

Agriculture is the mainstay of economy of the people of North-East India. The traditional type of agriculture carried out in primitive manners still determines the way of life of the people of the region. Barring aside the production of a few minerals, whatever little industry has grown up in this region is essentially agro-based.

**Importance of agriculture:**

1. Agriculture produces most of the food requirements of the region.
2. It provides employment to about 65% of the working population of the region. So, agriculture is the major source of livelihood of the people of the region.
3. It provides raw-materials for many agro-based industries such as tea, jute, oil processing, canning, etc.
4. The contribution of agriculture including its allied activities like animal husbandry, piggery, poultry keeping, fishing, etc. to the income of the region is the largest of all the economic sectors. Nearly a half of the total income of the region comes from the agricultural sector.

**Problems and Prospects of Agriculture**

**Problems:**

The main problems of the agriculture of North East India are:

1. **Fragmentation of holding:** With the rapid increase of population on the one hand and lack of economic diversification on the other, the agricultural plots have undergone subdivision in every generation and hence, the agricultural land now has been turned into uneconomic small plots and fragmented. Such fragmented plots are not suitable for application of modern machinery.
2. **The primitive methods and implements** are still in vogue among the peasants of North-East India. Land is tilled in the plains by a wooden plough with the help of a pair of bullocks.

3. **Inadequacy of irrigational facilities:** Although North-East India receives very high amount of rainfall, about 6 months of the year remains completely dry. Because of long drought in winter, no substantial crop can be grown in the 6 dry months. Even during the summer months there are periods of drought which affect agricultural work of the region.
4. **Soil erosion:** Every year a huge amount of land has been eroded due to manmade and natural causes. As the top soil is being depleted the crop yield has decreased.
5. **Scarcity of suitable agricultural land:** Only 30% of the total area of North East is plains, while the remaining 70% are full of hills and plateaus. Then again, the plains are often ravaged by floods and shifting river courses and whatever little land is found suitable for agriculture has already been put to use.
6. **Poverty:** Due to high level of poverty, farmers of the region cannot afford to buy high yielding varieties of crops, machineries etc.
7. **Low crop intensity:** The crop intensity in north east India is one of the lowest in the country. A number of reasons such as absence of irrigational facilities, the habit of not herding cattle in the season when traditional paddy crops are not in the field, non-use of manure and fertilizer, absence of the use of short growing varieties of crops etc. contributing to a low crop intensity in the region.
8. **Paucity of agricultural credit:** As we know that the farmers of north east India are traditionally poverty-stricken. Very few of them can get agricultural credit at favourable terms in time.
9. **Problem of marketing of agricultural products:** The cultivators of the region do not get a fair return from their agricultural products. Due to poverty they cannot hold back the sale of their products for long.

### **Prospects:**

1. The problem of fragmentation landholding can be solved by consolidation of land holdings through co-operative endeavour.
2. Initial help for capital investment either in the form of cash or kind may help the farmers to get away from the primitive implements. But such help must be supplemented by proper extension services to make the farmers realize the benefit of the scientific methods.

3. In order to solve the problem of inadequacy of irrigational facilities in agricultural fields, irrigational facilities must be developed adequately. In the plains of North-East India, power operated lift and tube-well irrigation would be more suitable than canal irrigation.
4. The problem of soil erosion can be controlled by preventing deforestation, encouraging afforestation and stopping over-grazing in the agricultural fields.
5. The problem of scarcity of suitable agricultural land can be solved only by improving the methods of agriculture so that more production can be obtained on whatever agricultural land the region has. Apart from this, reclamation of waste land shall contribute marginally to ease the problem.
6. Farmers have to live in a vicious circle. To rid them of it a well-planned programme is necessary. To educate them in scientific agricultural methods, supply them with agricultural inputs, such as HYV seeds, irrigational facilities whenever necessary, fertilizers etc. at subsidized rates or on loan are some of the measures that will go a long way in uplifting their present condition.
7. In order to raise crop intensity, irrigation must be provided, especially in winter. Besides some quick growing cash crops should be introduced.
8. The problem of paucity of agricultural credit can be solved by providing agricultural credit on easy terms in proper time, so that the man behind the plough can cultivate his land without having to go to the money lender or middlemen.
9. Problem of marketing of agricultural products can be solved by providing marketing facilities to the growers, improvement of roads and conveyance facilities and procurement by public sectors agencies may go a long way in mitigating this problem.

## MAJOR CROPS: PRODUCTION AND THEIR DISTRIBUTION

### RICE

Rice is the leading and staple food crop of North-East India. It is grown both in the plains and in the hills. Depending on the season of cultivation, the rice grown in North-east India can be divided into three varieties: **Aman or Sali, Aus or Ahu and Bao**. The Aman rice is transplanted in summer from late May to early September in wet fields and harvested in the period from late November to early January. Aus or Ahu rice is broadcast in the months of March and April in dry fields and harvested in summer. The Bao rice is essentially a variety of long stemmed rice that can withstand a long period of deep and stagnant water. Its seeds are broadcast in spring when the ground remains dry and harvested in winter when the water that accumulates over the ground in summer has dried up. Besides these three varieties, another variety, known as '**Boro**' is grown in the low-lying areas of North –East India.

In Assam as much as 2.00 million hectares of land is given to rice. The state produces about 2.5 million metric tonnes of paddy. All the districts (except N. C. Hills and Karbi Anglong) of the Brahmaputra and Barak Valleys grow rice abundantly. In Meghalaya rice is grown both on the hill slopes and occasionally on valley bottoms. In three western districts i.e. Garo Hills, West, East and South, both spring rice and winter rice are grown. The 4 eastern districts, viz. West Khasi Hills, East Khasi Hills, Ri Bhoi and Jaintia Hills generally grow winter rice on limited valley bottoms and a small quantity of hill rice over the slopes in the jhum fields.

In Arunachal Pradesh rice is grown mainly in the jhum fields. In the Apatani Plateau around Ziro in Lower Subansiri district, wet rice is grown by an ingenious method of irrigation. In Nagaland rice occupies about two-thirds of the total land under agriculture. Rice is mostly grown here in the jhum fields. However, in the Angami inhabited areas of Kohima district rice is found to be grown over terraces with a traditional method of irrigation which is very much ingenious and effective.

**Table: North-East India: Production of rice (2011-12)**

State	Area (‘000 ha)	Production (‘000 tonnes)	Yield (kg/ha)
Arunachal Pradesh	123.5	225.0	2065.0
Assam	2570.3	4516.3	1780.0
Manipur	223.7	591.0	2642.0
Meghalaya	108.9	216.5	1988.0
Mizoram	38.5	54.3	1411.0
Nagaland	181.6	382.4	2106.0
Tripura	266.0	718.3	2700.0

Source: Basic Statistics of North-Eastern Region, 2015

In Manipur rice is grown mainly in the fertile Manipur basin. Over the hill slopes, only a small quantity of rice is grown in the jhum fields. In Mizoram rice is traditionally grown on the jhum fields. In Tripura rice is grown both on the plains and on the hill slopes. In the hills the crop is grown partly on the terraced beds and partly in the jhum fields.

With a rapid increase in the population the rice production has fallen short of the requirement in the region. Efforts have been made to increase the production of the crop mainly by using high yielding varieties of crops and bringing more land under it. Now a days the region produces varieties of quality rice Joha, Ranjit, bahadur, Masare, Luit, Chilarai, IR-50, IR-36 , Moirang Phou etc.

Table: N-E India : Trend of Rice Production

Year	Production (1000 tonnes)
1990-91	4528.1
1997-98	4847.6
2000-01	5480.0
2002-03	5350.0
2008-09	5791.5

## Production and distribution of Sugarcane

Sugarcane is a traditional crop of North-East India. It is grown in relatively high and fertile flat or rolling ground. The crop is grown in the region as a source of **gur and malasses** for domestic use.

Compared to the other states of the region, Assam has favourable physical condition for sugarcane cultivation. In Assam sugarcane is produced in the districts of Golaghat, Jorhat, Sibsagar, Nagaon, Kamrup, Nalbari and Barpeta. The plains of Brahmaputra valley surrounding the Karbi Plateau produce good harvest of sugarcane. Assam produces 993.5 thousand tonnes over 25.7 thousand hectares of land in 2011-2012.

Nagaland comes next to Assam in sugarcane production in the region. In 2011-12 the state produced 186.7 thousand tonnes of sugarcane over 4.4 thousand hectares of land. On the basis of this production there came up a khandsari sugar mill along with a brewery near Dimapur. In Tripura sugarcane is grown on the foothill plains. The state produced 45.0 thousand tonnes of sugarcane over 0.9 thousand hectares of land in 2011-12. Manipur produced 333.0 thousand tonnes over 5.8 thousand hectares of land in 2011-12. The state's entire production comes from the plains districts and used for '**gur**' production.

In Meghalaya sugarcane is mostly produced in the three Garo hills districts where there are enough of rolling ground. In Mizoram the crop is grown in a very little quantity. In 2011-12 the state produced 7.5 thousand tonnes of cane over 1.4 thousand hectares of land. Arunachal Pradesh has recently introduced sugarcane in its foothill slopes and plains.

Table: North-East India: Sugarcane Production (2011-12)

State	Area Under Sugarcane ( '000 ha)	Production of raw cane ('000 tonnes)	Yield (kg/ha)
Arunachal Pradesh	1.6	30.0	19355.0
Assam	25.7	993.5	38611.0
Manipur	5.8	333.0	57913.0
Meghalaya	0.1	0.2	2714.0
Mizoram	1.4	7.5	5284.0

Nagaland	4.3	186.7	43513.0
Tripura	0.9	45.0	48913.0

Source: Basic Statistics of North-Eastern Region, 2015

## Wheat: Production and distribution

### Wheat Production and distribution

Normally it is grown as a second crop on less productive land. The seeds are sown in October and November and the crop is harvested from January to March.

In Assam wheat cultivation was started only in the early nineteenth century. Now it is grown in all the plains districts of Assam. The varieties commonly grown in Assam are Sonalika, Kalyan, Sona, Sofed and Laxma. At present Kamrup, Nalbari, Barpeta, and Dhubri are the leading districts in wheat production. In 2000-01, Assam produced 86.0 thousand tonnes of wheat but it showed a decline trend which was 60.3 thousand tonnes in 2011-2012.

In Arunachal Pradesh wheat is cultivated mainly in west Kameng, East Kameng and Lohit districts over the gentle hill slopes. In 2003-04 Arunachal Pradesh produced 6.3 thousand tonnes of wheat which was increased to 6.5 thousand tonnes in 2011-2012.

### NE India: wheat Production (2011-2012)

State	Area ('000 ha)	Production ('000 tonnes)	Yield (kg/ha)
Assam	52.6	60.3	1147.0
Arunachal Pradesh	3.7	6.5	1757.0
Meghalaya	0.4	0.6	1564.0
Tripura	0.3	0.5	2000
Nagaland	3.2	5.4	1711.0
Manipur	2.7	5.4	2498.0

In Meghalaya wheat is cultivated mainly in

West Garo hills, East Garo hills and west Khasi Hills districts. In 2002-03, the state produced 7.0 thousand tonnes but it is declined to 0.6 thousand tonnes in 2011-2012.

In Tripura wheat is grown mainly in West Tripura district. In 2011-2012, the state produced 0.5 thousand tonnes of wheat. Nagaland produces very little quantity of wheat. In 2011-2012, Manipur produced 5.4 thousand tonnes of wheat.

The production of this crop in Mizoram is negligible.

## Jute: Production and distribution

### Production and Distribution of Jute

Jute is an important fibre crop grown in the low-lying plains under monsoon climate. The crop needs heavy rainfall and high temperature during the periods of its growth.

North East India now produces about 1/8 of the total jute production of the country. The following table gives the state-wise area devoted to the production and yield of jute in North-East India.

Table: - N-E India: Jute Production (2011-12)

State	Area ('000 ha)	Production ('000 tonnes)	Yield (kg/ha)
Assam	66.6	607.9	1667.0
Meghalaya	3.9	34.4	1600.0
Nagaland	3.0	5.5	324.0
Tripura	0.6	5.5	1541



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Since jute is essentially a cash crop, its cultivation is sensitive to the demand and price in the market. Therefore, its production varies from year to year following its demand in the national and international market.

Assam is the most important producer of jute in N-E India. About 81% of the total area devoted to jute in the region is in Assam. Assam is now second most important jute grower in the country after West-Bengal. Dhubri, Goalpara, Bongaigaon, Barpeta, Nalbari, Kamrup, Darrang, Marigaon and Nagaon are the districts where it is grown in large quantities. In the Barak valley jute is grown, to some extent, in all the three districts on the flood plains of the Barak river. Assam produced 607.9 thousand tonnes jute in 2011-12 which was 691.0 thousand tonnes in 2002-03.

In Meghalaya jute is produced in the foothill regions in West and South Garo hills districts. In 2002-03 the state produced 36.0 thousand tonnes and in 2011-12, it produced 34.4 thousand tonnes.

In Jharkhand jute is cultivated in the lowlying areas of the plains. In 2002-03 the state produced 11.0 thousand tonnes, over 1.0 thousand hectares of land, and in 2011-12 it produced 5.5 thousand tonnes over 0.6 thousand hectares of land. Nagaland produces 5.5 thousand tonnes over 3.0 thousand hectares of land in 2011-12. Other states in N-E like Mizoram, Arunachal Pradesh, Manipur and Manipur produces very negligible amount of jute.