

# Chapter 1

## Introduction

Hill economies in India are based on local resources and dictated by local needs. A majority of the population is dependent on agriculture, and it provides a significant proportion of household incomes. Generally low soil productivity and the subsistence characteristics of agricultural activities, restrict the availability of marketable surplus. This is aggravated by an inadequate infrastructure and consequently high transport costs. However, the demand for agricultural and horticultural products that are not in sufficient supply from the lowlands offers a unique advantage to hill farmers to produce, process, and market these products. Strengthening these comparative advantages could be extremely beneficial for the local population, especially in the context of employment and income, since agriculture is the sole means of livelihood in the hills. Therefore, defining appropriate strategies must involve all the stakeholders and adequate integration of the production process with market research.

The processing of agricultural and horticultural produce is relevant for these economies because of the many benefits that can accrue from it. Firstly, processing would increase the shelf life of otherwise perishable crops that have to be transported over long distances by slow and uncertain road networks. Secondly, with the growing demand for processed fruits and spices from countries that do not produce them, there could be an export potential for them. Thirdly, the advantage lies in the employment creation potential of the processing activity and in the diversification of employment opportunities from growing crops to more entrepreneurial and marketing options. Finally, value addition of commercial crops in the area of production would reduce the involvement of the intermediaries in marketing of processed foods. All these factors together could result in valuable improvements in the quality of life of hill/mountain populations.

## Agroprocessing in Meghalaya's Economy

Meghalaya, a State in northeastern India, is representative of the ecological complexity of the northeastern hill region, with natural topographic and climatic features determining the course of human settlements and modes of economic production. The main land use system in this area is shifting cultivation, locally called *jhum*. However, with reduction in the duration of the *jhum* cycle, there has been extensive erosion and soil impoverishment and decreasing returns from such agricultural operations. In recent years, the State government has taken various steps to encourage settled cultivation with cash crops.

Since the population was primarily dependent on farming, it was considered necessary to find ways to diversify into areas offering a comparative advantage, such as horticulture and processing agricultural products, thereby developing alternative sources of income. To this end, the State government encouraged people to grow cotton, jute, and *mesta* (Roselle). In addition, it encouraged coffee and rubber plantations and citrus and pineapple cultivation. Broom grass, which grows wild in the area, has become an important income-generating source for marginal farmers. Similarly, cane and bamboo products have been encouraged and marketing facilities were provided where possible. Areca nut plantations and supari making have also become extremely profitable ventures in some areas.

Ginger and pineapple as commercial crops are cultivated extensively in the State, and they appear to have immense potential for value addition through processing. The state is the second largest producer of gin-

ger in India, contributing 20 per cent of the total national produce. The proportion of land under ginger in 1990-91 was 2.86 per cent, accounting for 12.01 per cent of India's total land area used for ginger cultivation. The area and production of ginger in the State during the last decade are presented in Figure 1.1.

Pineapple is a popular fruit crop. Meghalaya has the second largest area used for pineapple cultivation in the northeastern States. Figure 1.2 presents the production and area under pineapple production for Meghalaya for the period from 1989-90 to 1995-96.

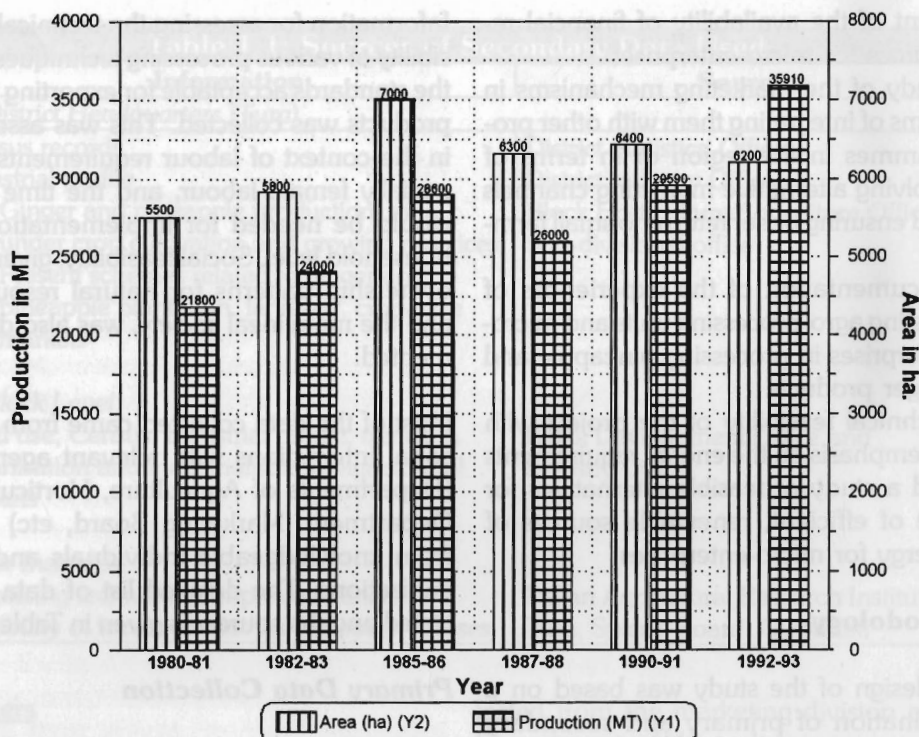
Most of the agricultural produce is sold in raw form. There is one cotton-spinning mill in the West Garo Hills. It was established in 1954-55. Since 1976-77, the management of the mill has diversified its activities to include oil extraction. In addition, there are two food preservation units, under the management of the Department of Agriculture. These units mainly serve as demonstration units for squashes, jams, pineapple slices, and titbits. With several cash crops now being cultivated in the area, there is a fairly good potential for agro-processing.

### Objective of the Study

The main objective of the study was to examine the feasibility of developing micro-enterprises based on existing farm produce, especially ginger and pineapples in the West Garo Hills of Meghalaya.

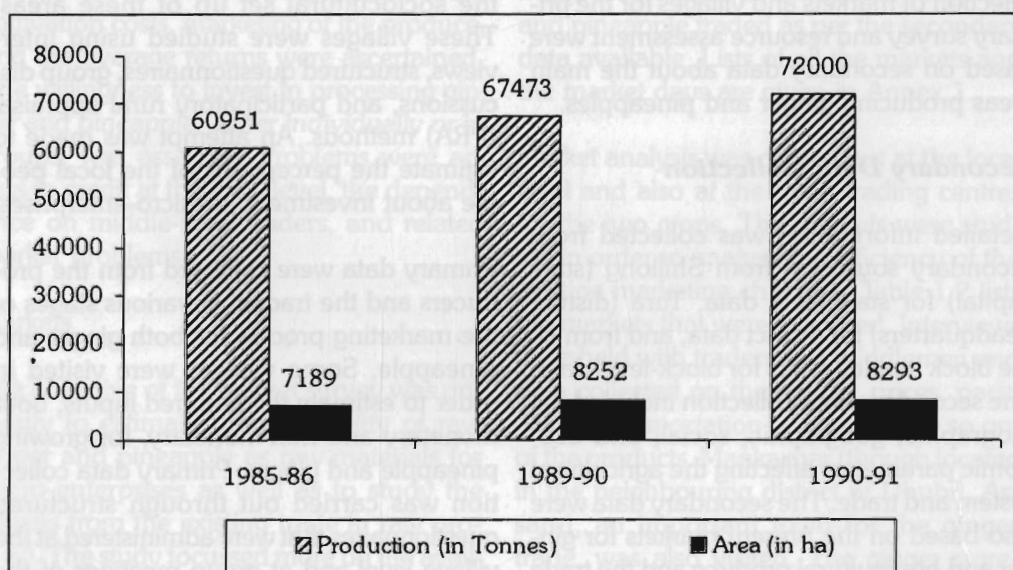
The study was conducted as follows.

- Assessment of the raw material required for the micro-enterprise and sufficiency of inputs from existing land holdings
- Documentation of available credit facilities and financial institutions and assess-



**Figure 1.1: Production of and Area under Ginger in Meghalaya**

Source: Basic Statistics of North Eastern Region 1995, North Eastern Council, 1995.



**Figure 1.2: Production of and Area under Pineapples in Meghalaya**

Source: Directorate of Agriculture, Government of Meghalaya 1997

ment of the availability of financial resources for micro-enterprises

- Study of the marketing mechanisms in terms of integrating them with other programmes in the region or in terms of evolving alternative marketing channels and ensuring better returns to small farmers
- Documentation of the experiences of existing agro-processing units and micro-enterprises in processing pineapple and ginger products
- Technical feasibility of the project with an emphasis on the energy requirements and a study of feasible alternatives for use of efficient, renewable sources of energy for micro-enterprises

## **Methodology**

The design of the study was based on a combination of primary and secondary data collection. Given a duration of only four months, an extensive rapid survey of farmers and markets was undertaken. The selection of markets and villages for the primary survey and resource assessment were based on secondary data about the main areas producing ginger and pineapples.

### ***Secondary Data Collection***

Detailed information was collected from secondary sources – from Shillong (state capital) for state-level data, Tura (district headquarters) for district data, and from all the block headquarters for block-level data. The secondary data collection included demographic, geographic, social, and economic parameters affecting the agricultural system and trade. The secondary data were also based on the present markets for ginger and horticultural produce and the trade in agro-processed products.

Information for assessing the technical feasibility of various processing techniques and the standards acceptable for exporting food products was collected. This was assessed in the context of labour requirements, especially female labour, and the time that would be needed for implementation at household level. Social feasibility, given the ownership patterns for natural resources and the matrilineal society, was also documented.

Most of the data collected came from personal interactions with relevant agencies (Departments of Agriculture, Horticulture Department, Marketing Board, etc) and from knowledgeable individuals and organizations. The detailed list of data collected and the sources is given in Table 1.1.

### ***Primary Data Collection***

Primary data collection was carried out in selected villages to assess the resources available in the village and to understand the sociocultural set up of these areas. These villages were studied using interviews, structured questionnaires, group discussions, and participatory rural appraisal (PRA) methods. An attempt was made to estimate the perceptions of the local people about investment in micro-enterprises.

Primary data were collected from the producers and the traders at various stages of the marketing process for both ginger and pineapple. Some villages were visited in order to estimate the required inputs, both monetary and non-monetary, for growing pineapple and ginger. Primary data collection was carried out through structured questionnaires that were administered at the village level and at group meetings of the villagers.



**Table 1.1: Sources of Secondary Data Used**

| Information   | Source  |
|---|---|
| <i>At District Headquarters (Tura)</i>  |   |
| Census records  | District Statistics' Office   |
| Industrial profile  | District Industry Office  |
| <ul style="list-style-type: none"> <li>Ginger and pineapple production, area under crop cultivation and growing practices</li> <li>Present schemes related to ginger and pineapple plantation, land use, crop-wise markets</li> </ul> | Block Horticulture/Agriculture Office<br>Sub-divisional office        |
| <i>At Block Level</i>   |   |
| Land use, Census, industrial profile, trends in urbanisation and industrialisation, agricultural markets  | Block Development Office and Industry Office                          |
| <i>Other Institutes</i>   |   |
| Processing techniques, improved varieties   | Indian Agricultural Research Institute, Tura, Spices' Board, Guwahati |
| Suitability of local varieties for various processes  |   |

### Farmers

Group meetings and discussions were held with individuals and households. Details of the area under the two crops, production, cultivation costs, marketing of the produce, and the average returns were ascertained. The willingness to invest in processing ginger and pineapple, either individually or in groups, was assessed. Problems were access to credit at the local level, the dependence on middle-level traders, and related market problems.

### Markets

The objective of the market survey was primarily to estimate the availability of raw ginger and pineapple as raw materials for micro-enterprises as well as to study the returns from the existing trade in raw produce. The study focussed more on the availability of ginger because the survey and discussions revealed constraints in pineapple processing units. Secondary data col-

lected from the marketing division of the Department of Agriculture were supplemented by the primary survey of selected markets. Selection of sample markets was made on the basis of the quantity of ginger and pineapple traded as per the secondary data available. Lists of all the markets and the market days are given in Annex 1.

Market analysis was carried out at the local level and also at the main trading centres for the two crops. The markets were studied in order to analyse the efficiency of the existing marketing channels. Table 1.2 lists the markets that were surveyed. Interviews were held with traders and middlemen and data collected on the supply, prices, packaging, transportation, demand, and so on, of the products. Mankachar (though located in the neighbouring district of Dhubri, Assam), an important town for the ginger trade, was also visited. The ginger store-houses were visited to explore their capacities, costs, and other factors involved in the present trade of ginger.

**Table 1.2: List of the Markets Surveyed**

| Markets      | Market days |
|--------------|-------------|
| Ampati       | Saturday    |
| Garobadha    | Tuesday     |
| Chibinang    | Tuesday     |
| Dadenggiri   | Wednesday   |
| Jengjal      | Thursday    |
| Rongram      | Friday      |
| Mahendrananj | Friday      |

### Financial Institutions

Credit facilities available from local institutions, both government banks and development agencies, were explored to assess the available financial support for local enterprises. The banks included the State Bank of India, the Union Bank, the Meghalaya Cooperative Apex Bank, and the National Bank for Agriculture and Rural Development (NABARD). Among the other government agencies, the District Industries' Centre, the Small Industries' Service Institute, and the Khadi Village Industries' Commission (KVIC) were visited.

There are several government projects — the Integrated Rural Development Programme (IRDP), *Jawahar Rozgar Yojana* (JRY), etc — under the District Rural Development Agency (DRDA) that aim to eradicate poverty through the creation of opportunities of self-and wage employment. Discussions were held with resource persons for these agencies.

The Tribal Cooperative Marketing Development Federation of India Limited (TRIFED), a national federation that aims to promote agro- and forest-based produce for income generation for tribal people

throughout the country, is involved in the marketing of several products, including ginger. Hence, an attempt was made to investigate their present and potential roles in the development of micro-enterprises.

### Research Organizations

Organizations involved in the development of improved agricultural crops and processing techniques for production of agro-products, such as the Spices' Board and the Indian Agricultural Research Institute (IARI), were also visited. An assessment of the services for testing raw crops, chemicals used for processing products, and so on was carried out.

### Cooperatives and NGOs

Institutions involved at any stage in the growth and marketing of the two products were studied. These included cooperatives and NGOs such as the Mothers' Unions and Village-level Farmers' Cooperatives.

### Agro-processing Units

There are no food processing units in the West Garo Hills. However, visits were made to the nearest food preservation unit operated by the Department of Agriculture of the Government of Meghalaya at Dainadubi in East Garo Hills and to Associated Beverages (in Ri Bhoi district), a firm manufacturing fruit products, to document their experiences in establishing and operating their units. An effort was made to ascertain the feasibility of household-level processes, especially for pineapples, that could produce a semi-processed raw material for the Dainadubi units.

## **Definition of a Micro-Enterprise for the Study Area**

Traditional income-generating activities, both farm and off-farm, face several difficulties. These include competition from industrial products, lack of proper marketing channels, and the dependence of producers on agents and middlemen. However, these activities are important as they supplement the meagre, seasonal incomes from farming. The possibility of initiating income-generating activities, with appropriate processing of farm-based raw materials using sustainable non-conventional energy sources and the active participation of women, is a possibility to be explored in this region.

Given the fact that micro-enterprises can increase rural incomes and provide better returns from the resources available, the options were evaluated based on a single family's investment and earning potential. The proportion of rural families benefitting from the plan proposed was also considered.

Hence, it was observed that, if pineapple processing were to be carried out on a large scale, the people would not have the resources required. Pineapple products would have to be aggregated, by a village or a group of villages, at a central processing point. The investment required to process pineapple for canned products and jams is high and the standards, infrastructure, and marketing should be excellent. Partially processed pineapples have a short shelf life, making such an enterprise risky.

The present trade in ginger revolves around fresh rhizomes, while the main exports and supplies to the domestic market are of dried/powdered ginger. This provides an opportunity to explore avenues for drying ginger

locally, thereby increasing the returns to the farmers. The seasonality of the produce and the prices could also balance out if the shelf life of fresh ginger could be increased so that a fall in prices does not take place during the two to three months of harvest. This would involve cold storage facilities or processing at source.

Both options were evaluated, keeping in mind the interests of stakeholders, especially their investment capabilities and the dependency on middlemen. Thus, the details for micro-enterprise establishment in the area were determined based on certain critical factors, apart from the amounts of investment required for the enterprise that have been described in Chapter 5. Enterprises have been evaluated at farmer, community, and current trader levels. In addition, larger business enterprises were evaluated to assess their role in providing the initial impetus to project and market development, with subsequent expansion and involvement of the local people once a market is established.

Hence, it was found that products that have a longer shelf life, e.g., spices, and have a ready market providing better opportunities for trade (fresh or processed), suffer from price fluctuations and the vagaries of consumer preferences. For processed fruit, markets need considerable development as consumers not only prefer freshly processed fruits but they also prefer established brand names associated with better quality standards and mechanised processing. All this makes manual processing uncompetitive, both quality and price wise.

## **Scope of the Study**

The study document details the existing trade in pineapple and ginger and their

products. The possibility of developing pineapple and ginger-based micro-enterprises in the area has been studied also. The report also documents the credit facilities available in the study area and the prerequisites for planning micro-enterprise development initiatives.

### **Limitations**

The study mainly concentrates on the potential for micro-enterprises in ginger processing, as it was observed that processing pineapple is not feasible at household level. After detailed interaction with the farmers, traders, and government agencies concerned, it was found that ginger drying was one of the enterprises being actively considered. Therefore, an attempt has been made to deal with this option in greater detail.

The two crops, ginger and pineapple, have different harvest seasons and, given the short duration of the study, field visits could not be matched to the harvest season for both crops. While it was possible to inter-

view ginger traders to quite an extent, the pineapple season was over and only a few traders, based in local areas, could be identified.

Also, because the main markets for ginger and pineapple are located outside the district and state, it was not possible to assess such markets fully. Therefore, the demand estimations for the products concerned were based on interviews with the local traders. However, the supply scenario was studied in detail, thus the market assessment for supply of ginger and pineapple was carried out satisfactorily.

Lastly, given the scope of the study, the limited time of four months and logistics involved in surveys of the local markets, merchants, producer households, and the government departments and financial institutions, it was not possible to carry out more intensive interviews. Hence, the emphasis of the report has been on secondary published material on all the components that could highlight areas for further research.