

## Sericulture and Livelihood Security of Mizos in North

### East India

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**ARTICLE ID: 043**

#### **Introduction**

North East India comprises of seven states commonly known as the “Seven Sisters”. They are Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Mizoram is the southernmost landlocked state, sharing borders with three of the Seven Sister States, namely Tripura, Assam and Manipur. The state also shares total of 722 km border with the two neighbouring countries viz., Bangladesh (404 km) and Myanmar (318 km).

The name “Mizoram” itself reflects the dominant population of the tribes called “Mizo” and “Ram” means Land in their Mizo language. Thus, the name coined as land of Mizos. Aizawl is the capital of the state. About 95% of Mizoram's population is descendants of a diverse tribal origin. Among all of the states of India, Mizoram has the highest concentration of tribal people.

#### **Population**

According to the 2011 census, Mizoram's population was 1,097,206 with literacy rate of 91.33 %. It is the 2nd least populous state in the country after Sikkim. About 20% of Mizoram's population lives below the poverty line, with 35% rural poverty as of 2014. The State is divided into 11 districts, 23 sub-divisions and 26 blocks for administrative purpose. There are 23 towns and 704 inhabited villages in the State. Mizoram is the only state in the northeast where the urban population is more than the rural population. 51 percent of Mizoram's population resides in cities, its villages are basically deserted.

#### **Topography**



The state covers an area of approximately 21,087 square kilometres of which more than 91% is forested. It lying between 92° 15' and 93° 29' E longitude and 21° 58' and 24° 35' N latitude. The tropic of cancer (23° 30' N latitude) runs through the state nearly at its middle. Mizoram is a land of rolling hills, valleys, rivers and lakes.

### **Climate**

Mizoram enjoys a moderate and pleasant climate being relatively cool in summer 20 to 29 °C (68 to 84 °F) but progressively warmer, most probably due to climate change, with summer temperatures crossing 30 degrees Celsius and winter temperatures ranging from 7 to 22 °C (45 to 72 °F). The entire state comes under the direct influence of the southwest monsoon, raining heavily from May to September with little rain during the cold season and receiving an annual average rainfall between 1926mm and 2479mm. The state is in a region where cyclones and landslides can cause weather-related emergencies.

### **Shifting cultivation practices**

Shifting cultivation that is known as “jhuming” in Mizoram is an integral part of the sociocultural life of Mizos. It involves the clearing of forest followed by burning, sowing and reaping. Traditionally, village elders select the sites in December and January, then allot the land to the Jhumias for cultivation. These fragmented patches of land (*jhumlands*) roughly 0.7 hectares in area, controlled by village assemblies are temporarily distributed to the farmers for a maximum period of two years for cultivation.

The Jhumias prepare the land by slashing the forest trees in January and February and burning the slashed vegetation in March and April. Seeds are sown in May prior to the onset of the monsoon. Weeding takes place three times a year. Harvesting begins in the month of July and lasts until December, depending upon the crops. After one cropping season is over, *Jhumias* may continue for another crop cycle in the same plot or move on to a different patch. Following the cultivation phase, the land is left fallow for a period of three to five years. The village assembly ensures a different set of *Jhumias* gets access to the used land after a fallow period. This practice is discouraged by the state government and the practice of permanent farming is slowly emerging.

### **Agriculture & Horticulture**

Agriculture has traditionally been a subsistence profession in Mizoram. It is seen as a means for generate food for one's family, ignoring its potential for commerce, growth and



prosperity. About 55% to 60% of the working population of the state is annually deployed on agriculture. The soils of Mizoram are dominated mainly by loose sedimentary formation. They are described as young, immature and sandy. Rice remains the largest crop grown in Mizoram by gross value of output.

Fruits have grown to become the second largest category, followed by condiments and spices. Some of the most common crops are upland rice, maize, chillies, mustard, taro, brinjal, cowpea, squash and Indian nightshade. In addition, ginger and turmeric are frequently planted in recently burned sites because they grow well on steep slopes and bananas are high-value crop in the state.

### **Forestry**

Mizoram is one of the leading producers of bamboo in India, has 27 species of bamboo, and supplies 14% of India's commercial bamboo. The other major forest produce are timber and fuel wood. Forest products contribute about 5% to the state's gross product.

### **Fisheries**

Approximately, 15,000 farmers were engaged in fisheries sector. The state produces about 5,000 metric tonnes of fish annually mainly from natural resources like rivers and ponds. The state has also introduced the cage culture and 96 cages are operational at present and around 1000 ha reported to be under paddy cum fish culture.

### **Livestock**

Livestock farming plays an important role in the socio-economic and cultural life of the people of Mizoram. With the efforts taken by various agencies working in the field of dairy development, the dairy sector in the state of Mizoram is now developing. Crossbred cows and indigenous cows are mainly used for milk production while milking of goat and buffalo are very rare in Mizoram and is negligible. The state produces approximately 25 tonnes of milk annually. Majority of the people in the State are non-vegetarian and prefer pork and chicken meat. The backyard piggery and poultry are common activity in the rural as well as in urban areas.

### **Sericulture**

Mizoram being a non-traditional area for Sericulture, Govt. of India has given special emphasis for consolidation and expansion of Sericulture in entire state with the help of

Department of Sericulture, Government of Mizoram. Mulberry sericulture is an important Agro-based industry engaged by nearly 8,000 families in over 300 Mizo villages.

### **Cultivation of food plants**

Mulberry (*Morus alba* L.), the food plant of silkworm (*Bombyx mori* L.) is cultivated in hill slopes under rainfed condition and maintained as small trees by regular pruning. The variety S1635 and S1 which are most suitable for hill region are dominant in the state. The trees are generally cultivated at the spacing of 5 x 5 feet. The crop is maintained naturally without any agronomical practices except that of weeding.



**Mulberry plantation in hill tract**

### **Inter cropping**

All most all farmers cultivate inter crops in the mulberry field. The crops like rainfed paddy, pulses, grams, vegetables and fruit crops like banana, pineapple, orange, dragon fruit *etc* and getting additional income out of sericulture.

### **Rearing houses**



**Silkworm rearing house**

Small huts are made with the help of locally available bamboo or with metal sheet/ asbestos in the vicinity of mulberry plantation. Most of the farmers rear silkworm in plastic trays by the practice of feeding chopped leaves. However, rearing of silkworms in 3-5 tire shelves made by bamboo or woods are popularized in order to use entire mulberry shoots for feeding which reduces drudgery.

### **Silkworm Rearing**

Silkworms are reared 3- 4 times in a year during March to November in bimonthly intervals. The silkworm eggs are prepared in government centres locally and supplied to the farmers based on the availability of food plants. Farmers are supplied manly with the silkworm hybrids SK6 x SK7 and J112 in this region. The eggs hatch 8 - 10 days after laying and larvae grow by feeding mulberry leaves, pass 5 stages in a month period and form the cocoons. The farmers collect the cocoons and sale them in the local government cocoon market.



**Silkworm rearing in trays**



**Silkworm rearing in shelves**



**Government cocoon market in Mizoram**

### **Economics of sericulture**

The farmer holding one acre of mulberry plantation is rearing 50-100 egg layings depending upon the availability and quality of the mulberry leaf and harvesting 30 - 60 kg of cocoons and selling it at the rate of Rs. 300 - 350 per kg. Therefore, a farmer gets income of approximately 9,000 - 21,000 in each rearing. The total annual income through sericulture *i.e.*, by 3 - 4 rearings ranges between Rs. 30,000 - 80,000 from the one acre of mulberry garden depending upon the garden condition, rearing house type, system of rearing, efforts of the farmers and climatic conditions during the rearing.

### **Government initiatives**

Bases on the success of sericulture practices in the state, both Central Government (Central Silk Board) and State Government (Directorate of Sericulture, Government of Mizoram) are taking lot of initiatives with various schemes and programmes. Financial support for mulberry cultivation, construction of rearing houses, and purchase of rearing appliances besides providing appropriate technologies is also extended to the farmers in order to promote sericulture in the entire state involving maximum number of farmers for livelihood security of Mizo community.

### **Conclusion**

Sericulture is a great remuneration comparable to any other source of income to the poor Mizo tribals who live in the remote hill tracts without any basic amenities. Besides the income from cocoon production, the farmers meet their domestic requirement of rice, vegetables, grains, pulses *etc* and get additional income through inter crops raised in their mulberry garden. Thus, it is the fact that sericulture plays vital role in livelihood security of



Mizos in Nort east zone of India. Another greater advantage of sericulture is that it helps to avoid the Shifting cultivation “jhuming” practice by the farmers in the state.

