

Astam Tea Farm Proposal

***A perspective of Agricultural Entrepreneur to
Promote Economy & Tourism of Machhapuchhre Rural Municipality
Ward No. 6***

Submitted By:
Radha Adhikari
Himalayan Tea and Vegetable Farm
(Himalayan Chiya Tatha Tarkari Farm)

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Table of Contents

- 1 Introduction 3**
 - 1.1 Importance of Tea Garden to Tourism 3**
- 2 Our Strategies..... 4**
 - 2.1 Market Research..... 4**
 - 2.2 Location 5**
- 3 Implementation Plan 6**
 - 3.1 Financing 6**
 - 3.2 Plantation and Cultivation..... 8**
 - 3.3 Processing and Packaging 9**
 - 3.4 Marketing for Sales 10**

1 Introduction

Nepal is known for producing high-quality teas that have a unique flavor and aroma. The tea produced in Nepal is mainly sold in the domestic market, although it is also exported to a number of countries around the world.

Among different species of tea plant, *Camellia sinensis*¹ is a popular tea in different regions of Nepal² like Illam. Many tea farms are major tourist attractions for people visiting Pokhara, where the farmers pick the best tea leaves and sell them to Nepali and international tourists.

Villagers in Astam often rely on agriculture and livestock farming as their main sources of income. Rice, maize and millet are the main crops grown in Astam, and villagers also raise animals such as cows, goats, and chickens.

Tourists visiting Nepali villages can expect to experience the unique culture and way of life of rural Nepal. Many tourists visit Astam Village to learn about traditional agriculture and livestock farming practices, as well as to participate in community activities and festivals.

1.1 Importance of Tea Garden to Tourism

Tea gardens are a popular tourist destination in many villages where tea is grown, such as Darjeeling, Illam, and Lwang(Kaski). Tourists visiting tea gardens can learn about the history and process of tea production and may have the opportunity to participate in guided tours of the tea garden and tea factory.

Tourists visiting tea gardens may have the chance to see the tea plants up close and learn about the different varieties of tea that are grown. They may also be able to watch the tea leaves being plucked and processed and learn about the different methods used to produce different types of tea, such as black, green, oolong, and white tea.

¹Tea has been grown in Nepal for centuries and is an important agricultural crop in the country. It is grown in the eastern and central regions of Nepal, with the largest tea-producing district being Jhapa. Tea is typically grown at high altitudes, between 1,500 and 2,000 meters above sea level, in terraced fields.

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2 Our Strategies

Starting a tea farming business can be a rewarding and challenging venture for entrepreneurs. There are a number of factors to consider when starting a tea farming business, including location, financing, and marketing. We consider the following strategies for developing tea farm in Astam:

2.1 Market Research

2.1.1 Demand

We find that the demands in the international market varies from region to region, with some countries consuming more tea than others. For example ³, the United Kingdom and Ireland are known for their high tea consumption, with the average person in these countries consuming around 2.1 kg of tea per year. Other countries with high tea consumption include Turkey, where the average person consumes around 1.8 kg of tea per year, and Russia, where the average person consumes around 1.7 kg of tea per year.

³ According to the International Tea Committee (ITC), global tea production in 2020 was approximately 6.4 million metric tons, with the largest producing countries being China, India, and Kenya.

According to the statistics of World Tourism Organization (UNWTO), the maximum number of tourists visiting Nepal come from France, Spain, USA, China, Italy, Turkey, Mexico, Germany etc. in an decreasing order. Looking at the data, it appears that most of them are Europeans. The demand of tea is high among these countries. On the contrasting side, tea consumption is relatively low in some other European countries, such as Germany (ranking 8th), where the average person consumes around 0.9 kg of tea per year, and Italy, where the average person consumes around 0.5 kg of tea per year.

If we observe the local market, there is an increasing trend of tea and coffee enthusiasts as small cafes are being started by young entrepreneurs. In Pokhara alone, there are already more than 23 new tea cafes established in Mahendrapool, Newroad, Simpani, Lakeside, Bagar etc.

2.1.2 Competition

The majority of the tea leaves available in the market are from Jhapa, Illam, India and China in an decreasing order. While the major trade of tea involves CTC Tea (which is generally powdered form of tea), the specialized tea shops only sell the tea leaves. The locally produced tea leaves are available from Lamjung, Lwang and Kande. With the growing tourism, the im-

portance of flavor of tea leaves and the quality from different parts of Kaski district will determine the market trends. The market is already

2.2 Location

Tea plants grow best in well-draining soil that is rich in organic matter, and they need plenty of sunlight and water to thrive.

The proposed location (known as Khorja) is in Astam Village facing north towards the Machhapuchhre and Annapurna Himalayan Ranges.

The proposed area is 1450 m above the sea-level and constitutes of terraced farm lands. The region is covered with grassland in recent days because of difficulty in carrying fertilizers and water for seasonal crop production (e.g. millet, corn and wheat).

It receives adequate amount of rainfall during the monsoons. During the rainy season, the stream distance from the area is just 50m.

3 Implementation Plan

3.1 Financing

3.1.1 Budget Plan

S.No.	Particulars	Description	Rate	Quantity	Total
1	Land Development	Land Surface Development (Man-days)	1000	500	Rs.500,000
2	Fencing	Barbed Wires and Poles (Lump Sum)	-	-	Rs.700,000
3	Organic Fertilizers	Per Seedling	100	6000	Rs.600,000
4	Seedlings	-	20	6000	Rs.120,000
5	Plantation	-	100	6000	Rs.600,000
6	Electric Dryer	For Preparation of leaves	300000	2	Rs.600,000
7	Packaging Machine	For Tea Bags	1400000	1	Rs.1,400,000
8	Inventory & Packaging Hall Construction (1200 sq. ft)	House to store tea and factory equipments	1800000	1	Rs.1,800,000
9	Inventory Supplies	Racks, Cabinets, Lab Equipments	500000	1	Rs.500,000
					Rs.6,820,000

3.1.2 Estimate of Income

The seedling will require 3 years before proper harvesting is to be made. The maturity time depends on meteorological distribution of climate and land type.

After the plant matures, 1 kilo of fresh tea-leaves is expected from a tea plant. When processed, the weight will get reduced due to loss of moisture and weigh around 250 grams.

$$6,000 \times 250 \text{ grams} = 1,500,000 \text{ grams} \quad (1)$$

$$6,000 \times 0.25\text{kg} = 1500\text{kg} \quad (2)$$

Calculation of Tea Value

Rate of Tea per kg = NPR 1500. Estimated Value of Tea is

$$\text{Value} = 1500 \times \text{NRs } 1500 = \text{NRs } 2,250,000 \quad (3)$$

3.1.3 Estimate of Expense

After the tea leaves mature, the expenses of tea farm typically consists of following states:

- **Harvesting Expenses:** After the tea leaves mature, it is time to picking up the leaves. The quality depends on the method used to pluck the tea leaves. For black tea, a person on average day picks 10 kilos of fresh tea. When processed, the tea amount to 2.5 kilos per person. Assuming that labor of a person during the day to be NRs. 1000 per day, the expenses can be calculated as:

Calculation for Value of Labor

$$2.5\text{kg per person} = \text{NRs. } 1000 \quad (4)$$

For 1500 kg of tea the calculation of labor expense is:

$$\begin{aligned} \text{Labor Expense} &= \text{NRs. } \frac{1000}{2.5} \times 1500 \\ &= \text{NRs. } 40 \times 1500 \\ &= \text{NRs. } 600,000 \end{aligned} \quad (5)$$

- **Packaging Expenses:** The packaging process involves preparing the tea leaves for labelling. It consists of rolling the leaves and allowing for fermentation. This can be done at home. Considering present labor cost and time to prepare the leaves, NRs. 30 is the estimated cost for tea processing. For the preparation of tea leaves done in above pattern the estimated expense is:

$$\begin{aligned} \text{Tea Processing Expenses} &= 1500\text{kg} \times \text{NRs. } 30 \\ &= \text{NRs. } 45,000 \end{aligned} \quad (6)$$

- **Electricity Cost:** The cost of drying the tea leaves can be estimated as NRs. 12.00 per kg. So the annual cost of electricity is:

$$\begin{aligned} \text{Cost Electricity} &= \text{NRs. } 12.00 \times 1500\text{kg} \\ &\simeq \text{NRs. } 18,000 \end{aligned} \quad (7)$$

- Annual Maintenance: It consists of pruning of tea plants, weeding and adding fertilizers to the plants.

$$\begin{aligned}
 \text{Annual Incurred Cost} &= \text{Pruning} + \text{Weeding} + \text{Fertilizers} \\
 &= \text{NRs.}(20 + 30 + 50) \times 6000 \\
 &= \text{NRs.}600,000
 \end{aligned}
 \tag{8}$$

- Bank Interest: With Loan of 30 Lakhs, 5% Interest(Agriculture) and Loan Term of 10 years,

$$\text{Yearly Premium} = \text{NRs.}390,709 \tag{9}$$

- Staffs: A caretaker will be employed by the tea farm.

$$\begin{aligned}
 \text{Annual Salary} &= 13 \times 18,000 \\
 &= 234,000
 \end{aligned}
 \tag{10}$$

$$\begin{aligned}
 \text{Total Expenses} &= (5) + (6) + (7) + (8) + (9) + (10) \\
 &= \text{NRs.}(600,000 + 45,000 + 18,000 + 600,000 + 390,709 + 234,000) \\
 &= \text{NRs.}1,887,709
 \end{aligned}
 \tag{11}$$

3.1.4 Growth in Future

The production increases when tea plants grow annually. After 5 years, though for the quality yield of the tea, pruning of tea needs to be done so that the height of plant is 3ft from the ground.

After 3 years, the annual profit can be evaluated as:

$$\begin{aligned}
 \text{Income} &= \text{NRs.}2,250,000 \text{ from (3)} \\
 \text{Expense} &= \text{NRs.}1,887,709 \text{ from (11)} \\
 \text{Profit} &= \text{NRs.}2,250,000(3) - 1,887,709(11) \\
 &= \text{NRs.}362,291
 \end{aligned}
 \tag{12}$$

3.2 Plantation and Cultivation

The proposed area has a total of 20 ropanies of land. We plan to plant around 300 seedlings per ropany. So, total number of seedlings of *Camelia Sinensis* is:

$$\begin{aligned}
 \text{Seedlings} &= 300 \times 20 \\
 &= 6,000
 \end{aligned}
 \tag{13}$$

While some tea plants species are found to live upto 100 years, a tea plant (*Camelia sinensis*) usually lives from 40 to 50 years. They are found to be widely cultivated in China, India, Japan, Taiwan, Nepal, Sri Lanka, Indonesia, Malaysia, Vietnam and Bangladesh.

About Camelia Sinensis: There are two main varieties of the camelia sinensis or thea sinensis: the Chinese type, known as sinensis, with small and olive green leaves; and the Assam variety, known as assamica, which has large, pale, plump leaves. Other varieties have now appeared as a result of hybridization, grafting, propagation from cuttings etc, with many hybrids known as jats or clones.

The cultivated tea plant is a bush with evergreen leaves, the upper surfaces of which are shiny and the undersides matt and paler. The young leaves and buds are covered with a light, silvery down, hence their name known as "Pekoe" ⁴ after the Chinese word Pak-ho which means "fine hair" or "down".

3.3 Processing and Packaging

The process of processing tea leaves involves a series of steps that are used to transform freshly picked tea leaves into the final tea product. The specific processing steps used depend on the type of tea being produced. Here is a general overview of the processing steps that are typically used for processing tea leaves:

- **Withering:** Freshly picked tea leaves are placed in a withering room, where they are spread out on racks or trays and left to wilt. This process helps to remove excess moisture from the leaves and makes them more pliable.
- **Rolling:** After withering, the tea leaves are rolled to break down the cell walls and release the juices and enzymes contained within the leaves. This process also helps to shape the leaves and gives them their characteristic curled appearance.
- **Oxidation:** Some types of tea, such as black and oolong tea, undergo a process called oxidation, which involves exposing the tea leaves to the air. This process causes the enzymes in the leaves to react with the oxygen in the air, which gives the tea its characteristic flavor and color.
- **Drying:** After rolling and oxidation (if applicable), the tea leaves are dried to remove any remaining moisture. This can be done using natural sunlight, warm air, or heat

⁴The top average temperature is between 18°C and 20°C and should have little daily variations. The climate has an affect both in the volume and the quality of the harvest. A climate too humid will give a lower quality, while a dry season can often bring higher quality harvests. High altitude also improves quality with a smaller yield.

Sunlight is important: it is necessary for the formation of the essential oils that give the brew its aroma. The light should preferably be scattered: this is why large trees are regularly planted on tea plantations, they regulate the soil ecology and filter the strong sunrays.

The soil should be permeable, loose and deep since the tea plant's roots can push down to a depth of up to 6m. Soil cover should be at least 1.5m deep. The best areas have a young, volcanic soil which is very permeable and rich in humus, neither basal nor too clayey. Tea is always grown on sloping ground, allowing for natural drainage, since the tea plants, unlike rice plants, cannot survive in stagnant water. This drawback is also a trump card: the tea plant is very resilient, it

sources such as hot air dryers or ovens.

- Sorting: Once the tea leaves have been dried, they are sorted based on size and quality. The sorted leaves are then packaged for sale or further processing.

3.4 Marketing for Sales

Marketing tea requires a combination of strategic planning and creative execution. By identifying our target market, developing a unique selling proposition, and utilizing a variety of marketing channels, we can effectively market our tea and reach a wide audience of potential customers. Our strategies will involve:

- Identification of target market: Determine who the target customers are and what types of tea they are most likely to purchase. This may involve identifying specific demographics, such as age, income, and geographic location, as well as preferences for different types of tea.
- Develop a unique selling proposition (USP): Identify what makes our tea unique and use this to differentiate our product from competitors. This could be factors such as the origin of the tea, the production methods used, or the flavor profile of the tea.
- Use social media and online marketing: Utilize social media platforms such as Instagram, Facebook, and Twitter to promote tea and engage with customers. We can also use online marketing techniques such as email marketing, paid advertising, and search engine optimization (SEO) to reach a wider audience.
- Participate in trade shows and events: Attend trade shows and events related to the tea industry to network with other tea professionals and showcase our tea products to potential customers.
- Collaborate with influencers and partners: Partner with influencers or other brands that are relevant to our target market and that can help us promote our tea brand. This may involve sponsored posts or collaborations on social media or in-person events.