

Centre for Agriculture and Rural Development

A Report on Diversifying Growth Opportunities in North East Region of India



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INDIAN COUNCIL OF FOOD AND AGRICULTURE

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Foreward

To be socially, and economically sustainable, India's growth story needs to be inclusive. However, the country's north east has been experiencing a comparatively slower pace of industrialization and socio-economic growth. Though the region is blessed with abundant natural resources for industrial development and social development, they have not been utilized to their full potential.

The region has certain distinct advantages. It is strategically located with access to the traditional domestic market of eastern India, along with proximity to the major states in the east and adjacent countries such as Bangladesh and Myanmar. The region is also a vantage entry point for the South-East Asian markets. The resource-rich north east with its expanses of fertile farmland and a huge talent pool could turn into one of India's most prosperous regions. Yet, owing to its unique challenges, we believe that conventional market-based solutions may not work here, given the issues related to poor infrastructure and connectivity, unemployment and low economic development, law and order problems, etc.

The government and the private sector need to collaborate and take the lead in providing solutions to these problems. More reform needs to be initiated in a range of areas, such as investment in agriculture, horticulture, fisheries, rural crafts, hydel power, infrastructure as well as in creating new avenues of growth through the development of vertically integrated food processing chains, market-linked skill development and cross-border trade.

As multiple avenues for growth and development emerge, it is of paramount importance that the region, as a collective identity, embarks on a vibrant journey to realize the dreams of a better future. This vision can be realized only through the combined effort of all stakeholders. This report delineates these opportunities and attempts to provide new insights to the ongoing interventions to raise the north east of India to higher levels of inclusive economic development.

Thank You
Sincerely

Kunal Tiwari
Executive Director
CARD





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North East India Overview

Introduction

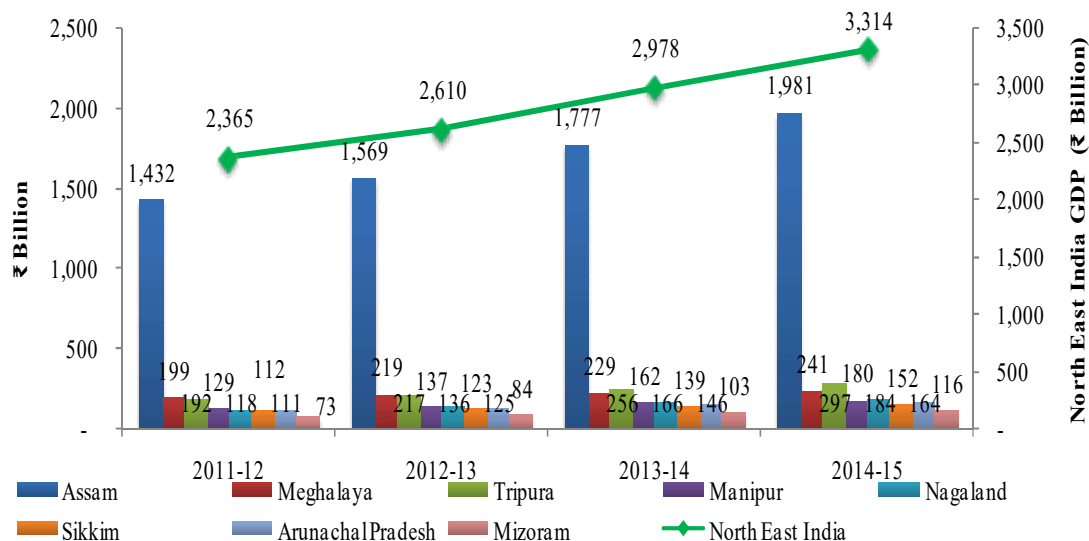
- The seven states of North East India along with Sikkim, namely Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland and Tripura cover 255.79 Lakh hectares, constituting 7.92% of total land area of the country.
- The region shares international borders with China in the north and northeast; with Bhutan, located between the states of Sikkim and Arunachal Pradesh. It also shares boundary with Bangladesh and Myanmar on the south and south- east. The western part of the region is connected to the eastern part of the country through a narrow land (in between Nepal and Bangladesh), the Siliguri corridor.
- The region has diverse hill ecosystems covering more than two-third of total geographical area. Assam and Tripura occupy the plains while the rest of the states are mostly mountainous with much rugged and inaccessible terrain.
- Agriculture is the major economic activity, followed by animal husbandry. The region has 3.73% of the total population of the country and contributes 2.6% to the Net Domestic Product with the total forest cover of more than 66.1% against the national average of 21.1%.

Economic Profile

Gross State Domestic Product

The gross state domestic product of each of the states constituting the North East Region of India is represented in the following graph, which clearly depicts that Assam had the highest GSDP over the years.

North East Region States Gross State Domestic Product; 2011-15



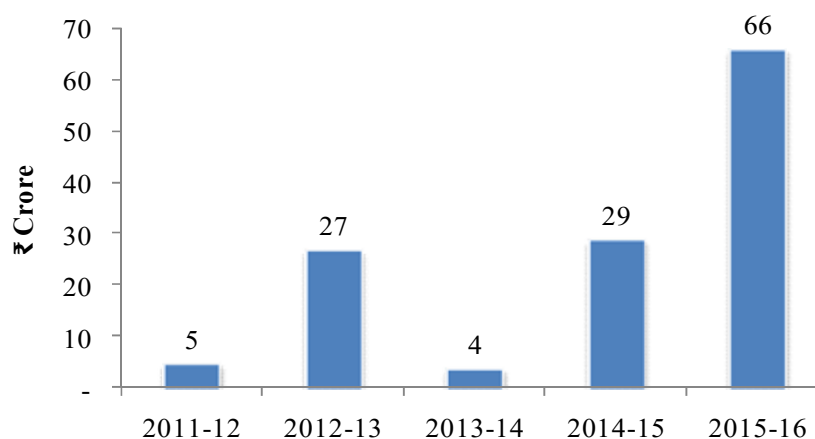
Source: MOSPI

FDI Inflow

According to the business maps of India, the northeast states together attracted only 0.032% the total FDI inflow to India during 2015-16. FDI brings in the dollar to the host government's coffers; it generates employment and facilitates knowledge and technology transfer to the host country. For the foreign investors, a potential FDI destination means two important incentives. There exists the potential for low-cost labor and there is a market to sell their products. Given the fact that North Eastern Region has poor

infrastructure with erratic electricity supply, lack of good roads, bridges and a qualified labor pool; outsourcing of production from NER is possibly not on the radar screen of the potential investors.

North East Region Total FDI Inflow; 2011-16



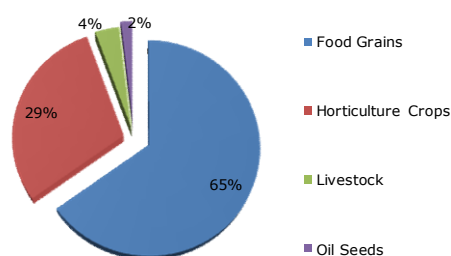
Source: Department of Industrial Policy and Promotion

Note: Excluding Sikkim

Arunachal Pradesh

Arunachal Pradesh is the largest among the seven states located in the Northeast of India, with an area of 83,743 sq km. The state's economy is largely agrarian, based on the terrace farming of rice and the cultivation of crops such as maize, millet, wheat, pulses, sugarcane, ginger, oilseeds, cereals, potato, and pineapple. In 2014-15, total production of food grains in the state was recorded at 1,213 thousand metric tonne, while the total production of horticulture crops in the state stood at around 547.72 thousand metric tonne. Major cereal crops of the state are rice, wheat, maize and millet.

Arunachal Pradesh Agriculture and Allied Sector; 2014-15

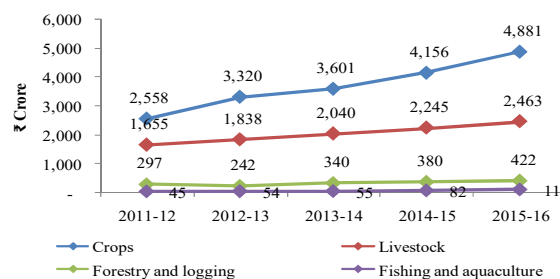


Source: NER Databank, DAHD – GOI and Dept. of Agriculture and Farmers Welfare – GOI

Note: Livestock does not include egg production.

Arunachal Pradesh is considered as one of the 12 mega diversity in the world. The state has 20% species of the country's fauna, 4500 species of flowering plants, 400 species of pteridophytes, 23 species of conifers, 35 species of bamboos, 20 species of canes, 52 rhododendron species and more than 500 species of orchids. Some of the other key sectors of the state include livestock, art & crafts, weaving, cane & bamboo and etc. Milk governs the livestock sector of the state with the total production of 46.07 thousand metric tonne, while the egg production totaled to 417.26 lakh eggs during 2014-15. At current prices, Arunachal Pradesh's GSDP from Agriculture and allied sector was about ₹7883 crore in 2015-16, increasing at a CAGR 11.59% from ₹4555 Crore in 2011-12.

Arunachal Pradesh GSDP from Agriculture and Allied Sector; 2011-16

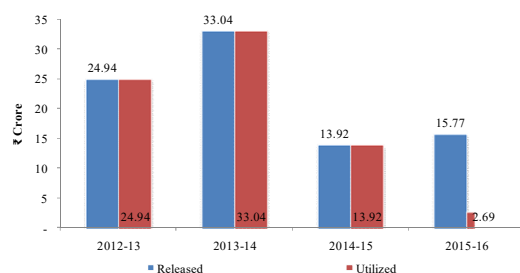


Source: MOSPI

Rashtriya Krishi Vikas Yojana (RKVY)

Keeping the need for achieving higher economic growth and creating job opportunities for the rural unemployed through Agriculture and allied sector, it is necessary for the state to give thrust to agriculture policy for better utilization of resources. The major constraints are low level of productivity, capital inadequacy, lack of infrastructural support, Unfavorable terrain, high cost of production along with demand side constraints. The non availability of basic preservation, storage and processing facilities, low value addition and unfavorable price of agricultural commodities are severely affecting as a whole which directly encourages migration from rural areas to urban centers.

Arunachal Pradesh Fund Release Under RKVY; 2012-16



Source: Ministry of Agriculture

Location specific strategy development and convergence of allied activities with agriculture

needs to be build to strengthen agriculture as well as economy of the Arunachal Pradesh.

Priority Sectors

- The resources, policy incentives & climate in state support investments in tissue culture & floriculture, plantation crops (tea, rubber, etc.) & agro-based industries.
- Horticulture has a vast potential, owing to good agro-climatic conditions and topography, for the development of varied varieties of fruits and vegetables.
- Tourism is another conceivable sector with eco and adventure tourism, cultural tourism and religious tourism being the major areas of interest.
- The state's location provides opportunities for international trade with South Asian countries such as Myanmar, Bhutan and China.
- Based on the availability of resources, the identified thrust areas for industrial development are:
 - Industries based on agricultural, horticultural and plantation produce.
 - Industries based on non-timber forest produce such as bamboo, cane (rattan), medicinal plants/herbs, aromatic grass, tea and coffee.
 - Textiles (handlooms and power-looms), handicrafts and sericulture.
 - Food processing industries.
 - Industries based on locally available raw-materials, except timber.

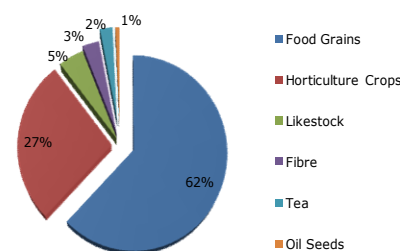
Assam

Assam is the largest economy in the Northeast region. Owing to its relative proximity to the rest of the country and availability of quality infrastructure, the state offers a favorable environment for industry.

Assam has the single largest tea growing area in the world, constituting around one seventh of the global tea production. The state accounts for over 50% in the country's overall tea production. About 17% of the workers of Assam are engaged in the tea industry. There are more than 765 tea gardens in the state of Assam. Tea is grown in the Brahmaputra & Barak plains. Tea gardens are mostly found in the districts of Tinsukia,

Dibrugarh, Sibsagar, Jorhat, Golaghat, Nagaon & Sonitpur.

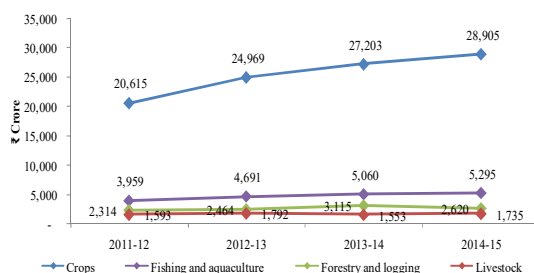
Assam Agriculture and Allied Sector; 2014-15



Source: NER Databank, DAHD – GOI and Dept. of Agriculture and Farmers Welfare – GOI, Tea Board of India
Note: Livestock does not include egg production.

Assam, with its vast area under hills and forests, is home to a variety of medicinal herbs and plants. About 300 types of medicinal herbs and plants are found in abundance in the state with the Brahmaputra valley alone having 150 varieties of herbs and plants of commercial value. Livestock is the integral part of the mixed-farming system that characterizes agriculture in Assam. For many poor households, livestock is a daily source of earning and is an insurance against adversity. Animal traction is still significant in the State because of the increasing miniaturization of landholdings and high fuel cost that limits use of machinery. Livestock production in the State includes milk, meat, fish and eggs. However, the sectoral composition of economic growth of Assam shows a fall in the share of Agriculture and Allied sector. During 2013-14, the contribution of Agriculture and Allied sectors to the GSDP was 20.78%, which reduced to 19.46% in 2014-15.

Assam GSDP from Agriculture and Allied Sector; 2011-15



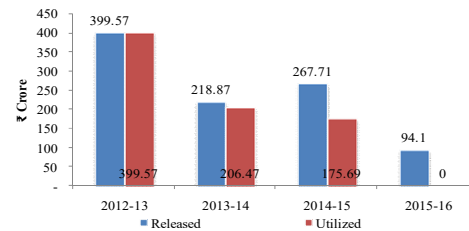
Source: MOSPI

Rashtriya Krishi Vikas Yojana (RKVY)

RKVY since its implementation in six years since 2008-09 till 2013-14 has widely impacted the agriculture of state of Assam. The production of crops like rice, pulses and food grains have increased by more than 50 % viz. 56%, 63% and 56% respectively. Further the production of Mustard, Fruits and Vegetables have also considerably increased. Besides production, additional 2.25 Lakh hectares (7% of Net Cropped

Area) has been brought under assured irrigation facility through installation of Shallow Tube Wells (STW) and Low Lift Pump (LLP) Sets. These interventions have contributed towards increasing agriculture growth from 3.03% to 4.45% by bringing additional area of 2.77 Lakh hectares under double cropping and increasing cropping intensity from 139% to 149%.

Assam RKVY Fund Released and Utilized; 2012-16



Source: Ministry of Agriculture

Priority Sectors

- There is a potential for wildlife tourism in the state as state has various national parks and wildlife sanctuaries.
- The agro-climatic conditions of the state favour growing of a variety of fruits, vegetables/ spices. With better quality planting material, organic farming, adequate research support and better know-how, the state could easily cause a major boom in horticulture and food processing sector.
- Bamboo, which is the fastest growing plant and generates large bio-mass, holds the potential to replace wood on many grounds. Bamboo based industries could prove profitable in the state.
- With its vast hills and forests, Assam is the home of a variety of medicinal herbs and plants. There is a scope for Extraction and Value Addition of Herbal Medicinal and Aromatic Plants.

Manipur

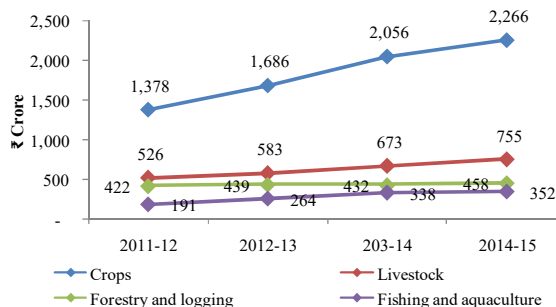
Agriculture has a significant share in the state's domestic product and provides employment to about 52.2% of the total workers in the state.

Natural forests cover about 77% of the total geographical area of Manipur. Teak, pine, oak,

uningthou, leihao, bamboo, cane, etc, are important forest resources. In addition, rubber, tea, coffee, orange and cardamom are grown in the hill areas. During 2014-15 the total production of horticulture crops in the state was recorded to be

814.2 thousand metric tonne.

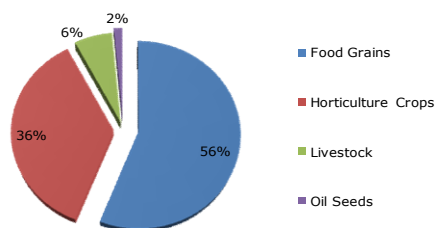
Manipur GSDP from Agriculture and Allied Sector; 2011-15



Source: MOSPI

Major fruits grown in the state are pineapple, lime, lemon, banana, orange, papaya, plum and passion fruit. Some of the other major sectors operating in the state include handloom, handicraft and sericulture. However, the socio-economic development of Manipur will largely depend upon small and medium scale industries promoted by local entrepreneurs.

Manipur Agriculture and Allied Sector; 2014-15



Source: NER Databank, DAHD – GOI and Dept. of Agriculture and Farmers Welfare – GOI, Tea Board of India

Note: Livestock does not include egg production.

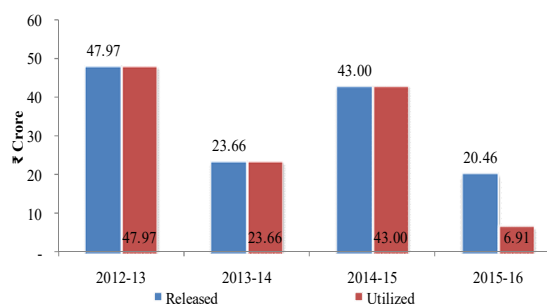
Government Schemes

Rashtriya Krishi Vikas Yojana (RKVY)

RKVY was launched in the State since 2008-09. In Manipur RKVY is implemented by 7 (Seven) Allied Departments and 2 (Two) Registered Societies viz. 1) Agriculture as Nodal Department 2) Cooperation 3) Horticulture & Soil Conservation 4) Fisheries 5) Forest 6) Sericulture 7) Veterinary and Animal Husbandary 8) Eastern Border Area Development Authority (EBADA Registered society) and 9) Barak River Valley Development Board BRVDB Registered society). Since the attainment of Statehood in 1972 the State made tremendous progress in the field of agriculture. In fact agriculture is the backbone of the State

economy till today and farming community has been backbone of the State agriculture. The State is marginally deficit in cereals and highly deficit in the production of oilseeds and pulses. In spite of the rapid advancement in the crop productivity, the faster rate of population growth poses a great problem to agriculture in the State.

Manipur RKVY Fund Released and Utilized; 2012-16

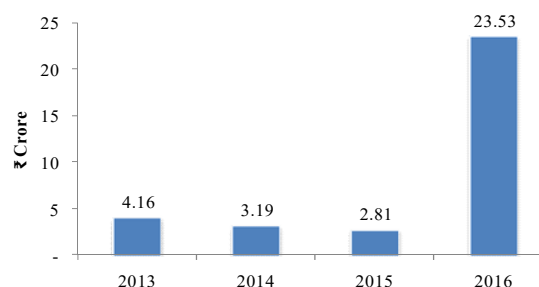


Source: Ministry of Agriculture

Dairy Development Schemes

The main objectives of the Dairy Development scheme is to make available clear, disease free and wholesome milk and milk products to the public consumers in abundance. It also aims to increase milk production of the State by streamlining marketing of milk by the milk producers through organization of co-operative societies and self-help groups. The Dairy Development is an importation sector not only for creation of facilities to supply clear and wholesome milk and milk products to the public consumers but also to increase the milk production of the State by organizing various self-help groups and co-operative societies.

Funds Released Under Dairy Development Schemes; 2013-16



Source: Ministry of Food Processing Industries

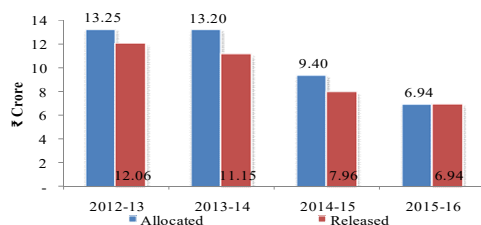
The scheme is having three important components viz.

- Imphal Milk Supply for production of clear milk with setting up of milk processing plant.
- Rural Dairy Centre- for taping surplus milk from the milk pocket areas by creating Milk Chilling Plants.
- Rural Dairy Extension to mobilize dairy farming through organization of co-operative societies.

National Agro Forestry & Bamboo Mission

In India, National Bamboo Mission (NBM) was created as a Centrally Sponsored Scheme with 100% contribution from the Central Government. In the State of Manipur, the Scheme is being implemented through State Bamboo Steering Committee (SBSC) by seven Forest Development Agencies (FDAs) and Bamboo Development Agency (BDA). FDAs are taking up the activities in Forest areas whereas BDA in non-forest areas of the State. During the year 2012-13, 2000 ha of bamboo plantation was carried out in non-forest areas and a further 1838 ha of existing stock was improved.

Funds Allocated and Released Under National Agro forestry & Bamboo Mission; 2012-16



Source: Ministry of Food Processing Industries

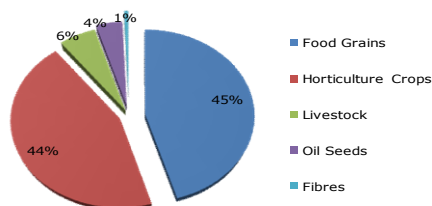
Priority Sectors

- Production and trading units can flourish, taking advantage of the expanding international trade of various agricultural products from the region.
- The food processing industry is a major thrust sector of Manipur. The state's agro climatic conditions are most suited for food processing industry.
- Bamboo shoot production units have potential for bamboo cultivation and marketing of processed bamboo shoots and products for the local as well as international markets.
- Manipur has a pleasant climate, exotic greenery and varied flora, besides a rich tribal culture, which makes tourism as one of the major potential areas of the state.
- The potential industries in the agriculture sector are integrated rice parboiling, hulling/dehusking/milling, bran stabilizing and captive power generation (based on rice husk biomass gasified dual fuel) unit, Non-flavored potato chip projects.
- The potential industries in the horticulture plantation sectors are Multi-fruit juice project, Orange Squash & Jam/Marmalade, Pineapple/Mixed Fruits Jam and Jelly, Tomato sauce, Ginger oleoresin Extraction as the major crops grown the state include the orange, pineapple, tomato, ginger and etc.

Meghalaya

Meghalaya has diverse range of soil types, including red-loamy and laterite, which supports various agricultural crops like rice, maize, pulses, oilseeds, cotton, jute and mesta. The major fruits grown in the state include, citrus fruits, pineapples, bananas, papayas, plums, peaches and apricots, while Turmeric, ginger, black pepper and bay leaves are the major spices cultivated in Meghalaya.

Meghalaya Agriculture and Allied Sector; 2014-15



Source: NER Databank, DAHD – GOI and Dept. of Agriculture and Farmers Welfare – GOI, Tea Board of India

Note: Livestock does not include egg production.

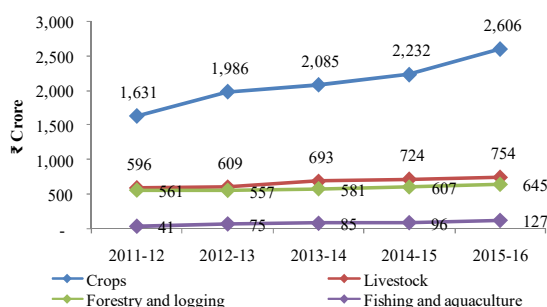
The state has a strong floriculture sector and is one of the leading states in the region in terms of

production and supply of cut flowers to mainland consumer markets. The Floriculture Development Scheme in the state is focused on promoting and raising awareness about the sector.

Meghalaya is also a reservoir of medicinal plants as 8 out of top 20 highly demanded and traded medicinal plants in India are found in Meghalaya. In 2015, in order to link the farmers with the herbal industry of the state, the Meghalaya Basin Development Authority has signed a memorandum of understanding with Central Institute of Medicinal and Aromatic plants (CIMAP). Meghalaya is one of the leading producers of bamboo in the country. Bamboo enterprises can be developed from the bamboo reserves and forest cultivations.

The agriculture sector contributed around 11.5% to the state's GSDP in 2014-15.

Meghalaya GSDP from Agriculture and Allied Sector; 2011-15



Source: MOSPI

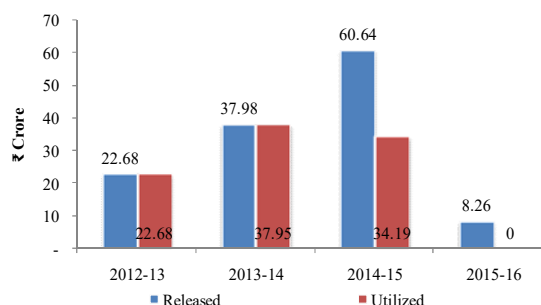
Government Schemes

Rashtriya Krishi Vikas Yojana (RKVY)

The economy of Meghalaya is basically agrarian as it is rural based with Agriculture laying a predominant role in the state's economy. The State is yet to touch the National Level in economic and agricultural growth rate. Though, 81% of the population depends on agriculture, the net cropped area is only about 9.87 % of the total geographical area of the State. The state is deficit in food grains by 1.22 lakh tonnes annually to feed a population of 2.3 million. This is due to a lot of constraints, such as the undulating topography, transport and communication problem, population dispersal pattern, inadequate credit support, poor marketing system, etc. To overcome these hurdles, future programmes are proposed, like increasing agricultural / horticultural production and productivity, research system on the development

of economically viable and location specific technologies in rainfed, flood-prone irrigated areas, and increasing the utilisation of irrigation potential etc.

Meghalaya RKVY Fund Released and Utilized; 2012-16

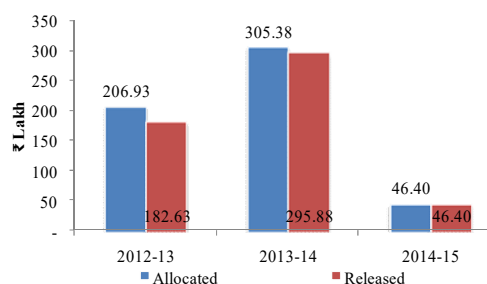


Source: Ministry of Agriculture

Funds for Floriculture

In Meghalaya, floriculture is mostly practiced as a hobby by flower lovers. However, lately the high cost of planting materials, seeds, cut-flowers etc and the increase in their demand, has created awareness in the grower on the commercial aspects. Although commercial Floriculture is a recent development in Meghalaya, however, considering the natural advantages of having the most varied range of climatic conditions in the country, it has a very high potential for cultivation of all types of flowers. The rich flora and the many species of Orchids growing wild in the State which is the highest ever recorded in a single concentrated area is a testimony to this effect.

Funds for promotion of Floriculture in Meghalaya; 2012-15



Source: Meghalaya Directorate of Industries

The Floriculture Development scheme has created a very good and positive impact to the farmers in terms of returns, creating new economic avenues and thereby enhancing the benefits within a short period to the existing assets of the farmers.

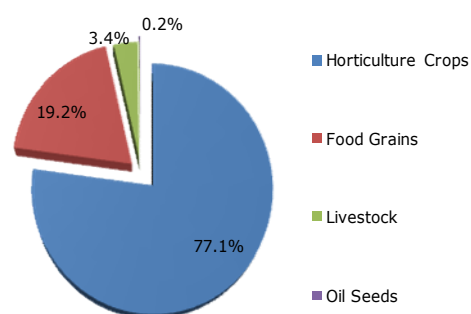
Priority Sectors

- Horticulture Based Units have high potential, which include food processing, mushroom cultivation and processing.
- There exist a high potential for the setting up of select, bio-technology based industries in Meghalaya. This industry is essentially knowledge-based and can function with minimum resources and limited transportation infrastructure.
- Meghalaya accounts for 150 species of orchids. Thus, there is a large scope for commercial exploitation in a systematic and scientific manner through tissue culture.
- Setting up of high value export production units in the state, especially for Spices, Oleoresin and other Essential Oils.
- Meghalaya needs units for hygienic and scientific processing of poultry, piggery and other meat products. Meghalaya has a high potential for development of dairy and allied products as well as for processing of animal hides and skins and for setting up leather industries.
- Meghalaya has a good potential for cultivation of tea and rubber.

Mizoram

Of the 21,087 sq. km geographical area of Mizoram, gross cropped area constitutes just 6.26%. The climatic conditions in the Mizoram are quite suitable for the production of fruits. Thus, the state accounts for approximately 13% of the total fruit production in the North East Region. Paddy is the principal food crop and the staple food of the state. With the implementation of the National Food Security Mission – Rice, the productivity of rice under wet rice cultivation increased tremendously.

**Mizoram Agriculture and Allied Sector;
2014-15**



Source: NER Databank, DAHD – GOI and Dept. of Agriculture and Farmers Welfare – GOI, Tea Board of India

Note: Livestock does not include egg production.

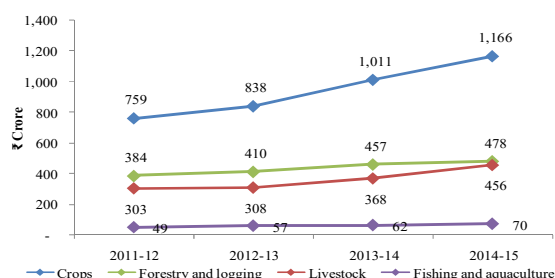
Mizoram has rich flora & fauna with a variety of medicinal plants. About 94% of the population in the interior regions of the state depends on medicinal plants for general cures. The state has identified specific medicinal plants, which can be cultivated & processed.

Factors such as good climatic conditions, fertility of the soil and rainfall help in the breeding of all kinds of silkworms in Mizoram. Thus, boosting the sericulture in the state. Also, ethnic handloom and crafts of Mizoram have a large market in India and abroad. Bamboo crafts and the ready-to-wear ethnic clothing are being marketed by the government agencies.

Also, the Government of Mizoram has given special emphasis to oil palm cultivation, as it would help mitigate environment degradation and provide employment opportunities. Mizoram's Government has signed a Memorandum of Understanding (MOU) with national companies for oil palm development.

Horticulture Crops accounting the largest share in the total agricultural and allied sector of the state, also has the largest contribution to the GSDP from agriculture and allied sector of Mizoram.

Mizoram GSDP from Agriculture and Allied Sector; 2011-15



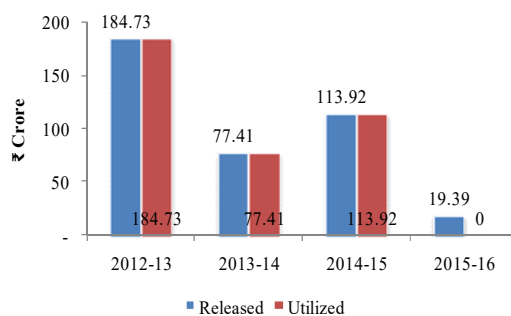
Source: MOSPI

Government Schemes

Rashtriya Krishi Vikas Yojana (RKVY)

Due to slow growth in agriculture and allied sectors, a special additional central assistance scheme called RKVY was launched with major focus on integrated development of major food crops paddy, coarse cereals, minor millets, pulses and oilseeds; Agriculture mechanization; strengthening of market infrastructure and marketing development; activities related to enhancement of horticultural production and popularization of micro-irrigation system; sericulture development and animal husbandry and fisheries development activities.

Mizoram RKVY Fund Released and Utilized; 2012-16

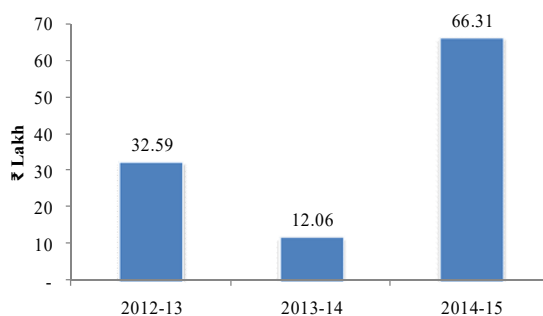


Source: Ministry of Agriculture

National Mission for Food Processing

With abundant natural resources and supporting policies, the food processing sector offers potential for investment. Allied services such as cold chain management also provide potential for investment. A special purpose vehicle (SPV) has been formed with private sector companies to set up a plant for processing turmeric, ginger, chilli, fruits and other horticultural products.

National Mission for Food Processing Funds; 2012-16



Source: Ministry of Food Processing Industries

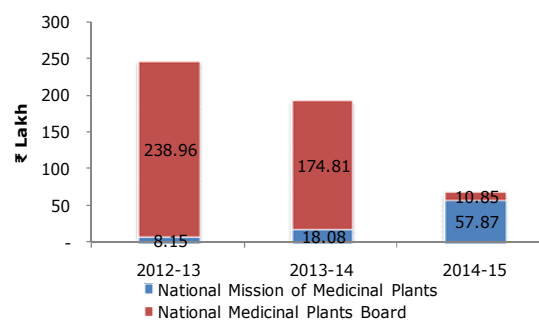
Under the centrally sponsored scheme – National Mission on Food Processing (NMFP), the central government releases funds for the establishment, up gradation and modernization of food processing industries in Mizoram.

Funds for Medicinal Plants

About 94% of the population in the interior regions of the state depends on medicinal plants for general cures. The state has identified specific medicinal plants, which can be cultivated & processed.

Under National Mission on Medicinal Plants, production of aloe vera is dominated by Baktawng Tlangnuam of Serchhip district. During 2014-15, the production of various medicinal plants such as aloe vera, stevia & amla in Mizoram had reached US\$ 0.09 million.

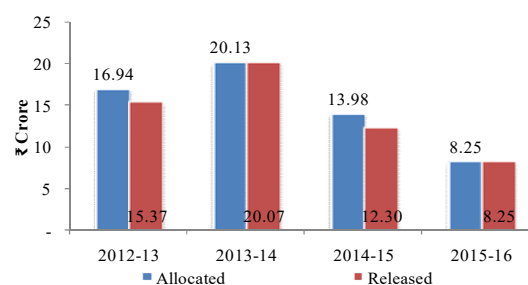
Funds Released for Medicinal Plants; 2012-15



Source: Ministry of Food Processing Industries

National Bamboo Mission

Funds Under National Bamboo Mission; 2012-16



Source: Mizoram Economic Survey 2014-15

Around 57% of the geographical area of Mizoram is under Bamboo cover found at heights ranging from 400m – 1500m above mean sea level. The State possesses the maximum percentage of its geographical area under bamboo forests as compared to other States of the country. Under

NBM, Plantations have been raised since 2007 in Forest area, Non forest area and Improvement of existing stock (Forest area). Around 15-20 Lakhs of bamboo seedlings are produced each year. So far 15 permanent nurseries have been set up in public sector under NBM.

Priority Sectors

- Production of fruits, vegetables, spices, cotton, coffee, tea, bird's eye chilli, anthurium, and rose has immense potential in Mizoram.
- Mizoram has 24,000 hectares of area that could be utilized for fish farming; of which, just 4,790 hectares have been developed as ponds and tanks until 2015-16. The industry has great potential as only around 19% of the

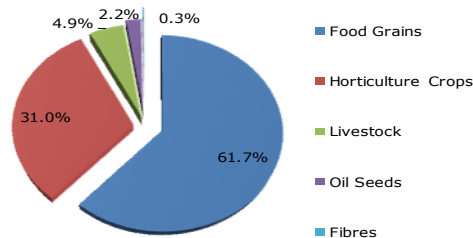
state's fishing potential has been utilized up till now.

- With abundant natural resources and supporting policies, the food processing sector along with allied services such as cold chain management offers potential for investment.
- Use of pesticides and fertilizers is low in Mizoram, leading to rich organic produce, which makes it attractive for exports.
- Creation of tourist complexes, adventure sports and resort facilities, amusement parks, health farms, hotels, convention centres, tourist travel services, etc., offer various avenues for investment in the tourism sector of Mizoram.

Nagaland

The economy of Nagaland is largely agrarian in nature, employing around 72% of the population. Nagaland has a suitable climate for agricultural and horticultural produce. It supports multiple crops viz., rice, maize, millet, gram, mustard, bean, sugarcane, rubber, tea, banana, pineapple, orange, jackfruit, pear, plum, passion fruit, litchi, mango, lemon, sweet lime, potato, sweet potato, tapioca, tomato, pea, chilly, ginger, garlic, cardamom, etc.

**Nagaland Agriculture and Allied Sector;
2014-15**



Source: NER Databank, DAHD – GOI and Dept. of Agriculture and Farmers Welfare – GOI, Tea Board of India

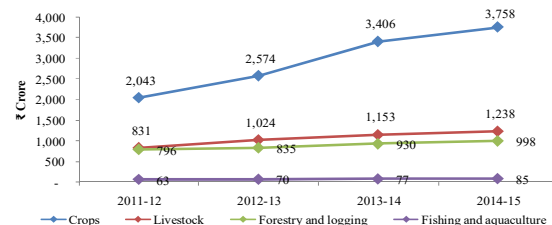
Note: Livestock does not include egg production.

Jhum cultivation (or shifting cultivation) is widely practiced in Nagaland; however, crop yields are low under such cultivation. There is potential for increasing capacity utilization by adopting modern techniques. In 2014-15, the production of the staple crop of Nagaland i.e. rice was recorded to be 454.2 metric tonne. The other major crops being produced in the state include linseed, pulses, maize, potato, soya, sugarcane, bean, jute, cotton, castor and gram. In 2014-15, the area under food

grain occupied 68.23% of the total cropped area and 82.38% of the net sown area. During the same period, the area under cereals increased by 2.16%, area under pulses increased by 0.68% and the total area under food grain increased by 1.98% over the preceding year.

Spices like Ginger, Turmeric, Large Cardamom, Naga Chilli, Black Pepper and Betel Vine are commonly cultivated by the farmers spread across the State. Agriculture accounts for a significant share in Nagaland's economy. It contributed approximately 33% to the state's total GSDP during 2015-16.

Nagaland GSDP from Agriculture and Allied Sector; 2011-15



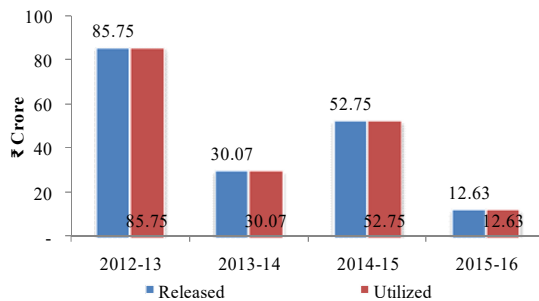
Source: MOSPI

Rashtriya Krishi Vikas Yojana (RKVY)

Nagaland Economy is mainly based on agriculture as more than 60% of the population is engaged in this sector. The Economy of Nagaland is also dependent on forestry, cottage industry, and tourism. The economy's remarkable feature is that

there are no landless peasants in the state. The various kinds of crops cultivated in Nagaland are corn, pulses, oilseeds, fibers, sugarcane, potatoes, tobacco, millets, and rice. In spite of agriculture being the main occupation of the people, the state still has to import food items from other states. due to unsustainable agricultural practices.

**Nagaland RKVY Fund Released and Utilized;
2012-16**



Source: Ministry of Agriculture

Priority Sectors

- The Horticulture is one of the promising sectors for the state in terms of employment
- The handicraft and handloom sector in Nagaland has enormous growth potential due to the abundant availability of skilled labor and raw materials.
- Setting up of private commercial and rural breeding farms on Private Public Partnership mode.

generation and income addition along with reducing nutritional poverty.

- The natural resources, climatic conditions and policy incentives in Nagaland support investments in industries related to bamboo, sericulture, tourism and agro-processing.
- Nagaland has a rich wealth of flora and fauna. Favorable climatic and geographical conditions in the state offer tremendous scope for floriculture.
- Nagaland has immense potential to produce organic honey and pollen due to its rich biodiversity, traditional knowledge, practice of beekeeping and numerous honeybee species.
- Eco-tourism, adventure tourism, ethnic culture tourism, health farms, hotels, convention centres, tourist travel services, etc, has high potential in the tourism sector of the state.

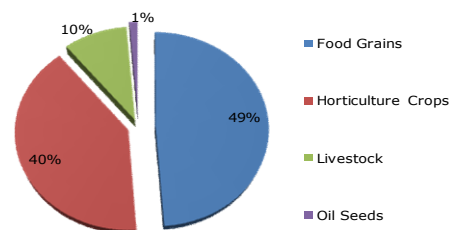
Sikkim

Agriculture is vital to the progress of Sikkim as more than 64% of the population depends on it for their livelihoods. The Sikkim AGRISNET is an internet-based agriculture information centre to promote scientific agricultural methods and convert research into practice in the agricultural sector.

The state of Sikkim is abundantly endowed with rare and exotic flora and fauna, which includes 4,500 different flowering plants, 550 types of orchids, 36 varieties of rhododendrons, 28 bamboo species, over 144 mammals, 552 species of birds and 600 different butterflies, which makes it one of the leading states of the region in production and supply of cut flowers to mainland consumer markets.

Also, of the 6,000 medicinal plants in India, over 424 plants are grown in Sikkim. Moreover, it is all set to be recognized and certified by the Government of India under National Medicinal Plant Board (NMPB) proposed under the 12th Five Year Plan.

**Sikkim Agriculture and Allied Sector;
2014-15**



Source: NER Databank, DAHD – GOI and Dept. of Agriculture and Farmers Welfare – GOI, Tea Board of India

Note: Livestock does not include egg production.

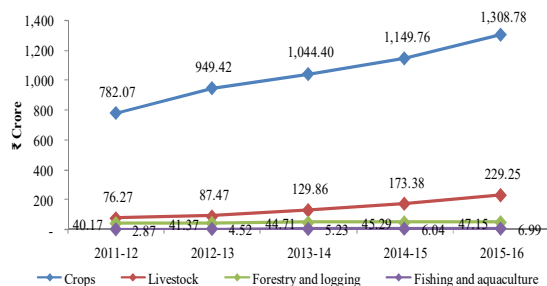
Tea grown in the Temi region of south Sikkim is famous by its brand name Temi Tea. The tea has its unique flavor and about 100 metric tonne of tea is produced annually.

The state is considered as a large cardamom epicentre of the world and produces more cardamom than any other Indian state. Sikkim is the largest producer of cardamom in India, and

accounts for more than 90% of total production in the country.

The overall contribution of agriculture and allied sector to GSDP of the state of Sikkim during 2015-16 totaled to ₹1592.17 Crore.

Sikkim GSDP from Agriculture and Allied Sector; 2011-16



Source: MOSPI

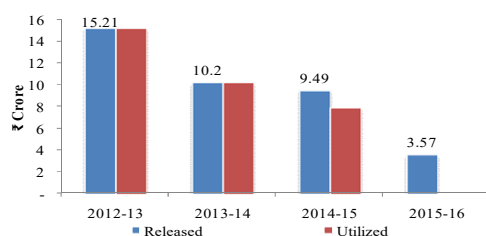
Tourism in Sikkim has emerged as the new profession of the Sikkimese people with its vast natural potential. Promotion of village tourism, home stay, cultural tourism, trekking tourism, ecotourism, wellness tourism, flori-tourism and adventure tourism has given fillip to the tourism trade in the state where a large of number of people are engaged under different employment opportunities.

Government Schemes

Rashtriya Krishi Vikas Yojana (RKVY)

The economy of Sikkim is linked with agriculture that serves as the source of livelihood and economic security of sizeable native population. The growth, however, has been restricted because of biotic and abiotic factors. It is estimated that over 80% of the rural population depends on agriculture and allied sectors for economic, food, and nutritional security.

Sikkim RKVY Fund Released and Utilized; 2012-16



Source: Ministry of Agriculture

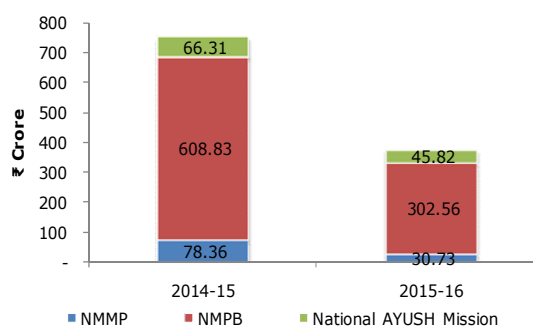
The agriculture systems practiced in Sikkim are integrated in nature that have evolved through

years of experimentation by the farmers. Also, Sikkim State has some inherent strength that largely supports organic farming. The march towards organic farming has led to substantial departmental intervention. A large number of initiatives have been taken by the Agriculture and Horticulture departments.

Schemes for Medicinal Plants

The agro-climatic conditions in the state support a wide variety of exotic flora and fauna that have utility in the medicine sector. Around 22 different medicinal and aromatic plants are cultivated under contract farming for the National Medicinal Plants Board. The state has identified medicinal plants as among the priority sectors for investment. National Mission of Medicinal Plants, National Medicinal Plants Board and National AYUSH Mission are few of the centrally sponsored schemes under which the state was allocated funds.

Funds Released for Medicinal Plants; 2014-16



Source: Ministry Of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)

Priority Sectors

- The surveyed arable land in Sikkim is 109,000 ha, of which only 9.5% is used; this provides a vast untapped potential for development.
- There are large areas of fallow land available, having the potential to be converted into productive farms for cash crops.
- The handloom and handicraft industry has a great potential to generate income and employment in the state.
- The demand for large cardamom in the export market is bound to increase steadily. Thus, there is huge export potential for large cardamom from Sikkim.

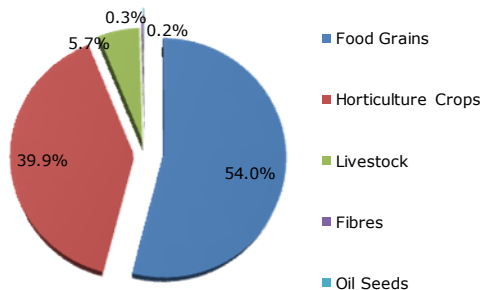
Tripura

Tripura is bounded on the north, west, south and southeast by Bangladesh; whereas in the east, the state has a common boundary with Assam and Mizoram.

Tripura is an agrarian state with more than half of the population dependent on agriculture and allied activities. Rice, the major crop of the state, is cultivated in 91% of the cropped area. Tripura is the second largest natural rubber producer in the country, after Kerala.

The agro-climatic conditions in the state are favorable for growing various fruits and horticultural crops. Tripura's pineapples and oranges are known for their unique flavor and organic nature.

Tripura Agriculture and Allied Sector; 2014-15



Source: NER Databank, DAHD – GOI and Dept. of Agriculture and Farmers Welfare – GOI, Tea Board of India

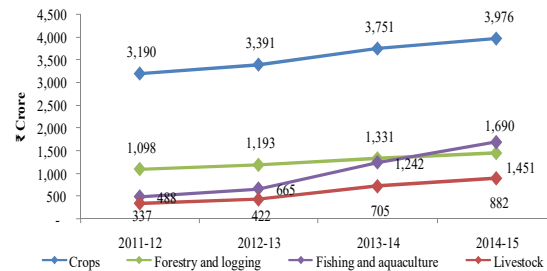
Note: Livestock does not include egg production.

Tripura has about 266 medicinal plants, 379 species of trees, 581 herbs, 320 shrubs, 165 climbers, 16 climbing shrubs, 35 ferns and 45 epiphytes. The pertinent tropical climatic conditions in the state support the flourishing growth of various types of the medicinal plant and other forest resources scattered all over the state.

A variety of horticultural and plantation crops are produced in the state. Major plantation crops include coconut, arecanut, oil palm, cashew, tea, coffee and rubber. The special focus is being given to value addition to non-timber forestry products and promotion of the bamboos for giving more economic return to rural people. Major spices include ginger, turmeric, chilli, black pepper, cinnamon and tezpatta.

Being an agrarian economy, the maximum contribution to GSDP have been from the crops segment of the agriculture and allied sector of the state. However, fishing and aquaculture segment gained momentum over the years.

Tripura GSDP from Agriculture and Allied Sector; 2011-15



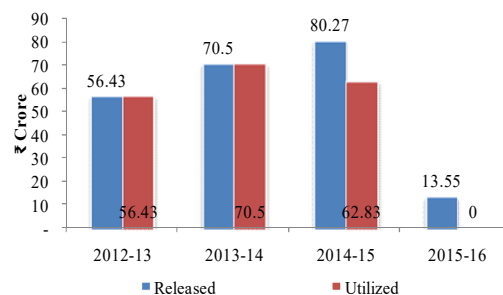
Source: MOSPI

Government Schemes

Rashtriya Krishi Vikas Yojana (RKVY)

The economy is primarily agrarian. The primary sector (Agricultural) contributes about 64% of total employment in the state and about 23% of the State Domestic Product (SDP). A variety of Horticultural/ Plantation Crops are produced in Tripura like Pineapple, Orange, Cashew nut, Jackfruit, Coconut, Tea, Rubber, Forest, Plantations etc. There is ample scope for increasing the area under such plantations as well as the productivity.

Tripura RKVY Fund Released and Utilized; 2012-16



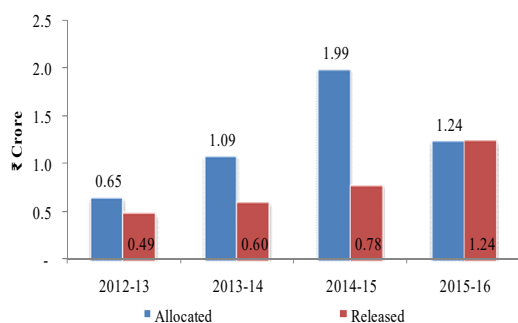
Source: Ministry of Agriculture

National Agro Forestry & Bamboo Mission

Department of Agriculture & Cooperation (DAC), Ministry of Agriculture implemented National Agro

Forestry & Bamboo Mission (NABM scheme under Mission for Integrated Development of Horticulture (MIDH) with the objective to utilize the potential of bamboo crop and increase the area of cultivation. During 2015-16, ₹1.24 Crore was allocated and released for the implementation of NABM scheme in Tripura.

Funds Allocated and Released under National Agro Forestry & Bamboo Mission; 2012-16



Source: Ministry of Agriculture

Priority Sectors

- Tripura acts as a gateway between Northeast India and Bangladesh. The state shares a 856-km international border with Bangladesh. This offers enormous potential for international trade.
- The state has a huge potential in tourism, specially eco-tourism, religious tourism, heritage tourism, hill tourism, rural tourism, archaeological tourism and water tourism.
- There is huge potential of RoFR land available for cultivation of fruit/ plantation crops like Pineapple, Jackfruit, Orange, Mosambi, Mango, Arecanut etc., commercially which may cater the need of other North Eastern States and neighboring country Bangladesh.
- There is a vast potential for setting up of food processing units in the State.
- The State also has potential in the meat processing sector.
- There is an ample scope for area expansion under organic spices cultivation in Tripura.

Recommendations

1. Recommendations have been given to constitute a committee of experts from all relevant aspects to analyze the crops for local as well as domestic consumption, for exports to neighboring countries & rest of the world and for food processing industry. Further, the competitive advantage for the identified crops needs to be worked out for better advisory to the states.
2. Government should fund the breeding and extension services and provide the peasants with necessary subsidy to undertake piggery due to huge domestic as well as export demand and limited availability for the same. Moreover, the piggery is low input high output venture in less time period and NER has natural resources insufficient to undertake the rearing. Thus, a tripartite arrangement between an NGO – ICAR – Banker, or a private company supported by the Government can go well in promoting profitable piggeries in NER.
3. Government should earmark funds for training and exposure visits to successful farming and agro ventures, outside NER so that people of the region could learn most advanced techniques and practices and practice the same as there are new avenues in agriculture and allied sectors are coming up regularly. For this purpose, preparation of training modules on new emerging areas is a prerequisite for promoting alternative crops for income generation. Specialized extension services for horticulture, spices, fisheries, piggeries, livestock sector and other focused sectors need to be created by a Government, SPV or a reputed NGO to be funded to execute services.
4. Establishment of at least one quality testing lab in Guwahati initially and later one in each state and four incubation centers for the region is recommended so as to ascertain the quality of the products being produced in the region, in order to promote and establish the processing industry in the NER. For this purpose, public private partnership (PPP) model for the same may also be considered.

5. Crops with hardy nature and long shelf life should be promoted against perishable nature commodities to sustain distant transportation. Disease free horticulture Quality planting material, produced under in-vitro conditions, is critical to improving yields and profitability on sustainable basis. Such technologies are available with ICAR. A modern tissue culture lab and nursery need to be set up for key crops of the region.
6. Supporting industry like packaging material and labeling needs to be promoted to reduce the manufacturing cost of the agricultural and other products such as animal husbandry handloom and handicraft products.
7. NER has huge potential for the development of eco-tourism as the region is perfect blend of natural wealth and topography. The region is richly endowed with thick forests, flora and fauna, lakes, glaciers and mountain peaks, which makes it a tourist paradise.
8. The region is endowed with rich and diverse bamboo resources. Thus, there is a high potential for bamboo processing industries. Government should provide funds for the establishment of such units to NGOs and private companies. In fact PPP model can also be adopted for the same.
9. The climate smart villages project should be set up to promote agriculture practices that will mitigate the effects of climate change on agriculture and help communities adapt to climate change to become resilient to extreme weather events such as droughts, floods, and delayed monsoons. The interventions range from index-based insurance, weather forecasting services, efficient irrigation and water management, conservation agriculture, inter-cropping and crop diversification, minimum tillage, laser land leveling and agro forestry. In addition to farm practices, farmers in climate-smart villages will also be accessing climate-smart services, such as tailored weather forecasts to plan planting, harvesting and other activities on the farm; advisories, and phones are also being used to enable farmers to buy index-based insurance that gives them a measure of protection in the event of extreme weather.
10. Developing commercial poultry production in the region by setting up Poultry Park with one mother unit of about 25,000 birds and block level satellite units of about 2000 birds each, taking one district as model is also advised.
11. A guide on schemes about agricultural sector of all central and State departments, development institutions, Government organizations, autonomous bodies and other agencies along with the training schedules of various bodies for the benefits of all the stake-holders should be documented. The guide book may be circulated to all the State Government officials up to block levels, NGOs, extension workers, FOs, academic institutions and development organizations so that the information could reach all the needy and potential beneficiaries.
12. The rural products and the handicrafts in the region are in great demand in the national and international market. However, for the want of proper information and the lack of communication between the buyers and the sellers, the artisans are not in a position to capitalize on the market opportunities. In this regard, information technology can help overcome this gap by providing the vital platform and link for the interaction between the buyers, sellers, the developmental agencies and the Government.
13. There should be study tour visit for NER farmers so that it will help them to identify location specific and economically viable different crops, exhibiting integrated farming systems such as mixed cropping and crop rotation practices, showing advanced practices in horticulture farming and use of improved varieties and farm resources, demonstrating the existing chain for market linkage and value addition, exploring possibility of replication of the methods, techniques and practices in production, extension, marketing and value chain.