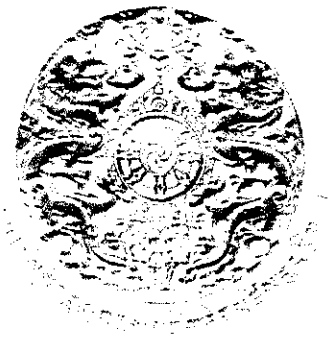
BIODIVERSITY ACTION PLAN FOR BHUTAN

2002



Thursday, 04 April 2002

FOREWORD

Biological resources, especially plants, have always been important for Bhutanese. These resources have been conserved in their ecosystems by local communities who utilised them. The huge genetic resource base our country has, due to its diverse agro-ecological zones spanning from subtropical forest to alpine meadows, is one of our most precious patrimonies. Indeed, it is of global importance now. The global interdependence of genetic resources is apparent from the introduction of exotic varieties into our country and our country's contribution to germplasm and herbarium collections to several institutions abroad.

There is abundant biological diversity both on-farm and in the 'wild'. It is pleasing to note that the strategies for the conservation of biodiversity have given equal importance to both. Farmers in our country have bred impressive varieties of crops, fruits, vegetables to find the characteristics most suitable for local culture and environment. Some of the varieties are best suited to marginal areas where main varieties can scarcely be cultivated. Close to five hundred landraces of rice grown by our farmers is proof of the genetic variations that the farmers have selected and adapted. In addition, significant portion of foods, fodder, and indigenous medicines in our country comes not only from domesticated farmer-bred varieties or species, but from the yearly harvest of plants from the 'wild'. A good deal of self-sufficiency in food and fodder in rural societies are met out of the biodiversity found in nature. The dependence on wild relatives is also true in the case of the most important livestock in our country: *jatsha, jatsham*

jatsham and other *mithun* cross breeds. Those who breed livestock in our country know that to develop good diary cattle, the genetic materials in the wild must continue to be available.

Generations of local communities have contributed to the knowledge about development of breeds and varieties of food crops, as well about wild plants and animals. The transmission of this accumulated, indigenous knowledge, which exists mostly in vernacular form, is equally important for the conservation of biodiversity and uses of biomaterials. Conservation of biodiversity can be strengthened hand in hand with enhancement of indigenous knowledge about biomaterials we have traditionally used.

With the explosion in biotechnologies, the potential uses of biomaterials are far greater than what were possible in the past. Genetic materials are being incorporated into commercial products, and a considerable and increasing part of the global economy is based on biotechnological products. For our country, too, biotechnology holds bright prospect, and we must move in that direction as quickly as possible. The golden bridge linking development and conservation is biotechnology.

In the context of conservation, this updated biodiversity action plan represents a serious and ambitious effort made by our country. May the merit of this publication benefit both man and animal, who ultimately depend, directly or indirectly, on the diversity of plantlife.

Dorji Wangmo Wangchuck

TABLE OF CONTENTS

Abbreviations

ADB:	Asian Development Bank
BAP:	Biodiversity Action Plan
BFI:	Bhutan Forestry Institute
BIBIS:	Bhutan Integrated Biodiversity Information System
BMB:	Biodiversity Management Board
BWS:	Bomdeling Wildlife Sanctuary
CBD:	Convention on Biological Diversity
CDM:	Clean Development Mechanism
CGIAR:	Consultative Group on International Agricultural Research
CIAT:	The International Centre for Tropical Agriculture
COP:	Conference of Parties
CSO:	Central Statistical Office
DALSS:	Department of Agriculture and Livestock Support Services
DANIDA:	Danish Development Assistance
DFS:	Department of Forestry Services
DRDS	Department of Research and Development Services
DSC:	Druk Seed Corporation
DYT:	Dzongkhag Yargye Tshogchung(District Development Committee)
EIA:	Environmental Impact Assessment
EU:	European Union
FAO:	Food and Agricultural Organization
FCB:	Food Corporation of Bhutan
FED:	Forest Extension Division
FMU:	Forest Management Unit
FPUD:	Forest Protection and Utilization Division
FRDD:	Forest Resource Development Division
FYP:	Five-Year Plan
GATT:	General Agreement on Trade and Tariff
GCR:	Government of Costa Rica.
GDP:	Gross Domestic Product
GEF:	Global Environment Facility
GIS:	Geographical Information Systems
GYT:	Geog Yargye Tshogchung (Block Development Committee)
HRD:	Human Resource Development
IARC:	International Agricultural Research Centre
IBRD:	International Bank for Reconstruction and Development - The World Bank
ICDP:	Integrated Conservation Development Programme
ICPGR:	International Commission on Plant Genetic Resources
ICS:	Information and Communication Services
IEE:	Initial Environmental Examination
INBio:	National Biodiversity Institute
IPGRI:	International Plant Genetic Resources Institute
IRRI:	International Rice Research Institute.
ITMS:	Institute of Traditional Medicine Services
IUCN:	International Union for the Conservation of Nature
JDNP:	Jigme Dorji National Park
JSWNP:	Jigme Singye Wangchuck National Park
LUPP:	Land Use Planning Project
MOA:	Ministry of Agriculture
MOHA:	Ministry of Health and Education
MTA:	Material Transfer Agreement
MTI:	Ministry of Trade and Industry
NBC:	National Biodiversity Centre
NBPGR:	National Bureau of Plant Genetic Resources

NCD:	Nature Conservation Division
NEC:	National Environment Commission
NES:	National Environment Strategy
NGO:	Non-Government Organization
NRTI:	Natural Resources Training Institute
NTFP:	Non Timber Forest Product
NWFP:	Non-Wood Forest Product
O& M:	Operation and Maintenance
PBR:	Plant Breeders Right
PGR:	Plant Genetic Resources
PGRP:	Plant Genetic Resources Program
PIC:	Prior Informed Consent
PPD:	Policy and Planning Division
PWS:	Phibsoo Wildlife Sanctuary
QCRS:	Quality Control and Regulatory Services
RGOB:	Royal Government of Bhutan
RIM:	Royal Institute of Management
RMNP:	Royal Manas National Park
RNR:	Renewable Natural Resources
RNRRC:	Renewable Natural Resources Research Centre
RSPN:	Royal Society for the Protection of Nature
SDA:	Sustainable Development Agreement
SEA:	Strategic Environment Assessment.
SWS:	Sakteng Wildlife Sanctuary
TNP:	Thrimshingla National Park
TRIPS:	Trade Related Intellectual Property Rights
UNDP:	United Nations Development Programme
UNFPA:	United Nations Population Fund
UNIDO:	United Nations Industrial Development Organization
UPOV:	Union of the protection of varieties.
WCMC:	World Conservation Monitoring Centre
WTO:	World Trade Organization
WWF:	World Wildlife Fund

Tables

Graphs

Maps

Introduction – Part I

1. Biodiversity and its Values

The Role and Values of Biodiversity

The Convention on Biological Diversity defines Biological diversity as "the variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and ecosystems." Biodiversity is generally considered in terms of ecosystem, species, and genetic diversity. Biodiversity refers to all living organisms, and thus includes all wild, domestic, terrestrial and aquatic species.

It has become increasingly recognized that biodiversity is absolutely basic to human survival and welfare. The role of biodiversity in human affairs and therefore its values to mankind can be described as ethical, cultural, aesthetic, utilitarian, and ecological. Of course, these roles are not separate from one another. For example, the ethical and aesthetic roles are combined in Bhutan's culture, and the aesthetic interest in biodiversity drives much tourism, which can play a distinctly utilitarian role in many countries.

Ethical, Cultural and Aesthetic Values

The ethical, cultural and aesthetic roles are mentioned first because in Bhutan the Buddhist religion plays such a central role in peoples' lives and their entire culture, and nature--which in this sense is essentially biodiversity--is so central to Buddhism. The basic principles are to give back to nature what has been taken away and to respect all forms of life. Thus, in Bhutan, the ethical and aesthetic roles of biodiversity are integral components of the culture. In other countries, however, they may be more separate, yet the ethical concern for biodiversity can still play a major role.

In many industrialized countries there is a dramatically different culture and one in which religion plays a much less overt role than here. Yet many people maintain a strong ethic about biodiversity. This ethic can be described as a conviction that it is wrong to needlessly take life, or that since humans have the technological capability to exterminate other species, they also have an ethical responsibility to avoid doing so. This ethic can also have important economic or utilization implications. For example, because of the public's strong ethical objection to killing baby seals, the import and sale of seal skins were banned in Europe, which had important economic effects in seal-producing countries such as Canada.

The Utilitarian Values

The utilitarian value of biodiversity is great. Biodiversity provides direct products such as food, medicines and timber along with genetic materials and chemicals for agriculture, medicines and biotechnology. It can also provide the basis for economically significant tourism. In Bhutan 79 percent of the population live in rural areas and depend directly on biological resources. Food, fibre, construction materials, clothing, fuel and medicines are a few of the biodiversity products in direct daily use. Wild species provide a significant food source for peoples on all continents. But on a global basis the genetic diversity represented by wild species is of even greater importance. The need for wild genetic material to improve and diversify domestic crops, livestock, and other agricultural products and processes is well known. This utilitarian value of biodiversity, along with the recognition of its threatened status, was one of the important motivations for the Convention on Biological Diversity.

There are increasing efforts to achieve conservation and sustainable use of biodiversity in agriculture. Beyond assuring supplies for immediate use, the rationale for conservation of agro-

biodiversity is to maintain the materials for use by future generations. In the proposal for the Bhutanese Agro-Biodiversity Project (RGOB 1996) it was noted that the conservation and utilization of agro-biodiversity would contribute to three primary areas in Bhutan: sustainable development, food security, and financial benefit. While these goals and contributions were described for Bhutan, they are also valid for most other countries throughout the world.

In Bhutan an estimated 300 species of plants and animals are used for medicinal purposes in forming nearly 200 different traditional medicines. The National Institute of Traditional Medicine has developed standardized preparations of many of these medicines and is making them available through traditional medicine clinics across the country. Various herbal products are also marketed and some are exported.

But biodiversity resources also are essential and are of great economic importance to industrialized countries and to urban dwellers throughout the world. It is estimated that a key component of over 80 percent of the modern medicinal prescriptions currently filled in the industrialized nations originally derived from wild biodiversity. New uses are continually being found for biodiversity, and some of these are of great economic value. This point is well illustrated by the volcanic Hot Springs in America's Yellowstone National Park. These springs have been found to harbor a variety of curious microorganisms. These organisms are yielding genetic material with uses that range from developing bacteria which consume toxic wastes, to providing scientific insights into the possibilities of life on Mars. One form already has earned several hundred millions of dollars from using these genetic materials in a process to identify DNA, a basic building block in the genetic make up of humans and other animals.

Bioprospecting -- the search for new genes or chemicals of value in pharmaceutical, biotechnology, or agriculture industries -- is a rapidly growing endeavor, and one, which, as the Yellowstone example shows, can have immense economic benefits. However, bioprospecting in most developing countries must involve significant international exchange of biodiversity since these countries lack the technological capacity for complete product development. In view of this, bioprospecting falls under many of the provisions of the Convention on Biological Diversity and in particular Articles 15 and 16 on Access to Genetic Resources and Transfer of Technology. If it is very carefully approached and with the protection of the Convention, bioprospecting may offer an opportunity for substantial economic benefits.

Ecological Values

At first thought, ecological values may sound academic and detached from the day-to-day business of living. However, wild species and the ecosystems of which they are components provide a number of ecological services that are of critical importance to human welfare. Forests regulate and ameliorate climates, maintaining conditions necessary for agriculture and other human needs. Forests and other vegetation provide watersheds, assuring sustained flows of clear water. Vegetation prevents erosion, soil slumps and landslides. Plants and various animals, including microorganisms, create and maintain soil and its structure and fertility. Healthy ecosystems recycle nutrients. Birds, insects and some bats provide pollination for agricultural crops as well as wild plants. Many wild species are predators, which help to control pests. Forests and other wild ecosystems play key roles in global cycles such as those of carbon and water. Vegetation absorbs or filters many air pollutants. And of course, ecosystem biodiversity provides the essential habitats for species and genetic diversity.

Forest biodiversity provides two particularly critical ecological services for Bhutan, erosion protection and maintenance of water discharge patterns. Bhutan's steep slopes would be particularly subject to landslides and erosion without the forests, with resultant severe impacts on settlements, agriculture, and hydropower. Forest cover also smoothes out water flow to and in the rivers, reducing peak wet season flows and providing continuing flow during dry seasons. Loss of watershed vegetation creates a "tin roof" effect, with sudden run off in the wet periods and minimal flow in the dry, causing damaging floods, interrupted water supplies. and significantly impacting the

operation and economics of hydropower developments. These results of lost ecological services are all-too-evident in neighbouring areas where the forest biodiversity has been lost.

The Global Concept of Conservation and Sustainable Utilization of Biodiversity

The main objectives of the Convention on Biological Diversity are the conservation of biological diversity, the sustainable use of its components, and the sharing of the benefits. Although *Conservation* is often used in the broader sense of including protection and sustainable use, in this BAP we have maintained the distinction of the Convention, with the caveat that *conservation* in the Bhutanese context does not exclude sustainable use.

There is much confusion about the definition of *sustainable use*. In the Convention on Biological Diversity, *sustainable use* is defined as the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations. In practice there are several components of the definition of *sustainable use* which must be considered together. These include:

Sustainability of the yield of a particular consumed biodiversity product, such as timber, medicinal plants, domestic crops, etc.

Sustainability of the ecosystem on which the consumed biodiversity product depends, as opposed to a plantation or cropped field. That is, it may be possible to sustain timber harvest in some conifer trees but in the process the forest has been transformed from a forest ecosystem with rich biodiversity into the equivalent of a plantation with very limited biodiversity -- so there is a basic difference between sustainability of wood production and sustainability of the natural ecosystem with its full biodiversity and the benefits (including those of ecosystem services) which the natural ecosystems provide for humans.

Long term sustainability considerations. There are long term sustainability issues, which often are overlooked. It is often argued, for example, that logging only a small percentage of a forest annually has little effect in any one year and therefore is sustainable. But after some years the small percentages can add up to 100 percent, and the original, mature ecosystem which may have taken centuries to establish, is lost.

Lateral considerations. As far as we know, each species plays some role in the ecosystem, and it has a set of relationships with other species. Some are predators, some are prey providing food for others, and some tree or other plant species provide shelter or food for other plants and animals. Therefore, harvesting any species, plant or animal, from an ecosystem will have some effect on the other species (including threatened ones), which make up the ecosystem. Removing prey species may leave predators without natural food, so they may starve, or shift to domestic livestock. Removing "keystone species", i.e., species which play a key role in maintaining the ecosystem, may cause the collapse of the ecosystem even though only one species was removed.

Sustainability of Ecosystem Services. Sustainability of an ecosystem includes sustainability of the ecosystem services, which the ecosystem provides for humans (and others). Ecosystem services include maintenance of watersheds, control of erosion, climate amelioration, provision of critical habitats for other life forms, development of soils, so the impact of use on these services is another consideration in determining the sustainability of use of any component of the ecosystem.

Sustainability of non-consumptive uses. Non-consumptive uses (i.e., uses that do not remove individual species, e.g. trees, from the system) are assumed to be sustainable because they are not believed to have an impact. However, this is not necessarily true. Tourism is an example of non-consumptive use of biodiversity, but even though tourism is non-consumptive, unless it is carefully planned and executed it may have a significant impact on the biodiversity.

2. The Action Plan Process in Bhutan

The Royal Government of Bhutan undertook the development of the Biodiversity Action Plan for Bhutan (BAP I) in 1996. The process followed by RGOB was particularly comprehensive, involving, among other things, workshops and consultations throughout the country. BAP I was completed and submitted to Government for approval in June of 1997, and the RGOB immediately initiated a series of actions to implement the Action Plan. The BAP is intended to be a living document, to be revised from time to time as the actions it specifies are completed and conditions change. By 2001 so much progress on implementing the original action plan had been achieved that RGOB decided to undertake the first revision, BAP II. Since this process relied upon the comprehensive foundations laid in the development of BAP I, the preparations for both BAP I and BAP II are described below.

Preparation of BAP I

On 19th November 1996, the Royal Government of Bhutan initiated a project funded by the UNDP/GEF to enable the RGOB to develop a National Biodiversity Conservation Strategy with prioritized Action Plans. This was to serve as an overall framework to consolidate, strengthen and improve its activities and programs to conserve and sustainably utilize the rich natural biodiversity in Bhutan. In addition this project was to also enable the RGOB to prepare its first National Report on Biodiversity to the CBD Conference of Parties (cop) in 1997, thus fulfilling Bhutan's obligation to the CBD under article 26.

The Nature Conservation Section of the Forestry services Division within the Ministry of Agriculture was given the responsibility for co-ordinating the development of the National Biodiversity Conservation Strategy and Action Plan (BAP). This was because the Forestry Services Division was then the main governmental agency responsible for the execution of biodiversity conservation programs as well as overseeing and enforcing measures to conserve and sustainably utilize the biodiversity resources of Bhutan. The Nature Conservation Section is now the Nature Conservation Division of the Department of Forestry Services.

The Core Team

A core team was formed comprising of T.N.Acharya (CLSD), Karma Tsering/Cheki Wangmo (REID), Tenzing Dhendup (REID), Durga D Sharma (FSD) and Deki Yonten (FSD). Each person played a key role in developing the BAP. This was a nearly full time assignment from mid-January to June 1997.

Task Force

Individuals from other Ministries, NGOs and the UNDP were also nominated as members of a Task Force, which served as a steering committee and acted as a forum for consultation, discussion, review, analysis, and co-ordination for the development of the Strategy and Action Plan. The Task Force Members were:

- Kunzang Norbhu, Planning Ministry
- Karma Nyedrup, National Environment Commission
- Dorji Thinley, National Institute of Traditional Medicine
- Ugen P Norbhu, World Wildlife Fund
- Kunzang Yonten, Royal Society for the Protection of Nature
- Thinley Wangchuk, Ministry of Trade and Industries
- Sonam Tobgay, Tourism Authority of Bhutan
- Gyem Tshering, Bhutan Chamber of Commerce and Industries
- Chhador Wangdi, Ministry of Health and Education
- Ugen Norbhu, Ministry of Finance, NBACD.
- Tenzin Dorji, United Nations Development Program
- and more from the Ministry of Agriculture

National Workshop

On January 13, 1997, a one-day National Workshop was convened in Thimphu to discuss the approach to be adopted in the preparation of the National Biodiversity Conservation Strategy and Action Plan. An outline of the National Biodiversity Strategy and Action Plan prepared by the consultant Dr. Lee M. Talbot was reviewed and Terms of References for the Co-ordinator, Focal Persons and Task Force Members were also discussed.

This workshop was immediately followed up with a meeting of Biodiversity Task force Members to discuss the Terms of Reference for Focal Persons as well as devise the course of action and future programmes for the core team. The team was given the responsibility of identifying, collecting and reviewing existing reports and plans that should be included in or can contribute to the National Biodiversity Conservation Strategy and Action Plan to fulfil any of the requirements for the plan while avoiding unnecessary duplication or effort. One means of collecting the information required for the BAP as well was through familiarisation tours through the country meeting the relevant persons.

Regional Workshops

In an effort to ensure broad participation of all stakeholders as well as encourage constructive contributions to the BAP, a series of regional workshops was held throughout the country as per the following,
12-14 March 1997: Conducted Regional Workshop in Paro
19-21 March 1997: Conducted Regional Workshop in Bumthang
24- 26 March 1997: Conducted Regional Workshop in Trashigang

The workshops provided a mechanism for consensus building and information gathering. Their purpose was

- To provide a forum for participation for local people who use, affect, study and conserve biodiversity, in order to assure a wide participation in the BAP process
- To assure the differing needs and perceptions of people from different regions is incorporated in the BAP process
- Through local participation, to seek to build understanding and support for the BAP
- To compile information from the different regions to assure that the BAP reflects differing conditions in the differing parts of the country.

Participants

To achieve the objectives the workshop organisers tried to seek the widest participation from groups using and affecting biodiversity. These included representatives of the local people such as Gups, Chimis and MangiAps from each Dzongkhag. Government Officials included Divisional Forest Officers, District Agricultural Officers, District Animal Husbandry Officers, Dzongkhag Forest Extension Officers, selected District Education Officers, Research Officers from the RNR-RCs, selected Dungtsos, lecturers from institutes like the Bhutan Forestry Institute, Natural Resource Training Institute, and Sherubtse College. Local users included sawmill owners and paper industry owners.

Task Force Members were invited to join the core team at various stages in the tour and participate in at least one workshop. This would provide a better insight and understanding of the BAP process for the Task Force Members as well. The workshops were organised and conducted by the BAP core team.

Workshop process

Since the objective was to both gather information as well as seek to build consensus, the workshops were structured so as to encourage local representatives. The workshops were informal

with no papers 'read'. Each workshop began with an explanation of the terms 'Biodiversity, Sustainable Development, the importance of conservation, the Convention on Biological Diversity and the country's obligations to the CBD. Participants were divided into groups dealing with (a) Forestry; (b) Livestock/Pastoral; (c) Arable-Agriculture/Horticulture; (d) Wetlands/Freshwater; (e) Pasture and grazing; and (f) Wildlife.

The group discussions were held for two days and mainly dwelt on the following topics,

- the status of biodiversity (varieties known to participants),
- their special significance
- existing threats to or from the use of biodiversity
- distribution of species
- status of wild biodiversity
- uses of biodiversity, sustainability of these uses,
- existing conservation measures currently in use in any region,
- conservation actions that may be required for the future
- conflicting issues and
- recommendations to the government

The local representatives were very keen to share their knowledge with the other participants and also did many presentations. A Task force meeting was organized to present and discuss the findings of the regional workshops and discuss further actions required.

Based on the findings of the regional workshops, the Forestry Services Division nominated a small working group to discuss the issues raised and come up with solutions or actions for recommendations that came from the workshops. In late May and June 1997, a series of meetings of the Focal Persons and Consultant were held to review progress and compile the draft BAP on the basis of the materials collected, prepared and drafted by the Focal Persons. The draft was assembled from sections drafted by each member of the Core Group. The draft was subsequently reviewed at a meeting of the Task Force and submitted to a final National Workshop.

Final National Workshop

A final National Workshop was held on 17 June 1997 to present and discuss the Draft National Biodiversity Conservation Strategy and Action Plan. The draft was then revised in accordance with the workshop recommendations and submitted to Government for approval.

Preparation of BAP II

Bhutan has made significant progress in implementing the original action plan and improving the conservation and sustainable utilization of biological diversity in the nation. Consequently, in November 2001, the Nature Conservation Division under the Department of Forestry Services of the Ministry of Agriculture took the initiative to update the BAP document with financial support of the GEF/UNDP. The objective was to update the original BAP in the light of these achievements and to present them to the 6th Conference of Parties on the Convention on Biological Diversity in April 2002 as the country's second national report on biodiversity.

The updating was to be a part of the ongoing BAP process, so it built upon the extensive work done in the preparation of BAP I, rather than starting anew. Consequently, the process and methodology for updating this BAP was different from the original effort. It primarily involved review and revision of each part of the original BAP to reflect new information and what has been done in the last four years. The action plan proper in chapters 3, 4 and 5 was then revised to reflect new priorities for action.

To accomplish this a process was followed that was similar to the initial phase where a task force representing members from different institutions and sectors contributed relevant material.

The Task Force

A task force for BAP II was established consisting of a Core Group and Focal Persons representing components of the RGOB, NGOs and the UNDP. The Task Force served as Steering Committee for the BAPII revision and acted as a forum for consultation, discussion, review and recommendations for the development of the BAP.

The Core Group: The Core Group comprised of Sonam Choden (NCD), Deki Yonten (NCD), Karma Tenzin (DoFS), T.N. Acharya, (DALSS), Mahesh Ghimeray (DRDS), and Medon Yaganegi (NBC).

Focal Persons: The Focal Persons were:

- Dr. Sangay Wangchuk, Nature Conservation Division
- Dr. Ugyen Tshewang, Program Director, National Biodiversity Center
- Tenzin Choephyel, Policy and Planning Division
- Dr. Manohar Sharma, Quality Control and Regulatory Services
- Kencho Wangdi and Ed Santos, RNR Information and Communication Services
- Lam Dorji, Royal Society for Protection of Nature
- Tobgay Sonam, Bhutan Trust Fund for Environmental Conservation
- Chado Tenzin, World Wildlife Fund, Bhutan Programme
- Thuji Nadik, Department of Tourism
- Kesang Choden, Department of Aid and Debt Management
- Tshewang Tandin, Department of Education
- Ugyen, Institute of Traditional Medicine Services
- Kumbu Dukpa and Thinley Dorji, National Environmental Commission
- Tenzin Dorji, Seeta Giri and Dr. Durga Devi Sharma, United Nations Development Program

Initial Workshops and Consultations

Five workshops were held between November 16 and 30, 2001. The participants included the Task Force members plus other individuals relevant to the preparation of the BAP, and the BAP Consultant, Dr. Lee Talbot. The Workshops produced agreement on the procedures and methodology, an initial review of BAP I, and identification of the main areas where revision was necessary.

During the same period an extensive series of consultations was held between members of the Core Group, the Consultant, and representatives of the RGOB ministries and agencies, NGOs, international organizations, and others in Bhutan who were concerned or involved with biodiversity conservation. These consultations involved Honorable Ministers, other officials of the relevant ministries, departments and agencies, and senior officials of the other institutions and organizations involved, and provided important perspectives and information for the BAP revision.

Preparation of the Revision

During December, January and February the Focal Persons prepared and drafted additions and other revisions to the BAP and forwarded them to the Consultant. From these materials the consultant compiled a first full draft of the BAP II, which was then circulated back to the Focal Persons involved and to the Task Force as a whole who reviewed, commented and improved upon it. Based on this the consultant prepared the final draft which was again circulated to a wider audience and presented in a final workshop held on 25th March 2002. The draft was then revised as per the workshop recommendations and submitted to the government for approval.

3. Follow up - The BAP as a living document

This revision of the BAP illustrates that the BAP is a living document. It is an ongoing process, not a one-time document to be noted and set aside. The BAP provides a framework for action that will enhance Bhutan's ability to ensure the productivity, diversity and integrity of its biodiversity and natural systems, and as a result, its ability as a nation to develop sustainably. To be successful the BAP must be used and implemented, it must lead to action – and it has. Conditions are changing. Bhutan is developing; its population is rising; knowledge and understanding about biodiversity is increasing; and the nation's ecosystems are in a dynamic state. The successful achievement of some of the goals in the BAP will themselves change conditions – and indeed they have. Consequently, the BAP must be and is a dynamic document, which changes to reflect these changes.

As a result, the BAP is an ongoing process of:

- defining goals and action to attain them;
- monitoring the actions to see that they are carried out;
- assessing the success of the actions, both administrative and in the field;
- determining what changes are required in the Action Plan itself;
- making those changes; and
- Repeating the cycle.

Assessing the progress of implementing the BAP will require establishing goals, standards against which progress can be measured. The first-order goals would be the achievement or progress on the actions and objectives specified in the BAP. The second-order goals would involve, for example, the status and trends of key species, habitats and ecosystems -- which themselves indicate the ultimate success of the BAP process -- and these in turn would require the development of indicators and indicator criteria. This process will be relatively crude initially, given the present state of scientific knowledge about Bhutan's biodiversity. But with time and the achievement of key goals of the BAP, the process is becoming significantly refined.

Experience with BAPs in other countries has shown that it is important to monitor, evaluate and revise the BAP reasonably shortly after its approval by government. Such initial reevaluation and revision has proved particularly important in Bhutan's case. This is Bhutan's first effort of this type; as noted above both the original and this revised document was prepared from separate parts of drafts prepared by different people; and the time available was short. Consequently some areas of biodiversity have received more complete attention, and some, such as microflora, are not yet covered. Therefore it is anticipated that relatively significant revisions will continue to be required.

Thereafter it would be desirable for such action to be taken relatively frequently (this first revision was undertaken about three years after publication of the initial BAP) and timed to precede the Conference of the Parties to the Convention on Biological Diversity, so that the results of the evaluation can serve as the nation's report to that conference, as required by the Convention. If they are properly carried out, the periodic evaluations of the BAP can serve as a report on the state of the nation's biodiversity. Such a report can be of great value both to the government and to the general public, and as such it can help build continued support for biodiversity conservation.

In the future the BAP document will be updated by the National Biodiversity Center (NBC) with the approval and recommendation of the Biodiversity Management Board (BMB). The NBC has been established with the mandate to facilitate and coordinate all the biodiversity related activities in the country. It is recommended that the NBC establish a BAP task force – basically the one which prepared this BAP II -- that will be responsible to meet every six months to review progress under the BAP and consider and recommend what actions need to be undertaken. Depending on the reviews the BAP task force must determine the time for the next publication, as it can be an expensive activity. However the recommendation is that during the course of the RGoB's 9th Five Year Plan period at least one revised version should be published.