

Chapter 2

The Study Area

Meghalaya

In the northeastern region of India, hills constitute 70 per cent of the area. Meghalaya is representative of the ecological complexity in this hill region, with natural topographic and climatic features determining the course of human settlements and modes of production. Rich in biodiversity, it boasts of a number of rare species of flora, which include orchids, insectivorous plants, and a diversity of fauna. Home to a large number of ethnic, linguistic, and cultural groups, it is characterised also by the strategic vulnerability and economic backwardness.

Meghalaya is mostly a plateau region. It is situated at an average elevation of 1,000masl, ranging from 610 and 1,830masl. It is home to the Garo, Khasi, and Jaintia hill ranges, with the higher ridges in the coniferous belt sloping gently down to the subtropical and tropical zones. It lies between latitudes $25^{\circ}47'$ and $26^{\circ}10'$ north and longitudes $98^{\circ}47'$ and $97^{\circ}47'$

east. Covering an area of 22,429sq.km. it can be divided into seven districts – the West Garo Hills, East Garo Hills, South Garo Hills, West Khasi Hills, East Khasi Hills, Ri Bhoi, and Jaintia Hills. The Khasi and Jaintia Hills occupy 13,400sq.km., and the rest of the area is covered by the Garo Hills. The climate varies from warm pre-humid to humid. Mean temperatures vary from $13.0 - 21.6^{\circ}\text{C}$.

Traditionally, local communities have been dependent on natural resources for their biomass needs and daily sustenance. The land use in this area is mainly characterised by shifting cultivation, locally called *jhum*. Apart from large-scale extraction of timber, fuelwood, and fodder, *jhum* cultivation is considered to be the main cause of the conversion and degradation of forest lands. With an unsustainable decrease in the *jhum* cycle, there has been extensive erosion and soil impoverishment, finally resulting in increased poverty for indigenous communities.

West Garo Hill District

West Garo Hills were a part of Assam until 1971 when Meghalaya attained statehood. The West Garo Hills lie between latitudes 25°8' and 26°1' north and longitudes 89°50' and 90°59' east in the western corner of Meghalaya. The southern and western boundaries are shared with Mymensing district and a part of the Rangpur district of Bangladesh. To the north lies the Goalpara district of Assam; the East Garo Hills border the northeast, and the West Khasi Hills the east. The district was created in 1976 and, in the middle of 1993, it was sub-divided into the West Garo Hills and the South Garo Hills. The average elevation of the district is about 950masl.

The district now covers an area of 3,714sq.km. (Planning Organization 1995). Administratively, the district consists of three sub-divisions (see map) that are further subdivided into seven Community Development Blocks (DoES 1995).

Topography and Climate

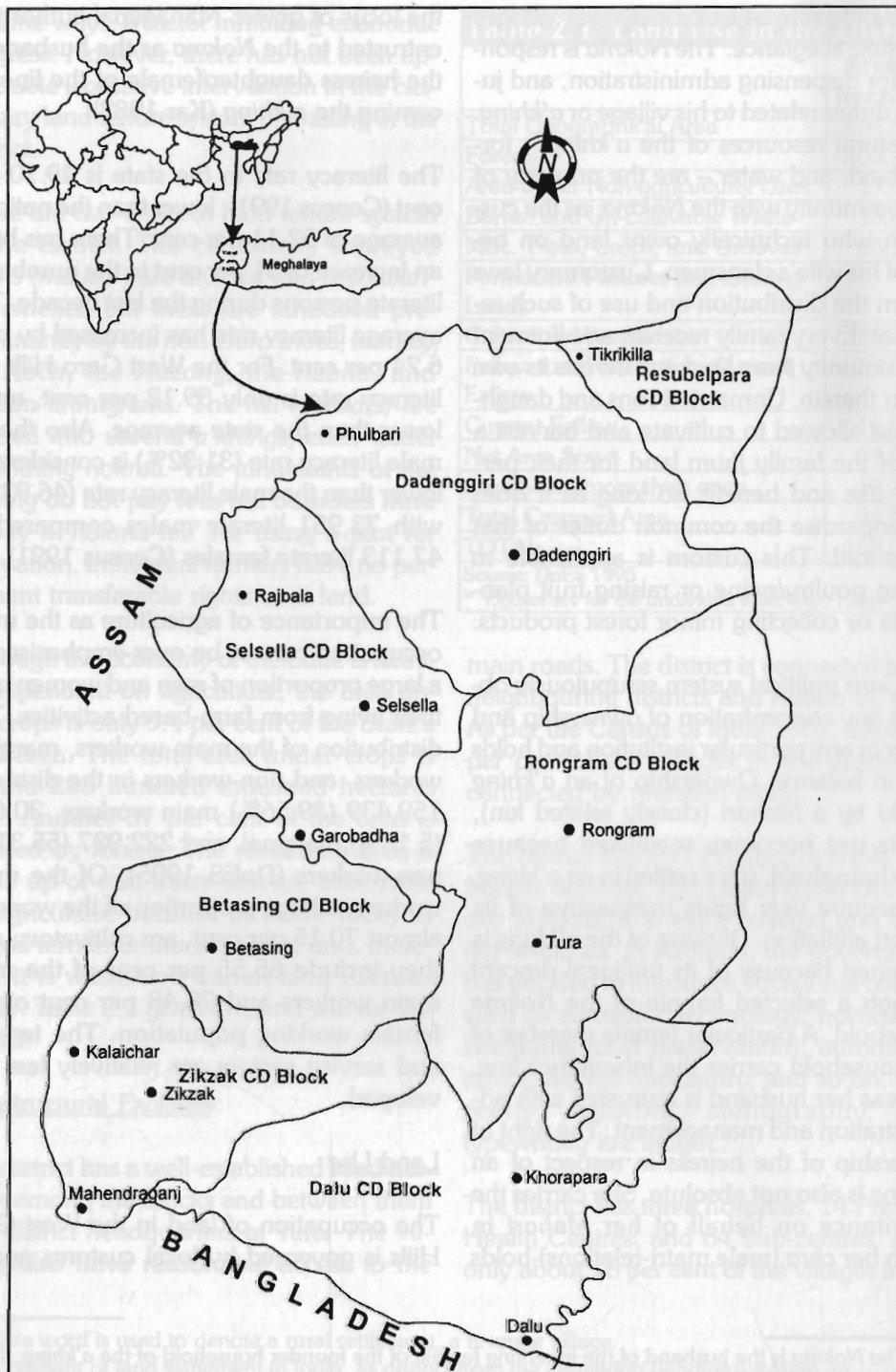
Geographically, the district is located in the Garo Hills. Its topography is marked by undulating tracts with high ridges and narrow valleys, and the plains fall mainly along the borders of Assam and Bangladesh. A large portion of the land mass is hilly, and the land rises sharply from the plains in the south and, after attaining the highest elevations in the Tura and Arabella ranges, slopes towards the Brahmaputra River in the north. The altitude ranges from 35masl in the plains to 1,200masl in the Tura range. The district is endowed with a substantial network of well-developed rivers, fed by heavy precipitation. The soil is acidic laterite with a predominance of clay.

The climate is humid subtropical, with annual temperatures varying from a minimum of 10.38 to a maximum of 38°C. The district receives between 475 to 550cm of rainfall annually. Precipitation takes place mainly between April and October with little or no rainfall between November and March (Planning Organization 1995).

Sociocultural Profile of the District

With a total population of 4,03,027, the district is a distinct area, because of its diverse bio-physical environment and the rich cultural milieu of the indigenous communities. Inhabited by hill tribes, the area is sparsely populated with a population density of 109/km² (Planning Organization 1995), though the density is considerably higher than the state average of 79/km² (Census 1991). The Garo tribe is the dominant ethnic community in the district, and the society is divided into two ideally exogamous clans or sects — the *Sangma* and *Marak*. These are further subdivided into various exogamous clans or *Machong*. The Garos are a matrilineal community and descent is through the mother only. Clan affiliation is determined by the mother, i.e., the children bear the title of their mother. All property and other material effects belong to the mother and are passed from mother to female child. The youngest daughter (*Nokna*) automatically inherits the family assets and her husband is called *Nokkrom*. Traditionally, after marriage, the son-in-law, or *Nokkrom*, resides in his wife's house. On the death of the father-in-law, the *Nokkrom* becomes the head of the family. The non-inheriting daughters of the family establish households away from their parents after marriage.

The Garo have their own administrative areas called, *a'khing*, under a chief called the



Location of West Garo Hills, Meghalaya, India

*Nokma*¹ to whom one or several villages owe their allegiance. The *Nokma* is responsible for dispensing administration, and judicial duties related to his village or *a'khing*. All natural resources of the *a'khing* – forests, land, and water – are the property of the community with the *Nokma*, as the custodian who technically owns land on behalf of his wife's clansmen. Customary laws govern the distribution and use of such resources. Every family receives an allotment of community *jhum* land and invests its own labour therein. Unmarried sons and daughters are allowed to cultivate and harvest a part of the family *jhum* land for their personal use and benefit, so long as it does not jeopardise the common duties of that household. This custom is applicable to rearing poultry/swine or raising fruit plantations or collecting minor forest products.

The Garo political system scrupulously obviates any concentration of ownership and power in any particular institution and holds both in balance. Ownership of an *a'khing* is held by a *Mahari* (closely related kin), but its use becomes socialised because every household, once settled in an *a'khing*, can acquire user rights irrespective of its *Mahari* affiliation. Division of the *a'khing* is restrained because of its unilineal descent through a selected female of the *Nokma* household. A particular female member of the household carries the inheritance line, whereas her husband is entrusted with administration and management. The right of ownership of the heiress in respect of an *a'khing* is also not absolute. She carries the inheritance on behalf of her *Mahari* in which her *chra* (male matri-relations) holds

the locus of power. Managerial authority is entrusted to the *Nokma* as the husband of the heiress daughter/female of the lineage owning the *a'khing* (Kar 1982).

The literacy rate in the state is 49.10 per cent (Census 1991), lower than the national average of 52.11 per cent. There has been an increase of 51 per cent in the number of literate persons during the last decade. The average literacy rate has increased by only 6.24 per cent. For the West Garo Hills the literacy rate is only 39.12 per cent, much lower than the state average. Also the female literacy rate (31.32%) is considerably lower than the male literacy rate (46.93%), with 73,951 literate males compared to 47,113 literate females (Census 1991).

The importance of agriculture as the main occupation cannot be over-emphasised as a large proportion of men and women earn their living from farm-based activities. The distribution of the main workers, marginal workers, and non-workers in the district is 159,439 (39.56%) main workers, 20,661 (5.13%) marginal, and 222,927 (55.31%) non-workers (DoES 1995). Of the main workers, a large proportion of the workers, almost 70.15 per cent, are cultivators; and they include 65.55 per cent of the male main workers and 78.48 per cent of the female working population. The tertiary and service sectors are relatively less developed.

Land Use

The occupation of land in the West Garo Hills is governed by local customs and is,

¹ The *Nokma* is the husband of the inheriting female of the founder household of the *a'khing*. The son-in-law (*Nokrrum*) becomes the *Nokma* after the death of the father-in-law. The office of the *Nokma* is hereditary.

in some ways, a factor inhibiting economic progress. However, there has not been appreciable legislative intervention in the customary land tenure system prevailing in the district.

There are two types of land tenure system in the district. The cadastrally surveyed plains (*mauza*²) are divided into *reyotwari*³ settlements, but these are inhabited predominantly by the non-Garo tribes, namely, the *Koch*, the *Hazong*, the *Rabha*, and Muslim immigrants. The hill *mauza*(s) are divided into several *a'khings*, each under an *a'kning nokma*. The inhabitants of the *a'kning* do not pay fees but outsiders have to pay a 'nokma fee' for using a plot for cultivation. Individual farmers have no permanent transferable rights over land.

Although the economy of the State is heavily dependent on agriculture, the area under crops is only 9.4 per cent of the State's land area. The total area under crops is around 203 hundred thousand hectares only. Another 37 per cent of the area is covered by forests. The remaining area is made up of vast tracts that are unsuitable for agriculture because of either rocky or rugged terrain or inaccessibility and, therefore, it is waste and barren land (Census 1991). Table 2.1 gives the land use for the district.

Infrastructural Facilities

The district has a well-established road network among the blocks and between them and district headquarters at Tura. The villages also have reasonable access to the

Table 2.1: Land Use in the District*

	Area in hectares
Total Geographical Area	554,500
Forests	263,254
Area under Non-agricultural Uses	19,082
Barren and Un-cultivable Waste	13,017
Misc. Trees, Crops, and Grooves	28,195
Permanent Pastures and Grazing Lands	nil
Cultivable Wasteland	80,113
Fallow Land other than Current Fallow	59,833
Current Fallow	16,015
Net Area Sown	74,991
Area Sown more than once	19,283
Total Cropped Area	94,274
TOTAL	668,057

Source: DoES 1995

* Figures are for the undivided West Garo Hills.

main roads. The district is connected to the neighbouring districts and Assam by road. As per the Census of India 1991, about 13 per cent of the villages in the district are connected by metalled roads.

The district has 967 Primary Schools, 207 Middle Schools, 105 High/Higher Secondary Schools, and eight colleges and training institutes. In addition, the government has decided to introduce vocational courses such as electronic technology, horticulture (including food preservation), automobile repair, animal husbandry, and so on. Currently, tailoring, stenography, and typewriting are taught.

The district has three hospitals, 14 Primary Health Centres, and 64 Sub-centres. Also, only about 18 per cent of the villages in the

² The word is used to denote a rural settlement, a revenue village.

³ A variant of land settlement in India, as distinct from the *Zamindari* (landlord) system, in which the tenant farmers supplicated directly to the king/state, without an intermediary like the *Zamindar*.

district received electricity in 1991 (Table 2.2).

ests, and to the *Nokma*, in the case of unreserved forests (Census 1991).

**Table 2.2: Block-wise Distribution of Villages
As Per the Availability of Amenities**

C D Block	No. of inhabited villages	No (with %) of villages having the following amenities		
		Market / <i>Haat</i>	Approach by metalled road	Power supply
Dadenggiri (including Tikrikilla)	263	11 (41.83)	13 (4.94)	7 (2.66)
Selsella	304	19 (6.25)	44 (14.47)	108 (35.53)
Rongram	230	6 (2.61)	41 (17.83)	29 (12.61)
Betasing	200	10 (5.00)	22 (11.00)	38 (19.00)
Zikzak	189	8 (4.23)	23 (12.17)	23 (12.17)
Dalu	249	19 (7.63)	39 (15.66)	57 (22.89)
District	1435	73 (5.09)	182 (12.68)	262 (18.26)

Source: Census of India 1991

Forests

As a result of the variation in altitude (600 to 1,600masl), the district has different climatic zones, ranging from tropical to sub-temperate, that support several vegetation types – from moist deciduous to tropical semi-evergreen forests. The forests fall into three different administrative systems – reserve forests under the Forest Department, unclassified forests under the district councils, and unreserved forests owned by the clans. In the West Garo Hills, there are six reserved forests with an area of about 109.36sq.km. A considerable portion of these reserved forests consists of *Shorea robusta* trees. Other valuable trees are *Tectona grandis*, *Gmelina arborea*, *Sterospermum chelonodes*, and *Albezzia procera*. The unclassified forests are managed by the Garo Hills' District Council and the unreserved forests by the *Nokma*. Timber from the forest areas is extracted on the basis of royalty payments to the District Council, in the case of the unclassified for-

The unclassified forests, though managed by the District Council, are included in the *a'khing* land of every *Nokma*. These forests may be subjected to annual shifting cultivation. This has resulted in depletion in and degradation of the growing stock, with mostly secondary scrub forests remaining in such areas.

During 1977-82, emphasis was placed on increasing the productivity of forests and linking forest development with industry and the rural economy. As a result, in the state controlled forest, 22.50sq.km. were planted with economically valuable species and 4.66sq.km. with fast growing species during the five-year period.

In addition, in an attempt to preserve wildlife habitats in the state, the government created the Siju Wildlife Sanctuary in West Garo district. The sanctuary lies on the banks of the Simsang River, covering an area of 5.18sq.km. (Census 1991).

Agriculture, Horticulture⁴ and Livestock

The majority (88.57%) of the population in the study region is rural (Census 1991). Thus, the life support systems of the Garo tribe have traditionally relied on (and continue to do so) the natural resources, especially forest resources, for survival and sustenance directly or indirectly. Shifting agriculture is practised on hill slopes, while wet rice cultivation takes place on the plains. Approximately 85.84 per cent of the total working population is engaged in agriculture. The dependence on *jhum* is interlinked with the forests, as these constitute the source lands for agriculture and fulfill other subsistence needs for fodder, timber, and fuel.

The fallow period is five to seven years, and about 5.7 per cent (2,650sq.km.) of the area is the minimum area under shifting cultivation at any point in time. The number of households practising shifting cultivation in 1981 was 28,877, engaging 1,41,786 people (DoES 1995). Efforts to control *jhum* cultivation have focussed on promotion of settled agriculture and growth of cash crop and horticultural species. Agriculture remains the main income generating source for the local people, especially in view of the high soil productivity and abundant rainfall, making conditions suitable for a wide range of crops.

Paddy is the main crop and is the staple food of the people. Other food crops grown include maize, millet, tapioca, and sweet potatoes. Paddy and maize are summer crops and pulses are grown in winter. The total area under agriculture in the district is 94,274 hectares out of which 57,136 hec-

tares are cultivated with food grains, resulting in production of 63,882M.T. (Planning Organization 1995). Jute and *mesta*, cotton, oilseeds, bananas, and pineapples are the main cash crops grown in the district. Other cash crops grown are sugarcane, tobacco, ginger, chillies, and other fruits and vegetables.

With continuous shifting cultivation and deforestation, land becomes almost barren and unproductive. Such natural constraints have forced farmers to shift from traditional cropping patterns to more remunerative crops. Horticultural crops and plantation crops were promoted by the Department. The important fruit crops in the district include oranges, pineapples, bananas, and jackfruit. Papaya, litchi, guava, pear, and other citrus fruits are also grown. The total area under the main horticultural crops is 7,254 hectares with a production of 76,858M.T. An additional area of 551 hectares was brought under horticulture by distributing 2.23 hundred thousand plants and grafts to the farmers in 1994.

The important plantation crops are areca and cashew nuts. Other plantation crops, such as coconut, tea, black pepper, betel leaf, and bayleaf, are also grown to some extent. The total area under plantation crops is 7,156 hectares with a production of 7,845M.T.

The main spices are ginger, turmeric, and chillies. Besides these, large cardamoms and cinnamon have been introduced recently. The area under different spice crops is 3,686 hectares with a production of 11,450M.T. (Planning Organization 1995).

⁴ Horticulture here means market gardening – cash crop cultivation — and not gardening as per the dictionary definition.

The main limitation to increasing yields from agriculture in the area is the lack of adequate irrigation facilities. The Soil Conservation Department and the Department of Agriculture have undertaken some schemes for land reclamation. The minor irrigation schemes executed in the district include construction of small weir dams and bunds for flow irrigation.

Livestock

Livestock husbandry in the district is mainly concerned with rearing cows, bullocks, poultry, and pigs. The cattle population is primarily maintained as draught power for settled agricultural operations; but it is also a source of food (meat for self consumption or sale during the festive season). However, in *jhum* cultivation the use of draught power is not required. The total livestock population is 323,762. Chickens and pigs are raised for self consumption or for sale by some families (Table 2.3). Some of the villages, especially in the hilly areas of the district, do not rear goats for the fear of overgrazing in the *jhum* areas.

Table 2.3: Livestock Population in the District

Type	Number
Cattle	203,580
Buffalos	15,286
Goats	48,802
Sheep	2,616
Pigs	53,478

Source: Planning Organization 1995

State Agricultural Department and Marketing Board : The agriculture and horticulture departments have their district headquarters at Tura and are headed by a District Agriculture Officer. At the state level, the headquarters of these departments is

at Shillong, the state capital. The organizational structure (Figure 2.1) is as follows.

The Departments of Agriculture and Horticulture : The emphasis of the Department of Agriculture in the last few years has been on encouraging agriculture and on increasing productivity of food grains to achieve self-reliance in them. To this end, the department has been promoting the adoption of double and multiple cropping systems, better farming practices, and irrigation facilities. Efforts to use high-yielding varieties and to cater to the need for quality planting materials of fruit and plantation crops have also been made. The department has a tea nursery at Rongram and three horticultural nurseries at Rongram, Damalgre, and Zikzak. The use of pesticides is not common in the area, although loss of crops due to disease is common. The department has been distributing pesticides and educating the farmers about various techniques for preventing and controlling crop diseases.

The department has made significant progress in encouraging fruit and plantation crops. Efforts are being made by them to tackle some of the problems persisting in the fruit industry. Some of the main areas identified for future action are:

- extension of areas under fruit trees and plantation crops as per the agro-climatic zones,
- supply of genuine and quality planting materials,
- optimisation of production per unit area through rejuvenation of orchards,
- strengthening of transfer of orchard-management technology,
- availability of credit at lower rates of interest for fruit and plantation crops because of perishability, and

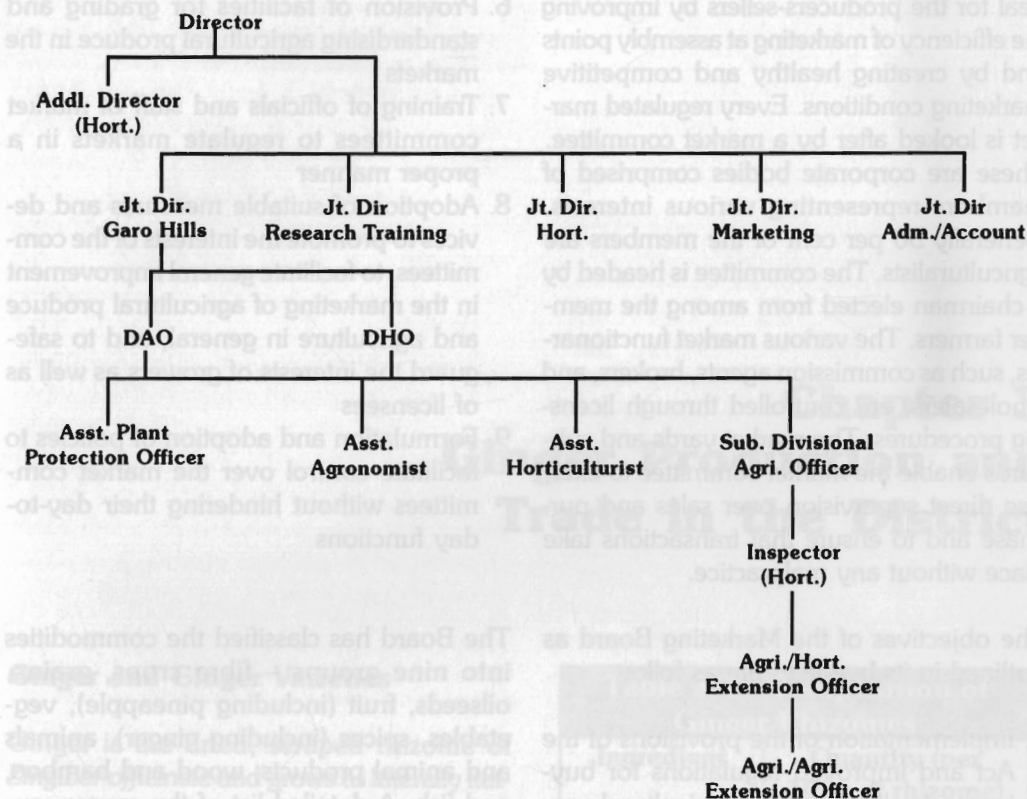


Figure 2.1: Organizational Structure of Agriculture and Horticulture

- creation of large fruit growing belts with the provision of necessary facilities such as cold storage, preservation, processing, and marketing.

Marketing Board : At present, the market for the agricultural output in West Garo Hills is unregulated for the most part. The Market Regulation Act 1980 was enacted in Meghalaya to establish an efficient agricultural marketing system and ensure good prices for growers. This Act delineates:

- an area under the authority and responsibility of each regulated market,
- commodities that come under regulation, and

- the constitution of a Market Committee to implement the provisions of the Act.

A marketing board was established in 1983, with headquarters in Shillong. It started functioning in 1983 with a skeleton staff and expansion activities include the establishment of the first secondary regulated market at Garobadha (CAM 1993).

The main function of the Marketing Board is to establish secondary regulated markets and primary market yards in different areas. A regulated market is an institution that provides for better regulation of sales and purchase of agricultural produce, in order to protect the interests of and ensure a fair

deal for the producers-sellers by improving the efficiency of marketing at assembly points and by creating healthy and competitive marketing conditions. Every regulated market is looked after by a market committee. These are corporate bodies comprised of members representing various interests. Generally 50 per cent of the members are agriculturalists. The committee is headed by a chairman elected from among the member farmers. The various market functionaries, such as commission agents, brokers, and wholesalers, are controlled through licensing procedures. The market yards and sub-yards enable the market committee to exercise direct supervision over sales and purchase and to ensure that transactions take place without any malpractice.

The objectives of the Marketing Board as outlined in its bye-laws are as follow.

1. Implementation of the provisions of the Act and improved regulations for buying and selling notified agricultural produce in the state
2. Provision of infrastructural facilities in each new, regulated market with amenities such as godowns, auction platforms, traders' shops, retailers' shops, rest houses for farmers, banks, post offices, and jute baling presses, etc
3. General improvement in marketing efficiency by promoting discipline among the trading community and other market functionaries by introducing the licensing system into market yards
4. Provision of grants and loans for the financially weak market committees to enable them to discharge their functions and duties effectively
5. Propaganda and publicity on matters pertaining to regulated marketing of agricultural produce in the state

6. Provision of facilities for grading and standardising agricultural produce in the markets
7. Training of officials and staff of market committees to regulate markets in a proper manner
8. Adoption of suitable measures and devices to promote the interests of the committees, to facilitate general improvement in the marketing of agricultural produce and agriculture in general, and to safeguard the interests of growers as well as of licensees
9. Formulation and adoption of policies to facilitate control over the market committees without hindering their day-to-day functions

The Board has classified the commodities into nine groups – fibre crops, grains, oilseeds, fruit (including pineapple), vegetables, spices (including ginger), animals and animal products, wood and bamboo, and fish. A detailed list of the crops regulated is given in Annex 2.

In the West Garo Hills, the regulated market yard proposed for Garobadha will be equipped with godowns, trader rooms, and cold storage facilities. The farmers will be able to bring their farm produce, have it weighed or measured with standard weighing equipment, and sell it through open auction to get the best rates available. The provision of storage, both seasonal and on a day-to-day basis, would allow farmers to leave the produce when prices are low on a particular day because of excess supply in the market. Their susceptibility to the fluctuations in daily prices would be reduced considerably as a result of this facility and ensure a minimum support price for farmers.