

# **Non-Timber Forest Products Sub-Sector in Nepal: Opportunities and Challenges for Linking the Business with Biodiversity Conservation<sup>1</sup>**

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## **I. INTRODUCTION**

This paper explores and analyzes the opportunities and challenges for the efficient, sustainable and equitable commercial use of Non-Timber Forest Products (NTFPs) in Nepal. The strategies for handling the challenges and enhancing the opportunities of this sector are suggested. Unlike any other business, NTFP enterprise development can be linked to biodiversity conservation by creating economic incentives for local people to conserve while safeguarding their traditional livelihood strategies as well as cultural values. But a number of challenges must be tackled for realizing this potential.

The information sources for this paper included Asia Network for Small Scale Boiresources (ANSAB) commissioned 18 small field research studies on various aspects of NTFPs in Nepal, official records of Department of Forests and ANSAB, and published literature on NTFPs of Nepal. The knowledge and experience gained while implementing several ANSAB NTFPs related projects in Nepal during the past four years are also reflected. This report is expected to be useful to planners and professionals involved in this sector.

For the purpose of this paper, NTFPs are defined to include all goods of biological origin other than timber, fuelwood and fodder from forest, grassland or any land under similar use. Examples of NTFPs include medicinal and aromatic plants (MAPs); bamboo and rattan; nuts, fruits, tubers and berries; grasses and leaves; resins; insect and insect providers; and wild animals and birds. More specifically, this paper focuses on the plant products.

## **II. POLICIES, REGULATIONS AND PRACTICES**

Several polices, plans, Acts and laws in Nepal interact to regulate and set the context in which NTFPs are collected, cultivated, processed and sold.

### **1. National Regulations**

The policy and legislative framework set for NTFPs in Nepal is innovative and provides several opportunities for the utilization of these resources. A brief review of the main ones is given below.

**The Master Plan for the Forestry Sector (MPFS).** The plan aims at meeting the basic needs of rural Nepalese for fuel, fodder, and timber. Its long term objectives are to improve farming systems, conserve the soil and water ecological balance, conserve genetic resources and ecosystems, and develop and manage forests for income and employment opportunities.

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Its medium term objectives are to achieve people's participation in forest development, management and conservation by decentralizing authority, to develop a legal framework to involve people in forest management, and to build the institutional capability of forestry institutions to perform their job effectively.

Community forestry is the main focus in the MPFS, receiving 47% of funding for the 25-year period of the Plan. The focus for activities has until recently been in the midhills, but the focus is now also on the high mountains, where locals heavily rely on forestry for their subsistence.

The MPFS discusses development aims and objectives for seven groups of NTFPs: medicinal and aromatic plants, *Daphne* paper, pine resin, kattha (from *Acacia catechu*), sabai grass, and canes and bamboo.

The Forest Based Industrial Development Plan of the MPFS emphasizes creation of jobs and processing facilities as well as cultivating many of the wildy collected medicinal plants.

**Forest Act 1993, Forestry Regulations 1995 and Their Amendments.** The Act recognizes forest user groups (FUGs) as self-governing and autonomous entities and entrusts them with the management, control, utilization, and sale of community forest resources in a planned way. The FUG has the rights to exclude others from using the forest.

The Forest Products Sales and Distribution Regulation contains a complex set of procedures to obtain permits and to extract and utilize forest products. In consequence, this law is frequently circumvented.

Also under the regulation the following two species are banned for collection, use, sale, distribution, and export: *Dactylorhiza hatagirea* and *Cordyceps sinensis*.

The following eight species are banned for export in their unprocessed form: *Nardostyhis grandiflora*, *Valeriana jatamansi*, *Cinnamomum glaucescens*, *Taxus baccata*, *Abies spectabilis*, *Rawolfia serpentina*, *Permelia spp.*, and Silajit (a mineral).

**The National Conservation Strategy (HMGN/IUCN, 1983).** The strategy protects areas that contain essential habitats for terrestrial and aquatic mammals, migratory birds, freshwater fishes, and rare and/or endangered species. It seeks conservation of Nepal's natural resource base through sustainable use.

**The Nepal Environmental Policy and Action Plan (HMGN, 1993a).** It aims to preserve endangered species and their habitats, promote private and public institutions for biological resource inventory and conservation, and strengthen the capacity of the Department of National Parks and Wildlife Conservation to act as the main institution responsible for biodiversity conservation.

**The Ninth Five Year Plan.** It recognizes the role of local people in managing Nepal's forests. It aims to involve them in managing natural resources where appropriate and allow them to share in the benefits. This plan also has objectives to increase income and employment opportunities from forest resources and to conserve ecosystems and the biodiversity of Nepal. The plan puts more emphasis in promoting the management of NTFPs within the framework of community forestry for generating income and employment at the local level.

## **2. International Conventions**

The Government of Nepal is a signatory to Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This establishes lists of endangered species for which international trade is either prohibited or strictly regulated. The Forest Act 1993 and National Parks and Wildlife Act 1973, amended 1995, ban the collection or hunting of many endangered species of plants or animals.

Nepal has ratified UNCED (Convention on Biological Diversity), but most of the policies just listed were passed previously and do not reflect the need of conserving biological diversity in the spirit of UNCED.

## **3. Implementation of Rules and Regulation**

At the district level, the District Forest Office (DFO) is responsible for implementing the forestry legislation. The DFO performs the technical, administrative, and judicial services concerned with the flora and fauna available in the national forest area.

Any national individual or organization can apply for the collection of NTFPs, stating the types, area, quantity, and the purpose of collection. But in practice, the DFO issues NTFP collection licenses to traders, who produce an income tax certificate, not to harvesters. Traders holding these licenses are able to strongly influence prices if they can collude, since harvesters can only sell these plants to one of them. The FUGs can also provide collection licenses to collect from its community forest, if it is mentioned in the operational plan.

A DFO issues the transport permit, known as “Release Order”, to the traders who show a collection license and a royalty payment receipt, which is obtained after the products are checked to tally with the specifications in the collection license. The transport permit is valid for fifteen days and can be extended for seven more days at a time. The traders frequently pay local taxes to the local development bodies while transporting and trading the products in and through their territory. The collection permit and release order are necessary to have with the trader while transporting the products.

To export the products, a certificate of origin is required, which is issued by Federation of Nepal Chamber of Commerce and Industry or Nepal Chamber of Commerce. For processed items, only the processor’s firm that gets an export recommendation from the technical committee of Department of Industry can obtain the certificate of origin.

The DFO recommends the concerned Customs Office for granting a permission to export. Customs office takes the export duty equivalent to 0.5% of the product value and issues an export permission. To export the processed NTFPs that are prohibited from export in crude form, a Product Certification and Export Permission must be obtained from the Department of Plant Resources. The import duty can be exempted from Indian Customs Office if the certificate of origin is shown. Developed countries also require a certificate of general system of preference in addition to a certificate of origin. To import NTFPs in Nepal, importers submit an application to Nepal Customs Office along with a customs declaration form and authentic evidence from the exporting country.

#### **4. Policy Related Challenges**

When judged against the impact of the forest legislation on NTFP collectors and conservation, the national policy objectives do not seem to be properly translated into regulations.

The regulations pertaining to NTFPs are still based on restrictive policy. Except for a few isolated cases, unclearly defined property rights is leading to over-collection and mismanagement of these resources. Collection permits, bans, and lack of knowledge of law are contributing to increased rent seeking. Royalty payment, taxes, and transport permit are not effectively implemented. The problems also arise due to discrepancies in interpretations and distortions in use of existing regulatory provisions. The current system of determining royalty rates is arbitrary and the rates remain fixed until the rules are changed.

Producing and selling forest products including NTFPs is considered a difficult and second class (illegal) business. The entrepreneurs and traders are not adequately encouraged in growing and marketing of forest products from privately controlled land.

Although there is a provision in the community forest for the management of medicinal plants, no specific guidelines are given in the section to the development of NTFPs. The scope and opportunities for NTFP management within community forests are not clearly spelled out in the existing forest rules. This mismatch is largely a result of the fact that NTFP collectors are not able to influence the decision making process at the local as well as national level.

### **III. THE RESOURCE BASE: DISTRIBUTION AND OCCURRENCE**

#### **1. The Diverse Resource Base for Unique and High Value Products**

While small in terms of surface area (147,181 sq. km.), Nepal is remarkably diverse in flora and fauna due to its climatic and topographical variation (see Map 1: Nepal). Numerous side ranges and shoulders extend in all directions from the main Himalayan chain, creating a complex mosaic of biologically isolated high altitude ridges and deep valleys. The complex vertical topography acts to restrict gene flow across the landscape. Nearly 7,000 species of higher plants are found in Nepal, out of which 5% are endemic to Nepal and 30% endemic to the Himalaya.

On the basis of physiography and dominant species, Nepal's vegetation is classified broadly into 35 types (Stainton 1972) and more elaborately into 75 types (Dobremez 1972). The small country accommodates dense tropical forests of the Terai in the south through subtropical broadleaf and coniferous forests at the middle to temperate, sub-alpine and alpine vegetation in the north. While only a limited economic benefits is realized from the plant resources of Nepal at present, there is a huge potential for the future.

The forests (37.4%), and shrub and grass lands (15.7%) of Nepal, covering 53% of the total geographical area of the country or 7.8 million hectares of land, form the major ecosystems for the provision of NTFPs. A large number of diverse forest and grassland communities contain many species of valuable plants, some in large

amounts. Most of the area lies in the hills and mountains and is rich in high value NTFPs. For example, there are about 700 species of medicinal and aromatic plants.

Based on 98 commercial NTFPs species of Nepal, distribution of these plants by ecological zones, parts used, life forms, and major usage is presented in Chart 1. The majority of the plant species that produce commercial NTFPs fall under medicinal and aromatic group, mostly herbs or trees, and are likely to be severely impacted from harvest, as most of these products are derived from whole plant, bark, stem or root.

## 2. Depletion of Resources

The large and diverse resource base for a variety of NTFPs is difficult to conserve for the sustainable supply. The challenge is that in many areas it is known, and in most other areas suspected, that the diversity, quality, and availability of many species of NTFPs are decreasing.

Several studies report that certain NTFP species or groups of species are being overused and degraded (Edward 1994, 1996a, 1996b; Malla *et. al* 1995; Hertog 1995; Karki 1996; Sharma 1996; Subedi 1997). The reasons for this overuse and degradation are complex but include the lack of knowledge and local control over these resources, rural poverty, increasing external market demand, and social and cultural traditions (also see Section 5: Collection and Management of Resources).

## IV. UTILIZATION PATTERNS

As mentioned earlier, NTFPs are an important part of the Nepalese economy. These products have a potential for contributing to the local economy, subsistence needs (medicine, food, etc.) and improved natural resource management, leading to the conservation of ecosystem and biodiversity of an area (Subedi 1997). Moreover, non-consumptive uses and functional services of the ecosystem and plant resources that produce these products are significant to the society as a whole.

From the point of view of use and management, three distinct but mutually non-exclusive categories of NTFPs are identified. These are: a) Locally Used or Traded for Subsistence Purpose, b) Commercially Traded, and c) Potential for Trade.

**Locally Used or Traded for Subsistence Purpose.** This category include those plant species which are not currently of commercial interest or available in commercial volumes, but are used at a subsistence level within an area. Note, a species, which is currently used only for subsistence purposes, may enter into trade at any time when its outside market value is known or a commercial product is developed using its product(s).

The people of several ethnic groups living in Nepal have made and still do make, in many similar and different ways, use of many available NTFPs since time immemorial. About 800 species of NTFPs are used locally to provide medicines, foods, oils, fibers, dyes, tannins, gums, resins, incense, building materials, and agricultural implements. Only a small amount of these products are used at local level. Some commercially traded plants are also used for local medicine and incense making. The most notable products are Kakarsingi (insect gall on *Pistacia integerima*), and roots of *Picrorhiza scrophulariiflora* and *Nardostachys grandiflora*.

**Commercially Traded.** A commercially traded species is the one that is traded directly or through a series of traders to processing or manufacturing industries, or distributors.

We have recorded more than 100 species of plants that are in trade commercially, which includes different uses in and outside the country (see Annex 1: List of Commercially Traded NTFPs of Nepal). The main commercial products include medicinal and aromatic products, essential oils, cosmetics and toiletries, plant fibers, oils, gums and resins, herbal dyes, food and flavors, paper and pulps, and wood for cottage industries. Some of these NTFPs are of high value low volume while the others are relatively bulky and low value products. Examples of high value NTFPs are *Nardostachys grandiflora*, *Picrorhiza scrophulriiflora*, *Morchella conica*, *Delphinium himalayai*, *Valerianna jatamansi*, *Paris polyphylla*, and Lichens.

**Potential for Trade.** A plant species with potential for trade is found in a sizable volume, has not been traded from Nepal, but has already been traded outside the country, or have some prospect for processing at the national level.

More than 100 types of NTFPs that have potential for trade are found in Nepal. It has been observed during the last decade that a significant number of potential products entered into commercial trade.

## V. COLLECTION AND MANAGEMENT OF RESOURCES

### 1. Local Capacity for Management

#### A. *Local People's Access to and Control of Resources*

National forests<sup>2</sup> outside the Protected Area System are owned, protected and maintained by the government through its Department of Forests (DOF). The Forest Act of 1993 and several amendments together with the Forest Regulations of 1995 and the Community Forest Directives of 1995 provide a framework for the ownership/tenure structure of community forests in Nepal. The new government policy has a mandate to hand over use rights and management responsibility of all accessible forests to local forest user groups.

The 1993 Forest Act states that the “District Forest Officer (DFO) may hand over part of a national forest to a user group in the form of a community forest, entitling the group to develop, conserve, use and manage such forest and, sell and distribute the forest products by independently fixing their prices, according to an operational plan”.

About 61% of the total national forest within the DOF are considered to be potential community forests, of which more than 55% is forested and the rest is non-forested. In addition, a portion of alpine grassland can be managed as community forest for NTFPs.

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<sup>2</sup> The national forest, which includes grassland, can be divided into several management options: protected forest (within the protected area system, PAS), government-managed forest, community forest, leasehold forest and religious forest.

## **B. Forest User Groups: Local Level Institutions for the Management of Resources**

The legislation recognizes forest user groups (FUGs) as self-governing and autonomous entities and entrusts them with the management, control, utilization and sale of community forest resources in a planned way. The use rights remain with the FUG for an indefinite period of time. The FUG has the rights to exclude others from using the forest.

As of July 1998, more than 500,000 hectares of national forests have been handed over to more than 7,000 Forest User Groups. This comes to be about 15% of the total potential community forest area of the nation.

Many forest users expressed a desire to gain formal control of their resources and initiate activities to gain financially from harvesting and processing the NTFPs (Maharjan 1994; Hertog 1995; Edward and Maharjan 1994; Edward 1996a; Karki 1996).

## **2. Existing Collection and Management Practices**

Most of the commercially important NTFPs come from the collection in wild from all ecological zones of Nepal, except some species in small areas such as *Znthoxylum armatum*, *Sapindus mukorossi*, *Ammomum subulatum*, and recently *Swertia chirayita*. These NTFPs are collected from extensive areas of the government owned forests and grasslands except some which are harvested from community forest, private land, national parks, and conservation areas.

Although not primarily meant to benefit the NTFPs in the forest, indigenous protection systems for some forests are in place. There are some very good examples of successful local community systems of resource management. Recently local communities of Humla initiated systems of NTFP focused sustainable forestry (Subedi 1998) and generating biological and socio-economic information required for the management decisions (Subedi 1999a). It is found that species cultivated on private land are better managed than the same species on public access land indicating some management knowledge certainly exists.

## **3. Challenges for Sustainable Management**

The DOF is the government agency for the control and management of NTFPs. However, its function is limited to giving permission and issuing license for collection. Practically there is no supervision or control in collection, nor is any rational basis for allotting plots. The highest bidder usually gets the plot for large-scale collection of NTFPs, for which the government receives a royalty. The DFO rangers have difficulties correctly identifying NTFPs because they are often referred to by various local names.

Over harvesting and unscientific collection triggered by the *de-facto* property right arrangement and other economic conditions led to the depletion of these resources even from the protected areas like national parks (Yonzon 1993).

Current practices or level of skills for NTFP extraction/harvest, production management, and post-harvest operations are not satisfactory. Unlike agricultural crops and timber producing trees, the management knowledge and techniques are not

well developed. The species specific information required for *in-situ* as well as *ex-situ* management is generally lacking for most of the species.

Although there was little pressure on species that were collected for local use on a subsistence basis, the pressure on some of the commercial species has already resulted in overharvesting, and in some cases, immature and unscientific harvesting have led to the threat of extinction. The indigenous knowledge and traditional skill of limited individuals on harvesting NTFPs at a subsistence use level are not enough or enforceable to apply to the harvesting of commercially demanded species.

The support services for organizing, empowering, and transferring knowledge and skills for the sustainable management to NTFP dependent communities is very limited, if not unavailable.

Since the forest and grasslands where NTFPs are collected are considered to be under the government property regime and not under the control of the communities, there is an incentive to harvest as much as possible before someone else gets to it. At the same time, there was little or no awareness for conservation coupled with lack of alternative income generating opportunities that would change the unsustainable practices.

## **VI. PROCESSING, TRADE AND MARKET CHANNELS**

### **1. Processing Practices**

The technology behind processing of many NTFPs is relatively straightforward and a wide range of Ayurvedic preparations is already produced. However, the bulk of NTFPs are exported, mostly to India, in raw form, making Nepal the leading supplier of medicinal plants to the Indian sub-continent.

Only a small percentage of NTFPs collected are processed within Nepal by a few processing industries (producing resins, turpentine, kattha, paper, essential oils, etc.) or cottage industries (using fibers and wood materials). Most of these were established only recently. Some weaving of Allo (*Girardiana diversifolia*) and Hemp (*Cannabis sativa*) cloth and other fibers is going on but the work is difficult with the market being very limited. The weaving of bamboo and Nigalo (*Arundinaria falcata*) for baskets, mats and other goods for daily, seasonal, and ceremonial uses is common in hills and plains. Other small-scale cottage industries practiced in Nepal include hand-made paper making, herbal dye making, honey production from bees, incense making, Chiuri (*Aesandra butyracea*) oil production and *Bhutun* production (a sour juice concentrate locally made from the plant, *Pyrus pashia*).

### **2. Growing International and National Market Demand**

In analyzing the international trade, Iqbal (1995) found a striking pattern that developing countries are the major producers and exporters of raw or semi-processed products and developed, industrialized countries are the major importers.

Global markets for Nepal's NTFPs have been large and the demand trend for these products is increasing as more and more people from developed country are attracted to natural products. There was less interest in natural products from late 1960s to the early 1980s with the new possibilities in biotechnology and the synthesization of drugs. But by the mid-1980s, the interest in natural products increased with a

recognition that technology alone could not solve the pressing health care needs of the world's population and with the growing health consciousness (Tempesta and King 1994).

The value of the most economically important NTFPs in world trade totals about US \$11 billion annually (Iqbal 1995). Growth in the natural products market is in a range of 3% to 20% (Grunwald 1994), which is on average 3 to 4 times average national economic growth rates.

### **3. Marketing and Trade**

The market and trade channels of most of the NTFPs follow a general pattern of forest/meadow to village to road-head or trade center, then on to larger trade centers. Most of these NTFPs, processed or unprocessed, are exported both formally and informally to India, with a small percentage directly going to Europe, America and other Asian countries.

Due to the secretive nature of transactions of forest products, especially NTFPs, and poor record keeping system, getting reliable data on trade is difficult. Based on the DOF records, Chart 2 shows the annual quantity of NTFPs collected and traded as well as government revenue collected from these products by the DOF. Many people consider these data as an underestimation of real transaction. This chart shows an interesting trend that both quantity and revenue are increasing but the amount of revenue per kilogram of NTFPs has increased remarkably in recent years.

An ANSAB survey found that about 100 entrepreneurs handled approximately 42 thousand tons, consisting of more than 100 different NTFP items in 1995. This amounted to more than 1.5 billion Nepali Rupees (equivalent to US \$26 million) in 1995 (Subedi 1997). Even this conservative estimate shows that commerce involving NTFPs is contributing significantly to the Nepalese economy.

### **4. Challenges in NTFP Processing and Marketing**

The processing industry is in its infant stage in Nepal. The main difficulties are getting reliable information, processing technologies and access to market (Subedi 1997). Since many high-value NTFPs are located in very remote area, the processing and marketing costs are generally high. The support services available for processing and marketing of NTFPs are not adequate for small fair trade businesses and in some cases these are favorable for illegal transactions. Most of the local traders do not have easy access to the capital required for processing and marketing of NTFPs.

The additional challenges faced in processing and marketing are:

- Lack of marketing infrastructure;
- Imperfect wholesale market for NTFPs created by the following conditions: a) limited number of wholesalers, b) controlled price information, and c) government the major buyers for some products;
- Less developed market for many products and high price fluctuations;
- Many producers with small quantities of products -- receive only a small portion of the total income;

- Role and services of brokers and middlemen -- myths and reality (exploitation by middlemen versus their services: cash advances, transport, storage, risk-taking, etc.);
- Lack of market information: current marketing channels, amount of each products, price variation as well as future supply and demand of the products, processed product, development and future price projection;
- Most of the traders with an inadequate marketing knowledge and skills;
- Limited access to availability of information and technology for product development;
- Difficulties in matching market requirements by suppliers due to several uncertainties such as production fluctuation, decreased collection due to early snow fall, inconsistent quality of products coming from many sources, and guaranty of collection permits.

## **VII. EQUITY**

### **1. Livelihood, Income and Employment for Local People**

Forest resources are an integral part of the livelihood support system in Nepal, where overwhelming majority of the 20 million people live in the interface between forest and agriculture. There are very few economic opportunities for the population of hill and mountain areas. NTFPs play a crucial role in the livelihood strategy of these people.

It has been generally found that most of the NTFP collection is done by the poor. Proper support to FUGs in managing and commercial use of NTFPs can help in generating income and employment to rural poor. ANSAB survey in Humla shows that NTFPs contribute about 25% of the household income for the collecting households (Subedi 1999b).

### **2. Challenges for Equitable Distribution**

The present trade channel is not providing the fair share of profits to collectors. Based on an average of 13 products traded from catchments in far-west, central and east Nepal, Edward (1996a) found that harvesters of NTFPs receive only 32% of the final price in India. For some products the price received by collectors is less than their labor charges.

Another challenge is to safeguard the traditional collectors and local traders from being marginalized when the business becomes more profitable. It is generally the poor section of society who collects NTFPs when the price is very low in order to cope with their economic hardship. But other members of society may control the business, as these products become more valuable.

Intellectual Property Rights (IPR) have been emerged as an important mechanism for securing an equitable share of benefits from NTFPs, which are supported by the International Convention on Biological Diversity to protect the property rights of developing countries to native plants and other species. But the present system of patenting is unlikely to protect the IPR for the benefits of local people.

## **VIII. RECOMMENDATIONS: STRATEGIES FOR SUSTAINABLE COMMERCIALIZATION**

The strategies related to policy, sustainable resource management, and marketing are suggested considering the following three things in mind: a) conservation and sustainable use of the rich bio-resources of the country, b) increased equity in distribution of benefits from the commercial utilization of these resources, and c) contribution of this sector to overall social and economic development of the country.

### **1. Policy**

#### ***Revise NTFP related National Policy to support the harvesters and local entrepreneurs***

- Re-examine the ban on the unprocessed export of the key NTFPs; lifting this ban would result into: more competition in export, more transparency and hence easier monitoring of trade, lower transaction costs contributing more benefits to local harvesters, and more government revenue.
- Simplify trade procedures to support small business -- giving greater latitude to engage in regional and international commercial transactions.
- Develop a clear process and criteria for fixing and revision of royalty rates and implement the process.

#### ***Make NTFP policy development process more participatory***

- Recognize forest users, collectors, and traders as well as their associations, federations and networks as legitimate stakeholder in policy making.
- Create a mechanism of formally involving all legitimate stakeholders, specially the poor, women and other disadvantaged groups, in policy development and revision process.

#### ***Improve implementation of NTFP regulations***

- Establish a process of monitoring to facilitate smooth implementation of regulations.
- Maximize the opportunities given by the existing legislation for promoting conservation and local development, such as:
  - Include NTFPs as an integral part of the community forest operational plans and give higher priority to handing over large areas of NTFP rich forest and pasture lands as community forests;
  - Allow and support FUGs to use their NTFP resources for income generation (royalty collection and individual income from sale);
  - Terminate the contract with private party for collection and trade of forest products from community forests at or before the time of handing over; and
  - Promote transparency in the application of trade and transit fees and other charges within the country -- especially at the district level.
- Support to raise policy awareness among forest users, collectors, and traders.

## **2. Sustainable Management of Resources**

- Explore and test possible options for increasing production in a sustainable way, such as improving production from the wild, domestication, and improving harvesting technologies.
- Undertake economic mapping and inventory of NTFPs.
- Prioritize the ecosystems, habitats, species, and products for research.
- Promote participatory learning and innovation by combining indigenous knowledge with external expertise for improved management practices.
- Support adequate communication, coordination, and linkages between FUGs and other organizations involved in NTFP development.
- Provide training and conduct educational activities on NTFPs for extension workers and forest users to improve technical skills (*in situ* management, cultivation, harvesting, post harvesting, processing, marketing, etc.).
- Provide appropriate technical support to manage wild collection of NTFPs and domestication where feasible.
- Ensure equitable distribution of benefits within FUGs by empowering disadvantaged sub-groups.

## **3. Product Development and Marketing**

- Promote local value addition to NTFPs by introducing or developing appropriate processing technology.
- Provide marketing support services to local groups:
  - Analyze market system to generate information needed for sustainable management, fair prices, and efficient market
  - Provide good marketing information (current and future)
  - Help identify potential markets for NTFPs
  - Develop a good marketing infrastructure: roads, telephone, market places, storage and handling depots, processing facilities, etc.
  - Provide credit facilities for processing and trade
  - Provide entrepreneurship development training
- Promote market competition to provide fair NTFP prices for collectors and FUGs

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