

## **CHAPTER II**

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## CHAPTER II

### THEORETICAL BACKGROUND

#### 2.1 Introduction:

Bamboo is an important forest resources and its woody grass belonging to the sub-family Bambusoideae of the family Poaceae. Worldwide there are more than 1,500 species under 90 genera of bamboo are reported to occur in the world. Which are unevenly distributed in the various parts of the humid tropical, sub-tropical and temperate regions of the earth. This natural resource plays a major role in the livelihood of rural people and in rural industry. This green gold is sufficiently cheap and plentiful to meet the vast needs of human populace from the "child's cradle to the dead man's bier". That is why sometimes it is known as "poor man's timber". Bamboos has versatile uses as building material, paper pulp resource, scaffolding, food, agriculture implements, fishing rods, weaving material, substitute for rattan, plywood and particle board manufacture. Pickled or stewed bamboo shoots are regarded as delicacies in many parts of the country. The major use of bamboo in India is in paper industry, which consumes sizeable proportion of the total annual bamboo production. Bamboos are good soil binders owing to their peculiar clump formation and fibrous root system and hence also play an important role in soil and water conservation.

Bamboos play a very important role in many countries and its ecosystems, both natural and man-made, especially in hilly reign. In forest areas they provide useful products as well as valuable wildlife habitats, and annual harvesting without large machinery minimizes environmental disturbance. In many rural areas bamboos are also cultivated to support subsistence agriculture through the provision of animal fodder and manure, fencing and tools, as well as housing, thus reducing pressure on forests and grazing areas. In shifting cultivation, the rhizomes allow rapid reestablishment of soil cover and fast nutrient recycling. In steep or eroding areas their unique rhizome and rooting systems stabilise slopes and reduce

soil erosion. Throughout the Hilly area they are actively helping to maintain the ecological balance in delicate natural and man-made environments. Because the distribution of bamboos is so concentrated on hilly reign, the ecology of bamboos is a subject of particular regional importance.

Bamboos also play a very important role in world wide, its help to contributing greatly to ecological stability and soil conservation. Despite this many natural resource managers in the hilly area are reluctant to plant or utilize bamboos because of certainties concerning their life history. Not so the hilly region farmer, whose fragile subsistence lifestyle has relied upon bamboos since time immemorial.

Bamboo is an important forest resource in many countries of Asia. As overexploitation rapidly depletes bamboo along with other forest resources, bamboo cultivation has received increasing attention in many countries and from various international organizations for ecological, economic and social reasons.

## **2.2 History and Origin:**

There is existence of bamboo on earth since 200 lakh years bamboo can be cultivated in dry atmosphere and humid tropical soil. The salty and water lagged soil it's not grow. Bamboo is the fastest growing grass; bamboo is capable to create moso (BIOMASS). These are almost 90 genera and 1500 species of bamboo in the world. Bamboo Only once get flowering and after that its dies. Now days in this business new technology are used, therefore it is called "poor man timber to rich man Fancy". In the 21st century bamboo is the best option as wood for building.

Therefore it is best raw material for paper industries .It is also used for various purposes so that it is apt to call it "poor man timber". For human being bamboo are useful from birth to death.

The plant known as bamboo to the entire world has been around and used for centuries records dating back more than seven thousand years talk about products made of bamboo such as arrows, paper, building materials, and

books. Because of its origins, the current way it is used, and the economic sustainability of the plant, bamboo is an excellent resource. While bamboo grows everywhere in the world except those places with extremely cold and hot climates. It is thought to have originated in China, where the first use of bamboo to make every day items was recorded. This tall, hearty grass (yep, bamboo is technically grass) was used for as many products as they could manage, as it was a quickly renewable resource. The species of bamboo that we know today evolved from prehistoric grasses between thirty and forty million years ago, long after the extinction of the dinosaurs. It then became the major food source for herbivorous animals, eventually becoming a food source for the modern human being as well.

Bamboo is the name given to a group of perennial evergreen plant that is commonly found in Eastern Asia, the Americas, Australasia and sub-Saharan Africa. In Eastern and South Eastern Asia, the plant is of high economic importance, where it is used in gardens, for food and as a crucial material for building. As a woody plant, it is hardy, and can be found growing in a diverse range of climates. From the tropical jungle environment of Chile, to the high cold mountain slopes. In fact it is only Canada, Europe, Antarctica and Western Asia where bamboo is not found as a native plant species. It has however been introduced to these areas too, and usually takes to the climates in these places just as easily. One of the main factors behind the usefulness of bamboo over history, and indeed its success as a plant on such a large scale, is the rate at which it grows. As the fastest growing plant on earth, bamboo has been measured at having a growth rate exceeding one metre per hour for short periods. Studies have the record for daily growth as 121cm over a 24-hour period. Although the modern plant is a little shorter, heights of 250 feet were not unusual for prehistoric bamboo varieties.

### **2.3 Definition of Bamboo:**

Following definitions are help to clear about bamboo.

1. “The common name of various tropical and subtropical, perennial, ornamental grasses in five genera of the family Gramineae characterized by hollow woody stems up to 6 inches (15 centimetres) in diameter”.
2. **Definition as written by Terry:** “Any of several woody tropical grasses with hollow stems, typically from tropical climates, bamboo plants are botanically organized in the Arundinaria, Bambusa, Dendrocalamus Phyllostachys, and Sasa genera”.
3. **Another definition stated as:** “Any of a number of semitropical or tropical grasses (subfamily Bambusoideae) often resembling trees, with perennial, jointed stems that are woody, hard, springy, and often hollow and sometimes grow to a height of c. 36 m (c. 120 feet): the stems are used in light construction and for furniture, canes, etc., and the young shoots of some species are eaten”.

From the above definition we can say that bamboo means:

1. Any tall tree like tropical or subtropical fast-growing grass of the genus Bambusa.
2. Having hollow woody-walled stems with ringed joints and edible young shoots (bamboo shoots).
3. Any of various bamboo-like grasses of the genera Arundinaria, Phyllostachys or Dendrocalamus.

## **2.4 Bamboo Plants:**

A bamboo is belong to gramineae family and has about 90 genera with over 1500 species. It flowers rarely and in irregular cycles which are not yet clearly understood. Bamboo is an extremely diverse and hardy plant which can easily adapt to varied climate and soil conditions. While dwarf bamboo species grow to only a few centimetres (cm), medium sized bamboo species may reach a few meters (m) and gaint bamboo species grow to 30 m, with a diameter of up to 30 cm. Bamboo stem are generally hard and vigorous, and the plant can survive and recover after severe calamities, catastrophes and damage.

## **2.5 Bamboo and Bamboo Business Livelihood Activity:**

The origin of bamboo business is traced form the beginning of the civilisation when man started cultivation of food crop thousand year back People started making bamboo product ( as like air bow, baskets, mats and many other products of household use) with Bamboo that was largely available in nearby forests. Later, mostly tribal and rural people depend on Bamboo and closely related bamboo and bamboo business livelihood activity.

India is primarily a rural country with about three-quarters of its population residing in its 600,000 villages. Out of these, an estimated 170,000 villages with a total population of 147 million are located in the vicinity of forests. A vast majority of the Indian population depends on forests for meeting basic needs. Because of it are many uses including agricultural implements, handicrafts, construction material, as food, fodder and medicine. Bamboo is in great demand throughout the country. Bamboo craft is one of the oldest of traditional cottage industries in India.

In terms of employment, the Bamboo sector currently generates 432 million work days annually. Bamboo based handicrafts alone employ nearly 10 million people. The noteworthy aspects of this employment is that

women constitute a majority of the mat weaving and Bamboo crafts work and out of 68 million tribal population, 50% depend on Non Timber Forest Produces like Bamboo for their livelihood requirement. As of now the paper and pulp industry is the only major industry to provide employment to the people. The Bamboo sector can potentially provide in the following ways:

- Direct employment (Plantation, maintenance and extraction).
- Self-employment (craft workers).
- Secondary employment based on forest industries.

Statistics reveal that a single hectare of Bamboo plantation with 500 clumps generates about 384 work days of unskilled labour and 48 workdays for supervisory staff over a period of 30 days. Over the years not only have livelihoods of people dependent on Bamboo been threatened, the industrial enterprises too have suffered setbacks due to improper and unsustainable management of the resource. The unavailability of raw materials and the inadequate quality has lead artisans to shift away from Bamboo crafts. The change in policy while it did not bring any real benefits to the people proved to be a big blow to the industries dependent on Bamboo. The state was found unwilling to supply raw material while the private growers were in no position to do so. Thus livelihood options of the rural population as a whole have been seriously compromised due to faulty policies and half baked solutions of the government. The local and regional developmental role that Bamboo has played over the centuries of local exploitation in the Bamboo growing regions of India is however well documented. In many regions of India the Bamboo resource has been used by the local inhabitants as a vital raw material on which their material culture is centrally dependent. The centuries of use and experience are embedded in the local knowledge systems that we are just now beginning to appreciate and adopt for contemporary applications. However the beneficial role of Bamboo in the social and economic development of these communities is not fully

understood by the general population and needs to be promoted by suitable communication efforts to enhance the status of this resource in the minds of the modern Indian.

## **2.6 Characteristic of Bamboo Business :**

Above information clears some characteristics of bamboo business.

- This business activity is done in hilly area.
- This business is traditional done in rural area.
- Low-income level and poor people are closely related to bamboo business.
- Bamboo is also known as poor man timber.
- In rural area various livelihood activity are done through bamboo.
- It is principal sources of bamboo handicraft workers in rural areas.
- It is help to economical uplift to cultivators, artisans, bamboo purchasers, traders and entrepreneur's etc.

## **2.7 Objective of Bamboo Business :**

The objectives of the bamboo business are as follows:

- To cultivate in waste lands and it is benefit to farmers as sub crop.
- To contribute in local Bamboo purchaser household income.
- To generate employment in rural areas as well as urban areas.
- To generate revenue through various tax policies.
- To develop small scale industries as well as large scale industries such as paper industries construction, charcoal etc.
- To promote marketing and bamboo based product and by-products.
- To promote bamboo craft business in rural as well as urban areas.
- To promote growth of bamboo cultivation.
- To regulate bamboo business through Forest department.



## **2.8 Use of Bamboo:**

Bamboo has been used for eons for many applications, from a food source to a building material. But with the age of modern materials, many people don't understand the scope of uses for bamboo. The shoots can be picked early for eating, and the wood of older canes can be treated and used as anything from decoration to instruments. Thankfully, many manufacturers have seen all the products that can be made from this highly renewable resource and have begun to utilize bamboo in some fascinating ways.

### **1. Decorations:**

From picture frames to room dividing screens, bamboo can make some elegant and exotic decorations for the home. Depending on the manufacturer, bamboo decorations can be the rough finish of natural bamboo that reminds people of tropical getaways, or the sleek, lacquered finish that creates a modern elegance that many people remember. Bamboo can also be colour so that it can fit into any décor.

### **2. Building materials:**

More and more furniture, flooring, and even homes are being built with bamboo. Whether people like the look of the bamboo, or the way it holds up, it is becoming a more popular building material that many people are recognizing. The smooth floors hold up well in kitchens and other rooms, and the furniture, bound attractively with rattan or leather, gives any room a modern look.

### **3. Fabrics and clothing:**

A fabulous trend right now is bamboo fibres being used in fabrics and clothing. Bedding made of bamboo fibres is as soft as or softer than most cotton beddings, and drapes with the look of silk without the expense. It is becoming a mainstream trend to have bamboo fabric products or clothing, populating many major chain retail stores.

#### **4. Cooking:**

Cooking with bamboo is nothing new in Asian culture. Bamboo shoots are a common food in that part of the world, and have also migrated into cooking utensils. Bamboo cutting boards are notoriously good for not dulling blades on knives as quickly, while bamboo utensils like wooden spoons are excellent for not scratching the bottoms of expensive non-stick cookware.

#### **5. Agriculture:**

Bamboo started out as a natural plant in most places, but has become a large part of agriculture. From being the main crop of a farm to be harvested for other uses, or as the channel linings for irrigation systems, bamboo fits naturally into agriculture. Of course, bamboo is also grown as a food source and as a garden plant as well, the woody grass being an excellent addition to any garden.

#### **6. Weapons:**

While this is rarely seen any more, bamboo was once used to make many different types of weapons. From blow guns to archery bows and arrows, bamboo made light but strong weapons for many centuries. Though they aren't used as frequently any more, even gunpowder guns have been made with the hollow tubes.

#### **7. Instruments:**

Hollow tubes make excellent instruments, whether it is a flute or a drum, and bamboo is one of the best bases for instruments. The light, durable quality of the bamboo is coupled with its musical potential, and creates some of the most beautiful sounds that music has ever heard.

Of course, these aren't all the uses for bamboo. There are many other types of products that can be made of bamboo, and all are coming back into their own as bamboo continues to grow more popular in the main stream economy.

## **2.9 Bamboo Product:**

It seems like hundreds of products can be made from bamboo. From household items to the entire house, bamboo products are nothing new to society. Ancient civilizations were using bamboo for building long before they were using other materials and this trend has faded slightly over the centuries, but is now making a comeback in parts of the world, becoming a popular resource. The major products and uses of bamboo in India are mentioned below:

### **2.9.1 Numerous Products:**

Bamboo has been made into numerous products over the years. From raw products like bamboo charcoal or edible bamboo shoots, to finished pieces like furniture and instruments, there are many kinds of bamboo products out there. Whether they are made of raw or treated bamboo, they all seem to be used with more frequency now that we are re-discovering the versatility of the products. Some bamboo products include:

- Charcoal
- Alcohol
- Bed sheets
- Blinds
- Paint brushes
- Bicycles
- Cutting boards
- Clothing
- Fabrics
- Flooring
- Garden plants
- Matting
- Instruments

### **2.9.2 Unusual Products:**

There are also some very unusual products made from bamboo out in the world. Most people would never think these products could be made with bamboo, but they hold up just as well as metallic counterparts. These products include:

- Record player needles
- Roofing
- Umbrellas
- Wedding favours
- Sugar (as in sugar cane)
- Deodorizers
- Beer
- Beehives

This is only a tiny representation of what kinds of products can be made with bamboo. There are hundreds of others, all waiting to be accepted into mainstream society as great products to replace those out there made of less renewable resources.

### **2.10 Bamboo cultivation:**

There are more than 140 species found in the country out of which 60 species are cultivated in it bambusa and dendrocalamus are two main species of bamboos. Which are cultivated thought the country. Bamboo (plant of the gramineas (grass family) require chiefly of warm or humid tropical regions. It is most abundant in the monsoon area of East Asia. Bamboo cultivation requires 8 to 25 C temperature, Average 750 MM rainfall and humid tropical soil. The salty and water lagged soil should not be utilized for bamboo cultivation. New bamboo plants are produced mainly by using seeds and root of bamboo while producing new plants from seeds two types of plants are cultivated.

1. Showing seeds in the Bunds (Gadi Vaafa).

2. Showing seeds in polyethylene bags.

To create new plant of bamboos, seeds should plant on bunds/ gadi vaafa, for that the length of the bund should be put into the left side of the sloping, the width of the bund (Vaafa) should be 1 meter and length conveniently 10 meters, by putting 30 centimeters spacing in bund (vaafa) in left line. Seeds should be planted in September and October after 3-4 month plant would be cultivated in polyethylene bags and these small plants are used for cultivation in the months of June and July.

Plant can be polyethylene bags for this we should take 25 cm X 12 cm polyethylene bags in it mixture along with soil, sand, and farm yard manure (FYM), dung in the proportion of 1:1:1 and in each bag 3-4 Seeds should be sowed with timely water uptakes.

In polyethylene bags plant grows faster and it's required less seeds for planting in the month of April and May. Pits should be dug out at 5 meters distance and plant are planted in pits of 60 cm X 60 cm X 60 cm pits should be dug much before the rainy season and the dug out soil exposed to weathering while filling up the pits with the soil, mix farm yard (dung) manure (FYM), 50 grams ammonium sulphates and 200 grams super fospect and after sufficient raining plant should be cultivated. After planting in the three or four years duration plants grow well, by that time first two or three years of it we can take alternate crops such as Moong, Dal, Udid, Soya and Kulith etc. in two line of the plantation. Similarly bamboo cultivation helps to soil conservation and its help to environment.

### **2.11 Problem of Bamboo Business:**

Despite the available potential under the Bamboo sector viz. availability of land, availability of technology, and availability of credit, as also. Government thrust, the sector has not gained the desired momentum in the country. The main limiting factors in the promotion of the sector are:

### **1. Lack of Awareness:**

Bamboo has been traditionally raised; to a limited extent, in village commons and homestead gardens. However, it still remains a forest species in respect of industrial use and commercial plantations. There is a need for changing the 'forestry mindset' to the 'farming mind set' and creating awareness on the commercial viability and profitability of the species.

### **2. Marketing Problem:**

In many states, the state government has what amounts to monopoly rights over the collection and sale of non-timber forest products (NTFPs), through either forest departments, state-run forest development corporations, or designated agencies called LAMPS (Large Scale Adivasi Multi-Purpose Cooperative Societies) (Hazra 2002, Saigal et. 2002). Because there is no free market for the sale of their forest produce, the products are sold far below their actual value.

### **3. Financing Problem:**

As bamboo business is belonging in hilly and rural area. There are no financial provision for bamboo cultivation and business activity. Farmer and businessman are also lack of awareness about financial scheme provided by Govt. and financial scheme not properly communicated to farmer by related department senses farmer are not giving priority for bamboo cultivation because off non financial scheme and fund by the government.

### **4. Land Ceiling Act:**

The Land Ceiling Act is one of the deterrent factors for entrepreneurs interested in taking large-scale industrial plantations of the species. Plantation crops such as tea, coffee, cardamom and rubber have been relaxed from the purview of Land Ceiling Act. Similar relaxation needs to be extended for the bamboo sector.

### **5. Harvesting and Transport Restrictions:**

It is evident, to meet the domestic and International demand of bamboo, the 'raw material' has to necessarily come from the private sources. The Indian Forest Act. 1927, defines bamboo as a "forest produce", and the species

attracts the felling and transit restrictions under most of the States Forest Rules. Procedures for taking permits are, more often than not, cumbersome, time consuming and harassing. These legal restrictions detract farmers / artesian from raising bamboo on their private wastelands on commercial basis and are one of the most crucial issues in promotion of bamboo sector in the country.

#### **6. Product is Bulky and Transportation Cost is High:**

Bamboo products are high potential but the transportation facilities are insufficient and not proper. Also strict rules and regulations imposed on bamboo transportation by law it become very difficult to carry bamboo from one place to another.

#### **7. Lack of organized Supply Chain Management:**

Though a vast market exists for the bamboo sector, due to no there organized market with assured minimum price regime to encourage the small farmers to take up bamboo plantations on their private wastelands.

### **2.12 Conclusion:**

Bamboo has great potential to substitute wood in housing and industrial sector, and provide employment opportunity for rural people. It also plays an important role in soil conservation and protects the environment.

Bamboo is the most important non-timber forest produce in India. Recently these have enhanced greater popularity because of increased awareness of their importance in socio-economic development. The potential of bamboo is very high for socio-economic development especially in rural areas. It is also understood that bamboo with its fast growth, multiplicity of use and product besides environmental benefits, has caught the imagination of the world.

**Photo 2.1 Bamboo Use for Residual Purpose:**



**Photo 2.2 Traditional Use of Bamboo:**



**Photo 2.3 Bamboo Innovative Craft:**





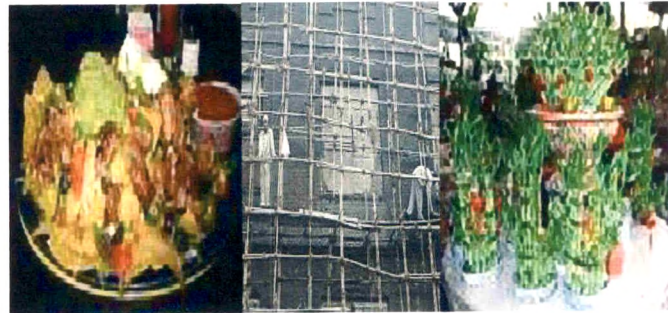
**Photo 2.4 Bamboo Use for Arts:**



**Photo 2.5 Bamboo Musical Instrument:**



**Photo 2.6 Other Use of Bamboo:**



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## हिरवं सोनं : बांबू

हिरवं सोनं म्हणून संबोधल्या जाणाऱ्या बांबूचे महत्त्व सांगणारा 'जागतिक बांबू दिवस' काल (शनिवार) साजरा करण्यात आला. राज्यातही प्रचंड क्षमता असलेल्या बांबूच्या विकाससाठी शासनाने राष्ट्रीय बांबू अभियान सुरू केले. त्याद्वारे औद्योगिक कारणांसाठी बांबू लागवड आणि प्रक्रिया उद्योगाला चालना देण्यात येत आहे. जाणून घेऊ: बांबूविषयी...

**वैशिष्ट्ये**

- पृथ्वीवरील सर्वात वेगाने वाढणारी वनस्पत
- जगाची वाढ विस्ताराचा चार फूट
- धूप झालेला जमिन हिलवागार करणारा
- सूर्यप्रकाशाची तीव्रता कमी करणारा
- अतिनैसर्गिक विनाशकारी अग्नि-नैसर्गिक विनाशकारी वनस्पत
- दलवाई गव्हेतूकडून तोंड शक्य, तोडून घेतून पुनः कालाची पूर्ण वाढ, त्यामुळे पर्यावरणाची हान
- जाग्यातील २,२ अजर्बात अजर्बात लेखांनी

## पश्चिम घाटावर बांबूचे हिरवे सोने बहरेल

**खासदार शेटी : नागार्डेडमध्ये चर्चासत्रात सहभाग**

स. आ. वड : सख्ख मुरावें

देऊंग, उलमय केडा आहे. बांबूच्या उत्पादन वाढवण्यासाठी बांबू लागवडीची मोठी योजना आहे. बांबू लागवड उद्योगासाठी बांबू लागवडीची योजना आहे. बांबू लागवड उद्योगासाठी बांबू लागवडीची योजना आहे. बांबू लागवड उद्योगासाठी बांबू लागवडीची योजना आहे.

## 'चिवारी' बांबूची लागवड वाढवायला हवी

चिवारी ही बांबूची एक दुर्लक्षित प्रजाती असून, त्यामध्ये अनेक चालू गुरामां आहेत, त्याची लागवड वाढविण्याची आवश्यकता आहे.

**प्रसन्न गोते, अजय राणे**

सोमनाथ शहराच्या सुकळीत बांबू हे एक लक्ष म्हणून ओळखले जात आहे, मात्र अजय राणे यांनी १५०० इंचेग नैसर्गिक बांबूचे अनेक जाती आहेत, त्यांची चिवारी ही बांबूची एक दुर्लक्षित प्रजाती आहे. ही बांबूची लागवड वाढविण्याची आवश्यकता आहे.

**बांबू लागवडीसाठी हवामान कसे हवे? लागवड करताना काय पाळतावे? योग्य जाती कोणत्या?**

राज्य सरकार नागार्डेडक, गु. पो. सौराष्ट्र, ता. माडा, जि. सोलापूर

सोनी, मला जवळ

अतिरिक्त, पत्र

सोनी, मला जवळ

अतिरिक्त, पत्र

### आकर्षक बांबू प्लॅट्स

केती तर ते विभागल्याच्या सोमनाथ शहर टाकिले. सध्या विभागल्याच्या बांबूचे प्लॅट्स सोमनाथ शहरात बांधण्यात आले आहे. बांबूची बांधणी करताना बांबू लागवडीची आवश्यकता आहे. बांबू लागवडीची आवश्यकता आहे.

## बांबूपासून मद्यनिर्मिती

सध्या फॅमसुईच्या फॅमसुई बांबूच्या झाडांची भेट देण्याची फॅमसुई आली आहे. स्वातंत्र्य हे झाड भेट म्हणून कोणी दिवस आणि ते चारदा देवते तर त्याचे

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