a 1.00kW station located at the tail-end of the southeastern corner of the lake, irrigation, and the water inflow rate. The mean annual water inflow is about 9.2m³ per second and the minimum is one cubic metre per second. The outflow occurs at Pardi dam where two canals divert water to irrigate 320ha of land. The average depth of the lake is about 8.6m and its maximum depth is 19m (IUCN 1995a). It extends about four kilometres northwest to southwest and is about two kilometres at its widest and only 100 metres at its narrowest. The surface area of the lake is about 443ha. The water storage capacity is about 46

million cubic metres. The south-facing slope of the watershed is comparatively gentler than the north-facing slope. Panchase is the highest ridge of the watershed.

Vegetation

In the watershed area an estimated 50 per cent of the total land is under agriculture and 25 per cent is under forest. The vegetation is dominated by broad-leaved forests constituting 98 per cent of the total forest area of the watershed (5,393ha). About 38ha of the forest area have undergone degradation. Agriculture covers about 82 hectares. The major vegetation types found in the watershed include marshy vegetation, submerged and floating vegetation, Sal forest (*Shorea robusta*), Sal Chilaune (*Schima wallichii*) forests, katus (*castanopsis*), and others.

Wild and Aquatic Life

There are 17 different types of native fish, four different exotic fish, six species of amphibians, 14 reptiles, 104 species of birds, and 34 species of mammals that depend on the Phewa watershed. Out of the 104 bird species, 14 are migratory. The wildlife, their habitat, and breeding grounds have also been affected to varying degrees due to development around the lake.

Socioeconomics

The total population of the area in 1991 was 31,578 (excluding the town population) of which the male population accounted for 52.3 per cent compared to 49.7 per cent for females. The average family size is six as shown by the socioeconomic baseline survey of the Phewa watershed. The population growth rate in Pokhara municipality is amongst the highest (7.41%) in the country. The population density is about 258 persons per sq. km. *Brahmin(s)* are the dominant caste group (48%) followed by the occupational caste group, (27%) Gurungs (14%), and others (IUCN 1995a).

Tourism in Pokhara

Despite being the second tourism destination after Kathmandu, as well as being the gateway to the Annapurna region, there is very little information on tourism with regard to Pokhara. Moreover, over the last half decade or so, Pokhara has become an important destination to Indian tourists, apart from being a longstanding destination for a large number of international tourists. An estimate indicates that the proportion of Indian tourists visiting Pokhara is more than 50 per cent of the total number of international tourists (IUCN 1995).

Table 1 shows the trend in arrivals of non-Indian tourists in Pokhara. Pokhara received about 64,000 non-Indian tourists in 1995, an increase over 59,000 in 1990 which gives an average annual growth rate of about 1.4 per cent over this period. This indicates

Table 1: Tourist Arrival Trends in Pokhara

Years	1990	1991	1992	1993	1994	1995
Tourist arrivals	59,488	62,138	69,049	56,499	59,201	63,750

Source : Pokhara Tourism Office 1996.

Table 2: Tourist Arrival in Pokhara by Nationality (1995)

Nationality	Japanese	American	British	Austrian	German	French	Others	Total
tourist arrival	6,027	5,307	7,812	4,606	5,697	3,617	30,756	63,750

Source : Pokhara Tourism Office 1996.

that overall the tourist flow to Pokhara was roughly 100,000 in 1995. Table 2 gives the breakdown by nationality of international visitors to Pokhara in 1995.

Table 3 provides an idea of existing tourist facilities in terms of hotels and lodges. Further details on the capacity of these facilities to accommodate tourists are analysed in the succeeding section of the report.

Table 3: Hotel Lodges and Restaurants in Pokhara (1995)

Number of Hotels and Lodges	Rooms	Beds	Remarks
96 (Registered)	1056	2476	2476
150 (Non-registered)	600	1200	1200
7 (Under construction)	337	674	674

Source: IUCN 1995.

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

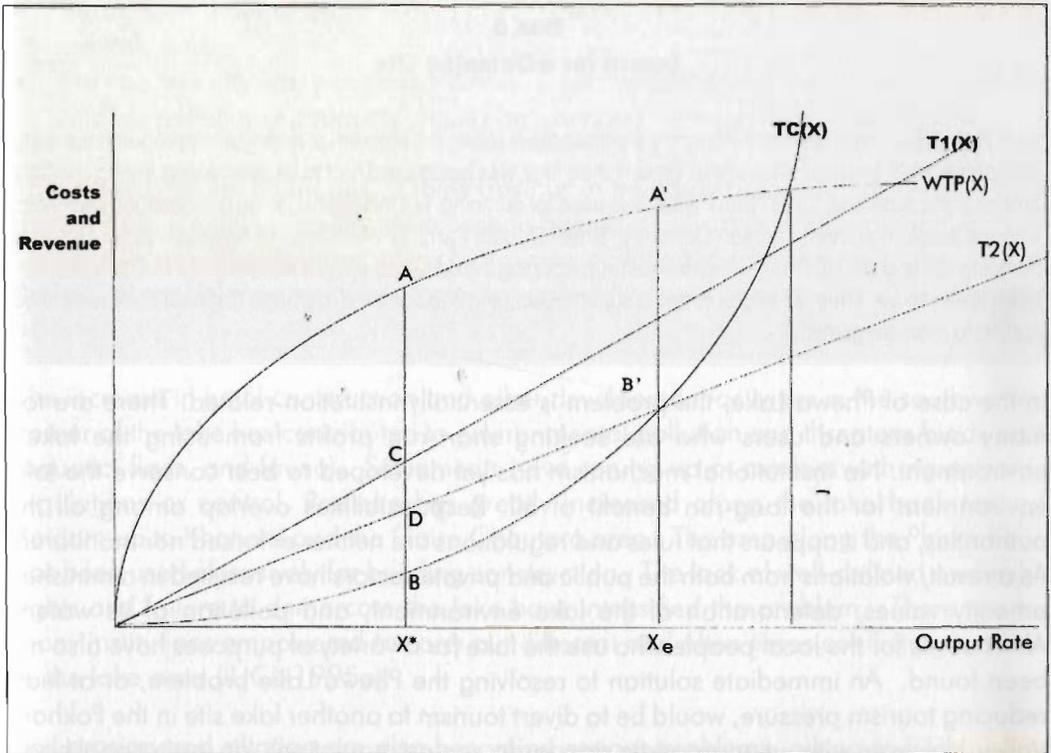


Figure 1: Divergence between Social Optimum Use and Present Use of the Phewa Lake Environment

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, 'Bhedhi 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.

CARRYING CAPACITY ASSESSMENT AND RECOMMENDATIONS

Introduction

The carrying capacity assessment will follow the methodology briefly outlined in the first part and discussed in more detail in Banskota and Sharma (1995a) and will be analysed in terms of environmental, economic, and social aspects. Although it is difficult to provide quantitative information related to these aspects of carrying capacity, the discussions already made provide an ample basis for assessing the major dimensions of carrying capacity.

Carrying Capacity Assessment

Environment

Environmental carrying capacity concerns itself with the status of HER or the maintenance of natural assets – renewable natural resources – in the context of multiple uses. For environmental sustainability, it is important that (Daly):

- growth of natural capital must be encouraged by reducing the current level of exploitation;

- pressure on natural capital should be reduced by expanding cultivated (more) natural capital; and
- the end-use efficiency of products should be increased and the lifecycle, durability, and recyclability of products should be extended to improve overall efficiency.

The 'tragedy of the commons' is fairly obvious in the study area and has already been discussed at length. Growing urbanisation has adversely affected the amenities in the urban area as well as tourism inflow by causing pollution, narrowing the pathways, and the lack of control over the discharge of sewage, all induced by human and development activities.

The increase in hotel construction and other development activities in the southwestern corner of the lake has contributed to environmental pollution and threatens biodiversity (aquatic, flora, and fauna). Settlements have sprung up at random with no apparent regulations or control. Pressure has greatly increased along the lake bank towards Baidam up to Khahare and the Gaira Chautara area. The area along the Phirke *Khola* has been used extensively for building construction. The lack of well-defined ownership rights and failure to demarcate the lake have intensified the problem. There are too many institutions empowered to carry out different and often times conflicting activities in the lake area (IUCN1995a).

Soil erosion and siltation are also becoming serious problems, owing to both natural processes and man-induced activities. The rate of soil erosion was estimated to be 17.37 cubic metres per hectare during 1993/94 (Department of Soil Conservation and Watershed Management HMG 1994). During the same period, silt deposits in the lake were estimated to be from 175,000 to 225,000 cubic metres per year. At this rate, it is estimated the lake will be completely covered in about 100 to 175 years.

These factors suggest that the natural capital (lake environment), the prime tourist asset, is depleting at an increasing rate directly due to tourism-related activities. The conservation efforts necessary to improve the natural capital have been unforthcoming. This problem is compounded by the many users, who compete among themselves. Upstream activities, such as deforestation, are also destroying the lake. Overall, the scale of human activities appears to have exceeded the regenerative and assimilative capacity of the lake environment. The economic growth that is occurring in the lake area, the poorly-managed urban development, deforestation, and agricultural activities (mostly upstream) have all contributed to the deterioration of Phewa Lake's environment. The current status of indicators and their perceived impacts on the environment can be seen in Table 4 which is based on field observations.

Economic

Economic sustainability can be defined as the maintenance of capital, i.e., 'the amount one can consume during a period and still be as well off at the end of the period' (Daly). In the present context, the income generated by the natural capital – the environment

Table 4: Environment Indicators: Current Status and Impact on Environmental Carrying Capacity

Broad Areas	Indicators	Current Status of Indicators	Perceived Impact			Remark
			Minor	Mod.	High	
Forestry Private tree plantation	Forest cover around the lake	Sparsely	✓			Regenerative capacity is low. Space for community plantation is limited. Biogas reduces firewood demand. Overgrazing is visible. Plantation of fodder trees to be encouraged.
	Number per household	Low	✓			
General landscape	Attractive	Deteriorating		✓		High natural value but negative impact due to human activities.
Littering and garbage Wildlife habitat Unique fauna Unique flora Aquatic life/fish Lake water	Visibility	High			✓	Poor management by authority.
	Quality	Fair	✓			Conservation plan urgently needed. Fish population being affected by lake water pollution.
	Density	Fair	✓			
	Density	Fair	Fair	✓		
	Density	Deteriorating	Deteriorating	✓		
	Sewage connection to lake	few	few		✓	
Amenity/aesthetic and recreational values	Laundry activities	Highly visible			✓	Loose enforcement of rules and regulations by concerned institutions. Institutional authority and responsibilities poorly defined and executed. Too many owners around lake area. Upstream problems affecting lake size and quality. Building codes and norm are poorly enforced. Vehicular emission standards and zoning are lacking completely.
	Domesticated animals	Highly visible			✓	
	Solid waste disposal	Visible	✓			
	Sedimentation rate	High			✓	
	Haphazard building construction	High rate			✓	
	Recreational and parking space	Limited		✓		
Overload of public infrastructure Air and noise pollution	Overload of public infrastructure	High			✓	
	Air and noise pollution	High		✓		

Note: The current status of indicators shows the status and the perceived impacts show the influence, positive or negative, on the carrying capacity.

of Phewa Lake – becomes important as it provides the driving force for economic growth in the area. In other words, the economic carrying capacity of a prime tourist area very much depends on the employment and income it has been able to create directly (locally) and indirectly (nationally), through forward and backward linkage without any negative impacts on either environmental or social sustainability.

The common property nature of the natural resource in question, which provides the basis for economic growth, is being overused. Private firms, in their pursuit of profits appear to have overinvested in buildings (a problem associated with common property resources as discussed above). Lack of regulatory controls and standards and failure to enforce them has made the situation even worse, as the entry of new firms into the industry is totally uncontrolled. Residential buildings and unauthorised firms have entered the industry creating a 'glut' (see Social Carrying Capacity below) to such an extent that the prices of tourism goods and services are rapidly falling. Because of the cut-throat competition among the hotels, lodges, and tourist industries, tourists reap a large part of the consumer surplus. As such the earnings from tourism are very low and declining. Local people have begun to realise that the decline in incomes generated from tourism is the result of degrading amenity and recreational values caused by increasing levels of pollution and environmental degradation in and around the lake. Without significantly improving the infrastructure and the management capabilities, the economic carrying capacity will be in serious trouble.

The economic carrying capacity suffers a double blow. In the first place, it suffers because visitor satisfaction is eroding, and hence their willingness to pay is also diminishing. In the second place, it appears that there is already overinvestment in physical capital by the private sector and underinvestment in physical capital by the public sector (drainage, water system, etc). The overinvestment of capital has thus created a surplus of accommodation and transport, and hence the price-cutting behaviour. The possibility of capturing consumer surplus is seriously constrained in such a situation. Estimates indicate that tourism contributes 16 per cent of Pokhara's total income (IUCN 1995a) and this is perhaps falling.

According to the local people, professionalism is lacking in this sector in terms of providing better services to tourists. The number of well-qualified guides is few and insufficient in relation to the tourist demand. Trained manpower in the tourism sector is low overall and of poor quality.

Economic sustainability is further weakened by the fact that the tourism industry in Pokhara is not linked to local development. Most of the food and non-food items that can be produced locally in the hinterlands are currently being imported from outside the country, especially from India. Most of the food items, such as fruit, eggs, and vegetables, are being imported from outside Pokhara. According to a local estimate, thirty to forty per cent of the earnings from tourism are retained in Pokhara (based on discussions with wholesalers). Local people are also becoming aware of the high leakages

of tourism income due to weak linkages between tourism and the local economy. Therefore, the economic carrying capacity is also weakening. Table 5 provides the current status of some economic indicators based on field observations.

Social

An important requirement for social sustainability is the development of social capital, i.e., new relationships between individuals to facilitate collective action and mutual trust, which is essential when common property resources are involved, as in the present case. Furthermore, social capital seeks to improve the ability of a community to make decisions and enlarge their choices and capabilities. The development of participatory institutions plays an important role in social capital formation.

At the heart of the Phewa Lake problem is the 'tragedy of the commons', which implies a poor state of social capital formation. Because the different stakeholders (*Stakeholders*) that have to share the common property resources have not been able to forge partnerships among themselves, establish participatory rules and regulations, and so on, the 'Phewa Lake environment is everybody's property and nobody's property'. Different studies, i.e., Master Plan (1972), PATA (1975), Pokhara Physical Development Plan (1973), and Department of Housing and Urban Development (1990) have recommended that the lakeside area be declared as and developed into a tourism resort requiring a strong institutional set-up, no effective action has taken place to date.

In the past, various government and non-government agencies have tried to address the problems. For example, Pokhara Valley Town Development Committee established codes and standards for development and expansion of the town. The government also acquired some private land for protection of Phewa Lake. Likewise, the Phewa watershed management programme aimed to reduce the soil erosion and siltation originating from upstream. All these efforts have not been effective and the problems continue to grow. The government agency, i.e., Department of Tourism, has been ineffective in monitoring and enforcing the rules and regulations; and, as a result, illegal tourism activities continue to flourish. Ironically, the local tourist office monitors only the registered agents and the unauthorised agents thus function normally. Without an institutional set-up, the chances of social sustainability are dim, which is clearly demonstrated in the case of Phewa Lake.

Promoting sustainable tourism in Pokhara first requires a conservation action plan for the Phewa Lake, and one has recently been prepared by IUCN (1995a). This Plan addresses the carrying capacity of tourism by addressing factors such as *accessibility, accommodation, facilities and services, and tourist products*.

The volume of passengers that the existing transport system can handle was analysed. At present, there are more than 10 tourist buses (each with a capacity of 40 passengers)

Table 5: Economic Indicators: Current Status and Impacts on Economic Carrying Capacity

Broad areas	Indicators	Current Status of Indicators	Perceived Impacts			Remarks
			Minor	Moderate	High	
Agricultural diversification	Cultivated land	Scarce			✓	No scope to expand agricultural land. Productivity gains have to be made through use of improved technology. There is enormous scope to link the agricultural and tourism sectors to benefit a wider farming community.
	Agricultural productivity	Declining		✓		
	Irrigation facility	Limited	✓			
	Commercial farming	Poor		✓		
Migration to Pokhara Employment, income opportunities and community and tourism linkage.	Percentage of households	Fairly high		✓		High, mostly among the poor. High dependency on imports and poor tourism diversification and relatively low occupancy do not provide many opportunities for employment and income. High imports also suggest high leakages and low linkages with the community. Within the sector, unhealthy competition exists and, due to the declining quality of tourism services and the Phewa Lake environment, incomes and visitor expenditure are believed to be declining. HRD needs to be improved thorough training and skills.
	Tourism induced-employment	Low	✓			
	Off farm induced-employment	Fairly high	✓			
	Tourism induced-income	Low	✓			
	Off farm -income	Moderate		✓		
	Visitor expenditure	Low		✓		
Knowledge and technology	Business income	Moderate		✓		
	Human resource development New technology	Poor Slow progress	✓		✓	

See notes in Table 4

that operate daily between Kathmandu and Pokhara. Many tourists use the regular buses as well. In fact, more than 400 tourists come to Pokhara and another 100 travel by tourist coach daily. In addition, the regular air flights between Kathmandu and Pokhara also increased after the construction of the tarmac runway in Pokhara under the TIDP. Considering both air and road transport, about 700 tourists per day or about 252,000 tourist per year can be handled by the existing transport system. Given, the number of visitors to Pokhara, carrying capacity is large enough to transport a much larger volume of tourists.

While assessing the accommodation carrying capacity (availability of beds in relation to the number of tourists), it was found that a total of 4,350 guests per night can be accommodated with the existing facilities (IUCN 1995a). Generally group tourists stay for two to three nights and FITs stay a little longer (5 to 6 nights). These rates give an occupancy rate of about 40 per cent. Clearly, the supply of accommodation is already in excess of the demand.

In any case, the accommodation capacity is not enough to satisfy visitors. The quality of the facilities and services is an essential part of tourism development and has implications on the overall carrying capacity. Visitor satisfaction is a complex phenomenon and depends on a host of factors that go beyond the number of beds and the availability of transport services.

In the first place, tourists visit Pokhara to enjoy the view of the Annapurna Himalayas, Machhapuchhre, and the Lake. The enjoyment of the view which, although non-consumptive in nature, i.e., its supply does not diminish, can be affected negatively by different factors such as crowding (people and buildings), smells and garbage, dirty roads, pollution, and so on.

The analysis of the present situation reveals that, unless an effective institution with appropriate representation of all stakeholders is in place, the social carrying capacity of the lake area will continue to deteriorate. Unless such an institution is in place, both the environmental and economic carrying capacities will also deteriorate. Hence, an institutional set-up appears to be the prime factor in improving the overall carrying capacity of the Phewa Lake environment. Table 6 gives an assessment of the social carrying capacity based on some indicators perceived during field observations.

Review of the IUCN Action Plan and Recommendations

The study carried out by IUCN (1995a) for the conservation of Phewa Lake has identified various policy strategies and actions to address the environmental problems of the lake. The purpose of this section is to highlight the major problems and assess, in brief, the recommended plan of action prepared by IUCN for the Phewa Lake area (also see Chart below).

Table 6: Sociocultural Indicators: Current Status and Impact on Social Carrying Capacity

Broad area	Indicators	Current Status of Indicators	Perceived Impacts			Remarks
			Minor	Moderate	High	
Host's perception of tourism	Well off people	favourable	✓	✓		Although benefits are not equitably distributed, both groups continue to have positive attitudes towards tourism.
	Poorer sections	favourable				
Cultural indicators	Religious monuments	good	✓			Cultural assets are not linked with tourism, with the exception of traditional dances and music in some hotels. Negative impacts of tourism are not visible in this area.
	Religious values	fair	✓			
	Dance, music, festivals	good	✓			
	Crafts	fairly good		✓		
Social indicators	Crime and theft	fairly high			✓	Discussions indicate crime and thefts are on the rise. Literacy and tourism are not linked and hence qualified people in the tourism industry are not adequate. Women's participation is low. There are currently no standards effectively enforced. Amenity values are decreasing. Management of hotels and lodges needs to be improved. Information and services provided to visitors also need to be improved. Transportation facilities and quality need to be improved. Lake area needs to be urgently improved to increase visitor satisfaction, which will most likely also increase their willingness to pay.
	Overall literacy	fair	✓			
	Female literacy	low		✓		
	Women's participation	low	✓			
	Cleanliness	poor		✓		
Visitor's perception (Quality of Experience) with regard to the Lake Area	Hospitality	good			✓	There are currently no standards effectively enforced. Amenity values are decreasing. Management of hotels and lodges needs to be improved. Information and services provided to visitors also need to be improved. Transportation facilities and quality need to be improved. Lake area needs to be urgently improved to increase visitor satisfaction, which will most likely also increase their willingness to pay.
	Information -visitor centre	fairly good			✓	
	Quality of services	poor		✓		
	Quality of tourism asset	poor		✓		
	Conservation effort	fairly good	✓			
	Hotel management	fair	✓			
	Communication media	fair			✓	
Congestion, Noise	increasing			✓		
Institutions - their effectiveness and capacity	Planning	poor			✓	Currently, there does not appear to be well-defined roles and responsibilities of the various institutions (both public and private) involved in the tourism industry. As such coordination is very poor.
	Implementation	poor			✓	
	Monitoring and Enforcement	poor			✓	
	Coordination	poor			✓	

See notes in Table 4

Chart 1
Action Plan: Salient Features

Problems and Issues	Actions
<i>Lake Ownership & Management Responsibility Not Defined</i>	<ul style="list-style-type: none"> Fix the boundary of the lake and prepare a map based on <ul style="list-style-type: none"> - 1971 aerial photograph - 2032 cadastral map * PVTDC's decision on lake demarcation * Establish a committee for boundary demarcation * Pokhara Municipality be given the responsibility to manage the lake
<i>Inconsistence and overlapping of legal provisions</i>	Review existing legal provisions, including relevant acts, rules, regulations, standards, and guidelines
<i>Land-use inconsistency in urban area around the lake</i>	<ul style="list-style-type: none"> - Review the ownership provisions for the lake - Carry out a detailed study of existing land-use trends and environmental problems in Pokhara Valley - Revise and update the physical environmental development strategy of the valley - Prepare land-use and environmental protection strategy for the lake
<i>Inadequate and incompatible infrastructural development</i>	<ul style="list-style-type: none"> - Review ADB-assisted TIDP project and storm drainage - Carry out a detailed study and design to construct embankment and checkdam - Carry out detailed realignment of Pame Road
<u>Uncontrolled pollution</u> <i>Lake water pollution</i> <i>Solid waste disposal</i>	<ul style="list-style-type: none"> - Identify an appropriate location for washing facilities - one at Sahedi <i>phant</i> another in Bulaudi-using water from the Seti canal and another in Berauta <i>phant</i> increasing the space for washing. - Identify and acquire dumping sites - Establish a routine lake-water quality monitoring unit - Strict enforcement of septic tank and soak pit provisions and regular monitoring by municipality - Expand the present municipality and HAN arrangements to collect solid waste by increasing the contribution from lakeside bassoonist people and residents.
<i>Absence of lakeside landscaping and beautification programme</i>	<ul style="list-style-type: none"> - Develop Sehadi hill as a picnic spot - Develop floricultural activities in appropriate places. - Acquire necessary land at Chhahadi and develop it into a park and picnic spot - Construct a lake fountain in the strategic spot west of Barahi Temple - Acquire and develop the hillock at the end of Lal <i>dada</i> near the lake - Beach development
<u>Absence of a lakeside tourism development strategy with regard to trekking</u> <ul style="list-style-type: none"> - <i>Trekking and pleasure walks</i> - <i>Hotels and restaurants</i> - <i>Recreation spots</i> - <i>Promotional policies</i> 	<ul style="list-style-type: none"> - Develop and promote trekking in the watershed area with an emphasis on nature and recreation - Undertake a detailed study of Panchase and the forest around it to develop it as a wilderness reserve - Prepare and enforce ethics and code of conduct for those involved in the tourism trade and for visitors. - Undertake a detailed study of recreational and sports' facilities along the lake shore and into the lake itself and execute them

Chart 1
Action Plan: Salient Features

Problems and Issues	Actions
- <i>Ethics and code of conduct</i> <i>Insufficient attention given to biodiversity conservation</i>	- Develop norms for hotels - Development on the lake to be based on the resort complex concept with emphasis on openness and vernacular - Establish zoo in natural setting - Establish botanical garden - Orchid garden and peasant farming and deer. Encourage agoforestry - Encourage floriculture in such areas - Encourage agoforestry - Encourage conservation awareness programme - Encourage forest plantations
- Inadequate emphasis paid to increase in agricultural productivity - Increase in productivity and dairy farming including - <i>Development of the aquaculture</i>	- Introduce farmers to new ideas of multi-layered farming - Introduce different varieties of plants and horticulture - Introduce high-yielding milch buffaloes and cattle - Pisciculture in the wetlands created by the sedimentation process in the lake - Developing a beach in such areas
<i>Soil erosion control still not effective</i>	- Undertake watershed management activities including drainage plantation and checkdam - Improve the Harpin <i>Khola</i> course by providing an embankment - Make a checkdam in the upper reaches of the Harpin <i>Khola</i> to reduce the flow of sedimentation - Fish farming - Review the previous work and recommend future conservation actions in identified location

Problem Lake Area Not Delineated and Lake Ownership and Management Not Defined

Action Define Lake Area and Its Management Responsibility

- Define Phewa Lake area and demarcate its boundary based on the 1971 aerial photograph
- Establish lake ownership and set up an institution responsible for its management
- Declare Phewa Lake Watershed Area a Protected Area

Problem Inconsistent and Overlapping Legal Provisions

Action Prepare Legal Framework for Lake Watershed Management

- Review, update, and make an ordinance relating to the Lake's conservation and management

- Study policies, functions, and roles of institutions and their impacts for effective performance for conservation and management of the lake
- In consultation with relevant ministries/departments and other institutions (stakeholders), prepare a national policy for lake management and conservation

Problem Land-use Inconsistency in Urban Areas and around the Lake

Action Review and Revise Existing Land-use Plan for Pokhara

- Review the Physical Development Plan for Pokhara (1973) and revise the physical and environmental strategies of the valley
- Prepare land-use and environmental protection strategies for the lakeside area

Problem Inadequate and Incompatible Infrastructural Development

Action Review the Municipal Infrastructure and Realign Pame Road where Necessary

- Review the Tourism Infrastructural Development Project (TIDP), especially with regard to the storm drainage
- Build a checkdam in Phirke *Khola* to control the sedimentation load and reduce the direct transfer of polluting debris into the lake
- Also build TIDP's second phase, i.e., drain construction and road pavement
- Involve Pokhara Municipality in the implementation of infrastructural development under the TIDP project

Problem Uncontrolled Pollution

Action Control Lake Pollution, Develop an Effective Waste Collection and Disposal System

Despite efforts that have been made (construction of storm-water drains, urban waste collection, cleaning activities, and awareness generation) by the municipality and different NGOs, they are not implemented as a package programme and are not coordinated due to lack of information on the environmental problem, lack of effluent standards, and lack of trained manpower, etc. Specific actions recommended with regard to this are given below.

- Formulation of a lake conservation policy and environmental plan
- Introduction of pollution control measures for waste water treatment and solid waste.
 - Develop appropriate facilities for washing clothes in Sehadi Phant, Bulandi, and Beraunta Phant at the end of Phewa Lake, using water from Seti canal

- Identify and acquire a dumping site and establish an effective solid waste collection system
 - Establish routine monitoring of the lake water
 - Regularly monitor and enforce construction of septic tanks
- Air and noise pollution control through zoning and emission standards and their enforcement
 - Prohibition of pollution-prone industries
 - Strengthening of local-level institutions to integrate environmental aspects into local plans and programmes through:
 - establishment of an environment unit in the municipality,
 - increasing the capability of existing manpower through training,
 - upgrading physical facilities,
 - developing environmental guidelines and a data bank,
 - strengthening the existing local NGOs and other social organizations, and
 - generating environmental awareness among local participants.

Prioritised actions recommended by IUCN to mitigate environmental problems are grouped into three categories.

High priority

- Policy formulation
- Environmental plan formulation and implementation
- Control of water pollution arising from sewage and disposal of solid waste into the lake
- Solid waste management
- Institutional strengthening
- Awareness programme

Moderate priority

- Air pollution control
- Landscape development

Low priority

- Noise pollution control

Problem Absence of Lakeside Landscaping and Beautification Programme
Action Landscaping and Beautification Scheme at Strategic Locations around Phewa Lake

The three strategic locations identified for beautification and landscaping around Phewa Lake are Sehadi hillock, Chhouhadi hillock, and a small hillock across the lake at the end of Lamidada which provides a panoramic view of the mountains and the lake. Partnership between the municipality and PVTDC has been suggested for their development.

Problem Absence of Lakeside Tourism Development Strategy
Action Formulation and Execution of Tourism Development Strategies for the Lakeside and Watershed Area

The existing violation of building regulations, haphazard construction, and hence overcrowding of the lakeside have severely affected the tourism industry. Given the lack of standards and their ineffective enforcement, there is cut-throat competition and, as such, the potential income from tourism in Pokhara remains largely unrealised. For the promotion of sustainable tourism in Pokhara, the following strategic actions have been identified by IUCN.

- Establish a branch office of HMTTC in Pokhara to educate, raise awareness, and train the local entrepreneurs and personnel engaged in the tourism industry
- Arrange for mobile training by HMTTC immediately until the HMTTC branch is established
- Prepare a code of conduct for hotels, lodges, and restaurants as well as other shops and agencies engaged in tourism
- Develop the lakeshore area
- Develop or improve the scenic view locations and camping sites in the watershed area of the lake
- Provide proper lighting arrangements for tourists along the lake shoreline from Pardi to Khahare
- Develop the Panchase area as a tourist resort and conserve forests, wildlife, and birds

Problem Insufficient Attention Given to Biodiversity Conservation
Action Encourage Conservation of Biodiversity on the Lakeside

- Develop orchid farming
- Establish medicinal and aromatic plant farming
- Establishment of the zoo

Problem Inadequate Emphasis Paid to Increasing Agricultural Productivity and Dairy Farming (Including Development of Aquaculture)

Action Encourage Horticulture, Silviculture, Aquaculture, and Improved Animal Husbandry

The mismanaged agricultural fields, increasing use of agro-chemicals, and increasing settlement on the lakeshore have further compounded soil erosion and water pollution. In order to reduce pollution caused by agricultural activities, the following measures have been suggested.

- Encourage horticultural and silvicultural activities in the denuded *bari* (unirrigated upland) area near the lake
- Introduce high milk-yielding buffaloes and encourage stall-feeding practices in the farming community within the lake watershed
- Institutionalise a system of agricultural extension and environmental education
- Encourage aquaculture in the land mass appearing due to siltation
- Introduce paddy-cum pisciculture along the lake's shoreline in the rice fields
- Introduce an integrated lake shoreline management system through community participation.

Problem Soil Erosion Control Still Not Effective

Action Encourage Watershed Management to Reduce Soil Erosion and Lake Sedimentation

Harpin *Khola* is called the sorrow of Phewa Lake because it deposits large amounts of sediment in it (20,000 tons per year). In order to minimise this siltation problem, IUCN has proposed the following.

- To undertake watershed management activities in the catchment area of the Harpin *Khola* through a government grant to VDCs and local participation
- To carry out a detailed study of Harpin *Khola* (by the Irrigation Department) to identify the most sensitive areas for immediate improvement of embankments and construction of checkdams
- To investigate soil erosion causes and identify options for community participation in controlling erosion.

Assessment of the IUCN Action Plan and Further Recommendations

While the IUCN action plan is comprehensive and addresses most of the major problems facing Phewa Lake, it has not addressed the necessary institutional arrangements for the management of the lakeside by the different stakeholders in order to operationalise the plan. The IUCN action plan has created some confusion and problems because the TDC implemented the IUCN action plan/recommendations without approval from HMG. While the TDC regulation of 1974 permits building construction beyond 200 feet from the shoreline of the lake, the IUCN standard in the upper part of the Baidam area stating that construction can take place 20m from the shoreline has already been

implemented. According to TPIO (Town Planning and Information Office) officials, the IUCN action plan has ignored land-use planning in the most critical area along the eastern corner of the Phewa Lake. Without systematic land-use planning and zoning regulations in this most critical area, long-term solutions to the environmental problems in around Phewa Lake will not be resolved.

This section addresses issues related to institutional development and codes in the tourism sector to complement the IUCN Action Plan. Although the analysis presented above is based on a small area around Phewa Lakeside, the problems discussed are fairly representative of greater Phewa Lake and possibly of similar lake areas in other parts of the country where tourism is practised. The recommendations made below focus on policies that are needed at the national level, without which area-based policies may not be effective even if implemented efficiently.

Identify Assets and Develop a Long-term Code for Sustainable Management

It is necessary for the government to declare what the tourist assets around the Phewa Lake are and develop a long-term code for their sustainable management. Such assets will have to be classified in different ways to reflect their local, national, and global values. A strict code of conduct with respect to the use of different assets must be clearly defined and penalties for violation need to be unambiguously formulated.

Depending on the prime value of the asset, broad guidelines for land use have to be made, since the Phewa Lake area has local, national, and global significance. A detailed land-use plan has to be made so that the assets are conserved. Therefore, strict development guidelines have to be provided in detail, monitored, and enforced. If the Phewa Lake area is considered to be a prime tourist destination, it must be declared so and development must be planned accordingly. For example, there is little disagreement on the fact that the Phewa Lake area is extremely important for tourism, but, as we have stated, there are many activities that do not promote tourism value. For example, buffaloes wallowing, cattle grazing, and pigs running around the lakeshore, washing clothes, unauthorised building construction, and so on are activities that deter tourism and reduce the willingness to pay on the part of the visitors. Such activities, which are important for the local people, need to be relocated. There is little doubt that other activities are unlikely to generate the benefits that tourism generates. The question is how to provide impetus to tourism growth and conserve the environment. Also, since local people have a stake in the lake, alternatives need to be developed through revenue generated by tourism and benefits also provided to local people.

Demarcate the Lake Boundary

What constitutes the Lake area needs to be resolved first. IUCN has already carried out adequate research and made recommendations. The Lake area then needs to be appropriately demarcated. It is worth noting that there are many lakes in Nepal, some

of which are better known than others. For example, the Rara Lake in Jumla and Shey Phoksindo in Dolpo are fairly well known. However, there are many other lakes in the mountains, as well as in the *Terai* region, which are not well known. The status of these lakes and their importance needs to be established, before they are submerged by human activities and development. In this context, it is recommended that HMG constitute a task force to study the lakes of Nepal and develop a conservation plan for them. Once approved the conservation plan has to be made effective through an appropriate participatory institutional framework.

Establishment of a Legal Basis and Institutional Arrangements

A legal basis for enforcement of rules and regulations should be established. Since Phewa Lake is a prime tourist destination in the nation, it is imperative to see that present laws do not hinder enforcement of the necessary rules and regulations. This step is necessary to protect the Phewa Lake as well as other assets in other parts of the country as well, if tourism is to be sustainable in Nepal. It may be useful to consider other lakes in the nation that have tourism development potentials when establishing the legal basis. In the case of Phewa Lake, there is an additional and urgent need to establish a participatory institution of all the major stakeholders to decide on and implement an action plan (IUCN). The lack of a sound institution is the major cause of problems confronting the Phewa Lake area. Some urgent steps that need to be taken with regard to this are listed below.

- Develop criteria to classify different natural, cultural, religious, historical, and other assets as tourism assets
- Categorise tourism destinations or sites on the basis of the different values (local, national, global)
- Develop broad guidelines for land-use plans, develop strict codes for their use and management
- Establish a legal basis for enforcing the codes
- HMG should constitute a task force to study the lakes of Nepal and to develop a long-term conservation plan, using Phewa Lake as an example.

Social sustainability has to improve, and this means that new relationships and solidarity between the different stakeholders have to be established for collective action to become possible. The Phewa Lake environment is deteriorating due to its 'common property ownership'. The problem facing the lake is such that all parties are likely to suffer from the myopic individual actions that are currently being practised. The first and foremost question that comes up in this regard is the need for specification not only of property rights but also of the roles and responsibilities of different partners/institutions. The institutional arrangements have to evolve in a participatory manner through establishing a partnership among the stakeholders. This partnership can be forged by developing a high-level steering committee constituted of representatives from among the stakeholder organizations.

- Form a steering committee constituted of representatives from all the stakeholder organizations.
- Develop a participatory Tourism Development Board – Pokhara Chapter – under the National Tourism Development Board.

Even before appropriate institutions can be created, the local people and other stakeholders should be made aware of the different problems and the possible actions they as stakeholders can take to reverse the process of unsustainability. They should also be made aware that individual actions, although they may appear rational, do not necessarily result in social benefits. There is, therefore, an urgent necessity to develop training programmes that will help generate awareness and impart skills to the different stakeholders at the policy, programme, and local levels, so that there is space for action plans to be implemented.

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Madan Sharma	: Pokhara Tourism Promotion Committee
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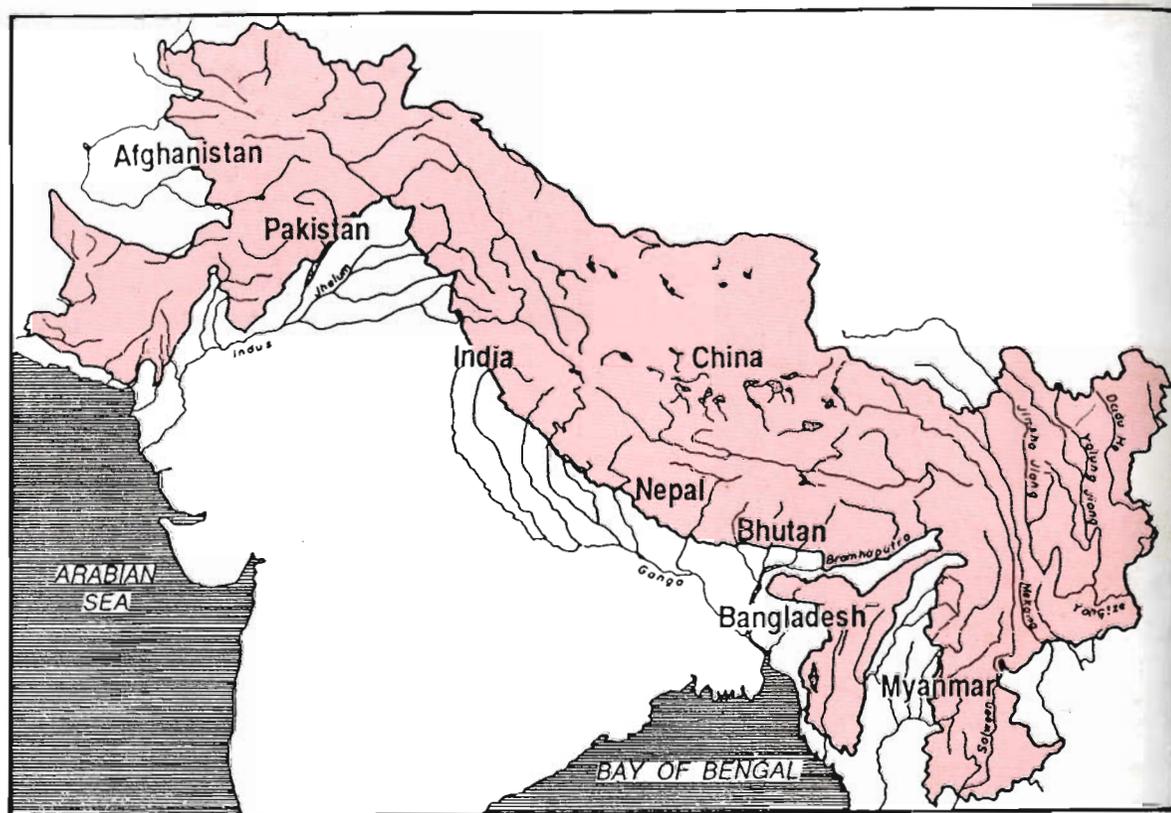
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