1. ***Bamboo Contract Farming.***

Bamboo Cultivating Venture In INDIA
Cost and Benefit Subtleties
Bamboo cultivating project presentation The beneath data is about
"Bamboo Cultivating Task Report, Cost and Benefit" The bamboo is an evergreen blossoming plant having a place with the grass Investigation. family. They are considered as the quickest developing plants on the planet. It is seen that a few types of bamboo can develop to right around 90 cm in a day. The plant is of affordable significance in districts of South Asia, Southeast Asia and East Asia. The bamboo I s characterized by the geographic division where it existed like the new world herbaceous, tropical woody and mild woody. It is trusted that there are in excess of 1400 types of bamboo from one side of the planet to the other. This plant is local to warm jungle al and calm climatic zones, however once in a while certain types of bamboo are additionally found to fill in cool rocky areas. Bamboo plants have regular recovery limit and are for the most part found in the woodland regions. The bamboo plant helps in safeguarding for forests by delivering 35% more oxygen and lessening the carbon dioxide in the climate.
Bamboo plants have two distinct development examples like clustering and running. The bunching assortment spreads gradually during the development time frame, though the running assortment ha s forceful development conduct. The normal stature of the bamboo could be assessed around 4.5 to 12 m. However, it is a blossoming plant, the recurrence of blooming is distinctive every one of the animal varieties. Additionally the timespan is very enormous and could go from 65 to 120 years. It

is seen that once the bamboo plant begins blooming then it gradually decays and bites the dust.

Bamboo farming project =varieties of bamboo

Among different species of bamboo found all over the world, there are some commercially cultivated species in India and they are:

Bambusa balcooa

Bambusa bambare

Bambusa nutans

Bambusa pallida

Bambusa tulda

Bambusa vulgaris

Dendrocalamus brandisii

Dendrocalamus giganteus

Dendrocalamus hamiltonii

Bambusa polymorpha

Dendrocalamus strictus

Oxytenanthera stocksii

Melocanna bambusoides

Ochlandra trbambusoides

Schizostachyum dullooa

Throstachys oliverii

Bamboo farming project – uses of bamboo There are many uses of bamboo out of which a few are listed here.

Fencing

Support material in agriculture

Construction purposes

Handicrafts

The shoots are edible

Making furniture

Panels and particle boards

Pulp and paper • Biomass production

Making musical instruments

Bamboosa balcooa

Height	12 - 22 m
Diameter	6 - 15 cm
Growth Habit	Clumping
Climate	Tropical – Subtropical
Hardiness	-4°C
Origin	Northeast India

Bamboosa balcooa also known as Female Bamboo is a tropical clumping bamboo originating from Northeast India. This bamboo species is often used as a food source, in scaffolding, for paper pulp

or wood chips.
Branches: Several to many clustered branches with 1-3 larger dominant branches. Branches usually occur from middle of the culm to the top. Branches from the lower nodes are leafless and hard, and sometimes thorn-like. Culm internodes are on average between 20-40 cm long.
Culms: The culms of Bamboosa Balcooa are on average between 12-22 m high and 6-15 cm in diameter. Culms are grayish green and thick walled, where the diameter of the cavity is about one-third of that of the culm. Nodes are thickened with a whitish ring above, and have short small hairs below.
Habitat: Bambusa balcooa grows up to an altitude of 700 m in tropical monsoon climates with an annual rainfall of 2,500 - 3,000 mm. It grows on any type of soil but prefers heavy textured soils with good drainage and a low pH of about 5.5. An annual production of 1200-1700 culms/ha is reported from Bangladesh.
Leaves: Leaves are narrow and are on average 15-30 cm long and 25-50 mm broad.
Mechanical properties: The compressive strength ranges from 39.4 to 50.6 N/mm2 in green and 51.0 to 57.3 N/mm2 in air dry condition. Modulus of rupture varied between 85.0-62.4 N/mm2 in green also 92.6-69.6 N/mm2 in air dry condition. Modulus of versatility 7.2-10.3 kN/mm2 in green, 9.3-12.7 kN/mm2 in air dry condition (Kabir et al. 1991).
Seeds: Gregarious blooming and seed-setting typically happens each 35-45 years, blossoming was last announced between 1983-1988.
Shoots: Youthful Bambusa balcooa shoots have a blackish-green with yellow tone. Culm sheaths are brown or orange touched, covered inadequately with dim earthy colored hairs.
Employments: Stems are utilized as a structure material for houses, spans, fishing floats, is greatly utilized for platform, casings of cart hoods, crates, woven mats and for farming and fishing carries out.
This bamboo species additionally fill in as a natural substance for the wood chip industry, paper mash, shoots are burned-through as a vegetable and leaves are utilized as grub.

Bamboo cultivating project – soil and environment

The dirt for bamboo manors ought to be all around depleted. They are found to fill well in sandy topsoil or loamy mud soils. It has been seen that bamboos additionally fill in damp soils. The dirt with somewhat acidic nature or with pH around 4.5 to 6 is really great for bamboo development. The dirt with high water table is ideal for the development of bamboo. The best environments for bamboo development are the warm mild and heat and humidities. It is accepted that the under these conditions, it grows 3 inches a day. Precipitation under 1200 mm a year isn't adequate for bamboo development. Moistness of the space ought to be in the middle of 75-85% and the breeze speed over 80 km/hr can create issues during the improvement stage.

Bamboo cultivating project – engendering techniques

The establishing material for bamboo might come as seeds, wildings, air-layering, balances, cuttings and tissue refined plantlets. This multitude of establishing materials must be brought up in a nursery prior to relocating them into the primary region.
Spread by seeds for enormous ranches is a seldom utilized strategy since seeds are created when bamboo plants blossom and the span might go from 40 to 80 years. Engendering by seeds produces seedlings following 8 a year, however needs great water and supplement supply. Wildings can be gotten from youthful bamboo groups by scooping them with a spade. Numerous seedlings can be raised utilizing this technique, yet it is seen that the foundation of the plant would be poor attributable to the unsettling influence in the root framework while evacuating.
Vegetative spread or proliferation through rhizomes is the most ideal way for huge manors and is a generally utilized strategy. The lower part of the culm with 3 to 5 hubs, rhizome and roots together is known as a bamboo offset. Gathering the counterbalances at the perfect opportunity is a significant element in bamboo proliferation and is done generally during the long stretches of February till April. A solid parent plant is picked for gathering the rhizome. Assuming the types of bamboo are thick walled, then, at that point, a 1-2 year old culm is chosen and the offset is eliminated else assuming it is a slim walled types of bamboo then a gathering of 2-3 balances is

taken out. The rhizome with the roots should be painstakingly disengaged from the balanced and enclosed by banana leaves or ought to be sacked with wet sawdust. They are relocated into the primary field right away.
2-3 years of age culm cuttings can likewise be utilized as establishing material, however fruitful establishing and shooting is hard to accomplish. Likewise it is observed that buds confronting downwards don't develop assuming the climate is warm.
Bamboo cultivating project – land planning and establishing The site chose for bamboo manor ought to be gotten free from hedges, grasses and other undesirable materials or plants. The development region ought to be cleaned in order to work with intercropping. An appropriate format is planned and pits are burrowed for planting. The size of the pit relies upon the sort of establishing material being utilized. For the most part the pits are made huge and profound so the recently established bamboo gets set up without any problem. The components of the pit are 60 x 60 cm in weighty precipitation regions. Little pits of size 30 x 30 cm are burrowed for very much established seedlings. Where the precipitation is sparse, pits of size up to 1 m are made to work on miniature catchment. The separating between the seedlings ought to be 5 x 4 m, with the goal that 1 section of land of land can roughly oblige 200 plants. The offset ought to be put 10-20 cm beneath the ground and ought to be covered with soil. It is important to somewhat press the dirt around the seedling.
Manure and compost prerequisites
Top soil blended in with 2 kg of phosphoric manure is filled in each pit up to 10 cm and planting ought to be done not long before the blustery season. Bamboo is a plant which needs overabundance supplements. One bunch of mature bamboo needs 5 pounds of NPK compost in a year. The plants need a consistent inventory of nitrogen and potassium. The green shade of the bamboo and the development of new shoots rely upon the substance of nitrogen in the dirt. The improvement of solid, sound root mass relies upon how much potassium in the dirt. A 13-3-13 exceptional manure is suggested for bamboo plants since it delivers the nitrogen and potassium gradually into the dirt so the inventory is consistent and as needed by the plants consistently. Macronutrient silica is additionally needed by the plants for outrageous development of the bamboo bunch.
water system necessities
The development of solid bamboo relies vigorously upon water system. A dribble water system framework or a sprinkler course of action can be a successful answer for providing water routinely to the plants. During the initial not many months, watering ought to be done consistently on the grounds that the bamboo plants require some investment to build up in the dirt. When the plants get established solidly, then, at that point, the time period supply can be expanded.
intercultural tasks
Weeds in the dirt can forestall the development of bamboo by retaining the supplements from the dirt. Thus, ordinary and efficient weeding ought to be finished. The weeds eliminated from the homestead ought to be arranged appropriately. 60 cm around the bamboo plants ought to be free all of the time from weeds. Mulching helps in legitimate bamboo development. Regions which have less precipitation or have dry climate conditions, mulching assists with forestalling soil water from dissipation. Dry natural matter or dry leaves can be spread around the foundation of bamboo plants as mulch material to safeguard soil dampness and furthermore to control weeds. Mulch likewise shields the youthful bamboo shoots from direct daylight and works with in delivering great quality shoots. Dealing with the bunch is exceptionally fundamental as this works on the usefulness of the ranch. The undesirable culms ought to be eliminated as a piece of support action to decongest the bunch. Old and spoiled culms ought to be taken out to advance the development of solid shoots. Intercropping is finished during the early years (3 years) of establishing bamboo. Most plants which are intercropped with bamboo are ginger, turmeric, chillies and other shade adoring plants.
Bamboo cultivating project–irritation and infectious prevention Sicknesses normal in bamboo plants are:
Bamboo blight
Branch bite the dust back

Witches' brush
Little leaf
String curse
Leaf rust
Leaf spot
Foliage curse
Rhizome and root decay

The principal significant stage in illness the board is to screen the plants consistently. The majority of the illnesses can be constrained by the cutting and expulsion of contaminated pieces of the plant. The trash, in this manner gathered ought to be singed. The social tasks ought to be completed before the rainstorm.

Use of prophylactic fungicides can likewise assist with controlling the spread of infections. Bothers that assault the bamboo plants are:

Aphids
scales
Mealybugs
Termites
Creepy crawlies

Non-compound insecticidal cleanser is the most ideal way to keep the bugs from swarming the plants.

Bamboo cultivating project report – gathering and yield

A few types of bamboo recover normally subsequent to collecting. Collecting in bamboo is finished by choosing the culms rather than felling the trees. The yield of bamboo is prepared for collecting in ordinarily 5 years. The collecting ought to be done from the middle in light of the fact that new culms are delivered outwards and the more established cluster is left at the middle. A couple of solid bunches are left on the tree to help the new delicate culms for a couple of months any other way they would twist. Culms which are dead or become dry ought to be taken out. Stems under 2.5m ought to be eliminated in the event that the bunch has in excess of 10 culms. It is important to clear-fell the vigorously clogged bunches. Culm cutting is done distinctly in the dry seasons and not during the downpours. By and large a long sharp blade or a bended saw is utilized for reaping the bamboo. The normal load of every culm is viewed as 15-20 kg and it is accepted that 1 section of land of land with 200 bamboo plants can create around 13.5 tons of bamboo on the fifth year of planting.

Bamboo cultivating project report post collect administration

Saving the reaped bamboo is profoundly significant on the grounds that they are powerless to rot and assault by powder post insects. Some non-substance techniques are utilized to treat collected bamboo, for example,

The culms that are cut at the base are left remaining on the cluster to such an extent that absorption of the leaves continues and the starch content is diminished which subsequently expands the solidness of the culm against the pervasion.

Putting away the culms over the chimneys inside the houses darkens the culms and because of the hotness the starch inside it gets obliterated. For the most part bamboo culms can likewise be kept in warming loads with temperatures around 120150˚C for 20 minutes to ensure them against creepy crawly assaults.

The culms of bamboo are painted with slaked lime to such an extent that the water retention is postponed and prompts higher opposition against organisms.

The newly cut bamboo culms are absorbed mud or stale water for half a month so the starch content Is diminished and the bamboo becomes impervious to drills. Later they are dried in conceal.

The bamboo ought to be painted with water anti-agents, so they are liberated from shape, creepy crawlies and decay.

A few synthetic substances are additionally used to safeguard bamboo and are viewed as m metal successful than the non compound methods.

Synthetic compounds are applied on the bamboo to control pervasion by method.
The newly slice bamboo culms are made to stand upward in an additive arrangement so the culm is covered with synthetic substances.
At times large pits are burrowed and fixed with plastic sheets and are loaded up with a synthetic arrangement into which the cut bamboo culms are doused for a very long time.
Butt treatment strategy is a conservative method of treating the bamboo culms. The base part is dunked in a con tainer with additive answer for example 10% copper sulfate, which further develops the assistance life of bamboo culms.

Bamboo cultivating project report financial aspects/cost and benefit examination

The assessment of developing bamboo in one section of land of land is given here. T relying upon the space of cultivating he esteems or figures might change and the expense of unrefined substance accessibility around there. The information can be simply utilized for reference and it is encouraged to really take a look at the nearby market for offices to begin bamboo development. Dispersing between the plants is a significant element to decide the number of plants can be obliged in one section of land of land. The base number of plants per section of land of land when the dividing is 5 x 4 m is 200 around. Though when the separating is decreased to 1.25 x 1.25 m then the quantity of plants that can be obliged are 2564. We expect to be the accompanying:

Material charges :

1 acre of land of land can oblige plants: 500.
1 bamboo plant cost: Rs 100.00.
Compost required per plant in 1 year: 5 kg.
Cost of excrement: Rs 2.5/kg (the expense might shift contingent upon the kind of compost like FYM or natural).
Cost of introducing trickle water system office for 1 section of land of land: Rs 35000-55000 (this cost might differ contingent upon the separating between the plants).
Water systems needed in 1 year: 20 (roughly).

Work charges

Compensation of work each man-day: Rs 400.
Land arrangement requires: 3 man-days (Rs 2400, in the event that 2 workers work).
20 pits burrowing and topping off: 5 man-days (Rs 4000 for 2 workers).
Planting and following: 5 man-days (Rs 2000).
Utilization of plant security: 2 man-days (Rs 800).
Manual evacuation of weeds: 5 man-days (Rs 2000 in the first year).
2 man-days (Rs 1600 in the second year).
Pruning in the third year: 5 man-days (Rs 2000).
Other soil exercises: 2 man-days (Rs 800).

Collecting in the fifth and sixth year: 10 man-days (Rs 5000 every year).

Manual and labour per acre	Investment in one year (rs)	investment in 5 years (rs)
Cost of planting material	25,000	
Irrigation system	50,000	
Manure and fertilizers	30,000	10,000
Cost of insecticides and pesticides	5,000	5,000
Labour charges	5,000	5,000
Others	5,000	5,000
Total charges	1,20,000	25,000

Income and benefit

Number of trees that can be gathered are: 500 (it is expected that there is a 10 % death rate).
Per cluster the quantity of culms is:5.
1 acre of land of land produces culms: 2500 (roughly).
Weight of every culm of bamboo (normal): 15 kg.
Tones of bamboo per acre of land: 37.5
The normal deal cost of bamboo culms per piece is: Rs 100 (may fluctuate contingent upon the quality and space of offer).

So the absolute cost of 2500 culms is: Rs 2,50,000 (After 4h year of planting).
Benefit from the interest in the fourth year would be: (Rs 2,50,000 – Rs 1,45,000) = Rs 1,05,000.
Next ensuing year the quantity of culms per bunch increment to 10 (normal), so the pay in the fifth year would be: Rs 2,50,000 – Rs 25,000) = Rs 2,00,000.

It is vital to take note of that the other additional charges like the power, transport, work shed, post gather the board, land, farming gear and so forth have not been remembered for the estimation. These might raise greater interest into the business and furthermore every resulting a seemingly endless amount of time after the first year of establishing needs a few interest in the process of childbirth, excrement, manures and plant assurance materials like the fifth year. Now and again ranchers top off the 10% loss of plants by replanting new plants in the second year.

Bamboo cultivating project – credits and subsidies

NABARD has a bamboo improvement strategy to assist with fostering the bamboo development area. It gives subsidizing under the RIDF-JFM model and furthermore miniature accounts through different Ngo's. For the specific measure of appropriation and advance, it is prudent to visit the closest NABARD office or reach them via telephone for help.