Chapter-II
Agricultural Development in Manipur

2.1 Introduction

Agriculture is the dominant occupation of the people of Manipur. It is not only the main source of livelihood of the overwhelming majority, but also a tradition and a way of life that moulds the socio-economic status of the people. More than half (52.19 percent) of the total working population of the state are directly dependent on agriculture for their livelihood. Of the total working population of 11,59,053 persons 2, 66,486 persons or 23 percent in the valley and 3,02,466 persons or 26.1 percent in the hills are agricultural workers (census, 2011). A large section of the population in the state pursued agriculture as secondary occupation even though agriculture is not their primary occupation. This shows that agriculture has been the most important occupation of the people. Agriculture provides almost all the entire food requirements of the people. This sector also provides raw materials for a limited agro-based industry.

The nature of agriculture in the valley differs from that of the hills due to the differences in physical configuration, climatic pattern, fertility of the soils and differential technological and scientific development. The valley having a stretch of fertile level land, well distributed rainfall, fair communication and marketing system along with easy access to modern technology, favours prosperous agricultural activities. Paddy is the main dominant crop of the valley. Economic condition of the people is therefore dependent on the production of paddy from their agricultural fields. In the hills, on the other hand, both shifting cultivation and terrace farming are practiced on the slopes having limited subsistence production. However, performance
of agriculture in the state mainly depends on timely rainfall and weather conditions. Rice is the staple food and is grown in hill and plain areas and its accounts for about 95 percent of the total foodgrains production of the state in 2009-10. The production of rice in 2011-12 is estimated at 4.10 lakh tonnes which is more than the preceding year’s rice output of 3.77 lakh tonnes. In case of maize, production in 2011-12 is estimated to be 9.10 thousand tonnes as against 11.91 thousand tonnes in the preceding year.

Agriculture being the main contributing sector to the state income (Net State Domestic Product) any variation in the production and productivity of this income has a direct impact on the income and welfare of the people who depend on it. Despite being the leading contributing sector in the state, some signs of the traditional agriculture, which inherited from our ancestors, are still woven around this sector in the realm of many years of economic planning. But of the late, Government has taken up development programmes to increase agricultural production in the hills and valley through innovations and modernization of the agricultural practices.

2.2 Horticulture in Manipur

Horticulture is the art of raising fruits, vegetables and ornamental plants on a commercial scale. There are three types of such crops (a) annuals that is, plants grow and set fruits and die out within a year, (b) biennials, those that complete their life cycle in two years and (c) perennials or those which live for many years (Dutta, 1966). In Manipur the above three types of horticultural crops are widely cultivated. Horticulture encompasses a wide range of crops, fruits, vegetables, flowers, spices, aromatic and medicinal plants as well as plantation of crops. In order to meet the dietary requirement of cereals, fruits and vegetables of the ever increasing population, development of the need based cropping system is the need of the hour. By taking into
consideration the geo-climatic condition and ethnic preference, cropping pattern such as horticultural crops grown in association with field crops in the same piece of land shows high degree of suitability in present day scenario of crop production system. Present day cropping pattern must focus on the sustainable system, technical feasibility, and on economic viability and also provide opportunity for promotion of marketing facilities.

As agriculture and society develop, marketing becomes ever more important. In subsistence agriculture a farmer will mainly be feeding himself and his neighbours. The local community's taste and requirements are well understood. Transport and post-harvest losses are not serious problems. As the populations of the cities expand farmers have added responsibility of feeding not only the rural market but the growing distant urban markets. The farmer therefore has to take on commercial and marketing skills. Marketing is the process by which the space between the producer and the consumer is bridged. The process obviously involves transport and techniques for minimizing crop losses. An effective distribution system will also require the establishment of rural businesses such as truck drivers and packaging manufacturers, contractors and wholesalers. The production/marketing chain is a two way process. Produce flows from the rural areas into the cities and money and market information should flow back. As tastes in the city market evolve the rural community can use this market information to target its production accordingly.

In horticultural farming, where prices are rarely regulated, financial viability depends as much upon business and marketing skills as on the farmer's technical expertise. It is high-value crops which are often a crucial component of viable small farms. The climatic conditions vary as its topography with average temperature of 15.4\(^0\)C to 25\(^0\)C, rainfall of 161.62 cm, and an altitude of about 750 meters in the
valley to about 3000 meters in the hills and mountain peaks. Under the various types of soil and favourable climatic conditions different varieties of fruits and vegetables are grown very well. The hills of the state are well defined for temperate fruits and the valley for sub-tropical fruits. The valley has plentiful species of fruits such as papaya, banana, mango, jackfruits, guava, walnut, palm, lime, arecanut, cashewnut, pomegranates, apricot etc. While pineapple, orange, apple, lemon, pear and peach etc., are excellent for most widely cultivated fruits in the hills.

The major fruits grown in the state are pineapple, orange, banana, guava and peaches etc. Manipur pineapples are well in quality; it is a moisture conserving and erosion resisting plant. It is well grown in plenty on the hill slope of the state and there is an immense possibility of increasing area under the cultivation of this fruit. The extension of the area under this crop could be done easily by reclaiming the abandoned jhum lands. Orange is another important fruit grown mostly in the hills of Churachandpur and Tamenglong areas of the Manipur western hills. There is a good scope for increasing area under orange cultivation. Papaya grown in Manipur has good quality, but the production is not enough to meet the local consumption or demand. Mangoes are poor quality, but are grown in abundance in the state upto the height of about 1000 meters from the mean sea level. Most of the fruits in the state are grown in the hills and they are consumed in the valley. They are mostly perishable and preserved as juice, jelly, etc., for export. The state has a fruit preservation and manufacturing factory at Mantripukhri, near Imphal, trademarked as MAGFRUIT. It produces squashes, jelly, chunk, rings and pickles of pineapple, orange, lime, mango, guava and ginger etc. Many orchards, usually old and unproductive that would have been abandoned are successfully rejuvenated under the proper management by ways of fertilization, cleaning and pruning etc., during the past five year plan periods.
Vegetables and spices, particularly potatoes of F(1) and F(2) seed potatoes were produced and distributed to the neighbouring states, like Nagaland, Mizoram, and the other parts of the North-Eastern states from the regional seed potatoes farm of the state, established by North East Council at Mao. Many community vegetable gardens have established in the hills area to meet the nutrient requirement and improve the economic condition of the hills people, and for increasing production of various vegetable crops. Cultivation of low volume, high value crops like cardamom, black pepper, clove, nutmeg, etc., has ample scope for socio-economic upliftment of the poor farmers of Manipur, particularly in the hills area. The valley is suitable for the growing of fruits like papaya, banana and mango and the hills are suitable for pineapple, orange, banana, pear, and peach and lemon. A large variety of vegetables and spices like chillies and ginger are grown on both the hills and plains areas. Singh (2010) points outs that bamboo shoots are very important horticultural product and there has been good demand of the bamboo shoot products as oriental food in the local and export markets specially, in countries namely Japan, Singapore, China, Thailand, Hong Kong and U.K., etc. It is also widely utilized as curry food for the people of the north-eastern states of the country. Among the fruits, pineapple has great export potential after having processed into value added products like pineapple juice concentrate, pineapple cube and singe or tit-bit and fresh pack pineapple. Among the spices, ginger has the most important potential for processing as ginger powder, ginger oil and oleoresin. Different fruit crops are being produced in different areas of the state as shown in Table 2.1.
Table 2.1
Production area of horticultural crops in Manipur

<table>
<thead>
<tr>
<th>Fruit Crops</th>
<th>Production Areas/Districts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td>Tamenglong, Churachandpur and Jiribam</td>
</tr>
<tr>
<td>Lemon</td>
<td>Tamenglong, Churachandpur and Ukhrul</td>
</tr>
<tr>
<td>Pineapple</td>
<td>Thoubal and Churachandpur</td>
</tr>
<tr>
<td>Cashewnut</td>
<td>Tamenglong and Jiribam</td>
</tr>
<tr>
<td>Banana</td>
<td>Tamenglong and Jiribam</td>
</tr>
<tr>
<td>Coconut</td>
<td>Jiribam</td>
</tr>
<tr>
<td>Plum</td>
<td>Senapati and Ukhrul</td>
</tr>
<tr>
<td>Pear</td>
<td>Senapati and Ukhrul</td>
</tr>
<tr>
<td>Peach</td>
<td>Senapati and Ukhrul</td>
</tr>
</tbody>
</table>

Source: Horticulture Department, Government of Manipur

In Manipur, production of horticultural crops is very low. This cropping pattern with lack of variety is a mark of the backwardness of agriculture in the state. As already mentioned above, physical or natural factors play a dominant role in the determination of cropping pattern in Manipur. Certain kinds of soil and climate are suitable for particular crops and are not so suitable for other crops. As a result, only those particular crops are grown in those areas which suit the natural conditions of those areas. In terms of such natural factors, rice and vegetables are the most suitably grown in the valley while fruits and other horticultural crops are suitably grown in the hills. The hilly terrain is specially suited for citrus fruits which grow well at altitudes upto 3000 feet. Oranges are also grown but the orchards are not maintained properly. In order to improve the existing orchards the orange rejuvenation programme and pineapple package programme were taken up by the Department of Horticulture. The favourable natural advantage prevailing in Manipur should be properly utilized particularly in respect of production system in horizontal spread and vertical growth.
of the tree crops for prosperous and healthy environment of the state, plantation of economically viable horticultural crops with a step towards developing modern technologies so as to help increase productivity thereby raising the economic status of the land per unit area (Meitei, Jayalaxmi, & Sophia, 2011).

2.3 Producers’ Surplus of Agricultural Commodities

In any developing economy, the producer’s surplus of agricultural produce plays a significant role. This is the quantity which is actually made available to the non-producing population of the state or region. From the marketing point of view, this surplus is more important than the total production of commodities. The arrangements for marketing and the expansion of markets have to be made only for the surplus quantity available with the farmers, and not for the total production.

The rate at which agricultural production expands determines the pace of agricultural development while the growth in the marketable surplus determines the pace of economic development. An increase in production must be accompanied by an increase in the marketable surplus for the economic development of the state. Though the marketing system is more concerned with the surplus which enters or is likely to enter the market, the quantum of total production is essential for this surplus. The larger the production of a commodity, the greater the surplus of that commodity and vice-versa. The knowledge of marketed and marketable surplus helps the policy makers as well as the traders in the following areas:

(1) Framing Sound Price Policies

Price support programmes are an integral part of agricultural policies necessary for simulating agricultural production. The knowledge of quantum of marketable surplus helps in farming these policies.
(2) **Developing Proper Procurement and Purchase Strategies**

The procurement policy for feeding the public distribution system has to taken into account the quantum and behavior of marketable and marketed surplus. Similarly, the traders, processors, and exporters have to decide their purchase strategies on the basis of marketed quantities.

(3) **Checking Undue Price Fluctuations**

A knowledge of the magnitude and extent of the surplus helps in the minimization of price fluctuations in agricultural commodities because it enables the government and the traders to make proper arrangements for the movement of produce from one area, where they are in surplus, to another area which is deficient.

(4) **Advance Estimate**

Advance estimate of the surpluses of such commodities which have the potential of external trade are useful in decisions related to the export and import of the commodity. If surplus is expected to be less than what is necessary, the state can plan for imports and if surplus is expected to be more than what is necessary, avenues for exporting such a surplus can be explored.

(5) **Development of Transport and Storage Systems**

The knowledge of marketed surplus helps in developing adequate capacity of transport and storage system to handle it.

2.4 Role of Marketing in Agriculture

In the process of marketing, goods pass through several hands before they reach the consumers. There are different middlemen between producers and consumers who perform various functions. The important marketing functions are as follows:
1. Assembling

In the marketing process, the first step is to purchase the produce from different producers and assemble them at selected places. In the rural areas, agricultural production is the main economic activity. There are a large number of agricultural producers scattered over a wide area. From each producer only a small quantity of marketable surplus may be available. Purchasing from different producers; assembling at selected places is a marketable function performed by several middlemen.

2. Transportation

Individual producers are not in a position to make their own transport arrangements and take the produce directly to the wholesale trader. Therefore, a large number of intermediaries who purchase the produce from different production centers make transport arrangements and take it to the wholesale market.

3. Storage and Warehousing

The agricultural produce is seasonal. Therefore, the produce has to be purchased in the seasons when it is available and it has to be stored. The stored or stocked produce is released to the market, whenever there is demand. The storage and warehousing facilities become an important in marketing.

4. Classification and Grading

The function of classification and grading helps in sorting out of commodities according to size, quality, colour, weight, etc. This step helps to fix the prices according to the quality or grade of the commodity. Classification and grading help the producer to get a fair price for his produce and help the consumer to get good quality produce.
5. Equalization

The process of equalization refers to matching the flow of supply with the rate of demand. Agricultural commodities are seasonally produced while they are consumed in all seasons. Hence, the middlemen purchase the agricultural produce at a time when it is produced and stock the produce. They release the stock whenever and wherever there is demand. So, they may help in equalizing seasonal supplies with regular demand. This type of equalization process is an important function in marketing.

6. Processing

Agricultural products are not acceptable to the consumers in the same form as they are available from the field. They have to be processed, converting paddy into rice, wheat into wheat powder, etc. This processing function is equally important.

7. Distribution

Produce purchased and stocked must be taken to the consumers. The consumers are also many in number and they are distributed over a wide area. Therefore, some persons, wholesale traders or retailers, must take the necessary steps to take the produce to the consumers.

2.5 Agricultural Produce Marketing in Manipur

Marketing of agricultural produce in Manipur has not been systematically organized. The lion’s share of the consumers’ rupee goes to the pockets of innumerable middlemen working in between the producer and the ultimate consumer. The cultivators of Manipur are generally persons of small means. Their holdings are small and scattered. As such, they have got very little quantity of agricultural produce available individually as a marketable surplus to be disposed off. Obviously it becomes uneconomical to carry the small quantity of produce to the assembling
markets located at distant places where middlemen operate at different stages. Under the prevailing marketing practice in the state, farm produces are collected from the producers in the interior villages and are brought to a central point, which is the assembling center, by the womenfolk. Sometimes cultivators sell their produce to the itinerate merchants. From the village markets it is procured by the itinerate merchants and agents of the wholesalers belonging to towns such as Imphal, Singjamei, Thoubal, Kakching, Bishnupur, Moirang, Churachandpur and the like. The trading and transaction pattern in almost all the markets are old traditional type. Manipur is the small state situated at the North-Eastern most corner of the country and has two distinct geographical regions – the valley and hill. Connectivity in the hill region is very poor and in most parts of the region the transportation of agricultural products is extremely difficult. These being the situation, transportation costs of agricultural commodities in the state are very high. The transport, that gives “place utility” to a farm product, is one of the main problems in Manipur. As motorable roads do not properly connect most of the production areas, the farmers find it difficult to bring their produce to the primary and terminal markets for sale and thus deprive themselves of remunerative prices. In some interior areas, there is no road at all and even bullock carts as a means of transport for bringing farm products to the assembling centers cannot be used. Consequently, the farmers have to sell their commodities at a lower and uneconomical price to the itinerate traders at their farms itself. In Manipur agricultural marketing is characterized by the existence of excessive middlemen between producers and consumers. The existence of a long chain of middlemen reduces the share of the consumer’s price received by the actual cultivators. Such a large number of markets and middlemen through which agricultural products move are superfluous and unwanted. Regarding market charges, it seems that the prevailing system in Manipur is different from those prevalent in the
unregulated markets in other parts of the country. In Manipur, the sellers have the advantages of not paying any charges. The producers have to pay numerous and varied charges for marketing of their produce. There are about 24 wholesale assembling markets and 94 rural primary markets in the state. Bihar Agricultural Produce Market Act 1960 with necessary modification has been extended to Manipur. But so far, none of the commodities is notified for the purpose of regulation. As such no regulated market exists in Manipur. Standard norms of weights and measures should be strictly adhered to in regulated markets. But there are very common scales and weights are manipulated against the seller. Multiplicity of weights and measures lead to cheating of the cultivators. Needless complications emerge between different markets making supervision difficult, rendering statistical data inaccurate etc., thus deliberate malpractices, ignorance and carelessness have all combined to make the consumers in Manipur pay an unnecessarily high price for many goods of different qualities.

Road transport is the only means of transport for farm products to distant places as there is no rail link in the state. During rainy and a few months of post-monsoon season water transport by boat is also used in some places. In the monsoon season due to bad road conditions and tear of landslides, the transport charges are very high. Again the cost of transport by road is not uniform as it varies according to the condition of the roads. Inadequate transport facility causes glut in the producing area and scarcity in consuming centers at that times affecting both the producer for receiving in lower price and the consumer due to irregular supply and high retail price. The cultivators are not fully aware of the perfect market information. They remain in the dark as to the movement of market prices, demand and supply, government policies, international trends etc. So far, there is neither any private nor
corporate body to disseminate market information for the benefit of the producers and consumers. As such the farmers who are in the villages have no chance to know the prevailing prices at district and state level markets. Most of the cultivators take their course of action on the basis of information supplied by money-lenders, traders, brokers, commission agents and other functionaries. This information is virtually wrong as well as biased and detrimental to the interests of the cultivators. The daily prices are also not broadcast through the All India Radio, Imphal. The newspaper does not give market data and prices of commodities. Price information helps cultivators to decide when to sell, how much to sell and where to sell.

There is a general shortage of storage facilities in both the urban and rural areas of the state. The prevailing systems of storage in the rural areas are quite primitive and unscientific; they cannot be regarded as satisfactory. There are no proper warehousing and cold storage facilities to store and sell at the opportune time to get better profit for their produce. Many rural people do not have adequate storage facilities. Large losses in agricultural products are incurred each year by dampness and damages by ants, pests and rodents. This loss is mainly due to insufficient and defective storage facilities. Lack of storage facilities lead the bulk of the agricultural produce is sold in the village at unfavourable price due to hurry. The itinerate traders and small merchants purchase the produce from the cultivators in village immediately after harvest. They either store it in the shops of the big merchants or sell the produce to the wholesalers or consumers. The big merchants purchase the produce and store it in their own godowns till better price prevails, reap the benefits of escalated prices. As the farmers do not have the storage facilities and enough finance to procure the requirements, they are deprived of their genuine share in the price hike. Producers in general sell their produce at an unfavourable place and at unfavourable time and
usually they get very unfavourable terms. The existing position of agricultural marketing could be assessed in the light of these three phases viz., unfavourable place, unfavourable time and unfavourable terms. It would be pertinent that the cultivators in general and small farmers in particular, are forced to sell their produce soon after harvesting crops in a period when there is glut in the market due to poverty, lack of holding capacity and need for finance. As a result, price offered to them is very low. Nevertheless, cultivators have to borrow heavily for growing crops, often mortgage their standing crops well in advance so that the sale is a mere formality which takes place in the field soon after harvesting crops.

In view of the several disadvantages suffered by the cultivators and special characteristics of agricultural products, marketing of agricultural products is really a complex problem. All these lapses of agricultural marketing in Manipur result in low income to the farmer which causes him to earn a number of hardships, adversely affecting marketing surplus, higher price and poor quality for the consumer and on the whole upsetting the planning process. It is, therefore, essential that the state plays a more meaningful, positive role in marketing of agricultural products.

2.6 Distribution Channels of Rural Marketing

Marketing channels are the routes through which agricultural products move from producers to consumers. The length of the channel varies from commodity to commodity, depending on the quantity to be moved, the form of consumer demand and degree of regional specialization in production. A marketing channel may be defined in different ways. According to Moore, Johl, and Khruso (1973), the chain of intermediaries through whom the various foodgrains pass from producers to consumers constitutes their marketing channels. Kohls and Uhls (1980) have defined marketing channel as alternative routes of product flows from producers to
consumers. A study conducted by Ricard defined marketing channel, “A channel is the pipeline through which a product flows on its way to the consumer. The manufacturer puts his product into the pipeline or marketing channel and various marketing people move it along to the consumer at the other end of the channel.”

Marketing channels for rural products vary from product to product, country to country, lot to lot and time to time. For examples, marketing channels for fruits are different from those foodgrains. Packagers play a crucial role in the marketing of fruits. The level of the development of a society or country determines the final form in which consumers demand the product. For example, consumers in developed countries demand more processed foods in a packet form. Wheat has to be supplied in the form of bread. Most eatables have to be cooked and packed properly before they reach the consumers. Processors play a dominant role in such societies. In developing countries like India, however, most foodgrains are purchased by consumers in the raw form and processing is done at the consumer’s level. Again, the lots originating at small farms follow different route or channels from the one originating in large farms. For example, small farms usually sell their produce to village traders; it may or may not enter the main market. But large farms usually sell their produce in the main market, where it goes into the hands of wholesalers. The produce sold immediately after harvest usually follows longer channel than the one sold in later months. With the expansion in transportation and communication network, changes in the structure of demand and the development of markets, marketing channels for farm products in Manipur have undergone a considerable change, both in terms of length and quality.

2.6.1 Marketing Channels for Foodgrains

In the process of foodgrains marketing, the produce undergoes a change in time, place, form and ownership adding up their values at respective stages. The chain
of intermediaries constitutes the channels of marketing system. Marketing channels for various foodgrains in Manipur are more or less similar except the channel for paddy (or rice) where rice millers come into picture. For pulse crops, dal mills appear prominently in the channel. In the case of foodgrains the important marketing channels are:

(i) Producer to consumer
(ii) Producer to village trader to wholesaler to retailer to consumer
(iii) Producer to primary wholesaler to secondary wholesaler to retailer to consumer.

The channels for paddy (or rice) and pulses are broadly the same, except that the rice millers or dal millers come into the picture before the produce reach retailers or consumers.

2.6.2 Marketing Channels for Oilseeds

Marketing channels for oilseeds are different from those for foodgrains, mainly because the extraction of oil from oilseeds is an important marketing function of oilseeds. The most common marketing channels for oilseeds in Manipur are:

(i) Producer to consumer
(ii) Producer to village trader to processor to oil retailer to consumer
(iii) Producer to village trader to processor to oil consumer

2.6.3 Marketing Channels for Fruits and Vegetables

Marketing channels for fruits and vegetables vary from commodity to commodity and from producer to producer. In rural areas and small towns, many producers perform the function of retail sellers. Large producers directly sell their produce to the wholesalers or processing firms. The chains of intermediaries
constitute the channels of marketing system (Rajagopal, 1988). Some of the common marketing channels for vegetables and fruits are:

(i) Producer to consumer
(ii) Producer to primary wholesalers to retailers or hawkers to consumer
(iii) Producer to processors (for conversion into juices, preserves, etc.)
(iv) Producers to primary wholesalers to processors
(v) Producers to primary wholesalers to secondary wholesalers to retailers or hawkers to consumers

An important feature of marketing channels for fruits and vegetables is that these commodities just move to some selected centers and subsequently are distributed to urban population and other medium size urban market centers. The wholesale markets of these urban centers work as transit points and thus play an important role in the entire marketing channel for fruits and vegetables. The cultivator gets the lowest value for his produce in the competitive price structure of the market and the trader’s trend of maximizing their profit and they purchase the produce on behalf of the wholesale merchants (Rajagopal, 1992).

The horticultural produce marketing is a complex process because of two main reasons: (i) the fruits and vegetables being perishable produce are subject to high price speculations and variations, and (ii) involvement of a large number of intermediaries in order to handle the large volume of produce. Such complexities result into spread of marketing margins among the set of intermediaries involved in mobilizing the produce from cultivator to consumer. However, the producer’s share in the consumer’s rupee for the produce sold will be lower due to the distribution of net margins at many levels of market functionaries.
2.6.4 Marketing Channel for Eggs

The prevalent marketing channels for eggs are:

(i) Producer to consumer
(ii) Producer to retailer to consumer
(iii) Producer to wholesaler to retailer to consumer

Sometimes, the wholesaling and retailing functions are performed by a single firm in the channel.

2.6.5 Marketing Channels for Live Poultry

In Manipur the movement path for live poultry are as follows:

(i) Producer to consumer
(ii) Producer to itinerate trader to consumer
(iii) Producer to itinerate trader to retailer to consumer
(iv) Producer to wholesaler to retailer consumer
(v) Producer to itinerate trader to wholesaler to hotels and institutions

2.7 Fertilizers Position in Manipur

Agriculture will continue to occupy a predominant role in the Indian economy. Agriculture in fact needs to be termed as the largest industry in India. As fertilizers use assumes greater importance to maximize the benefit of irrigation facilities and high yielding varieties of seeds, India has always accorded high priority to raising fertilizer consumption and production commensurate with stipulated agricultural growth and is giving subsidy on fertilizers. Chemical fertilizers have played a vital role in the success of India’s green revolution and consequent self-production of foodgrains in the country. The fertilizers industry in India has grown tremendously in the last thirty years. The Government has ensured adequate and timely supply of fertilizers to the farmers in the remote and hilly areas. It also facilitates the availability of the same at decontrolled prices, distribution and movements of Phosphatic (P) and
Potassic (K) fertilizers. Agriculture, as in the other parts of the country, is the main occupation of the people of Manipur. Fertilizers, therefore play an important role in the livelihood of the farmers of the state. Unlike the other bigger states, Manipur comprises mainly of marginal and small farmers operating in both valley and hill districts. Fertilizer is decidedly the most important of all the inputs purchased by the farmer for use in present day agriculture with a view to augmenting agricultural production. The increase in foodgrains production in Manipur is due to fertilizer use. The demand for chemical fertilizers has increased with the evolution of new hybrid and dwarf variety seeds, which are more responsive to chemical fertilizers. The use of fertilizers increases land productivity, the yield increases and eases the nutrient constraints on multiple cropping and land development programmes. Fertilizers relax the land constraint. Since the yield increase is proportionately more than the corresponding incremental labour applied, fertilizers use increases labour productivity. The production, distribution and consumption of fertilizers create an additional employment opportunity which is extremely important in labour-surplus countries.

Except for urea which is produced at Namrup, Assam, all chemical fertilizers are being brought from outside to the North-East region by railways upto Guwahati and then transported to Manipur by road. The main chemical fertilizers used in Manipur are Urea (controlled by the state), Di-ammonium Phosphate (DAP), Single Super Phosphate (SSP) and Muriate of Potash (MOP). The main manufacturers dealing in Manipur are Brahmaputra Valley Fertilizer Corporation Ltd. (BVFC) at Namrup, Assam and Indian Farmers Fertilizer Co-operative Ltd. (IFFCO) at Guwahati.
2.8 Promotion of Integrated Nutrient Management

For some decades now, approach and outlook towards agriculture and marketing of food has seen a quantum change world wide. Whereas in earlier times the seasons and the climate of an area determined what would be grown and when, today it is the “market” that determines what it wants and what should be grown. The focus is now more on quantity and the outer appearance rather than intrinsic or nutritional quality. Pesticide and other chemical residues in food and an overall reduced quality of food have lead to a marketed increase in various diseases, mainly various forms of cancer and reduced bodily immunity. This commercialization of farming has also had a very negative effect on the environment. The use of fertilizers and pesticides has lead to enormous levels of chemical buildup in our environment, soil, water, air, animals and even in human bodies. Fertilizers have a short-term effect on productivity but a longer-term negative effect on the environment where they remain for years after leaching and running off, contaminating ground water and water bodies. Despite increase in productivity, farmers in practically every country around the world have seen a downturn in their fortunes (Singh, 2007). This is where the organic farming comes in. Organic farming is a means of producing food and fiber including grains, meat, diary, eggs, cotton and flowers that is better for the environment and healthier than conventional farming. It also greatly helps a farmer to become self-sufficient in his requirements for agro-inputs and reduce his costs. Organic farming aspires to a combined mixture of agronomic, environmental, social and ethical objectives.

The Government of India is promoting soil test-based, balanced and judicious use of chemical fertilizers, bio-fertilizers and locally available organic manures such as farmyard manure, vermi-compost and green manure to maintain soil health and
productivity. A centrally sponsored scheme, namely, the National Project on Management of Soil Health and Fertility (NPMSF) has been introduced during 2008-09. The components of the new scheme include the setting up of 500 new Soil Testing Laboratories (STLs), strengthening the existing 315 STLs, setting up of 250 mobile STLs, promotion of organic manure, soil amendment and distribution of micro nutrients, setting up of 20 new Fertilizers Quality Control Laboratories (FQCLs) and strengthening of 63 existing FQCLs during the Eleventh Plan. Manure is required on both valley and hills for good yield. Usually the cultivators use organic manures, such as cow-dung which is easily available in rural areas. Every cultivator in the valley keeps cows, bullocks and buffalos, etc. They can collect cow-dung. The farmers have also knowledge of making compost. There is garbage and other waste, which may be put in the pits, called compost pits. Green manures had already been practiced in the fields. Certain plants like Dhaicha (Sebania aculeate) and sun hemp has grown in the field. They compost in the field and augment its fertility. The seeds of green manure are supplied to the cultivators at a subsidized rate by the state with necessary instructions and demonstrations provided. In the traditional agriculture, the productivity is low, because the farmers are ignorant about the improvement of soil and they do not use manure regularly. In Manipur using of organic inputs like vermi-compost, bio-fertilizers and bio-pesticides is in the initial stage. Moreover, these organic inputs are not readily available in sufficient quantity. Farmers are managing it to get from the private sectors. Steps have been taken by the state government to ensure an increase in the supply of non-chemical fertilizers. The bio-pesticides are also made available to the farmers by the department of Agriculture, Manipur. The consumption of bio-pesticides is very low. Although, organic farming is a common practice in the home-stead gardens, there is no commercial production of crops under organic farming. Due to lack of adequate awareness and education among the farming
community, there are many misconceptions regarding the use, application and types of organic and bio-fertilizers. Hence, it becomes extremely important to encourage the farming community to be educated and made aware about these non-chemical fertilizers. So, it may help the farmers in producing their products on commercial scale.

2.9 Profile of the Study Area

Prior to the discussion of findings of the study on rural marketing of agricultural produce, it is essential to sketch briefly the salient features of the study area. The following is the brief features of the districts of Bishnupur and Thoubal.

2.9.1 Bishnupur District

The original name of Bishnupur was Lamlangdong (Lamangdong). As soon as Kyamba ascended the throne of Manipur in 1467 he conquered Kyang, which was a Shan kingdom in the Kabow Valley. It is said that an image of Vishnu was given by the Pong king along with the fruit pong “hei” ton (guava) and the ponghawai (a kind of pulse). Kyamba kept the “Vishnu” image given to him at Lumlangdong which also came to be known as Bishnupur that is, abode of Vishnu. Perhaps, it was during the reign of Kyamba that Vishnu worship started in Manipur. The conical temple of Lord Vishnu was built during the reign of king Khagemba. It is interesting because of its antiquity and architectural design influenced by Chinese style.

2.9.1.1 Location

Bishnupur District came into existence on the 25th May, 1983. The district is located in the South-west of Manipur Central Valley area. It is geographically situated between 24°10’ and 24°45’ North latitude and 93°45’ and 93°52’ East longitude. The district is divided into two parts, viz., land portion which is mostly plain and water
portion comprising the major parts of the Loktak Lake. In fact, more than 50 percent of Bishnupur district is covered by the Loktak Lake. The District has a plethora of different kinds of soil viz., clay, loamy and sandy soils. About five rivers namely the Nambol, Thongjaorok, Moirang, Khuga and Manipur rivers flow through the district. The total area of this district according to 2011 census is 496 sq. km and the altitude is 822.18 meters above mean sea level. It is bounded by Thoubal District in the East, Imphal West District in the North, partly by Senapati, Churachandpur District in the West and South.

Bishnupur is situated 27 km. away from Imphal on Tidddim Road, the National Highway No. 150. Bishnupur is the District Headquater of Bishnupur District. The oldest name of Bishnupur is Lamangdong. Both the names are still used by the people of the State. Bishnupur was the gateway for travellers going out of the State or entering it via Cachar in Assam. The road from Bishnupur to Cachar was popularly called as “Tongjei Maril”, literally meaning the pipeline of a hookah and metaphorically it stands for the narrow character of the road. The bustling district headquarters is known for hill grown oranges. Bishnupur is better known for its bamboo shoot (Soidon/Soijin), tree beans (Yongchak) and Stoneware products popularly known as Nungtengkot.

2.9.1.2 Geographical Area

Bishnupur District covers an area of 530 sq. km. Most of which is occupied by valley. Comprising an urban area of 34.4 sq. km and a rural area of 495.6 sq. km in 1981 census, 496 sq. km constituting an urban area of 37.02 sq. km and a rural area of 458.98 sq. km in 1991 census and 496 sq. km comprising an urban area of 37.02 sq. km and a rural area of 458.98 sq. km in 2001 census. It constituted 2.37 percentage in 1981 census, 2.22 percentage in 1991 census and 2.22 percentage of the total
geographical area of Manipur according to 2001 census. According to 2011 census, density of population is 479 persons per sq. km as against 419 persons per sq. km in 2001 census. Bishnupur District is the smallest district of the existing nine districts of Manipur. Though, the area of the district is only 2.2 percent of the total area of the state, it contains 9.24 percent of the state population.

2.9.1.3 Climate

Bishnupur District has a moderate sub-tropical climate. The maximum and minimum temperatures are 36°C and 10°C respectively. The annual rainfall is about 1290 mm.

2.9.1.4 Administrative Units

Bishnupur District is administratively headed by a Deputy Commissioner also known as District Collector/Magistrate. There is a Revenue Commissioner who looks after the four valley districts including Bishnupur District. At the sub-divisional level, there is the Sub-Divisional Officers and below him the Sub-Deputy Collectors. The Sub-Deputy Collector’s is the smallest administrative unit. Bishnupur District remained as a Sub-Division under Manipur Central District according to 1981 census as against two Sub-Divisions viz., Bishnupur and Moirang Sub-Divisions in 1991 census and there were three Sub-divisions namely, Nambol, Bishnupur and Moirang Sub-Divisions in 2001 census as against four Sub-Deputy Collectors in 1991 census. The numbers of towns and villages as per 2001 census are 7 and 48 respectively as against 7 towns and 45 villages in 1991 census. There are two Community Development Blocks, they are:

(a) Bishnupur Community Development Block and
(b) Moirang Community Development Block.
Again, it has six Assembly constituencies viz., Nambol Assembly Constituency, Oinam Assembly Constituency, Bishnupur Assembly Constituency, Moirang Assembly Constituency, Thanga Assembly Constituency, Kumbi Assembly Constituency.

2.9.1.5 Population

The population of the district is 2,37,399 during 2011 census, out of which number of males are 1,18,782 and females are 1,18,617. The density of population is 479 persons per sq. Km. The rural and urban population are 1,49,894 and 87,505 that is, 63.14 and 36.86 respectively. The below Table 2.2 represents the population of Bishnupur district.

Table 2.2
Population of Bishnupur District

<table>
<thead>
<tr>
<th>Population Census</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>46,972</td>
</tr>
<tr>
<td>1961</td>
<td>78,853</td>
</tr>
<tr>
<td>1971</td>
<td>1,08,306</td>
</tr>
<tr>
<td>1981</td>
<td>1,41,150</td>
</tr>
<tr>
<td>1991</td>
<td>1,80,773</td>
</tr>
<tr>
<td>2001</td>
<td>2,08,368</td>
</tr>
<tr>
<td>2011</td>
<td>2,37,399</td>
</tr>
</tbody>
</table>

Source: Economic Survey Manipur 2012-13

2.9.1.6 Literacy

Education is a necessary and basic ingredient of economic and social development planning. Human is the most important factor in the economic development of the district. Man is a dynamic resource. It provides labour and skill to plan, perform the process of utilization and development of natural resources that help
in the process of production. So the entire population of an area can live healthy wealthy. The Literacy in the Bishnupur district is 75.85 percent during 2011 Census. The percentage of males and females are 85.11 and 66.68 respectively. This indicates that in the district males has preponderance over females in literacy.

2.9.1.7 Industry

Cottage and Village industries found in the district are an unorganized group requiring much assistance and facilities. Village industries in India have a long tradition of craftsmanship, but with the industrialization of the country and the drift from villages to the towns, many of these industries were fast declined. Therefore, focus on the rural areas and small towns of the country have been one of the main features of the New Industrial Policy of the Government of India.

There are nine District Industries Centres for the nine Districts of Manipur. The districts covered by the DICs are:

1. Imphal East District.
2. Imphal West District.
3. Thoubal District.
4. Bishnupur District.
5. Chandel District.
6. Ukhrul District
7. Senapati District.
8. Tamenglong District.
9. Churachandpur District.

National Committee on Development of Backward Areas (NCDBA) categorized Manipur as a less developed state. Because its per-capita value addition in manufacturing was below the national average Entrepreneur in Bishnupur District and
also be provided with all concessional finance and various facilities eligible to small-scale units in backward areas.

**2.9.1.8 Land Utilization**

Firm information regarding the land utilization of the entire state would not be available, but only for the cadastral survey area of the valley and a very small pocket of the hills can be visualized. Out of the total geographical area of the district, the statistical information regarding land use classification has been reported an area covering 46,076 hectares in 2001 census. About 4,760 hectares of land are not available for cultivation and there is no forested area. Other uncultivable land excluding the fallow lands covered about 2,445 hectares. Of course, part of this land can be brought under plough, at a prohibitive cost.

The net sown area of the district alone covered about 38,671 hectares. A small fraction of the sown area is sown more than once and it accounts for about 3,695 hectares of the total cropped area. It indicates that the land has brought under plough as far as possible. However further possibility of additional land under plough are very limited. In fact, at all sources, the use to which land is put here, the most important is agricultural use. The Table 2.3 shows the land utilization in the Bishnupur District.
Table 2.3
Land utilization in Bishnupur District

<table>
<thead>
<tr>
<th>Land use classification</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total geographical Area</td>
<td></td>
</tr>
<tr>
<td>(a) According to Surveyor General of India</td>
<td>53,000</td>
</tr>
<tr>
<td>(b) According to village paper</td>
<td>46,076</td>
</tr>
<tr>
<td>2. Forest</td>
<td></td>
</tr>
<tr>
<td>3. Land not available for cultivation</td>
<td>4,760</td>
</tr>
<tr>
<td>3.1 Barren and unculturable land</td>
<td>225</td>
</tr>
<tr>
<td>3.2 Land put to non-Agricultural uses</td>
<td>4,535</td>
</tr>
<tr>
<td>4. Other uncultivated land excluding fallow land</td>
<td>2,445</td>
</tr>
<tr>
<td>4.1 Permanent pastures and other grazing land</td>
<td>760</td>
</tr>
<tr>
<td>4.2 Land under Misc. tree crops and groves (not included in net area sown)</td>
<td>1,360</td>
</tr>
<tr>
<td>4.3 Cultivable waste land</td>
<td>325</td>
</tr>
<tr>
<td>5. Fallow</td>
<td>200</td>
</tr>
<tr>
<td>5.1 Fallow lands other than current fallows</td>
<td>60</td>
</tr>
<tr>
<td>5.2 Current fallows</td>
<td>140</td>
</tr>
<tr>
<td>6. Net area sown</td>
<td>38,671</td>
</tr>
<tr>
<td>7. Area sown more than once</td>
<td>3,695</td>
</tr>
<tr>
<td>8. Total cropped Area (6+7)</td>
<td>42,366</td>
</tr>
</tbody>
</table>

-Not available

Source: Statistical Abstract Manipur 2010

2.9.1.9 Irrigation

Increase in agricultural production and productivity depends to a large extent on the availability of water. Irrigation is, thus, the most important infrastructure need for the modernization of agriculture. High yielding varieties seeds require not only more water but also more rounds of irrigation. Further, irrigation helps in inducing
multiple cropping and reducing the extent of current fallows increasing the intensity of cropping.

In a State like Manipur where more than 53 per cent of the domestic product is generated from the agricultural sector, assured water supply for irrigation is of utmost importance (Singh, 1993). But, Bishnupur District is lagging much behind in the development of irrigation facilities. Most of the agricultural areas are under rainfed. Out of the total cultivated area in the district, about 22,380 hectares are under rainfed. However, under Bishnupur block about 5,200 hectares are brought under irrigation. The distribution of rainfall over the time and space is very uneven. The total irrigated area under rice is 19.12 thousand hectares in 2010-11. There are two kinds of irrigation projects in Bishnupur District. They are Minor Irrigation Project and Major Irrigation Project.

2.9.1.10 Cropping Pattern

The cropping pattern of Bishnupur District is mainly influenced by the natural, social, historical and economic factors. In addition, the government can also effect changes in cropping pattern through its agricultural policy. The cultivation in the district is almost entirely of mono-cropping pattern. Paddy is the main crop growing in the region. Paddy is widely cultivated in the district. In the year 2010-11, the area under this crop was 19.13 thousand hectares where the production was 32.94 thousand tonnes. Rice sown in this region is classified into three categories viz.,

(i) Broadcast (Punghul)
(ii) Broadcast into water (Pamphel) and
(iii) Transplantation method (Aringba)
Phughul is sown in the months of March and April and harvested from August to September. In other words, it is known as dry sowing of paddy. Pamphel is sown in the months of May and June and harvested from October to November and it is known as wet sown. On the other hand, transplantation method (Aringba) is adopted in a large variety of low and upland areas of the district. It is harvested from November to December. The intensity of cropping in the Bishnupur District is low. Agriculture operations in the district are mainly rainfed. However, there is a good scope to develop mono-cropping to double cropping in the paddy fields by supplying irrigation water from the mountain gift drainage that flow in the district. The cropping patterns of Kharif and Rabi seasons are usually seen in the ‘Ingkhol’ and fields, which include paddy, maize, pulses, wheat, vegetables, mustard, sugarcane, tomato, chillies, potato, spices, gingers, cabbage, banana, fruits, etc.

2.9.1.11 Occupational Structure

Occupation structure is an important index upon the economic dynamics factor of health and vigor of a region. Population structure is determined by the occupation of the population. Men earn a living by finding employment in some services, industry, or in a profession. These services, industries and profession are the occupations of the human kind. Each occupation presents a line of human work. There has been a change in the functional classification of the workers with a shift from the primary sector to the secondary and tertiary sector. The occupation-wise distribution of the district shows that there are 36.90 percent cultivators and 16.23 percent agricultural labourers according to 2011 census. The Table 2.4 represents the Occupation structure in the Bishnupur District.
Table 2.4
Occupation structure in Bishnupur District according to 2011 census

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Numbers</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultivators</td>
<td>34,358</td>
<td>36.90</td>
</tr>
<tr>
<td>Agricultural Labour</td>
<td>15,109</td>
<td>16.23</td>
</tr>
<tr>
<td>Livestock, Forestry, Fishing, Hunting and plantation, Orchards &amp; Allied activities</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mining and Quarrying</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Manufacturing, Processing, Servicing and Repairing in Household Industry</td>
<td>4072</td>
<td>4.37</td>
</tr>
<tr>
<td>Construction</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Trade and Commerce</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport Storage and Communication</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other Services</td>
<td>39,576</td>
<td>42.50</td>
</tr>
<tr>
<td>Total</td>
<td>93,115</td>
<td>100</td>
</tr>
</tbody>
</table>

-Not Available

Source: Statistical Year Book Manipur 2013

2.9.1.12 Information on Markets

Markets in the Bishnupur District are mostly unorganized. Local markets are within the radius of 3-4 kms from the villages. Local produce are brought and sold in the local markets. However, as all the produce could not be sold out in the local area, the produce are brought and sold to bigger markets like Moirang, Moirang Lamkhai, Kumbi, Nambol etc. There are twelve rural markets in Bishnupur district. Exploitations of the farmers by the middlemen by collecting the local produce from the local market and selling at a higher rate at the bigger markets occur frequently.

2.9.1.13 Infrastructure Facility

No infrastructures for warehouse/cold storage are available in the District. A few warehouses/godowns are available under co-operative societies. One state owned warehouse with a capacity of 1,000 Metric Tonnes (MT) is located at Bishnupur Headquarter under Food and Civil Supplies, Manipur.
2.9.2 Thoubal District

Thoubal is an historical district of Manipur. The district has in recent past, seen many bloody and disgraceful battles. It is in this district, at Khongjom, that the last battle of the independence of Manipur was fought in April, 1891 by a few and ill-equipped soldiers of Manipur against the might of the British Empire. It is not just an irony of the fate that Major Paona Brajabashi and others would meet their last days in this battle. The battle symbolizes the honorable deed of supreme sacrifice for one’s motherland.

2.9.2.1 Location

The district of Thoubal, which occupies the bigger portion of the eastern half of the Manipur valley, takes the shape of an irregular triangle with its base facing north. It lies between 23°45′ N and 24°45′ N latitude and 93°45′ E and 94°15′ E longitude. It is bounded on the north by Senapati district, on the east by Ukhrul and Chandel districts, on the south by Churachandpur and Bishnupur districts and on the west by the districts of Imphal west and Imphal east. It has an area of 514 sq. km Its average elevation is not very much different from the rest of the Manipur Valley which is about 790 meters on an average above the sea level. Although the district is a part of the valley, the area of the district is not entirely plain. Many rivers flow through the district and many lakes dot its surface. Some of which are closely intertwined with many folk tales and stories, of which mention may be made of the fishing and other episodes of the love story of the Khamba-Thoibi legend.

2.9.2.2 Geographical Area

The Thoubal district is quite young and has been separated from the former Manipur Central District on 25th May, 1983. It may be divided under three topographic divisions, viz., Plains, shallow lakes and small popping hill-locks. The
plain portion may be referred to the state plan, as the rice dish of the district. The District is mainly inhabited by Manipuri Meiteis, Manipur Muslims and a few Scheduled Tribes and Scheduled Castes namely Tangkhul, Koms, Marings, Anals, Kabuis and Thoubal Khunou which is the only scheduled caste village in the district. Thoubal district covers an area of 514 sq. km. The total population of Thoubal district according to 2011 census is 4,22,168 population. Out of which 2,70,835 are rural population and 1,51,333 are urban population. The percentage of rural population and urban population are 64.15 percent and 36.02 percent respectively. Although major shares of total population in Thoubal district is found in rural areas.

2.9.2.3 Climate

On the whole, the district has an equitable and pleasant climate. Rainfall is relatively abundant and widespread. The maximum and minimum temperature are $34^0\text{C}$ and $4^0\text{C}$ respectively. The rainy season starts in June with the onset of the south-west monsoon and last upto September. Intermittent rains continue even upto October along with the retreat of the monsoon. As in the rest of the state, the district is also under the effect of the so-called ‘Vagaries of the monsoon’ with the alternating droughts and floods. During the rainy season the rain water in the hills quickly flow down to the valley and all the rivers and small streams rises to the full brim, frequently flooding its embankments. As the lakes became full, the low lying areas around them are easily amenable to flood. Drainage is slow and takes a long time. The cold seasons last from December to February. During the winter months light rainfall occurs under the influence of the north-east monsoon, March and October are by far the most pleasant months in the year. April and May are not hot season followed by occasional thunder storms. Of late, some changes in the climate calendar in the state
are observed by some expert meteorologists attribute mainly to deforestation in the hills surrounding the valley.

2.9.2.4 Administrative Units

The Thoubal district is quite young and has been separated from the former Manipur Central District on 25<sup>th</sup> May 1983. The district is divided into three-sub division viz., Thoubal, Kakching and Lilong. The number of towns and villages according to 2001 census are 9 and 90 respectively. There are two blocks functioning in the district.

2.9.2.5 Population

Population of the district during 2011 Census is 4,22,168 out of which 2,10,845 are males and 2,11,323 are females. The density of population is 821 persons per sq. km. The rural and urban population are 2,70,835 and 1,51,333 respectively. Population during the 2001 was 3,64,140 whereas it was 2,93,958 during 1991. This indicates that the population growth in the district is increasing. Table 2.5 highlights population of the district.

**Table 2.5**
Population of Thoubal District

<table>
<thead>
<tr>
<th>Population Census</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>76,782</td>
</tr>
<tr>
<td>1961</td>
<td>1,34,924</td>
</tr>
<tr>
<td>1971</td>
<td>1,81,771</td>
</tr>
<tr>
<td>1981</td>
<td>2,31,781</td>
</tr>
<tr>
<td>1991</td>
<td>2,93,958</td>
</tr>
<tr>
<td>2001</td>
<td>3,64,140</td>
</tr>
<tr>
<td>2011</td>
<td>4,22,168</td>
</tr>
</tbody>
</table>

Source: Economic Survey Manipur 2012-13
2.9.2.6 Literacy

According to 2011 census, the literacy percentage of the district is 74.47 out of which 64.09 are women and 85.00 are men. This shows that males have preponderance over females in case of literacy, as the data indicates.

2.9.2.7 Industry

Industrially the district is backward. The Khansari Sugar Factory at Wangbal is the only medium sized industry set up in the district in 1973 with an installed capacity of 60 tonnes of sugar per day. Although the factory was initially intended to provide employment to about 200 persons, its actual production during the years was high. Since it has been commissioned, the yield was so much behind the targeted production that it is now running at huge loss. The most important industry from the point of view of employment potential and volume of output is the handloom and handicraft industry basis. Bedsheets, Chadars, faneks, mosquitoes nets, bamboo baskets, mats and other cane works, fishing nets, furniture, carpentry products, pottery articles etc., are some of the notable products of the industry. Handloom industry is spread throughout the length and breadth of the district. To help the industry there is a proposal to set up Raw Material Banks to supply quality yarn to the weavers. Waikhong, Nongpok Sekmai, Thongjao and Chairel are important places where pottery articles are manufactured. Heirok and Khangabok are noted for bamboo baskets and harvesting mats (Yeinaphak in the local language) made from Arundo donax a variety of reed.

2.9.2.8 Land Utilization

As per the land utilization statistics 2001 census, out of the 40,500 hectares of geographical area, the reporting area is about 38,950 hectares. Areas of 2,605 hectares of land are not available for cultivation. The net sown area of the district covered
33,215 hectares. During the rainy season lands are inundated by water which became seasonal swamps. If proper drainage is provided to drain out the excess water, the net sown area of the district can be increased and the total cropped area could be raised. The land use classification of the Thoubal district for the 2001 is presented in the Table 2.6.

Table 2.6
Land utilization in Thoubal District

<table>
<thead>
<tr>
<th>1. Land use classification</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total geographical Area</td>
<td></td>
</tr>
<tr>
<td>(a) According to Surveyor General of India</td>
<td>40,500</td>
</tr>
<tr>
<td>(b) According to village paper</td>
<td>38,950</td>
</tr>
<tr>
<td>2. Forest</td>
<td></td>
</tr>
<tr>
<td>3. Land not available for cultivation</td>
<td>2,605</td>
</tr>
<tr>
<td>3.1 Barren and unculturable land</td>
<td>495</td>
</tr>
<tr>
<td>3.2 Land put to non-Agricultural uses</td>
<td>2,110</td>
</tr>
<tr>
<td>4. Other uncultivated land excluding fallow land</td>
<td>3,130</td>
</tr>
<tr>
<td>4.1 Permanent pastures and other grazing land</td>
<td>310</td>
</tr>
<tr>
<td>4.2 Land under Misc. tree crops and groves (not included in net area sown)</td>
<td>2,640</td>
</tr>
<tr>
<td>4.3 Cultivable waste land</td>
<td>180</td>
</tr>
<tr>
<td>5. Fallow</td>
<td></td>
</tr>
<tr>
<td>5.1 Fallow lands other than current fallows</td>
<td>-</td>
</tr>
<tr>
<td>5.2 Current fallows</td>
<td>-</td>
</tr>
<tr>
<td>6. Net area sown</td>
<td>33,215</td>
</tr>
<tr>
<td>7. Area sown more than once</td>
<td>4,090</td>
</tr>
<tr>
<td>8. Total cropped Area (6+7)</td>
<td>37,305</td>
</tr>
</tbody>
</table>

- Not available

**Source:** Statistical Abstract Manipur 2010

**2.9.2.9 Irrigation**

Irrigation is the life blood of modern agriculture. Diversion of water from rivers like the Thoubal and Sekmai rivers through drains is the only means of irrigation practices in the district. The other types of irrigation namely, tank and well
are almost absent as in other parts of Manipur. In fact, the irrigation system in the
district is not well developed. The area under assured irrigation facilities is quite
meager and cannot influence cropping pattern to any significant extent. Major
irrigation projects which had so far been undertaken in the district are (i) Thoubal
Multipurpose project, one of the biggest irrigation projects in the whole north-eastern
region, with an irrigation potential of about 34,000 hectares, and (ii) Sekmai Barrage
project with an irrigation potential of 8,500 hectares. The estimated total irrigated area
under rice is 28.85 thousands hectares in the year 2010-11. Minor irrigation works in
the district include Imphal Barrage, Turel Ahanbi Dam, Ikop Dam, Ingourok Dam,
Heirok, Langthabal Dam, Kakching Dam, Maru Dam etc.

2.9.2.10 Cropping Pattern

Cropping pattern means the area of arable land to which different agricultural
cropping activities can be put to use, at a point of time. A change in cropping pattern
implies a change in the area under different crops. Cropping pattern of any region
may depend upon the physical characteristics of the soils, climate, weather and
rainfall, etc. The distribution of different crops in a region may vary of according to
the local conditions, means of irrigation, land capacity and social conditions etc., for a
real concentration and diversification of various crops. In food grains, the Kakching
belt which provides more than 50 percent of the total rice exports of the district may
be rightly termed as the ‘rice basket of Manipur’. In 2010-11, the area under paddy
cultivation is 28.85 thousand hectares and the production is 69.99 thousand tonnes.
The soil of the district is fertile and with the help of irrigation facilities from the
Imphal Barrage, the Thoubal Multipurpose project, Sekmai Barrage and other minor
irrigation works, double cropping is widely practiced in the district.
In some area, even triple cropping is practiced – first the paddy crop starting late February or early March, second paddy crop in July and early August and third crop of mustard seeds, pulses etc., in November. Other crops grown in the district are sugarcane, oilseeds, maize, potatoes, pulses, chillies, vegetables etc. The district is the largest producer of sugarcane in Manipur. Its cultivation is mainly confined to Thoubal, Wanging, Kakching Khunou and Wabagai. Although maize is grown throughout the district, it is cultivated as major cash crop around Serou, Pallel and Kakching belt. Oilseeds mainly mustards seeds are found all over the district. Cultivation of sunflower has also started. Vegetables such as cabbages, cauliflower, brinjal, different kinds of peas, gourds, pumpkins etc., are found in abundance.

Among the plantation crops, pineapples are the most important and are cultivated in the slopes of low hills and hill-locks. Langdum, Waithou and Poirou Tangkhul are mainly important for these crops. There is only one agro-processing unit operated by Youth Voluntary Organization (YVO), Thoubal. The product is known as WAIFRU. Pineapple squash of this factory is famous in the state. Although tea plantation is yet to take its shape in the district a blend of local variety of very good taste is grown in Pallel and Waikhong area. Tobacco was once cultivated in the district widely. Another important plantation crop is chillies.

In this district livestock plays a pivotal role in the rural economy next to agriculture. Livestock enterprises prevailing in the district are cattle, buffalo, goat, pig, poultry and duck rearing. Higher number of cattle is concentrated in the Thoubal district. Cattle population of cross-breed is very low in number in comparison to indigenous variety. The state has Regional Buffalo Breeding Farm in the Thoubal district for more development of buffaloes rearing in the state.
2.9.2.11 Occupation Structure

The structure of occupations of Thoubal District indicates the structure and level of development. The transformation of the occupational structure involves the economic development of that society. As in other parts of the valley areas of Manipur, the workers in the Thoubal district are engaged in various occupations. Of all occupations, cultivation is the most important. This is the largest single sector of employment. The total number of cultivators in the Thoubal district in 2011 census is 77,331 and the percentage is 44.89.

The next occupation as referred to in various plan documents of the district is “Agricultural labour”. Very few persons, however, are engaged as agricultural labour. There are only 33,106 agricultural labourers in the district, it constitute only 19.22 per cent of the total working population of the district. The Table 2.7 represents the occupation structure in the Thoubal District.

Table 2.7
Occupation structure in Thoubal District according to 2011 census

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Numbers</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultivators</td>
<td>77,331</td>
<td>44.89</td>
</tr>
<tr>
<td>Agricultural Labour</td>
<td>33,106</td>
<td>19.22</td>
</tr>
<tr>
<td>Livestock, Forestry, Fishing, Hunting and plantation, Orchards &amp; Allied activities</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mining and Quarrying</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Manufacturing, Processing, Servicing and Repairing in Household Industry</td>
<td>8,773</td>
<td>5.09</td>
</tr>
<tr>
<td>Construction</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Trade and Commerce</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport Storage and Communication</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other Services</td>
<td>53,069</td>
<td>30.80</td>
</tr>
<tr>
<td>Total</td>
<td>1,72,279</td>
<td>100</td>
</tr>
</tbody>
</table>

- Not Available

Source: Statistical Year Book Manipur 2013
2.9.2.12 Information on Market

There are eighteen rural markets in the district. Food grains and vegetables are collected in these markets and sell at the markets. Other essential commodities are supplied from Imphal to these markets.

2.9.2.13 Infrastructure Facility

The infrastructure facility of the district is negligible. The agriculture department has a small meeting hall which can be used as training hall of 40 trainees. There is one big godown used for storing fertilizers and seeds. Under the fishery department, 1 Government Fish Seed Farm at Wangbal and 16 selected private sector fish seed farms are providing quality fish seed to the fish farmers. Apart from that 38 numbers of Fish Farms are producing table fish. There are 12,752 hectares of low-lying areas which include water logging area, water body and marshy land. The low lying areas can be used for fishing. In sericulture, 9 Farms are running under Government sector. There is one Krishi Vigyan Kendra (KVK), which is going to be established at Wangbal. The construction of buildings and other facilities are yet to be pursued. At present, the KVK is functioning from the Directorate of Agriculture, Manipur. Rice Research Station, Wangbal is the only research station of the district as well as the state.