

Chapter 10

Environmental Financing

Introduction

Environmental financing is a new area of concern in Nepal. Once the benefits of conserving the environment are understood, budgetary allocations for national and local environmental programs will increase. At present environmental financing takes place in national and local budget allocations. Nepal has realized the importance of conserving environmental and natural resources through policies, legal measures, and institutional development. Institutions such as the Ministry of Environment, Science, and Technology (MOEST); and the ministries of Forests and Soil Conservation, Water Resources, Agriculture and Cooperatives, and Industry play major roles in environmental programs and therefore in environmental financing.

Based on the State of the Environment report (UNEP 2001), Nepal has identified 17 environmental issues of national significance, classified as most urgent, moderately urgent, and less urgent but significant. The most urgent environmental issues are: land degradation, forest depletion, solid waste, water pollution, and air pollution. The first two issues pertain to rural areas, where over 80% of the population lives; the latter three are outcomes of haphazard urban development and inadequate consideration of environmental aspects during urbanization and industrialization.

Moderately urgent environmental issues identified include: dwindling biodiversity, desertification, noise pollution, forest fires, groundwater pollution, glacial lake outburst flood events, food security, and alternative energy. Of these, biodiversity and desertification also have long-term implications for food security. Groundwater depletion, particularly in Kathmandu Valley, has been a major concern. Other environmental problems that are less urgent in terms of the need for implementation but still significant include loss of aquatic fish, haphazard urbanization, depletion of biomass energy, and transboundary movement of wastes.

Environmental financing is required in managing forests and land resources, and in minimizing water and air pollution. In rural areas,

most of the funds are required for the conservation, management, and sustainable use of the natural resource base, particularly forest, soil, and water conservation, water harvesting, and mineral resources. As most of the people depend upon agriculture, financing is necessary for promotion and expansion of sustainable agricultural systems to reduce poverty and to ensure food security. Ultimately, this will reduce loss of fertile topsoil and promote water retention. In urban areas, environmental financing is urgently required for the improvement of water and air quality, solid waste management, and reducing noise levels.

Domestic Sources

A number of domestic sources could generate the needed funds. Some of the potential areas are the sustainable use of water resources, and mining of precious metals, forests, and wildlife. There are vast potentials for hydroelectricity generation, development of irrigation schemes, and promotion of navigation and recreational sports. Deposits of precious metals can be explored and utilized in an environmentally friendly way. In the forestry sector, there is a vast potential for sustainable utilization of non-timber forest products (NTFPs) such as leaf, bark, fruits, and roots. Commercially valued plant species could also be planted and harvested on barren or public or private land as income generation activities. Some of the nurseries developed for promotion of NTFPs have shown potential for development and promotion. The public and private sector have been developing such nurseries in different parts of the country. A nursery developed and maintained by the Rural Development Service Center in Doti district can be taken as an example. Protected areas are an emerging sector where ecotourism could be promoted. Some of the common wild animals could also be utilized and/or domesticated and marketed. These funds could be recycled for environmental and natural resource conservation. The above activities are envisaged to be undertaken by public-private participation with support from donors as needed.

Some funding arrangements made by the government for natural resource management are summarized below.

National Level Funding

The Ministry of Finance disburses funds on the basis of the approved annual budget. Reviewing the development outlay from 1985 to 2002, there is an increasing trend towards funding sectors like agriculture, forestry, water resources, mining, and local development. About 14% of the total budget has been allocated to these sectors for the Tenth Plan (2002–2007) period. The budget outlay is several times more in the water resources, electricity, and irrigation sectors than the environment in general and forest management in particular.

About NRs 11 million were allocated to the environment sector from 1985 to 1990. For the Tenth Plan period, about NRs 111 million have been allocated for environmental activities in the country, about 0.05% of the total proposed development outlays of NRs 234,030 million (Figure 10.1).

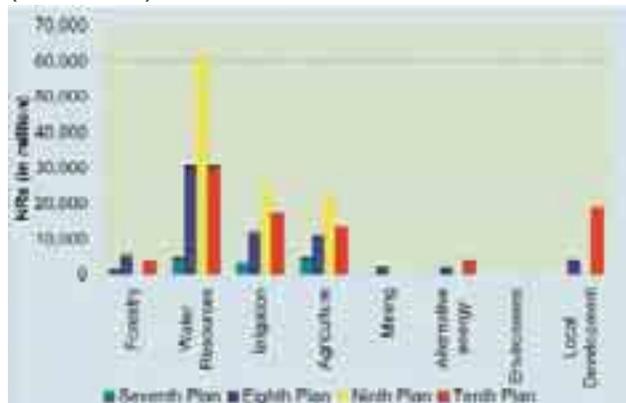
The Tenth Plan identified a number of environmental activities and prioritized them. The first priority programs included pollution control and prevention, environmental impact assessment, and environmental awareness raising. The second priority projects included urban parks, land use planning, environmental standards, and monitoring. MOEST is responsible for implementing these programs.

Similar funds have been allocated for the conservation, development, and management of forests and protected areas. Next to forest related activities, land and watershed degradation is of major concern in the sustainable management of natural resources. These activities receive comparatively larger budgetary allocation.

The development budget allocations for the forestry sector indicate higher Government funding than grants from bilateral and multilateral agencies (Figure 10.2). The Government's policy has been to discourage taking loans in the forestry sector and to increase recycling of the funds generated through management of protected areas and through the sustainable use of forest resources. Nevertheless, foreign assistance in the form of grants has increased from FY2001 onwards. The Department of Forest, which has a countrywide institutional network, receives funds both from the Government and from donors to carry out various forestry activities (Figure 10.3). In the mean time the funds required for management of protected areas come from the national consolidated fund.

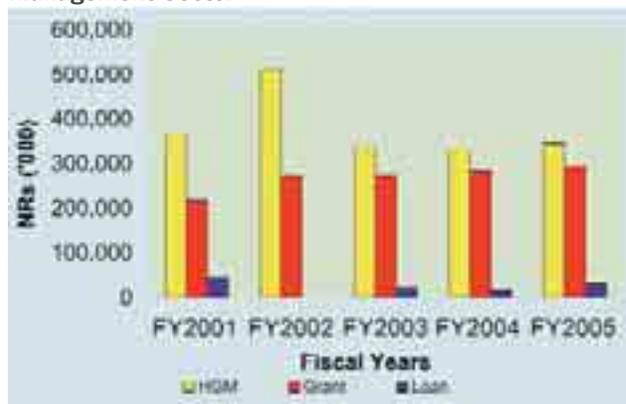
Budget allocations for plant resources management, and forest survey and research are very low, indicating inadequate attention to these

Figure 10.1: Development Outlay in Major Sectors (1985–2007)



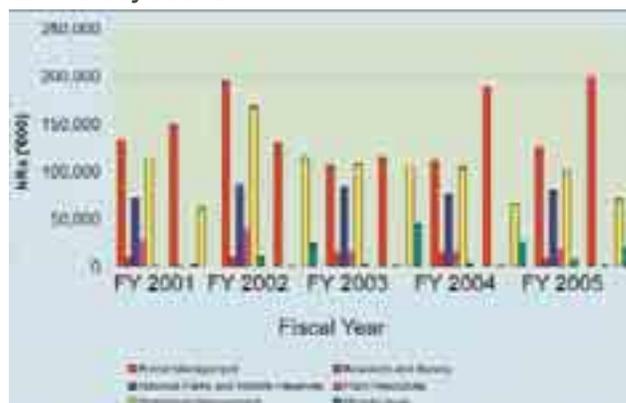
Source: 7th–10th Five Year Plan documents

Figure 10.2 Program Cost in the Natural Resource Management Sector



Source: Ministry of Forest and Soil Conservation records

Figure 10.3: Budget Allocation for Different Programs in the Forestry Sector



Source: Ministry of Forest and Soil Conservation records

areas. Similarly, the Department of Plant Resources which implements activities related to plant exploration, ex-situ conservation of plant diversity, and phyto-chemical research, has low funding. Two Government companies, Royal Drugs Limited and Herbs Processing and Production Center Limited, were established to produce medicines from plants and herbs. All phyto-chemical and bio-technological research activities for their establishment were conducted by the Department of Plant Resources.

Other ministries such as Agriculture, Water Resources, Physical Planning and Works, and Transport, and the municipalities also have funds available for environment-related activities. These include funds for sector-specific environmental impact assessment activities, some environmentally friendly measures (such as organic agriculture and roadside planting), and solid waste management. The funds committed by the Government for these activities are channeled to the research agencies concerned through related government departments. These agencies usually have difficulties in receiving allocated funds on time.

Environment Conservation Fund

The Government of Nepal established the Environment Conservation Fund under the Environment Protection Council in 1993 to finance environmental activities. Section 13 of the Environment Protection Act 1996 has provisions to establish a fund for protection of the environment, control of pollution, and protection of National Heritage sites. Funds received from the Government of Nepal, foreign governments or international organizations, and other sources are deposited in this fund, which is audited by the Auditor General of Nepal.

In order to administer this fund, the Environment Protection Regulations 1997 also provide for a Managing Committee under the chairmanship of the Secretary of the Ministry of Environment, Science and Technology. The committee has representatives from the National Planning Commission Secretariat, Ministry of Finance, Nepal Rastra Bank (Central Bank), Federation of Nepalese Chambers of Commerce and Industries, and an environmental expert or chief of an environment-related nongovernment organization (NGO).

Over the years, about NRs 40 million has been deposited in this fund. So far, no donor agencies or private sector groups have supported this fund. The fund was used in 1997 and 1998 by 15–20 local environmental NGOs from different districts of the country for implementing environment conservation and pollution control activities. However, due to the unsatisfactory performance of these NGOs, further allocation of funds was abandoned.

Poverty Alleviation Fund

The Government of Nepal established the Poverty Alleviation Fund (NPC 2003) in 2004 with support from the World Bank; it will remain effective until 2009. The main objective of the fund is to support Nepal to reduce poverty by improving the access to income generation projects and community infrastructure for marginalized groups, including environmental management.

The Poverty Alleviation Fund has also focused on environmental management to improve the livelihoods of the poor and conserve the environment. It seeks to reduce poverty by (i) preventing or mitigating negative environmental impacts that may emerge from sub-projects, (ii) ensuring the long-term sustainability of benefits from sub-projects by securing the natural resources base on which they depend, and (iii) facilitating projects that increase sustainable use and improvements in local environmental quality and human well-being.

The Fund finances demand-driven projects under several broad categories: income generation, infrastructure, and innovative and special programs. The fund was to be provided in the areas of livestock development, minor irrigation, agricultural development, forest products, infrastructure development, and micro enterprises. These projects should meet the criteria of productivity, equity, and sustainability. The fund has also focused on developing “environmental codes of practice” consonant with World Bank guidelines. The Codes of Practice include environmental compliance requirements and best practice guidelines for mitigation of environmental impacts.

National Agricultural Research and Development Fund

The Government of Nepal established the National Agricultural Research and Development Fund in December 2001 in accordance with the provision of the Working Fund Act, 1986 (B.S. 2043) to provide funding for action research in the agriculture sector.

The fund will be allocated for research and development in five areas: productivity of the farming system, crop research and extension, livestock and fisheries research and extension, sustainable utilization of natural resources and protection of the resource base and the environment, and NTFPs and crops in the Hills.

The budget for the fiscal year 2005 is NRs 70 million from the Hill Agriculture Research Project, which is funded by the UK Department for International Development (DFID), and the Crop Diversification Project. The Fund has provided a total of NRs 24 million for the development of 15 projects

(NARDF 2004) for a period of 1 to 3 years starting from 2003 for individual projects (Table 10.1). Almost all the research projects are related to increasing agricultural products on a sustainable basis, which requires addressing many environmental issues related to such things as the use of fertilizers and pesticides, water, and controlling soil erosion.

Power Development Fund

The Government established the Power Development Fund for initial loan financing for promoting hydropower projects ranging from 1 to 50 MW. This is aimed at improving the rural population's access to electricity services. Initial funding of \$35 million for selected projects will be provided by the International Development Association. Over time, resources from other international and domestic financial institutions will also be mobilized to develop the aforementioned projects by the private sector. The Fund operates under the direct

supervision and management control of the Power Development Fund Board. It is administered by the Power Development Fund Administrator who is selected through competitive bidding. Currently the Nepal Bangladesh Bank has been appointed as the Administrator. For accessibility to the fund, investment projects must be environmentally sound and should have been scrutinized through an initial environmental examination (IEE) or environmental impact assessment (EIA) process as appropriate (PDFB 2005).

Rural Water Supply and Sanitation Fund

The Government of Nepal established the Rural Water Supply and Sanitation Fund in 1996 (B.S. 2052) as per Section 3(1) of the Development Board Act, 1957 (B.S. 2013). The purpose is to develop rural drinking water and sanitation projects sustainably, reliably, and at reasonable cost by mobilizing and providing financial, technical, and organizational

Table 10.1: Major Projects Funded by the National Agricultural Research and Development Fund (NARDF)

Serial Number	Project	Duration	Project Cost (NRs)
1	Improvement in post-harvest handling and ripening of banana s	3 years (Jul '03–Jun '06)	2,073,500
2	Development and dissemination of honey production technology	3 years (Jul '03–Jun '06)	17,21,550
3	Improvement in fruit set of brinjal and chillies	3 years	2,116,000
4	Addressing food security through identification of farmer preferred crop varieties and by strengthening local seed supply system s in the rural communities of western Nepal	3 years (mid-Oct. '03–mid-Oct. '06)	2,858,800
5	Study on the improvement of productivity and production of oilseed crops through integrated crop management practices in t he mid-western region of Nepal	3 years	2,146,800
6	Shiitake mushroom production promotion through entrepreneurship development among hill farmers	2 years	1,845,750
7	Improvement of the vegetable marketing system through farmers cooperatives in Chitwan and Dhading districts	3 years (Jul '03–Jun '06)	1,595,463
8	Identification and promotion of commercial agricultural opportunities for farmers within the new Hile-Bhojpur road corridor	3 years (Jul '03–Jul '06)	1,760,110
9	Understanding potential and critic al constraints to marketing goats in the western hills of Nepal	1 year 1 Nov. '03–31 Oct. '04	527,563
10	Improving livelihoods of resource -poor farmers through on -farm seed priming in the western hills of Nepal	2.5 years	1,067,200
11	Increase the income , nutrition, and food security of hill farmers through introducing the French bean in maize -based cropping system s	2 years	827,885
12	Development of technologies for year -round production of cucumber in the hills of Nepal	3 years	1,864,150
13	Development of nutrition management strategies to improve the productivity of Pakhribas pig	2 years and 10 months	1,973,837
14	Promotion of wilt management technology on lentil, chickpea, and pigeon pea in mid - and far-western Terai	3 years Jul '03–Jun '06	1,519,265
15	Exploring the formation of well -organized marketing cooperatives in Jumla and Dailekh for promoting commercial production and export marketing of apples and oranges, respectively, including other high value agricultural products	2 years	1,903,025
Total			24,100,915

Source: NARDF (2004)

support to consumer groups and cooperating agencies. This fund is administered by the Rural Water Supply and Sanitation Fund Development Board established on 14 March 1996. It promotes sustainable and cost effective demand-led rural water supply and sanitation services in partnership with NGOs and private organizations, with full emphasis on community ownership in conformity with the Government's Eighth Plan (1992–1997), Ninth Plan (1997–2002), and Tenth Plan (2002–2007) policies.

The Ministry of Physical Planning and Works is the line ministry for the Board. The Board is designed based on the experience of a field testing pilot project, JAKPAS (the Nepali acronym of Janata Ko Khanepani Ra Sarsafai Karyakram, meaning People's Water Supply and Sanitation Programme). The Fund is supported by the United Nations Development Programme and a grant from the Japanese Grant Facility. The World Bank executed a pilot project for three years during 1993–1996, financed by two additional Japanese Grant Facility grants. The Board has completed its First Phase (1996–2003) successfully and entered into the Second Phase (2004–2009) to support rural communities on implementing water supply and sanitation schemes. The Board is being funded by the World Bank, International Development Association, and DFID. The Board has full operational autonomy and is supervised and managed by seven members.

The Board has adopted a demand-led participatory approach for increasing community capacity to sustain the project; enhancement of the role of women in all aspects of the project; and integration of hygiene and sanitation education with technically, environmentally, and operationally sustainable water supply.

Nepal has gained experience in managing this fund. It has been operated to supply additional drinking water and sanitation facilities to the rural poor. This fund also has direct input in improving health and sanitation conditions and reducing the environmental health problems that rural people face.

Funds Generated by Community-based Organizations

There are different types of community-based organizations involved in natural resource management activities. Community forestry programs were launched by the Government of Nepal as early as 1978. They have been implemented more vigorously since promulgation of the Forest Act in 1993. Community forest user groups (CFUGs) have been involved in the development, conservation, and sustainable use of forest resources. The Forest Act

1993 empowers the CFUGs to generate funds from community forests and utilize them for community development. However, the CFUGs have to invest at least 25% of the total income in forest management and development. The total income of CFUGs includes income from the sale of forest products and other sources. About 90% of the total income in the Hills is from the sale of forest products (Table 10.2).

Most of the income has been spent for community development activities, in particular infrastructure development (MOFSC 1993). The CFUGs are spending about 30% on forestry activities such as forest watchers and silvicultural operations. Community forestry has become one of the major sources of income in rural Nepal, and this income has been instrumental in enhancing community development activities.

Another important source of income for natural resource management and community development is from the protected areas, which cover about 18% of the total area of the country and have generated substantial revenue through ecotourism activities. The National Parks and Wildlife Conservation Act 1973 in its fourth amendment in 1993 provides that 30 to 50% of the total revenue generated in the national parks and wildlife reserves be used for buffer zone management and community development activities. In accordance with this Act and Buffer Zone Management Regulations 1996 (MOFSC 1996), the Government has declared buffer zones for 6 national parks and 2 wildlife reserves. The buffer zone area totals nearly 4,300 km² out of the country's total land area of 147,000 km².

The Buffer Zone Management Regulations 1996 authorizes collection of resources for community development, particularly in buffer zone areas. The protected areas are divided into national parks, and wildlife reserves and conservation areas. The source of revenue is the tourist flow in the protected areas. The national parks are generating more income than the wildlife reserves, hunting reserves, and conservation areas (Figure 10.4). Regarding conservation areas, the Government only manages and collects revenue from the Kanchenjunga Conservation Area, while the Annapurna and Manaslu Conservation Areas are managed by the King Mahendra Trust for Nature Conservation (KMTNC). The amount shown in Figure 10.4 only reflects the Government's revenue.

Buffer zone users are using the funds received for a number of community development activities, including community forestry development, conservation, and management; riverbank protection and compensation to affected families from riverbank cutting; community plantation and conservation; nursery establishment and sapling distribution;

Table 10.2: Annual Income and Expenditure of Community Forestry User Groups (NRs)

Items	Terai	%	Hills	%	Total	%
Income Source						
Forest product sale	143,305,329	59.15	604,074,653	90.40	747,379,982	82.08
GO/NGO grants	4,040,627	1.67	4,040,627	0.60	8,081,254	0.89
Fine/punishment	1,921,990	0.79	2,981,133	0.45	4,903,123	0.54
Membership fees	5,062,717	2.09	6,688,963	1.00	11,751,680	1.29
Entrance fees	2,359,803	0.97	2,417,298	0.36	4,777,101	0.52
Other income	85,487,836	35.29	27,040,978	4.05	112,528,814	12.36
Last year balance	90,253	0.04	20,999,190	3.14	21,089,443	2.32
Total income	242,268,555	100	668,242,842	100.00	910,511,397	100.00
Annual Expenditure						
Forest watcher	27,488,708	14.99	18,674,938	6.83	46,163,646	10.10
Silvicultural operations	31,108,914	16.97	52,773,342	19.29	83,882,256	18.36
Training, study tour workshops	2,908,653	1.59	5,838,382	2.13	8,747,035	1.91
Stationery	3,780,050	2.06	26,556,550	9.71	30,336,600	6.64
Building construction	12,097,447	6.60	17,875,924	6.53	29,973,371	6.56
Rent/equipment	2,004,638	1.09	1,902,831	0.70	3,907,469	0.86
Salary/allowance	13,893,684	7.58	5,494,599	2.01	19,388,283	4.24
Meeting/assembly	7,520,316	4.10	1,390,590	0.51	8,910,906	1.95
Other group operational	0	0.00	226,268	0.08	226,268	0.05
School support	11,120,118	6.07	23,872,342	8.73	34,992,460	7.66
Road construction	995,638	0.54	22,361,760	8.17	23,357,398	5.11
Other infrastructure	18,518,452	10.10	57,491,735	21.01	76,010,187	16.63
Pro-poor program	1,608,566	0.88	11,041,367	4.04	12,649,933	2.77
Miscellaneous	50,301,431	27.44	28,096,062	10.27	78,397,493	17.16
Total cost (NRs)	183,346,615	100.00	273,596,690	100.00	456,943,305	100.00

GO = government organization, NGO = non government organization
Source: Kanel (2004)

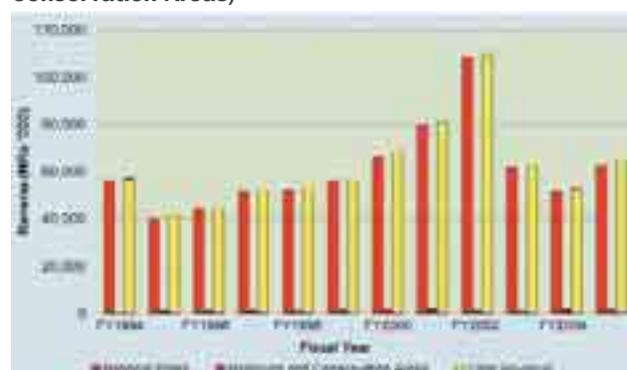
conservation of endangered species; tourism development and conservation of historical and archaeological sites; and wetland conservation and development within the buffer zone areas.

As empowered by the Buffer Zone Management Regulations 1996, the buffer zone users have also started community savings and biodiversity funds. As the protected areas are set aside for the conservation of biodiversity, buffer zone users have emphasized conserving species of plants and animals in the national parks and wildlife reserves and also in the buffer zones. In four national parks and three wildlife reserves, a total of NRs 62 million have been saved in the form of community savings during 1997 to 2004; of these NRs 26 million have been set aside as a biodiversity fund (Figure 10.5). The biodiversity fund will be extensively utilized for the conservation of legally protected, endangered, rare, threatened, and vulnerable species.

Community development groups have also been mobilized for the conservation of soil and water resources. The Department of Soil Conservation and Watershed Management has promoted the

formation of such groups. The Government provided up to 80% of the total cost for terrace improvement and off-farm conservation activities during the early 1980s. As per the information provided by the Department, the Government has been phasing out the subsidies, which had been reduced by about 50% by 2002. The cost sharing is based on the nature of the activity and the magnitude of the problems.

Figure 10.4: Government Revenue from Protected Areas (excluding the Annapurna and Manaslu Conservation Areas)



Source: Ministry of Forest and Soil Conservation records

Figure 10.5: Community Savings and Biodiversity Funds in Protected Areas



KNP = Khaptad National Park, KTWR = Koshi Tappu Wildlife Reserve, PWR = Parsa Wildlife Reserve, RBNP = Royal Bardia National Park, RCNP = Royal Chitwan National Park, RNP = Rara National Park, RSWR = Royal Suklaphanta Wildlife Reserve

Source: Ministry of Forest and Soil Conservation records

These additional incentives and formation of community development groups have been instrumental in encouraging local people to improve natural resources management, particularly soil and water conservation.

The Government has also initiated collaborative forest management since 2003 in selected districts of the Terai with the objective of managing the forests through the joint participation of users, local bodies, and the Government. The major stakeholders include forestry organizations, particularly the regional forestry directorates and district forest offices, local bodies such as district development committees and village development committees, and user groups. The Collaborative Forest Management Manual (MOFSC 2004) provides for establishing both “revolving funds” and “development funds.” The former will be utilized for the commercial felling and transportation of forest products (timber and firewood), and the development fund will be used for development activities. The Government has planned to replenish both funds through donor assistance. The development fund will later be converted to a district forest sector investment fund and utilized for intensive forest management.

The Government of Nepal has also developed a mechanism to share the Collaborative Forest Management benefits. Twenty-five percent of the revenue generated from the sale of timber and firewood under the scheme will be deposited in the local fund and the remainder will go to the national consolidated fund. Funds for local use will be dispersed by the District Forestry Sector Development Coordination Sub-Committee, and some portion of this fund will be set aside for the implementation of the Collaborative Forest Management scheme (MOFSC 2004).

The Irrigation Policy 2003 acknowledges people’s participation in irrigation development, particularly the involvement of water users associations. The policy outlines the framework for cost sharing for the construction of irrigation canal systems and also provides a framework for ownership development (Table 10.3).

The Irrigation Policy provides the framework shown in Table 10.3. The benefit sharing is based on the workload for management of the irrigation schemes. After construction of the irrigation project, The Government can hand over management responsibility to the water users association, and about 95% of the benefits derived from irrigation fees are deposited into the users’ fund. This enhances the possibility for generating more funds for irrigation water management and opportunities for involving the beneficiaries in the process (see Table 10.4). As the irrigation projects are scattered, there are difficulties in fully assessing the funds generated by this policy. However, they are expected to be significant.

Table 10.3: Users’ Share in Irrigation Project Construction

Average Irrigable Area	Percentage of Share (of Total Investment)			
	Head-work	Main Canal	Branch Canal	Distribution Canal
Less than 0.5 ha	0	0	0	10
0.5 ha–1.0 ha	0	0	5	10
1.0 ha–5.0 ha	1	3	7	12
5 ha or above	3	5	10	15

ha = hectare
Source: MOWR (1993)

Private Sector Investment

Private sector organizations are also involved in environmental management, particularly for pollution control. Some of the breweries such as Tuborg Beer Company at Nawalparasi District and San Miguel Beer Company at Chitwan District have developed effluent treatment plants to treat their chemical and biological wastes. The Government has also introduced an environmental management system and energy conservation scheme in selected industries with the assistance of Danish International Development Agency (DANIDA) to reduce pollution load at source. Some industries are practicing environmental management systems. For example, the Godavari Marble Factory located at Godavari in Lalitpur district of Kathmandu Valley has joined the environmental management systems program. A number of environmental problems have cropped up during mining and processing of marble. The area experiences the loss of topsoil and plants, noise, and

Table 10.4: Users' Share in Benefits from Irrigation Projects

Participation in Irrigation System Implementation	Sharing of Benefits Obtained from Irrigation Fee (%)		
	Central Maintenance Fund, Department of Irrigation	Government Revenue	Water Users Association
Government-managed scheme (kulo) area before water distribution	40	40	20
Government-managed irrigation canal above distribution canal	30	30	40
Government-managed irrigation canal above branch canal	20	20	60
Government-managed irrigation canal above main canal	10	10	80
Government's involvement only in headwork management	5	5	90
All management responsibility handed over to users	0	5	95

Note: the remaining parts of the kulo or canal are managed by the water users associations.
Source: MOWR (1993)

dust from drilling and blasting activities. During marble processing activities, significant amounts of sludge are also generated. The factory has had to invest in many areas to improve the quality of the environment.

External Sources

Besides national and local level environmental financing, Nepal also receives assistance from the international community and funding agencies.

Grant Assistance from Donors

The Government has continuously received grant assistance in the forestry sector (Table 10.5). The funding ranges from forestry management to livelihood issues. Currently, the Government has implemented forestry development and management programs with assistance totaling slightly over US\$ 47 million. In the forestry sector, DANIDA and DFID are the two major donors of recent years. As DANIDA's current support ended in July 2005, DFID will be the most important donor providing grant assistance to the forestry sector.

Similarly, the agricultural sector receives grants from donor agencies for the implementation of agricultural programs and projects. At present, this sector has a total of 14 projects (Table 10.6).

Loan Assistance from Donors

Although the Government has attempted to avoid loan assistance in the forestry sector, it has nevertheless taken about \$11.7 million in loans from the International Fund for Agricultural Development to implement the Leasehold Forest and Livestock Development Programme for the period from January 2005 to December 2013.

Tariffs and Subsidies

Tariffs

Tariffs and subsidies for environment and natural resources related sectors are another source of funds. The Government provides subsidies on tariffs/prices for electricity, water supply, community forestry, and community irrigation schemes as incentives for improved environmental management. Many of these initiatives are relatively new.

The Nepal Electricity Authority has implemented tariffs on the consumption of electricity for domestic, industrial, commercial, transport, and other purposes; the tariffs vary by type of use and quantity of energy consumed. It uses the revenues generated through application of these tariffs for extension of the power grid, maintenance and operation of its system, and debt servicing. The Nepal Water Supply Corporation charges tariffs for the use of municipal water and sewage. Currently the tariff on consumption of tapped drinking water is NRs 15.00 per thousand liters. In principle some of this revenue is reinvested to help improve the system. The Nepal Water Supply Corporation and Nepal Water Supply and Sewerage Department develop water supply systems in small towns and hand them over to users' groups. In return for maintaining these systems, the Government provides the users' groups grants of 50%, and loans of 30% (at 8% interest, with repayment in 12 years) from town development funds so that only 20% of the requirements need to be met by the community itself.

Similarly, royalties are imposed on the utilization of forest products, water resources, and others through the licensing process. Through the Forest Act 1993 and the Forest Regulations 1995 (MOFSC 1995) the Government collects revenue on the use of timber and NTFPs and medicinal and aromatic

Table 10.5: Some Major Grant Projects in the Forestry Sector (as of March 2005)

Name	Project Coverage	Funding Agency	Duration	Budget (\$'000)
Livelihood and Forestry Project	15 districts	DFID–UK Government	Mar. '01–Feb. '11	26,882
Nepal Australia Community Resource Management and Livelihood Project	2 districts	Aus-AID	Feb. '03–Jan. '06	12,394
Community Development and Forest Watershed Conservation (Phase II)	2 districts	JICA/JOVC	Jul '04–Jul 2005	—
Biodiversity Sector Programme for Siwaliks and Terai	8 districts	SNV	2002–2005	10,690
Participatory Conservation Programme (Phase II)	7 national parks and buffer zones	UNDP	May '04–Dec. '06	1,000
Terai Arc Landscape Conservation Project	Landscape of Terai Arc	WWF Nepal Program	Jul '01–Jul '06	6,000
Strengthened Advocacy for Governed Utilization of Natural Resources Programme	4 districts	CARE Nepal/ USAID	2002–2006	5,600
Western Terai Landscape Complex Project	3 districts	UNDP, SNV, WWF, IPGRI, NARC, LIBIRD	Oct. '03–Oct. '11	12,827
Conservation and Sustainable Use of Wetlands in Nepal	4 districts	IUCN/UNDP	2004–2009	4,988
Churiya Watershed Management Project	2 districts	CARE Nepal	Mar. '01–Feb. '06	1,978
Community Incentives to Reduce Landuse Conflict and Conserve Biodiversity in Nepal	Koshi Tappu WR	GEF/UNDP	2004–2005	194
Natural Resource Management Sector Assistance Programme (Phase I extension)	38 districts	DANIDA	Jul '04–Jul '05	3,846
Sustainable Management and Utilization of NTFPs in the Terai Region of Nepal	3 districts	ITTO	3 years (after agreement)	312

— = not available, AusAid = Australian Aid, DANIDA = Danish International Development Agency, DFID = Department for International Development, GEF = Global Environment Facility, IPGRI = International Plant Genetic Resources Institute, ITTO = International Tropical Timber Council, IUCN = World Conservation Union, JICA = Japan International Cooperation Agency, JOVC = Japan Overseas Volunteer Cooperation, LIBIRD = Local Initiatives for Biodiversity Research and Development, NARC = Nepal Agricultural Research Council, SNV = Netherlands Development Organization, UK = United Kingdom, UNDP = United Nations Development Programme, USAID = United States Agency for International Development, WWF = World Wide Fund for Nature
Source: MOFSC (2005)

Table 10.6: Some Major Grant Projects in the Agricultural Sector

Name	Project Coverage	Funding Agency	Duration	Budget
Janakpur Agricultural Development Project	Dhanusa, Mahottari and Siraha, and other Terai districts	Japan KR-2	1972 and yearly	—
District and National Implementation of Agricultural Perspective Plan	20 districts	DFID	2003–2007	£9.87 million
Livestock Service Extension Programme	61 districts		Yearly	NRs 60 million
Crop Diversion Project	12 districts of MWDR and FWDR	ADB	2002–2007	NRs 11 million
Maize-based Cropping System	Maize-based cropping areas	SDC	2003–2007	NRs 2.7 million
Sustainable Soil Management Project	12 districts	SDC	2003–2007	SwF 4.5 million
Agriculture Training and Extension Project	5 districts	JICA	2004–2008	—
Food Security Programme for Nepal	4 districts	France	2004–2007	—
Support to the National Integrated Pest Management Programme in Nepal	31 districts	Norway	2004–2006	—
Himalaya Tea Technology Outreach and Extension Programme		JICA		—

— = not available, £ = pounds sterling, NRs = Nepalese Rupees, SwF = Swiss francs, ADB = Asian Development Bank, DFID = Department for International Development, FWDR = Far West Development Region, JICA = Japan International Cooperation Agency, MWDR = Mid West Development Region, SDC = Swiss Development Cooperation
Source: Data from project annual progress reports (2003); MOAC (2003)

From Hands Around Everest book



ICIMOD file photo

From Women, Energy and Water in the Himalayas - Project Learning book



Keshar Man Sthapit

Finance is needed for many types of environmental interventions: bridges to link communities; hazard mitigation; water harvesting; beekeeping training

plants. The Government provides timber to the Timber Corporation of Nepal at subsidized royalty rates approved in 1995. A review of the royalty rates for licensing trade of NTFPs and medicinal and aromatic plants, making them more in-tune with current market prices for these products, could substantially increase the revenue collected. A review of these legal provisions could also ensure that tariffs were levied regularly and that the revenue collected from them was used to directly address different environmental issues around forests. In the case of community forests, users are obligated to spend 25% of the total income earned from the sale of forest products in the conservation and management of the forests at their disposal.

Power developers installing and operating isolated micro-hydro plants and diesel plants for supply of electricity in off-grid areas, as well as community-based users' groups operating with the rural water supply schemes, decide for themselves on the structure of tariffs for the maintenance of their schemes.

The Government, through the Nepal Oil Corporation, the sole importer and distributor of petroleum, oil, and liquefied natural gas, sets the price of these products and provides subsidies on kerosene to consumers in village development committee and rural areas. However, in some locations this must be rethought since higher prices in the border towns of India have caused this subsidized fuel to slip back across the border, while the Nepal Oil Corporation has been operating at a loss of about NRs 3.6 billion annually (NOC 2005). A tariff on petroleum products can be used to combat pollution, and indeed the Financial Act and Regulations do authorize the national environmental agency to collect NRs 0.50/liter on petrol, diesel, and kerosene in Kathmandu Valley to generate funds to combat pollution. It is estimated that about NRs 100 million per year could be collected from tariffs levied on sales of petroleum products in Kathmandu Valley alone. The above process applied throughout the Kingdom could generate as much as NRs 400 million per year.

In recent years, the Government has given priority to the introduction of alternative energy technologies like improved cooking stoves, biogas development, solar photovoltaic, and development of micro-hydro plants in remote areas. The subsidies amount to as much as 50–55% of the installation costs of the systems. By 2004, about 175,000 improved cooking stoves of different types, 125,000 biogas plants, and 250 micro-hydro plants were in use; while around 61,000 families were being

supplied electricity by solar photovoltaic modules of different capacity and types (AEPC 2005). The increased application of these technologies is beginning to yield visible dividends on improving indoor pollution and ambient air pollution, and a significant reduction in fuelwood consumption in remote areas, which has also helped to improve the health of the rural population¹.

Biogas

Being an agricultural country, livestock plays an important role in the Nepalese farming system. Cow dung and other bio-products such as plants can be utilized for the production of biogas—a viable alternative source of energy. Nepal has the technical potential for establishing about 1.9 million biogas plants and the economic potential for about 1 million. By the end of 2004, 123,395 biogas plants had been established under the Biogas Support Programme (Table 10.7). About 97% of these biogas plants are functioning at present. The total equivalent power output produced from biogas is 330 MW. It has also contributed to saving 239,386 tons/year of fuelwood, 3.83 million liters/year of kerosene, and 203,478 tons/year of bio-compost. The biogas sector also employs about 11,000 people (AEPC 2005)

The Government initiated biogas development in the mid-1970s on the occasion of “Agriculture Year” when it started funding the development of alternative energy; biogas, micro-hydro, solar energy, and wind energy receive subsidies under this scheme. To promote the development and use of biogas, the Government provided a subsidy of NRs 6,000 for plants installed in Kathmandu Valley, Hetauda municipality, Dang, and Terai districts; NRs 9,000 for plants installed in hill districts; and NRs 11,000 for plants installed in remote districts not accessible by road. In addition, NRs 1,000 is provided for plants below 6 cubic meters (m³) capacity, and a further NRs 1,000 for plants installed in low penetration districts. The subsidy rate for the fiscal year (FY) 2004 ranges from NRs 5,500 to NRs 11,500 (Table 10.8).

Table 10.7: Phase-wise Production of Biogas in Nepal

SN	Phases	No. of Plants
1	First Phase (1992–1994)	6,824
2	Second Phase (1994–February 1997)	13,375
3	Third Phase (March 1997–June 2003)	91,196
4	Fourth Phase (July 2003–December 2004)	12,000
Total		123,395

Source: AEPC (2005)

¹ Personal communication with staff of Tribhuvan University's Research Center for Applied Science and Technology (RECAST).

Table 10.8: Subsidy Rate for Biogas Plants

Region	Capacity	
	4 and 6m ³	8 and 10m ³
Terai districts	NRs 5,500	NRs 5,000
Hill districts	NRs 8,500	NRs 8,000
Remote hill districts	NRs 11,500	NRs 11,000

m³ = cubic meters
Source: AEPC (2005)

Eighteen districts (Achham, Baglung, Baitadi, Dadeldhura, Dailekh, Dhanusha, Doti, Mahottari, Okhaldhunga, Panchthar, Parsa, Rautahat, Rolpa, Rukum, Salyan, Saptari, Siraha, and Taplejung) are defined as low penetration districts for the FY 2006, and these districts receive an additional NRs 500 subsidy per plant.

Conclusion

Although there are complaints of inadequate funds for environmental activities, this preliminary review shows that there is fairly substantial funding from different sources. The direct allocations from the central treasury to national environmental organizations may be relatively limited, but the total amounts from different sources at various levels cannot be considered small. The most encouraging sources are the natural resources organizations and community groups involved in natural resources management. There are also new sources for mobilizing resources such as the pollution tax on petroleum products being used by the transport sector.

At present the financial contribution of urban areas towards resolving their environmental problems is quite limited. Therefore opportunities for enhancing such contributions in the future should be given priority for a more effective management of urban environment. This will necessitate a more exhaustive study of possible potential environmental financing in the future.

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