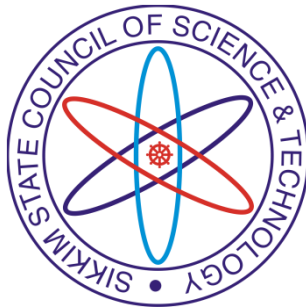


ENVIS RP SIKKIM ON ECOTOURISM

# GSDP Course on “Value addition & marketing of NTFP (Plant Origin) Bamboo Craft”

Proposal – cum- Module



ENVIS Resource Partner Sikkim on Ecotourism, Sikkim  
State Council of Science and Technology, Gangtok Sikkim  
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## Proposal cum Module GSDP Course on “Value addition & marketing of NTFP (Plant Origin) Bamboo Craft”

**Mission:** Skill development is an important aspect of economic development as it has the potential to integrate several craft ecologies with emerging market systems. Craft ecologies are embedded within traditional networks of skill, patronage and client networks, which take time to adapt to transitions in market logics. This is particularly true within globalizing frameworks where technology brings in a great quantum of standardization and disrupts traditional intuitions of aesthetics and utility. Consequently, craft ecologies may not be able to adapt to new forms of expertise and strategic presence that may be required to create value in contemporary market systems. As a result, craft labor may be subordinated and marginalized in evolving market paradigms.

The Ministry of Environment, Forest and Climate Change (MoEF&CC) has been implementing a Central Sector Scheme titled ENVIS since 1982-83. ENVIS, by providing scientific, technical and semi-technical information on various environmental issues has served in facilitating policy formulation and environment management at all levels of Government as well as in decision-making aimed at environment protection and its improvement for sustaining good quality of life for all living being.

Utilizing the vast network and expertise of ENVIS Hubs and RP's, the Ministry for the first time, has taken up an initiative for skill development in the environment and forest sector to enable India's youth to get gainful employment and/or self employment, called the Green Skill Development Programme (GSDP). The programme endeavours to develop green skilled workers having technical knowledge and commitment to sustainable development. Bamboo Craft Training is one of the initiatives of the Green Skill Development Programmes.

Bamboo is an ancient woody grass widely distributed in tropical, subtropical and mild temperate zones. Traditionally seen as the “poor man's tree”, in recent years bamboo has risen to a high-tech, industrial raw material and substitute for wood. Although the commercialization of planted bamboo has been slow, it is becoming an increasingly important economic asset in poverty eradication, economic and environmental development (FAO, 2005).

**Objective of the course:** The basic aim of this GSDP course is to impart green skill training to youths and local people who have not been able to continue education due to different financial or social constraints but have an urge to learn new things and do something fruitful. The training will provide hands-on knowledge and understanding about the Bamboo Crafts and processing vis-à-vis ways of conversation so that it can diversify livelihood opportunities at the grassroots level through means of conservation and better understanding as an important component of farming system as well.

**Aim of the Course:** To showcase the benefits of bamboo and various bamboo types. Through this training on bamboo crafts an individual can become skilled in this particular area so that he /she can start producing products made out of bamboo which can be sold to the general public.



## Prospects of bamboo crafts in Sikkim:

Cane and Bamboo forms an integral part in the lives of the people of Sikkim. Bamboo is used in many ways to make several articles and generally people use it in many ways to make those things which are required in their day to day lives.

Bamboos are giant woody grasses and over 1200 species of bamboo are known to exist throughout the world, with sizes ranging from miniatures to giants stems of over 60 metres. Bamboos are among the fastest growing plants on the planet and are an integral part of the cultural, social and economic tradition of Sikkim.

The traditional use for Bamboos to make household furniture items like moorah's or small stools, decorative items like flowers, utility items like pen stands, picture frames, baskets and dust bins. Attractive user friendly and eco- friendly products made out of cane and bamboo are fruit and vegetable baskets, beer mugs, hair clips, flower vases, containers etc.

Cane and bamboo craft is one of the many crafts that are found in Sikkim. The articles produced are mainly for day to day use. Bamboo is a good substitute for plastics, steel and cement for housing, furniture construction and agricultural tools and implements together with new designs and improved technologies. It is also an ecologically sustainable raw material which can offset the exploitation of our forests. Bamboo is also a major food crop.

The present study reveals that in Sikkim, there are 21 bamboo species found in tropical forests, 28 species in sub-tropical forests, 12 species in temperate forests, 6 species in sub-alpine forests and 3 species in alpine vegetation. In Sikkim, most of the bamboos are of sympodial type (6 genera) but 2 genera are of monopodial type of which 27 species (90.00%) under 6 genera constitute the first category while rest 3 species (10%) under 2 genera belongs to the other type.

## Bamboo Diversity:

Bamboos are distributed widely throughout Sikkim. During the field survey conducted throughout the state, 30 species of bamboo under 8 genera were recorded. Bamboo is usually found in the moist valleys, along the streams, low hill slopes of southern part, moist deciduous forests, wet temperate forests and sub-alpine coniferous forest of the state. The main genus found in the state is *Arundinaria sp*, *sinarundinaria sp*, *Phyllostachys sp*, *Bambusa sp*, *Dendrocalamus sp*, and *Schizostachyum sp*.

*Arundinaria sp* and *Sinarundinaria sp* mainly covers the northern part of Sikkim and, *Phyllostachys sp*, *Bambusa sp*, *Dendrocalamus sp* which occurs over extensive area are found in lower hills forest. Cultivated bamboos are also found in the agricultural land areas, roadsides private and government Khasmal areas.

From the above table we see that there are 8 genera of bamboo found in Sikkim. The main species found in Sikkim are *Bambusa nutans*, *B. tulda*, *Dendrocalamus hamiltonii*, *Sinarundinaria hookeriana* etc. The geographical distribution of a bamboo is greatly influenced by human actions. This is why probably *B. nutans*, *B. tulda* and *D. hamiltoni* are common to all over the state. Of the 30 bamboo species recorded from Sikkim, 27(90.00%) species under 6



genera are sympodial type and only three (10.00%) species under two genera are monopodial type.

### **Distribution pattern:**

21 bamboo species were found in tropical forests, 28 species in sub-tropical forests, 12 species in temperate forests, 6 species in sub-alpine forests and 3 species in alpine vegetation. The alpine and sub-alpine region has *Arundinaria*, *Sinarundinaria* and *Thamnocalamus*, the temperate region has five genera, including three genera from alpine and sub-alpine region and also *Dendrocalamus* and *Schizostachyum*, the tropical and sub-tropical region has *Bambusa*, *Dendrocalamus*, *Melocanna*, *Phyllostachys*, *Schizostachyum* and *Sinarundinaria*.

### **Uses of bamboo**

Bamboos are used for various purposes and its great versatility qualifies it to be a multiple use alternative to timber, food to the rural poor and tribal in particular. In the Himalayan state the culm of the bamboos are used for religious rituals like for hoisting prayer flags. They provide raw materials for scaffolding in building construction and in rural areas small dwelling huts are also constructed with bamboo. Some are used for making mats, fishing rods, baskets, bows and arrows and for making furniture. Bamboos are also used in making bridges in the rural areas; farmland fencing materials, fodder for cattle and young shoots are used as a vegetable and for making pickles. It is also used in making Lepcha traditional hat (Sumok thyaktuk), an oldest form of craft made by the Lepcha tribe in the state<sup>19</sup>. Apart from these they are also used for making chungas to carry milk and water, walls floor and roofs, supports to creeper agricultural plants and as an ornamental plant.

Some uses of bamboo are shown in fig. from A to O.

- A. Leaves used as fodder.
- B. Mat (Chitra) used as roof cover.
- C. Mat (Chitra) made from a bamboo culm.
- D. Basket (Doko) used in the tea garden.
- E. Walls floor.
- F. Fencing to protect the sapling from other animals.
- G. Shelter for small animals.
- H. Used in the construction of a house.
- I. Supporting a Prayer flags.
- J. Bamboo Scaffolding.
- K. Support to creeper plants.
- L. A house made of a bamboo mat (Chitra).
- M. Young shoots used as a vegetable.
- N. A gate made of a bamboo.
- O. Support to creeper agricultural plants



## Handholding support for setting up enterprises

The establishment of a small producing enterprise or plant requires some considerable establishment or assurance of the infrastructure and investment.

An entrepreneur needs demonstration centres, handicraft centres. A small scale business also requires support from other institutions. The main factor is of budget support. An entrepreneur should always be ready of machinery and equipments. To become a skilled businessman he should get training from a renowned institute. And most important factor is linkages to the market.



## GREEN SKILL DEVELOPMENT PROGRAMME



**Title of the GSDP Certificate Course:** Value addition & marketing of NTFP (Plant Origin)  
Bamboo Craft

**No. of participant:** 25 candidates per batch

**Eligibility Criteria:** No minimum qualification to X Pass/ School drop-outs/ Unemployed youths

**Age limit:** 18 years and above

**Duration of Course:** Two Months (50 working days - 400 hours)

**NSQF-** Level 5



**MODULE OF VALUE ADDITION & MARKETING OF NTFP (PLANT ORIGIN)**  
**BAMBOO CRAFT GSDP TRAINING PROGRAMME**  
**NSQF- Level 5 Duration: Two Months (400 hours)**  
**Time: 09.00AM to 3.00 PM (Every Sunday off)**

Hours	Particulars
Inauguration	Registration of Trainees & Inaugural Day Introduction of the basics of bamboo crafts
10 hrs	<i>Selection of bamboo species</i> Introduction of bamboo, Availability of bamboo species, Selection of species for variety of products
10 hrs	<i>Preservation of bamboo</i> Introduction, Durability of bamboo, Types of preservative, Preservative preparation
10hrs	Quantification of preservatives Qualitative testing of preservatives Preservative Treatment
10 hrs	<i>Non pressure treatments</i> i. Prophylactic treatment ii. Diffusion treatment iii. Sap displacement iv. Hot and cold
20 hrs	<i>Pressure treatments</i> i. Full cell process ii. Empty cell process iii. Modified boucherie process iv. Retention of preservative
20 hrs	<i>Conversion and primary processing</i> a) Operation and working of bamboo processing machine b) Node removal c) Cross cutting
30 hrs	Practical
10 hrs	d) Splitter e) Sliver making f) Splinters making g) Weaving of mat and patterns
30 hrs	Practical
30 hrs	Practical
5 hrs	Exposure Visit
10 hrs	<i>Agarbatti stick making</i> a) Square stick making b) Round stick making
12 hrs	<i>Bamboo composites</i> Introduction to composites Definitions Types of bamboo composites



## GREEN SKILL DEVELOPMENT PROGRAMME



	Methods for preparations of composites Qualitative and quantitative testing
12 hrs	Adhesives and types Application of adhesives on bamboo mat
12 hrs	Practical
12 hrs	Practical
12 hrs	Mat pressing Bamboo boards and composites
20 hrs	<i>Seasoning and finishing of bamboo</i>
30 hrs	<i>Product making</i> Basketry Design making,
30hrs	Decorative products Design, fabrication and furniture making
20 hrs	<i>Bamboo low cost housing</i> Conversion of bamboo Mud reinforced walls
25 hrs	Panelling Roof making Floor making
20 hrs	<i>Entrepreneurship Skill Development programmes (ESDP)</i> To impart the Entrepreneurial Orientation for capacity building of the trainees. To provide all the handholding support and informational inputs to the trainees for setting up their enterprises.
400 hrs	Valedictory function