Conservation of Biodiversity in Nepal-Approaches of IUCN

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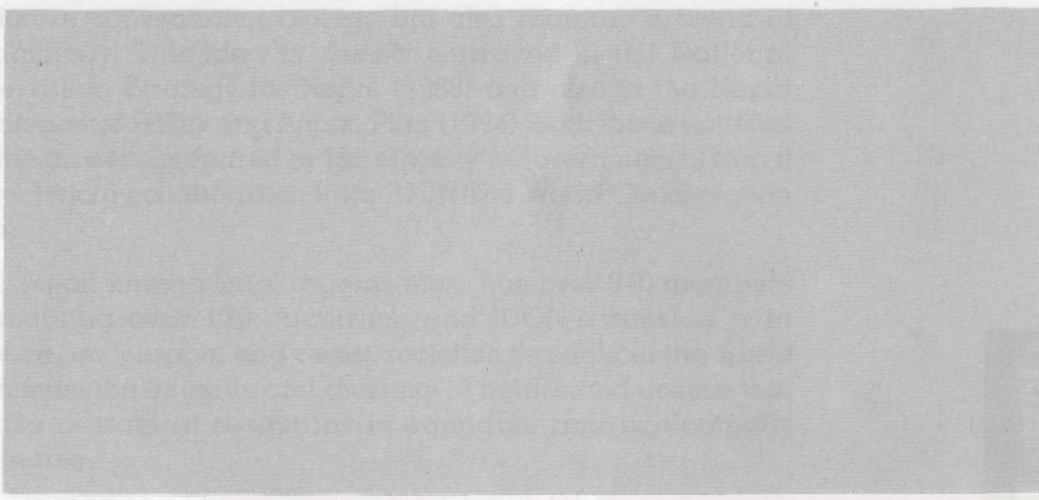

IUCN/Nepal

Background

Human quest for knowledge and information has driven scientists to explore new areas and search for new things in the vast treasures of nature. The Himalayas have always stood as a visible challenge to scientists, explorers, travellers, and pilgrims alike. Nepal, occupying the central sector of the Himalayas, has been a source in the quest for new species of plants and animals ever since it opened its frontiers to foreigners in 1951. The residents of Nepal, from the Himalayas to the tropical savannahs, on the other hand, developed the skill and knowledge to live in harmony with nature. Information on this knowledge and tradition is still sparse in modern scientific literature.

Organising biodiversity information is, therefore, not only the function of conventional biology but also requires a blend of ethnobiology. This idea is deeply engraved in the National Conservation Strategy for Nepal (1988) and also in the Nepal Environmental Policy and Action Plan (1994). Both these national documents were prepared by His Majesty's Government of Nepal with technical collaboration from IUCN-The World Conservation Union.

IUCN, as an international organisation, has over 840 members representing over 120 countries, and IUCN's mission is to influence, encourage, and assist societies throughout the world to conserve the integrity and diversity of nature and ensure that any use of natural resources is equitable and ecologically sustainable.

In Nepal, IUCN has five members, namely, (i) the Department of National Parks and Wildlife Conservation, (ii) Nepal Heritage Society, (iii) King Mahendra Trust for Nature Conservation, (iv) Nepal Forum of Environmental Journalists, and (v) Environmental Camps for Conservation Awareness. IUCN is implementing the NCS as a project in collaboration with the National Planning Commission, and the process of building up this strategy began as early as 1983.

The Heritage and Biodiversity Conservation Programme is run currently by the IUCN Nepal Country Office, and it has introduced a number of activities in line with a national action plan. The Heritage and Biodiversity Conservation Programme (HBCP) has been working to gain societal recognition and national concern for natural and cultural heritage, ranging from a sacred wetland site to national parks and world heritage sites (natural) in Nepal.

The main activities of this programme include: reconnaissance field surveys; scientific reports; awareness materials and popular publications; interactive community meetings; national and

international workshops/conferences; conservation support (technical and financial) to community groups, in order to enhance the heritage value of natural assets; and improving the quality of biodiversity information in public places such as the Central Zoo and the Visitor Centre of the Royal Chitwan National Park.

Nepal's biophysical diversity is part of a most complex terrestrial system. It is difficult to arrive at any easy classification of habitat types or even forest types. Nothwithstanding, habitat classification and consensus among various professionals are prerequisites to developing an information system. Therefore, HBCP attempted to standardise the classification and nomenclature of physiography, habitat types, and forest types. In addition, various inputs to the country study included an array of activities to open up new vistas of biodiversity, ranging from interpretation services, to inventories, and to legal matters such as CITES' implementation in Nepal.

This programme is improving and generating scientific information about protected biological species and protected areas, in order to help strengthen legal and administrative instruments which are responsible for implementing conservation principles, national rules and regulations, and international conventions such as the CITES, the Ramsar Convention, and the Biodiversity Convention. IUCN Nepal's biodiversity database is at the stage at which scientific information can be accessed and processed for general use by policy-makers, conservation professionals, and laymen alike. Incorporation of audiovisual effects and the installation of GIS software have improved the quality of the programme.

The need to develop a network database system was advocated by HBCP as early as 1992, and collaborative work with The Mountain Institute culminated in the development of a database for Koshi Tappu Wildlife Reserve (Ramsar Site) and the Makalu-Barun National Park and Conservation Area. IUCN itself ventured to develop a specialised database on heritage sites, wetlands, and protected species. An Experts' Meeting on a Biodiversity Information System organised by HBCP in November, 1995 brought together 16 organisations as potential members for the network. ICIMOD and IUCN are collaborating professionally to strengthen the linkage capabilities, especially in the context of GIS use.

The scope of the work undertaken by HBCP envisages the development of a comprehensive yet simple to use computerised database management system. The complexity of this system can be geared to the requirements of the users, viz., scientists, students and researchers, conservationists, managers and policy-makers,

and the general public. At present, the focus of the database management system is directed towards managers, policy-makers, the general public, and students.

The data output is designed on a principle of 'simple to complex to simple'. Simple question/queries emerging are to be answered or provided with simple information communicable to the general public as well. The intermediary 'complex' part is the scientific analysis section meant for professionals and scientists.

The volume of work involved in the development of the database for the biodiversity of Nepal is an enormous task, since there are 10 bioclimatic zones, many habitats, a wide variety of flora and fauna, and so on. The scope of data collection and management is wide open. However, the approach at IUCN Nepal has been one of minimum datasets. This involves developing databases for individual habitat types and then linking them to a common data bank.

IUCN Nepal has embarked upon the process of collecting site information on the basis of input sheets developed by experts from various sectors. A computerised database management system is being developed on Fourth Dimension software on the Macintosh Operating System. Simultaneously, a systematic data bank of the information collected from various sites is being prepared.

Conclusion

Biodiversity conservation is one of the four goals set by the National Conservation Strategy of Nepal, and IUCN is collaborating with government agencies, IUCN member partners, non-government organisations, and specialised agencies to advance the cause of biodiversity conservation as is pertinent to the welfare of the people of Nepal.

Table 1 : Synopsis of Biodiversity Information Systems in Nepal

No.	Organisation	Contact Person	Computer programme	Basic Software	System	Recom RAM (MB)	GIS software	Activities	Remarks
1.	IUCN	Devika Shah	Biodiversity Database	4th Dimension	Macintosh	16	MapInfo	Flora, Fauna, Wetlands, Protected Area	Illustration of plants & animals, sounds of birds incorporated
2.	The Mountain Institute	Rabindra Joshi	Biodiversity Database System (BDS)	FoxPro	Windows	10	MapInfo	Makalu-Barun NP, Koshi Tappu WR	
3.	KMTNC	Meena Joshi	Biological and Conservation Database (BCD)	Advance Revelation	DOS	16	CAMRIS	Biodiversity database of ACAP & RNCP	
4.	ICIMOD	Pramod Pradhan			UNIX	8	ArcInfo	Digitised map of Nepal based on LRMP, data on natural resources, climate	
5.	World Wildlife Fund	Khadga Basnet		FoxPro	Windows		CAMRIS	Database for management plan of RBNP & SPNP	
6.	FRISP	Risto Laamanen		FoxPro		12	Arcinfo	Natural forest inventory of Nepal	
7.	Resources Nepal	P. Yonzon		Access		8	Arcinfo	Data on Langtang NP, Shivpuri WR, Rhino, Red Panda, Blue Sheep, Hornbill	
8.	TU (Botany)	Krishna Shrestha	TROPICOS	Advance Revelation	DOS			Legume database of Nepal	
9.	DOPR	Binod Acharya		dBASE IV	DOS			Database of Medicinal Plants	Total 761 (576 species)
10.	BPP	Rajendra Suwal	Biodiversity Database System (BDS)		Windows	10			
11.	Miscellaneous	Purushottam Shrestha		Microsoft Excel				Aquatic plants of Nepal	

IUCN	The World Conservation Union	KMTNC	King Mahendra Trust for Nature Conservation
ICIMOD	International Centre for Integrated Mountain Development	FRISP	Forest Resource Information System Project
TU	Tribhuvan University	DOPR	Department of Plant Resources
BPP	Biodiversity Profile Project	LRMP	Land Resource Mapping Project