

# District Profile

## ABBOTTABAD



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February 2009

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## **1. Introduction:**

Abbottabad is a district in the North-West Frontier Province of Pakistan. The district covers an area of 1,969 km with the city of Abbottabad being the principal town of this district. Neighbouring districts are Mansehra to the north, Muzaffarabad to the east, Haripur to the west, and Rawalpindi to the south. Abbottabad, the headquarters of Hazara Division, situated at an altitude of 1,225 m (4002 ft) above sea level and surrounded by refreshing green hills of Sarban, is one of the best-known hill resorts of Pakistan. It is situated on the Karakoram Highway (Silk Route) to China, 120 Km from Rawalpindi/Islamabad and 205 Km from Peshawar. The climate is temperate with 4 distinct seasons-springs, summer, autumn and winter. The summer is pleasant while the winter is moderately cold with occasional snowfall. The city is non-industrial, situated in the green Orash valley and is free from environmental pollution. It has a population of over 300,000 with literacy rate of 56.61%. The main tribes are the Abbasies, Tanolis, Awans, Rajputs, Jadoons, Qureshis, Karlals, Sheikhs, and the Syeds.

Abbottabad is a small neat and clean town in spacious valleys surrounded by green hills. It is a popular summer resort, located at the end of Murree-Abbottabad hill tract, noted for its verdant parks, gardens, golf course and pine covered hills. Major Bazaars of the area include Sarban chowk, Ghaniadda bazar, and Cantt plaza.

Abbottabad is blessed with many natural resources. It is especially famous for the production of agricultural products, mining, tourism, industries of various products, and dependence on natural resources. All these produce play an important role in economic uplift of the people of Abbottabad. Some of the minerals mined within the district are barite, dolomite, granite, gypsum, limestone, magnesite, marble, phosphate, red ochre and red oxide.

## **2. History:**

Like Hazara, Abbottabad has seen many invasions from outside by the conquering forces of diverse races, tribes and kingdoms. The modern city of Abbottabad was founded by Major Abbott, the British deputy commissioner of Hazara (1849 to 1853) during British rule in the subcontinent. Major Abbott is credited with making major changes in the administrative setup in the region, so that after his departure, the city was named after him.

The British maintained a sizeable military presence here, evidenced even today by the Pakistan Military Academy (PMA), which has remained as the major training academy for military officers. The PMA provided fame to Abbottabad for many years, prior to the recent development of the city, from a non-industrial backward area, to a busy modern business, economic and academic centre. The creation of Ayub Medical Complex has once more brought the city into the national limelight and spurred a lasting chapter of growth and development. Abbottabad, apart from being famous for its educational institutions and Military Academy, also serves as the gateway to almost all-beautiful places in Pakistan.

The formidable Karakoram &, the enchanting Himalayas can be approached from Abbottabad. Though the importance of the city has been diminished a little by the completion of Karakoram Highway because, in the past the only track available to reach Karakoram was through Babusar Pass, which in its turn, could only be approached through Abbottabad.

### **3. Economic Scenario of the district:**

Abbottabad major economy depends on various alternatives such as, agriculture, Poultry, mining, tourism, industries of various products, and dependence on natural resources. Its population growth rate is higher, and income sources are scarce due to which, the use of natural resources is continuously increasing.

As there is no definite and special Agricultural product of the area so they embrace varieties of products which includes, wheat, maize, barley, and citrus fruit and also different seasonal vegetables such as, potato, tomato, turnip, onion, cabbage and peas.

Poultry, which includes chicken of different varieties, is also a good source of income for the people of Abbottabad. Poultry contribute too much to the earnings of people of this locality. They use this income to fulfill their day to day needs. Humble additional revenue is generated through activities such as backyard poultry farming.

District Abbottabad represents one of the major mining regions of the NWFP. In mining and quarrying sector of district Abbottabad, the major revenue sources are minor minerals in addition to three major minerals i.e. limestone, soapstone and phosphate. Mining and quarrying sector is subjugated and dominated by the commercial entities. The importance of mining for poverty reduction on the one hand and its potential effect on environmental degradation on the other makes this sector an interesting case where environmental fiscal reforms (EFR) may be initiated. In District Abbottabad, around 20 different types of minerals (both major and minor) are excavated. In terms of infrastructure, the district is relatively well served both by major roads and telecommunications networks.

With its stunning mountain landscape and rich biodiversity, as well as a number of picturesque hill stations, Abbottabad ought to be a favored holiday destination. In a district where unemployment is high and many other avenues for income generation are either saturated or intractable, at least in the short term, an effective way to boost economic activity is by establishing small businesses.

## **4. Economic Potential:**

### **4.1. Agriculture/Horticulture:**

Overall, some 48% of land in the district is under agriculture and land use intensity is high. Agriculture is the mainstay of the district's economy but the sector operates at subsistence level. Of the 63,000 ha under cultivation, only 11% is irrigated. The remaining 56,000 ha of farmland depends exclusively on rain. As a result, per-hectare yields are low, and local demand for cereal crops such as maize and wheat is met through imports. Barring apples and potatoes, the district has few horticultural outputs.

The Hazara belt has got favorable climate for agriculture but land available for cultivation is very limited and depleting further because of increased commercialization of the city. Two major crops maize in Kharif and wheat in Rabbi Season is sown everywhere in the district. Other crops are rice, jawar, bajra and barley etc. The future of the horticulture is bright but the past is not admirable. No regular food orchard lay out in this area. Irregular individual, scattered fruit plants are available everywhere. Although recently large number of apple plants have been planted in Berot circle, Galliat area and surrounding of Qalandarabad. Orchards of apples, apricot, plum, walnut, and several other fruits exist in Abbottabad.

### **4.2. Forestry:**

Abbottabad district covers just 1.8% of the total land area of the NWFP but accounts for 5.4% of the province's forest resources (KfW 2000). Official statistics for forest cover in the district are at variance with estimates provided by other agencies. According to an inventory carried out by KfW, Abbottabad's forests cover 36,394.6 ha; amounting to 21.4% of the district's total area, while official figures show the district's forested area to be slightly higher, at 36,441 ha. Hazara forest extends over an area of 155,049 acres. The area is mostly steep and rugged, partly covered with various types of vegetations. These forests consist of conifer and broad-leaved trees. The main conifer species are pine, kail, deodar and fir. Spruce and broad leaved species are walnut, horse, chestnut, oak, acacia, duodena and viscose.

Forests in the district consist of three major forest types: Himalayan moist temperate forest, Subtropical pine forest, Subtropical broad-leaved scrub forest. Wood from these forests is also taken to make agricultural implements.

### **4.3. Livestock and Poultry Development:**

Livestock consists of buffalo, goat, horse, poultry, and sheep. Milk production from buffaloes is divided into two categories: (i) small-scale milk production which serves the family's own subsistence needs and (ii) commercial milk production in the peri-urban areas of Abbottabad and Havelian, which has developed rapidly in response to the burgeoning urban demand for milk.

Besides agriculture, modest additional income is generated through activities such as livestock rearing. In their present state, the livestock and poultry sectors are contributing little but their contribution can be boost up by better extension services, adequate marketing support, and substantial availability of feed and fodder. A major fodder source spread over an estimated 59% of the district, has been available.

### **4.4. Fishery:**

An estimated 117 km of rivers and streams run through the district, in addition to countless springs. The fisheries potential of these resources is yet to be systematically analyzed. In 1998–99, the district produced 0.74t of fish, marking a 56%. The cash value of Abbottabad's fisheries output for the period 1998–99 is said to be Rs 50,050 but this figure needs to be re-examined since the total provincial fisheries output during the same period is valued at Rs 40.397 million. Only two water bodies in the district have been the subject of limnological analysis. The first of these is the Thandiani stream at Kalapani, which is rich in nutrients and offers an environment that is favorable for pisciculture, especially trout farming. This stream ranks high on the habitat quality index.

## 4.5. Minerals:

The mountains of Abbottabad district are rich in various minerals. In 1999–2000, the district produced 106,701t of various minerals, including soapstone (32%), limestone (52%), dolomite, magnesite and phosphate. At present soap stone and magnetite are dug out from Sherwan area mines, which constitutes 32% of the total mining output of the district, while the



phosphate stones snapped from Kakool and Tarnawi. Under the control of the Sarhad Development Authority, the Kakul mine yielded 250,000t to the Hazara Phosphate Fertilizer Company during the period 1985–96. The phosphate mines run on the management of Pakistan Industry Development Corporation. Some other minerals found in the district are baraites, dolomite, fire clay, latrite, red oxide, limestone and marble. The FDI inflow in mining and quarrying sector in Pakistan has increased from US\$ 99.1 million in 1997-98 to US\$ 221.5 million in 2005-06, yet deteriorating law and order situation and security issues are proving to be major barriers against the inflow of FDI to NWFP. In District Abbottabad, around 20 different types of minerals (both major and minor) are excavated. Between 15 and 20 private companies and lease holders operate in the vicinity of Abbottabad and Havelian cities, extracting limestone from the surrounding hills for the production of crush used as building material. This accounts for 52% of the mining output of the district. In 1972–73, the Pakistan Industrial Development Corporation (PIDC) was granted a 30-year lease for magnesite on 144,628 acres near the village of Kumhar. Exploratory work, carried out with the assistance of Japanese experts, reported 2.98 million t of magnesite in the area. There are reportedly plans to set up a factory in the Hattar Industrial Estate to manufacture magnesite bricks as a joint venture between PIDC and a private concern.. The Sarhad Development Authority completed exploratory work in lagarband otarnwai in 1993. Detailed mineral exploration using prospect evaluation techniques estimates reserves of 10 million t. Twenty-



six private concessionaires are currently working in the Bagla Kumhar, Bandi, Chetether and Khandakhu mines situated at Sherwan, some 45 km west of Abbottabad city.

## **5. Tourism:**

Tourism is now one of the world's largest industries and one of its fastest growing economic sectors. For many countries tourism is seen as a main instrument for regional development, as it stimulates new economic activities. Tourism may have a positive economic impact on the balance of payments, on employment, on gross income and production, but it may also have negative effects, particularly on the environment. Unplanned and uncontrolled tourism growth can result in such a deterioration of the environment that tourist growth can be compromised. The environment, being the major source of tourist product, should therefore be protected in order to have further growth of tourism and economic development in the future. This is especially true with regard to tourism based on the natural environment as well as on historical-cultural heritage. Sustainable tourism has three interconnected aspects: environmental, socio-cultural, and economic. Tourism is a growing industry in Pakistan, based on its diverse cultures, peoples and landscapes. Tourist of domestic and international type visited these areas which became earn of living for local people. In Pakistan's economy tourism can play a vital role due to its majestic landscape and diversity of cultures within Pakistan, but due to lack of proper infrastructure in certain areas and worsening security situation are the major reasons it still faces a set back. Other wise according to some international companies if Pakistan gets better tourist infrastructure it is estimated to be an over a \$10 billion industry.

### **(a) Ayubia:**

A cluster of four small hill stations of Khanaspur, Khairagali, Changlagali and Ghora Dhaka is called Ayubia and was named after former President Ayub Khan. The complex is spread over an area of 26 KM. The central place of Ghora Dhaka has Chair Lifts,



which gives a panoramic and mesmerizing view of the surrounding. Ayubia is 38 KM from Abbottabad.

### **(b) Dungagali:**

Dungagali is a picturesque small resort situated on the slopes of the Mukshpuri hill (2,376 meters.). It commands a charming view of a series of wooded spurs projecting towards the river Jhelum on the western side. From Dungagali one can climb the 2,813 meters peak of Mukshpuri, which is the highest point in the range. Natural springs abound on the slopes. It is 34 KM from Abbottabad.

### **(c) Nathiagali:**

Nathiagali is clad in pine, walnut, oak and maple trees. It is the prettiest hill resort in the Galliat region. It can be approached both from Murree and Abbottabad. It is 32 KM from Abbottabad as well as from Murree. Nathiagali is 2501 meter above sea level and is surrounded by lush green lofty mountains. Breathtaking landscapes, spring water and fresh air make it one of the most peaceful hill stations in Pakistan.



### **(d) Thandiani:**

Thandiani means “cold” in the local language. Therefore being a cool place it got the name of “Thandiani”. It is 2,700 meters above sea level on a small plateau surrounded by pine forests. This beautiful spot can easily be approached from Abbottabad and is 31 KM from main Abbottabad City. On the way along with tall majestic pine trees you come across groups of monkeys. The major place on the way is Kalapani at 23 KM from Abbottabad. It has a beautiful local Dak bungalow. Hule Ka Danna is about two KM North of Thandiani. It

is one of the most beautiful glades in the region. At night the lights of Abbottabad District and Azad Kashmir are clearly visible.

## **6. Industry:**

A few small scale industries are available which are still in developing stage and there is great potential for these industries products to contribute to the national income and also in reducing unemployment in the region and make improve the living standard of the locality, if they are given proper attention and assistance from the concerned authorities. A small industrial estate has been established at Mandian, 5 km away from Abbottabad city where cement, woodwork, PVC pipes, wires and cement pipes are prepared. The profile of the small industrial estate is given as follows:

**TABLE: INDUSTRIAL UNITS, ABBOTTABAD DISTRICT**

| <b><u>S.No</u></b> | <b><u>Type of Industry</u></b> | <b><u>Number of Units</u></b> |
|--------------------|--------------------------------|-------------------------------|
| 1                  | V/ Ghee & Oil                  | 2                             |
| 2                  | Bakery Products, Sweets        | 7                             |
| 3                  | Rubber & Plastic Goods         | 4                             |
| 4                  | Poultry Chicks                 | 1                             |
| 5                  | Marble Tiles                   | 10                            |
| 6                  | Pharmacy                       | 4                             |
| 7                  | Grey Cloth, Polyester          | 3                             |
| 8                  | Furniture                      | 14                            |
| 9                  | Ice factories                  | 3                             |
| 10                 | Metal & Metal Product          | 9                             |
| 11                 | Towels, Ready made Garments    | 2                             |

## **PROFILE**

### **SMALL INDUSTRIAL ESTATE ABBOTTABAD**

**Mansehra Road Abbottabad**

**Phone No. 0992-38008**

- |  |                                   |
|--|-----------------------------------|
| 1. Name                                | : S.I.E Abbottabad                |
| 2. Total Area                          | : 20 Acres                        |
| 3. Total No. of Plots                  | : 110                             |
| 4. Size of Plots                       | : A/10000, B/5000, C/3000 Sq: Ft. |
| 5. Total No. of Plots allotted         | : 110                             |
| 6. Total No. of Plots Not yet Allotted | : NIL                             |
| 7. Infrastructure Facilities           | : Available                       |

Besides the industrial units established at Abbottabad, there also exist some potential clusters which can be developed into proper industries. These include;

## **7. Clusters:**

### **Crochet Work in Hazara Division**

Crochet work is one of the major handicrafts made in the area by women. The art of making various items is transferred from generation to generation. It is a very delicately done job which needs concentration and precision on every stitch. In almost every village of Hazara Division women are making Crochet



products. Approximately 400 women are doing Crochet work in Abbottabad only. Currently over 2000 women are directly involved in Crochet work. These women mostly work at their homes and earn their living. Places like Haripur, Havelian, and Dhamtor are locally known for the quality Crochet.

### **Product Range:**

The following products are commonly made:

- Pillow Covers
- Cushions
- Bed Sheets
- Caps
- Dolls
- Socks
- Fan Covers
- Sweaters
- Floor Cushions
- Sofa seat covers



The products are not restricted to this list. Women can prepare products depending on the order and the design required by the clients.



### **8. Trade and trade centers:**

Although Abbottabad is a district as well as divisional headquarter, Havelian is the trade center due to railway station connected with Punjab/ Peshawar and other parts of the country through railway line. The government has established an export promotion bureau office headed by an Assistant Director to promote trade in the district.

## **9. Small Investment Projects for the District:**

- Trout Farming
- Crochet/Embroidery Stitching Unit
- Poultry Farm
- Honey Bee Keeping
- Walk In Tunnel Vegetables Farm

## 9.1 Trout Farming (Aquaculture)

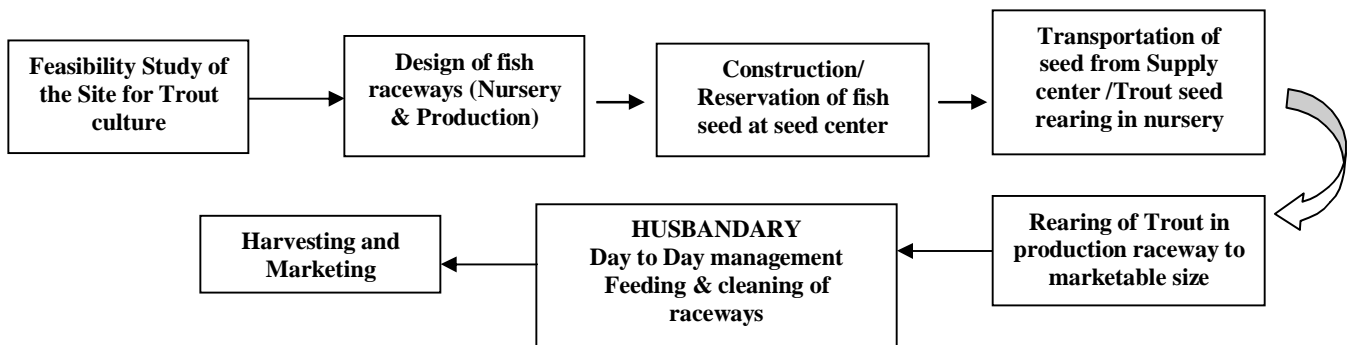
### INTRODUCTION

Aquaculture is an emerging industry in Pakistan; and is becoming of vital importance to food security and income generation potential in the rural area. The available technologies for the purpose are the variable size Concrete Raceways or earthen raceways in which trout rearing can be done.



Market Access and trade issues are key areas of concern for producers in terms of wealth creation and regional job. The trout fish is high demand and the production will be sold out on its availability within the local market. However, it is advisable to form cooperatives or group formation for the marketing of the product for better returns from sale of the trout production on the farms.

### Business Process Flow:



### (Micro Trout farm < 1,000 Kilogram)

| A | GENERAL INFORMATION              |  |
|---|----------------------------------|--|
|   | Type of Farm                     | Small Scale  |
|   | Size of proposed raceway         | 640 sft space<br>Duplix 40' x 8' x 3.5' with a common wall.                                    |
|   | Elevation of site from sea level | 5000 to 6000 feet  |
|   | Water Availability               | Stream/Spring water with minimum discharge of 12 -20 litres per Second during dry spell/season |
|   | Water Temperature range          | 5-18 Celsius   |
|   | CONSTRUCTION                     |  |
|   | Cost of land                     | Land available with owner  |
|   | Size of pond                     | Provided above   |
|   | Mode of Construction             | Concrete/Stone with steel reinforcement/earthen if site allows                                 |
|   | Working area around the pond     | 150 sft  |
|   | Water flow channel               | From stream to pond & out flow to main stream  |

### Estimated Capital Fixed Cost

| Item/Category  | Units              | Price  | Quantity | Value          |
|--|--------------------|--------|----------|----------------|
| Site preparation                                     |                    |        |          | 10,000         |
| Concrete floor                                       | Feet <sup>sq</sup> | 30,000 | 2 Nos    | 60,000         |
| Concrete walls                                       | Feet <sup>sq</sup> | 25,000 | 3        | 75,000         |
| Reinforcing steel                                    | Pair               |        |          | 15,000         |
| Drain pipe   | Pair               |        |          | 15,000         |
| Screens  | Pair               |        |          | 3,000          |
| Drain channel  |                    |        |          | 25,000         |
| Water Channel assembly                               |                    |        |          | 15,000         |
| Equipment  | Lot                |        |          | 30,000         |
| Machinery  | One set            |        |          | 50,000         |
| Cost of wooden frame with plastic gauze size 8'x3.5' |                    |        |          | 7,000          |
| <b>Total cost</b>                                    |                    |        |          | <b>305,000</b> |

### Operational Cost

| Item/Category              | Units    | Price | Quantity | Value          |
|----------------------------|----------|-------|----------|----------------|
| Fish seed 4"               | Each     | 5     | 5000     | 25,000         |
| Standard Feed              | Kilogram | 30    | 2200     | 66,000         |
| Medicine                   | Variable | -     | -        | 6,000          |
| Chemicals                  | Variable |       |          | 3,000          |
| <b>Total Variable Cost</b> |          |       |          | <b>100,000</b> |

### Estimated Annual Revenue From Sale of One Crop.

| Item/Category             | Units     | Price (Rs) | Quantity (Kg) | Value          |
|---------------------------|-----------|------------|---------------|----------------|
| Sale of Fish              | Kilogram  | 300        | 1000          | 3,00,000       |
| Operating cost            | Per annum |            |               | 1,00,000       |
| Operating cost            | 6 months  |            |               | 50,000         |
| <b>Total gross return</b> |           |            |               | <b>150,000</b> |

Add:

- Variable cost of land rent per annum = 4,000
- After first operation the production cycle will be for each year by including Nursery unit at the farm.

Assumptions:

- Based on final weight of 250-300 grams/fish over a period of 18-20 months each crop.
- Nursery units to be established with the production raceways 10'x5'x3' including 6" free board
- Amount of feed consumed based on 2.2:1 food conversion rates.



## 9.2 Crochet/Embroidery Stitching Unit

### Description:

Embroidery is the art or handicraft of decorating fabric or other materials with needle and thread or yarn. Embroidery may also incorporate other materials such as metal strips, pearls, beads, quills, and sequins.



### Tools and Machinery:

| No. | Equipment          | Quantity | Price         |
|-----|--------------------|----------|---------------|
| 1.  | Embroidery Machine | 1        | 25,000        |
| 2.  | Sewing Machine     | 1        | 5,000         |
| 3.  | Pressing Unit      | 1        | 5,000         |
| 4.  | Needles Kit        | 1        | 500           |
| 5.  | Thread Kit         | 1        | 500           |
| 6.  | Frames             | 1        | 500           |
| 7.  | Other equipments   |          | 500           |
|     | <b>Total</b>       | <b>6</b> | <b>37,000</b> |

### Project Costs per annum:

| No. | Particulars   | Price          |
|-----|---|----------------|
| 1.  | Fabric as required approx.                              | 50,000         |
| 2.  | Human Resource (2 personnel)                            | 150,000        |
| 3.  | Maintenance cost  | 1,000          |
| 4.  | Transportation Cost                                     | 100,000        |
| 5.  | Tools and equipments                                    | 37,000         |
| 6.  | <b>Total Investment</b>                                 | <b>347,000</b> |
| 7.  | Return on capital Employed (after 1 <sup>st</sup> year) | 226,000        |
| 8.  | <b>Profit</b>   | <b>121,000</b> |
| 9.  | <b>Rate of Return</b>                                   | <b>23%</b>     |

### 9.3 Poultry Farm

#### Introduction:

The broiler farm is a project of livestock sector, in which, the day old chicks (DOCs) are raised on high protein feed for a period of six weeks. This business can be started both in rural and semi-urban areas in sheds. The broiler birds are sold to traders and in the wholesale markets in the urban areas. Some times birds can also be sold directly to the shopkeepers in the urban markets.



#### Farm Equipment

List of farm equipment, which will be needed, are as under:

| S. No | Farm Equipment | No.        | Rs/unit. | Rs.           |
|-------|----------------|------------|----------|---------------|
| 1.    | Brooder        | 8          | 500      | 4000          |
| 2.    | Drum Heater    | 2          | 1000     | 2000          |
| 3.    | Small Drinkers | 40         | 75       | 3000          |
| 4.    | Large Drinkers | 80         | 200      | 16000         |
| 5.    | Small Feeder   | 55         | 95       | 5225          |
| 6.    | Large Feeder   | 90         | 135      | 12150         |
| 7.    | Shifting Boxes | 5          | 1900     | 9500          |
|       | <b>Total</b>   | <b>280</b> |          | <b>51,875</b> |

#### PROJECT COST (*Cost for One Flock*)

**Project Economics** (Broiler population = 4,500 birds)

| Account Head   | Total Cost (Rs) |
|--|-----------------|
| Machinery & Equipment                                    | 51,875          |
| Total Fixed Cost   | 51,875          |
| Feed, Electricity & Medicines (Rs.80 per 1.5 kg chick)   | 360,000         |
| Upfront Building Rent for two Months                     | 20,000          |
| Chicken price (Day old) of 4,500 @ Rs. 20 each           | 90,000          |
| HR (2 persons) for two Months                            | 20,000          |
| Total Working Capital                                    | 490,000         |
| <b>Total Project Cost</b>                                | <b>541,875</b>  |
| Revenues (selling price per chicken Rs. 150 per 1.5 kg ) | 641,250         |
| <b>Profit</b>  | <b>99,375</b>   |
| <b>Rate of Return</b>                                    | <b>19%</b>      |

## 9.4 Honey Bee Keeping

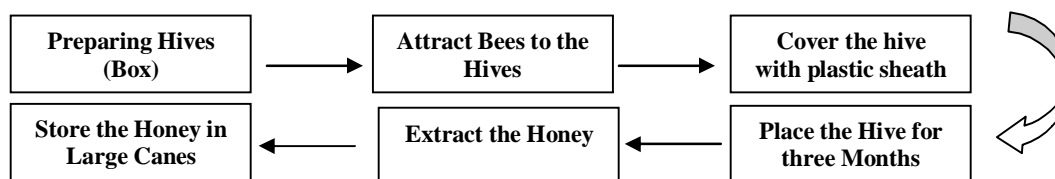
### Introduction

Honey is a sweet substance produced by honey bees from the nectar of blossoms. Honey consists essentially of different sugars, predominantly glucose and fructose etc. Honey, a pure, natural sweetener prepared by bees from nectar collected from wild and cultivated flowers, was the first sweetener known to man.

The total numbers of the bee keepers entrepreneurs (farm) in NWFP is about 3500 and the direct employment in these farms are 17500 people.



### Business Process Flow:



### Tools & Machinery

| No. | Equipment               | Quantity  | Price        |
|-----|-------------------------|-----------|--------------|
| 8.  | Honey Extractor Machine | 1         | 3,500        |
| 9.  | Monkey Cap              | 3         | 450          |
| 10. | Smoker                  | 1         | 150          |
| 11. | Queen catcher           | 2         | 160          |
| 12. | Swarming catch basket   | 2         | 300          |
| 13. | Spray Bottle Plastic    | 3         | 210          |
| 14. | Gloves                  | 3         | 210          |
| 15. | Fork                    | 4         | 320          |
|     | <b>Total</b>            | <b>19</b> | <b>5,300</b> |

### Cost of Project: per annum

| No. | Particulars   | Price          |
|-----|---|----------------|
| 10. | Colonies of bees @ Rs.5000 - 10 frames                  | 250,000        |
| 11. | Wooden Box with frame @ Rs.550 each                     | 27,500         |
| 12. | Human Resource (3 personnel)                            | 240,000        |
| 13. | Foundation sheet @ Rs.25 each                           | 12,500         |
| 14. | Tools & Machinery (as per list above)                   | 5,300          |
| 15. | Feeding of Bees   | 60,000         |
| 16. | Transportation Cost                                     | 10,000         |
| 17. | <b>Total Investment</b>                                 | <b>605,300</b> |
| 18. | Return on capital Employed (after 1 <sup>st</sup> year) | 445,100        |
| 19. | <b>Profit</b>   | <b>135,100</b> |
| 20. | <b>Rate of Return</b>                                   | <b>23%</b>     |

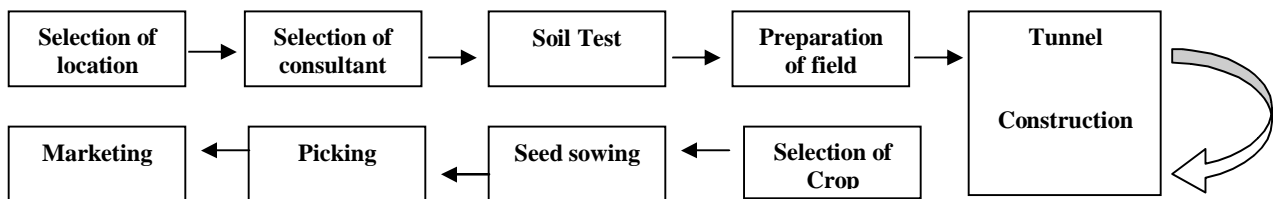
### 9.5 Model Vegetable Farms (Walk-in Tunnel)

This artificial method of plastic tunnels, specifically **walk-in Tunnel** farming, are lower than the high tunnels but they are gaining popularity as they provide high yield compared to low tunnels. The tunnel is suitable for growing tomatoes, cucumbers, sweet pepper and hot pepper.



These tunnels will be 190 feet long, 6 – 8 feet high and 12 feet wide. The tunnel is built by pipe material of 20-mm diameter 18 feet length, and round shaped mild steel iron rods of 12-mm diameter and 2 feet length. This tunnel structure will then be covered by 0.06-mm thick and 20 feet wide plastic sheet. A total of around **13** tunnels can be constructed on an acre of land.

#### Process Flow:



#### Financials:

Total cost of the Project is estimated to be Rs. 200,000 for one model farm and the total cost for 5 farms would be around 1 Million excluding the cost of land/rentals, expenses of land preparation, hybrid seeds and insecticides, which will be born by the private sector partner.

| S.No. | Description                      | Cost/farm (Rs.) | Total (Rs.)      |
|-------|----------------------------------|-----------------|------------------|
| 1.    | Structure                        | 100,000         | 500,000          |
| 2.    | Consultancy and Training program | 50,000          | 250,000          |
| 3.    | Equipment/ Machinery rentals     | 25,000          | 125,000          |
| 4.    | Labor charges                    | 25,000          | 125,000          |
|       | <b>Total</b>                     | <b>200,000</b>  | <b>1,000,000</b> |