

JAIANTIA HILLS DISTRICT
Inventory of Agriculture
2015



ICAR - Agricultural Technology Application Research Institute, Umiam (Barapani)
Ri- Bhoi District, Meghalaya - 793103



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FOREWORD

The ICAR-Agricultural Technology Application Research institute, Zone-III with its headquarters at Umiam, Meghalaya is primarily responsible for monitoring and reviewing of technology assessment, refinement, demonstrations, training programmes and other extension activities conducted by the *Krishi Vigyan Kendras* (KVKs) in North East Region, which comprises of eight states, namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The directorate also serves as feedback mechanism to research and extension systems while maintaining a very close liaison with ICAR headquarters and has made significant progress in research, capacity building and other extension activities which ultimately contributes for the planned growth and development of North Eastern Region of India.

Through this District Agriculture Inventory publication, an attempt has been made to compile and publish information about KVK district and agriculture in district, in a meaningful and comprehensive manner. It will be very useful for all stakeholders of agriculture in district. The inventory encompasses the information regarding geography of district; basic data about agriculture and district population, crops, institutional resources, agriculture relates schemes in district which also covers agriculture, fishery and livestock sector. The district inventory in the form of e-publication will surely increase the digital presence and penetration of KVKs. The inventory will also serve the communication needs of farmers and youth in district as it contains contact numbers and address related information to access various developmental agencies in district.

I congratulate the efforts of staff of KVK for collecting and compiling such a large volume of information in systematic manner. I also acknowledge the efforts of editors and other staff members of this institute for publishing this document on our website.

Umiam
18-03-2016

(Dr. Bidyut C. Deka)
Director,
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PREFACE

The synthesized compilation in the form of informative publication is of much value for decision making. The compiled information in this publication will immensely help farmers and other stakeholders of agriculture and allied sector of a district such as line departments, research organizations, planners, policy makers, input providers etc. Through this document, we are trying to provide entire gamut of information related to district and its agriculture setting for the benefit of farming community of the North Eastern Region. The connectivity related issues in the North Eastern region makes the information inaccessible to most of stakeholders. Therefore, the *Krishi Vigyan Kendras* in each district of North East region undertook this cumbersome task to compile the district Agricultural Inventory. This publication provides the latest information about district, agriculture and other essential constituents.

We, the editors of this publication, earnestly thank and acknowledge the contribution of all compilers i.e. Programme coordinator, Subject Matter Specialists and Programme Assistants of KVK Jaintia Hills for taking part in compiling the huge information to shape up Jaintia Hills District Inventory of Agriculture-2015. We also thank all officers of ICAR H.Q. for guiding us time to time and motivating us to complete this publication.

We, the editors, dedicate this publication to the farming community of Jaintia Hills District and we look forward to contribute more for the betterment of farming community in entire North East Region. We also welcome the suggestions for further improvement.

Umiam
18-03-2016

Editors

From the Desk of Programme Coordinator, KVK Jaintia Hills



The Inventory of Agriculture of Jaintia Hills District is expected to be useful to policy planners, farmers and all those who are concerned with the development of agriculture and related fields in the district. Basic information on the district and agricultural scenario is available through the publications of various agencies, but in a highly scattered form. As far as the farming community is concerned, getting information on their specific needs is still a herculean task. Information sharing with farmers would help them to technically advance in their farm-related activities. It is our own experience that a majority of the farming community is unaware of the programmes and schemes framed for them by the Governments and leading to failure of such programmes. Non adoption of modern field technologies by a larger group is another evil due to poor sharing of information. In the present day, information is percolated only to a handful of farmers who are resource-rich and highly progressive. The agricultural economy of the country can improve only is also noted that the farmers are unaware about the various institutions and organizations engaged in agricultural research and development activities in their own localities. In this publication, we have attempted to compile all the available information on various research and development organizations relevant to the district's agriculture. We have also provided the services and schemes offered by the organizations along with addresses for communication. We are fully aware about the importance of updating the contents periodically to include changes that are likely to happen due to policy changes. We assure to include any information that might have been omitted in the present compilation in our future versions of the publication.

The authors dedicate this publication for the benefit of the farming community of Jaintia Hills district and any suggestions made by the users of this inventory are highly appreciated for further improvement of the same.

(M.J.Syngkon)

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CHAPTER I DISTRICT IN GENERAL

Jaintia Hills District one of the seven Districts of the State of Meghalaya and is located in the eastern most part of the state. It is the home of one of the major tribes of Meghalaya popularly known as “the Jaintias” or the “Pnars” and other sub-tribes like the “Wars”, the “Bhois” and the “Biates”. It is the second largest district in the state in terms of area. It was created on February, 1972 by the bifurcation of the erstwhile united Khasi and Jaintia Hills district. Before its conquest and annexation by the British, Jaintia Hills was regarded as a kingdom under the rule of the Jaintia Kings. It comprised the vast hilly tracts of areas under the dominion of the traditional chiefs known as “Daloi” and often referred in the local parlance as “Ka Ri Khadar Dalloi” or “The Kingdom of twelve chieftains” and also lowlands in the Assam valley and Surma Valley(now in Bangladesh) which were under the direct supervision of the “Syiem” or “Rajah”. With the annexation, this kingdom was fragmented and its status was reduced to a mere sub-division to form part of the district known as United Khasi and Jaintia Hills. After independence and with the implementation of the Constitution of India in 1950, a number of District Councils were created in the State of erstwhile Assam carving out areas from the then Jaintia Hills. Thus we find the area under Jaintia Hills District which originally was 5462 sq. kms was reduced to 3819 sq.kms.

Jowai is the head quarter of Jaintia hills District and is the host of all the heads of important governmental offices and establishments, educational institutions, hospital, banking institutions etc. There are 2(two) Civil Sub-divisions viz., Amlarem Sub-division and Khliehriat Sub-division and 5(five) community and rural development blocks viz., Thadlaskein, Laskein, Amlarem, Khliehriat and Saipung blocks in the district.

The united district (Jaintia Hills District) was created in 22 February 1972 and occupied an area of 3819 km². It had a population of 295,692 (as of 2001). The district is part of the Meghalaya subtropical forests ecoregion. With the bifurcation of the erstwhile Jaintia Hills District into East and West Jaintia Hills District, West Jaintia Hills District came into existence on 31 July 2012 with its headquarters at Jowai. Jowai is the host of all the heads of important governmental offices and establishments, educational institutions, hospitals, banking institutions, etc. The total area of the district is 1693 km². The district comprises one Civil Sub-Division Viz. Amlarem Civil Sub-Division and three Community and Rural Development Blocks viz. Amlarem C&RD Block, Laskein C&RD Block and Thadlaskein C&RD Block with the following boundaries:

 North-Assam

- ✚ South-Bangladesh and East Jaintia Hills District
- ✚ East-Assam
- ✚ West-East Khasi Hills District
- ✚ West-East Khasi Hills District



Fig: Jaintia Hills District Map

CLIMATE

The climate of Jaintia Hills district is uniquely pleasant and caressing. It is neither too warm in summer nor too cold in winter. The rainfall profile is very high during the south west monsoons, which usually start from the middle of May and decline towards the end of September. The intensity of rainfall in the district during the last few years has registered a rising trend, due to the untimely vagary of monsoon coupled by the existence of fogs, mists and nimbus clouds which loom large during the rainy season. The Average relative humidity is the highest during the month of July while December records the lowest relative humidity.

TOPOGRAPHY

The relative relief of the District is 1200 m. The elevation ranges from 76m (at Dawki) and 1627m (at Maryngksi). Physiographically the District is divided into three broad divisions. They are (i) the Northern Hills (ii) the Central plateau or the central Jowai upland and (iii) the Southern escarpment. The Northern hills exhibit undulating topography. Denudational Hills and less dissected topography cover the Northern part of the District. The area is less dissected showing youthful topography with denudational Hills, highly dissected undulating topography with denudational Hills trending N-S, E-W, NE-SW. The Central plateau is characterized by rolling mounds and hummocks of gentle height and show flat topography. The Southern escarpment exhibits denudo structural Hills, highly dissected undulating topography with sharp crested hills, deep gorges and waterfalls. The region is at higher elevation than the northern hills. Physiographically the district may also be divided into Highlands-80.389(000ha), Midlands - 233.57(000ha), Lowlands -67.941(000ha) and Hilly tract-67.940(000ha).

FOREST

The District is very rich in natural resources. The heavy and long monsoon supports of luxuriant forest of pine over the plateau and deciduous forest along its fringe areas against the plains. Statistically, during 1997-98 an area of 1436.11 Sq.kms is clothed with forest against the State figure of 8919.15 Sq.Kms. The intensity of deforestation has been reduced to a lesser degree

and an appreciable extent with the judgment passed by the Supreme Court in December 1996 restricting the wanton felling down of trees for business purposes.

However, consumption of firewood being used as fuel for cooking purposes and jhum cultivation are still the principal causes of deforestation and environmental degradation which resulted in poor deliquescence, abnormal hygroscopicity; soil erosion, reduced soil fertility etc.

WATER RESOURCES

The District is drained in the north by the Mynkhen river, in the Northeast by Kupli River and its main tributaries like Kharkor, Saipung, Umürem, Myntang, Mynriang, and Litang. In the Southern part, the District is drained by Myntdu river and its tributaries. The main tributaries are Umlatang, Lynriang, Lubha, Umlanar, and Lukha. In the West Mynngot River separating the East Khasi Hills District with the Jaintia Hills.

DEMOGRAPHICS

The district has a total population of 270,352, of which 134,406 are males and 135,946 are females. The density of population is 159.69 per km².

CULTURE

Jaintia Hills district is the home of one of the major tribes of Meghalaya popularly known as the 'Jaintias' or the 'Pnars' and other sub tribes like the wars, the 'Bhois' and the 'Biates'. Like the Khasis, the Jaintias are believed to be remnants of the Mongolian overflow into India. They established in their present homeland in the remote past and owing primarily to their geographical isolation they succeeded in maintaining their independence until the consolidation of the British administration in this part of India.

Jaintias are a matrilineal society which is a very rare and unique practice where the children take the identity or family title solely from the mother. Women are very lucky in this way, because they are treated with equal rights but the head of the family is always the father.

Amongst the Jaintias, it is the youngest daughter who inherits property and has the obligation to take care and look after the family members incase of any financial or health problems.

EDUCATION

As per 2011 census the Literacy rate of the district is 63.23%, male is 59.75 and female is 66.71%.

In the last few years of the implementation of Sarva Shikshya Abhiyan (SSA) in the district, a lot of progress has been made in providing access to schooling facilities both at the Lower and Upper Primary stages. Development of infrastructural activities also has been taken in the district mainly through SSA program. Focusing on improvement of quality of education by improving the quality of teachers has also been successful to a great extent.

There are 718 L.P. Schools and 186 U>P> schools in west Jaintia hills district with an enrolment of 33089 and 7146 respectively.

In respect with Secondary and Higher Secondary Schools, there are 3 Government, 7 Deficit, 66 Permitted Secondary and 3 Government, 2 Deficit, 7 Adhoc, 6 Permitted and 2 Private Higher Secondary Schools.

RMSA (Rashtriya Madhyamic Shiksha Abhiyan) Scheme has also been implemented in the district in 2010-2011. As of now, only Government Secondary and Higher secondary Schools are covered.

Mid-day Meal scheme is also implemented in Government, Government aided and SSA Schools. The benefits of the scheme are construction of Kitchen shed, appointment of cook, provision of free food grains and cooking cost. The district has four Degree Level Colleges namely, Kiang Nangbah Government College, Nongtalang college, Thomas Jones Synod College and Shangpung College. There is one Law College in the district namely, Khat-ar-Doloi Law College-Jowai.

HEALTH CARE SECTOR

There are at present one Government Hospital and one Private Hospital, 3 Community Health Centres, 12 Primary Health Centres, 43 Sub Centres and 1 Dispensary.

LOCAL BODIES AND RURAL DEVELOPMENT

The Durbar is the councils which traditionally deliberate on issues of concern, especially taxation, land rights, marriages etc. with minister and headman in attendance function. They are also known as the Local Self Government. In the urban areas Jowai has a municipality under a chief executive appointed by the government.

CHAPTER II AGRICULTURAL SCENARIO OF THE JAINTIA HILLS DISTRICT

The total geographical area of the district is 381900 ha, out of which total cultivable area is 194593 ha. Although the mainstay of the district is agriculture, however due to the abundance of Limestone, plenty of Cement factories have been set up in the district (now East Jaintia Hills). Coal mining at sites like Lad Rymbai (East Jaintia Hills district) is also one of the major activities set up here.

Table: Land use pattern of Jaintia district

Sl no.	Land use	Area (ha)
1	Geographical area	381900
2	Total Cultivable area	194593
3	Forest area	153986
4	Land under non-agricultural use	18047
5	Permanent Pastures	-
6	Cultivable wasteland	113678
7	Land under Misc. tree crops and groves	17479
8	Barren and uncultivable land	18047
9	Current fallows	9760
10	Other fallows	176110

Source: District Crop Forecast Committee, Jaintia Hills District, 2012

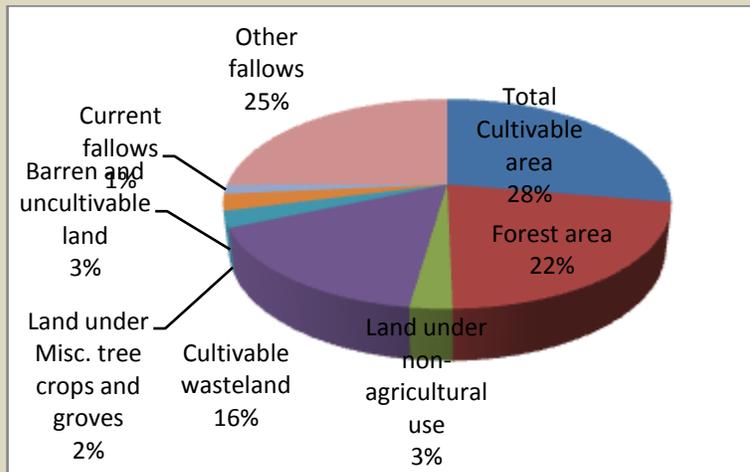


Fig: Percent of land area under different categories in Jaintia hills district

Characteristics of the soils of Jaintia hills district

Entisol, Inceptisol and Alfisol are the Soil group classifications present in the district. Black soils (16082.4 ha), Red soils (264899.4 ha), Alluvial soils (16631.6 ha), Sandy soils (36522.6 ha), and Acid soils (381100 ha) are found in the district. Soil fertility status is generally low to medium. The soil is mostly sandy, reddish brown to yellow brown in colour, acidic in reaction with low water holding capacity and has poor contents of organic matter and nutrients. The PH value ranges between 4.1 to 5.6. The concentrations of organic carbon content varies from 0.28 to 3.1 percent. Low phosphorus content is the characteristics of the soil of the District varying between 1.8 and 4.5 Kg/ha. The Potassium content ranges between 28.0 and 112.0 Kg/ha, which is quite lower than normal soil.

Table: Major Agroecological situations of Jaintia hills district

Agro Ecological Situation	Farming system	Soils	Rainfall	Altitude	Major crops	Important features	Location (area), extent of area in ha.
AES-I	FS-I (.Agri+Hort +AH+Fishery)	Red Clay Loamy soil	Very High and heavy rainfall (more than 8000 mm)	Elevation (0 - 600 m msl).	Paddy, areca nut, betel leaves, oranges	Very steep slope (25 - 33 %), rain fed.	Amlarem, Khliehriat & Saipung blocks, 67.940(000 Ha)
AESII	FS-II (Agri+Hort +AH+Seri)	Red sandy loam soil	High and heavy rainfall (less than 4000 - 8000mm)	Elevation more than 600- 1200 m msl)	Paddy, maize. Turmeric, ginger, mulberry, vegetables	Moderately —strongly sloping ,rain fed	Amlarem,Laskein , Thadlaskein, Khliehriat& Saipung Blocks, 233.57 (000 Ha)
AESIII	FS-III (Agri+Hort +AH)	Red sandy loam soil	Medium and heavy rainfall (4000 - 8000mm)	Elevation more 1200 m msl+	Paddy, maize, vegetables	Moderately sloping, rain fed.	Laskein, Thadlaskein, Khliehriat& Saipung Blocks, 80.389 (000 Ha)

CROPS

According to the District Statistical handbook (2012), during 2012-13 Jaintia hills district has a total cropped area of 36479 Hectares out of which only 412 hectares (1.12%) is sown more than once or under double cropping and the rest under single or mono cropping system. About 70 percent of the total cultivated area is under rain fed condition and is used mainly for cultivation of

Kharif crops like Rice, Maize, and Soybean etc. Land utilization for Rabi crops is very less. The district experienced steep decline in the cropped area due to coal mining activities. The major crops are rice (occupying an area of 49%), maize (13%), Spices (7%), Arecanut (7%) and vegetables (8%).

Maize cultivation both kharif and rabi are taken up by the farmers of the district as maize not only provides source of income but also provides feed for animals. In the past, farmers grow paddy once a year but now the farmers have come forward to cultivate this type of Boro Paddy, as it increase the crop production. In the lower altitude areas, boro paddy cultivation is taken up. In mid altitude and high altitude, multiple cropping was taken up in areas where irrigation is assured with a view to increase the cropping system, also converting mono cropping into double cropping system like growing potato and vegetables in paddy field. This was done after harvesting of paddy and then followed by potato or vegetables in the same areas and it was observed that production is more from both paddy and vegetables. The area, production and productivity of major agricultural crops and horticultural crops in Jaintia hills district are given in the tables.

Table: Area, production and productivity of major agricultural crops in Jaintia hills district

Sl no	Crop	Area (ha)	Production (t)	Productivity (kg/ha)
1	Rice			
a	Autumn	103	232	2252
b	Winter	12239	22458	1835
c	Spring	47	95	2021
	Total rice	12389	22785	1839
2	Maize	3199	5743	1795
3	Small millets	217	320	1475
4	Pulses			
a	Pea	116	112	966
b	Cowpea	52	48	923
	Total Pulses	168	160	952
5	Oilseeds			
a	Sesamum	44	43	977

b	Rape and mustard	89	76	854
c	Soyabean	603	842	1396
	Total oilseeds	736	961	1306
6	Sugarcane	11	11	1000

Source: Directorate of Agriculture, Meghalaya, 2012-13

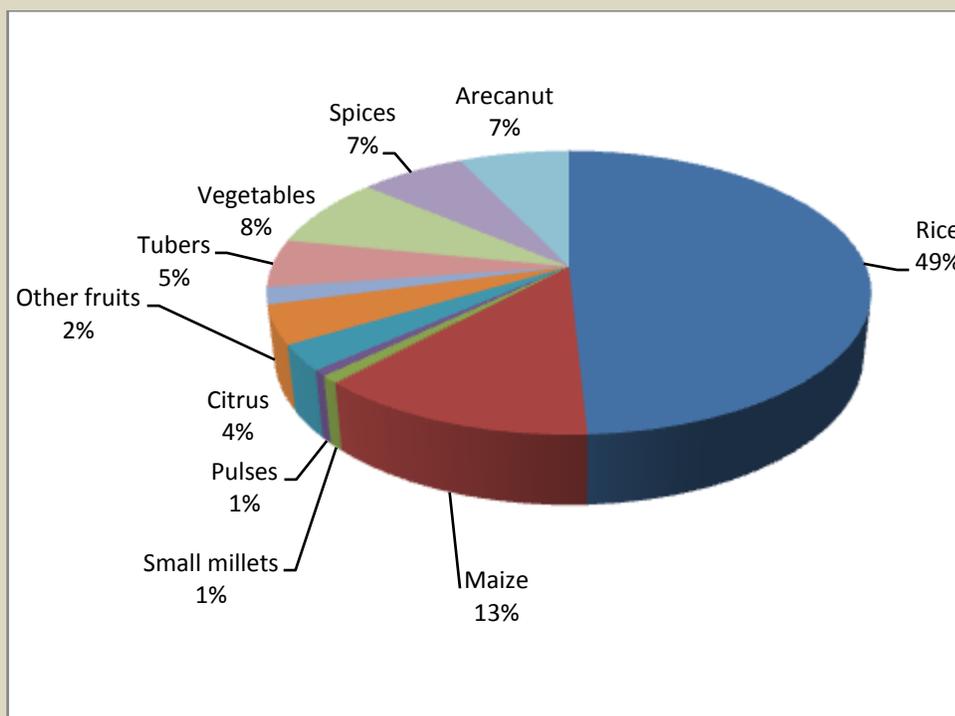


Fig: Percent land share of major crops

The district is the native of the world famous turmeric Lakadong variety and it has a vast potential for the development of horticulture. On the whole 8479 ha of area in the District is covered under orchards, vegetables etc. Among fruit crops Citrus occupies 13 % of the area, Areca nut 21%, Sweet potato 14 %, Turmeric 15 % and the rest are under vegetables and other crops.

Table: Area, production and productivity of major horticultural crops in Jaintia hills district

Sl no.	Crop	Area (ha)	Production (t)	Productivity (kg/ha)
1	Citrus			
A	Khasi mandarin	1071	5952	5557
B	Assam lemon	53	101	1906
C	Total citrus	1108	6065	5474
2	Banana	352	1146	3256
3	Pineapple	77	593	7701
4	Papaya	16	44	2750
	Total fruits	1553	7848	5053
5	Total vegetables	2042	22500	11019
6	Tuber crops			
A	Potato	207	1029	4971
B	Sweet potato	1152	3208	2785
C	Tapioca	25	257	10280
	Total tubers	1384	4494	3247
7	Spices			
A	Turmeric	1257	7381	5872
B	Ginger	340	3561	10474
C	Chillies	54	46	852
D	Black pepper	37	25	676
	Total spices	1688	11013	6524
8	Plantation crops			
A	Arecanut	1775	2667	1503

Source: Directorate of Horticulture, Meghalaya, 2012-13

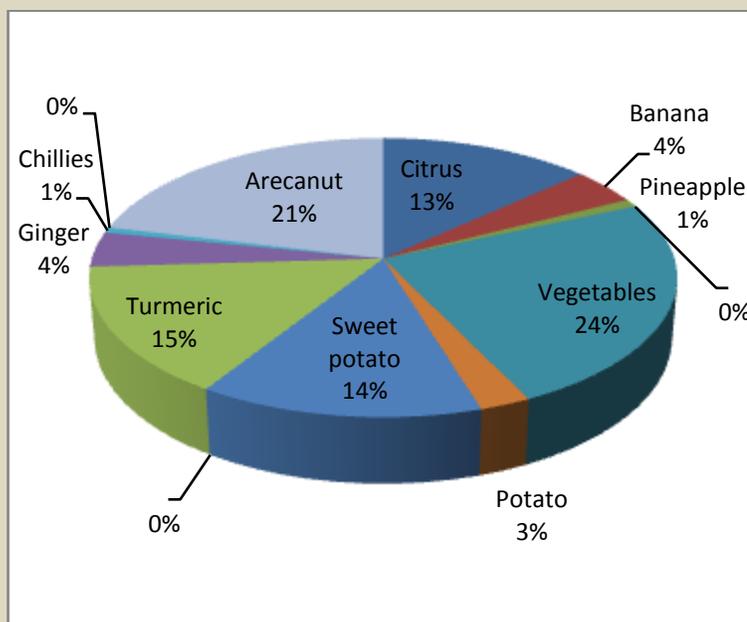


Fig: Percent horticultural land share by horticultural crops

Table: Sources of Irrigation

Sl no.	Sources of Irrigation	Number	Area (ha)
1	Canals/close conduits (No. of Schemes)Surface flow	73	4908
2	Lift irrigation schemes	6	42
3	Harvested water (rain)	23	144
4	Total Irrigated Area	102	5094

Source: Water Resources Department, Rymphum Jowai, West Jaintia Hills District ,2012

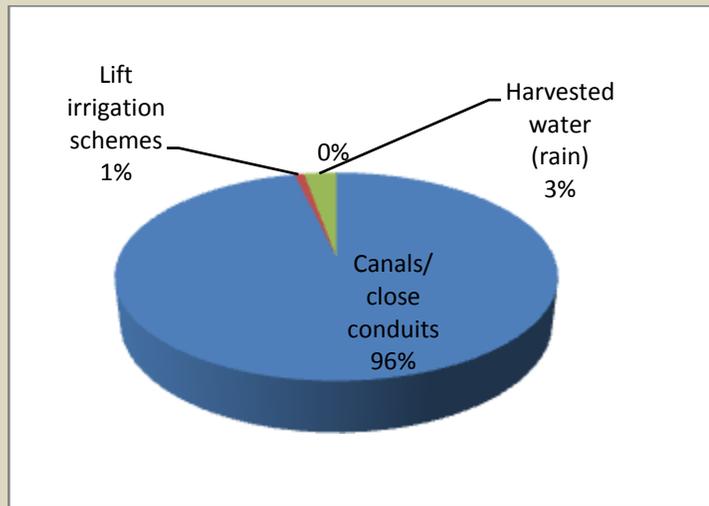


Fig: Percent share of source of irrigation

LIVESTOCK

According to the District Statistical handbook (2012), there is one veterinary Hospital, thirteen Dispensaries, eleven Veterinary Aid centre, eight key village Centres and five veterinary Block Centres for veterinary services in the district. Besides there is one Cattle Farm at Khliehtyrshi ,one Poultry farm at Jowai ,one Pig Farm at Thadlaskein, one Sheep and Goat Farm at Saitsama for rearing of improved breeds of livestock for producing pedigree stock for distribution to the interested breeders. There is one Fodder & Seed production Farm at Saitsama for raising of fodders and fodder seeds production for distribution and one Dairy Milk Plan at Jowai for Pasteurising of Milk procured from the Dairy Co-operative Societies / Farmers .The present livestock population in the District is 637275. Out of which 58 % are Poultry, 23% cattle, 14% Pigs and 4% Goats.

Table: Production and productivity of livestock in Jaintia hills district

Category	Population	Production
Cattle		
Cross bred	1208	2608 thousand litres of milk
Indigenous	146289	4216 thousand litres of milk
Buffalo	2224	175 thousand litres of milk
Goats	27005	200 thousand litres of milk
Pigs	85710	13140 tonnes meat
Poultry		
Desi	329824	114.49 lakhs eggs
Improved	37479	47.67 lakhs eggs
Ducks	7536	2.07 lakhs eggs

Source: District Animal Husbandry and Veterinary Officer, Jowai (2013-14)

FISHERIES

The district is backward in Fishery with 1453 number of culture ponds and a total fish production of 282.2 metric tonnes. There are 2 fish seed farm FRP and one ecohatchery. With the introduction of the Aqua mission scheme, there has been development of existing water bodies and creation of additional water area for large scale fish production, including reclamation of marshy and swampy lands.

CHAPTER III CONSTRAINTS IN AGRICULTURAL PRODUCTION

CROPS

Agriculture:

Since the state government has initiated organic farming, there is insufficient supply of organic products. The district agriculture office cannot meet the requirements, so the farmers have to procure the organic manures and bioproducts from the private suppliers at full rate. Also, labour is scarce and costly. This increases the cost of production. There is less area for expansion. **Productivity per unit area is low and declining due to mono cropping, improper soil nutrition, non-replacement of seeds, etc.** There is shortage of potato seeds for second cropping in paddy field. Due to high rainfall, there is heavy soil erosion and washing away of top soil and declining soil fertility. In the district mostly **rainfed agriculture is practiced which is dependent on rain water and there is lack of water conservation measures.** There is lack of postharvest management of produce, lack of proper storage of food grains which leads to pest and rodents attack causing heavy losses.

In East Jaintia hills, in addition to these constraints, in coal mining areas the soil fertility has degraded, there is iron toxicity and the soil is very acidic. The quality of water for irrigation is deteriorated affecting the paddy fields and other crops.

Horticulture

The constraints in horticulture are as follows:

1. The farmers have small land holdings
2. Unavailability of quality planting material
3. Non availability of organic manure and bioproducts
4. High pest and disease infestation
5. Lack of irrigation facilities hindering cultivation of vegetables in rabi season.
6. Since the production of vegetables and fruits is the secondary source of income of the farmers, the production is less
7. Lack of postharvest management and processing of horticultural produce

8. Lack of transportation facilities

Constraints of Khasi Mandarin Cultivation:

1. Lack of approach road to orchards
2. Cultivation is mainly done in steep slopes which causes difficulty in management. Application of organic fertilizers become very difficult and only few farmers can effort the construction of half-moon trenches
3. There is heavy soil erosion due to steep slopes and high rainfall which causes loss of top soil affecting the yield of the fruit trees
4. Lack of proper marketing channels
5. Lack of postharvest management and processing of the fruits

In East Jaintia hills district, during raining season the runoff water from the areas where coal is stock flows to the low lying area such as the valley. Thereafter, causing the soil to become more acidic, high iron toxicity and unfit for cultivation.

Pest and diseases are also one of the major constraints in crop cultivation. The details of the major pest and diseases of the crops are given in the table:

Table: Major pest and diseases of the crops

Crops	Pest and disease incidence
Paddy	Blast, Brown spot, Stem borer, Leaf folder, Swarming caterpillar, Gundhi bug, rice weevil
Maize	Cob borer, Stem borer, cutworm, thrips, aphid ,termite , Shoot fly
Soyabean	Stem fly, Blue beetle, Semiloopers
Mandarin Oranges	Citrus trunk borer, lemon butterfly, leaf miner, aphids, psylla, scales, mealy bug , fruit fly, pink diseases, powdery mildew
Turmeric	Soft rot diseases and rhizome weevil
Ginger	Soft rot diseases and rhizome weevil
Potato	White grub, cutworm, Late blight
Banana	Pseudostem and rhizome weevil
Tomato	Late blight, bacterial wilt, Leaf curl virus, <i>Helicoverpa armigera</i>

Cabbage	<i>Pieris brassicae</i> , white grub, cutworm, <i>alternaria</i> leaf spot
Cauliflower	<i>Pieris brassicae</i> , white grub, cutworm, <i>alternaria</i> leaf spot
Cucurbits	Red pumpkin beetle, Fruit fly
Arecanut	Bud rot and Fruit rot
Litchi	Litchi bug
Black pepper	<i>Phytophthora</i> rot

LIVESTOCK

In livestock the major constraints are unavailability of animal feeds and fodder and their high cost because they are imported from outside the state. Another constraint is unavailability of improved breeds of cattle and chicks at cheap rates for small and marginal farmers. Farmers of the district mostly rear **local breed with slow weight gain, low eggs production, high mortality and low conception rate affecting production and productivity in the district.**

FISHERIES

The major constraints of fisheries in Jaintia hills district are as follows :

1. Unavailability of quality seed at the required time
2. Unavailability of quality feed
3. Occurrence of EUS- Epizootic Ulcerative Syndrome in winter months
4. Water is acidic affecting the productivity of fish
5. Lack of proper pond management practices
6. Poor disease management
7. Less productivity
8. Loss due to escapement of fishes during the flash floods
9. Lack of proper market channels
10. In coal mining areas, in addition to these constraints, there is a decline in riverine fish due to water pollution.

CHAPTER IV INSTITUTIONAL SUPPORT FOR AGRICULTURAL DEVELOPMENT OF THE DISTRICT

There are several institutions that are involved towards the development of agriculture and allied fields in the district. State government departments, government agencies, non governmental agencies, voluntary organizations etc are active and contribute substantially towards the overall development of agriculture in the district.

CROPS

1. Department of Agriculture

The Department of Agriculture is responsible for executing and implementing the agricultural policies of the state. The Department of Agriculture, Meghalaya has been functioning as an integrated entity comprising the various spheres of development in Agriculture, Horticulture and Minor Irrigation. The mandate of the department is to bring about increased crop production and productivity. However, for effective administration in streamlining the developmental activities, the Directorate of Horticulture was created in 1995 and the Directorate of Irrigation in 2001. The three directorates were in operation within the same administrative control of the Department till the Dec 2010 where the Directorate of Irrigation was carved out as a Water Resources Department.

To achieve this, it has therefore built up a network of establishments in the district to cater to the needs of the farmers of the district. The department has the following offices in the district:

i. District Agriculture Office

It is the main office to supervise and monitor agricultural development activities in the district. It is located at the district headquarters, Jowai with the District Agriculture Officer as its head. He is assisted by Assitant Directors of Agriculture and at the block level by Agriculture Development Officers including Field Assistant and Agriculture Demonstrators at the field level. Besides, a Research Officer under the District Local Research Station & Laboratory, Jowai with Scientific Officers under his supervision and a Sub Divisional Agriculture Officer at Amlarem Civil Sub Division assisted by an Agriculture Development Officer has been sanctioned to assist the District Agriculture Officer.

Address for communication:

District Agriculture Officer,
Jowai
Phone No:

a. District Horticulture Office

It is the main office to supervise and monitor Horticultural development activities in the district. It is located at the district headquarters, Jowai with the District Horticulture Officer as its head. He is assisted by Assistant Directors of Horticulture and at the block level by Horticulture Development Officers including Field Assistant and Horticulture Demonstrators at the field level.

Address for communication:

District Horticulture Officer,
Jowai
Phone No:

2. Krishi Vigyan Kendra

KVK, Jaintia Hills is an innovative science based institution sponsored by the Indian Council of Agriculture Research, New Delhi and was established by the Department of Agriculture, Government of Meghalaya as a Host Organization to carry forward in implementing the mandates of KVK in the district by applying the principles of “Teaching by doing” and “Learning by doing”. It is presently being housed at the state department Farmer’s Training Institute, Rymphum, Jowai which is about 100 meter distance from the National Highway 44 on the way from Jowai to Silchar. It was sanctioned in the year 2004-05 and operationalized in 2009-10.

a. Mandates

- ✦ Conducting “On-Farm Testing” for identifying technologies in terms of location specific sustainable land use systems.
- ✦ Organising training to update the extension personnel with emerging advances in agricultural research on regular basis.
- ✦ Organising short and long term training courses in agriculture and allied vocations for the farmers and rural youths with emphasis on “Learning by doing” for higher production on farms and generating self-employment.
- ✦ Organising Front Line Demonstrations (FLDs) on various crops to generate production data and feed back information.

b. Programmes

I. Training Programmes

In fulfilling one of the mandated activities of the KVK's, the Krishi Vigyan Kendra, Jaintia Hills has been taking regular initiatives to impart training to the farming community. The purposes of the training programmes are to create awareness, impart knowledge, motivate learning, change behavioural attitudes and to help farmers acquire new skills. Therefore, regular training programmes as a means to disseminate up to date technology and to strengthen the knowledge component of the farming community has been initiated by the Krishi Vigyan Kendra, Jaintia Hills. The training programmes conducted are based on the felt needs of the farmers from varying aspects of agriculture. The training programmes conducted may be on campus or off campus. The topics of the training programmes conducted are as follows:

Agronomy	
1.	Nutrient management in Rice
2.	Package and practices of Maize
3.	System of Rice Intensification
4.	Organic fertilizers vs. Inorganic fertilizers
5.	Role of essential elements
6.	Crop weed competition
7.	Liming to reduce soil acidity
8.	Soil and Water Conservation techniques
9.	Water requirement of fields crops
10.	Natural resource depletion and its effect on the environment
11.	Use of Biofertilizers in Agriculture
12.	Soil sampling techniques
13.	Use of Biofertilizers in Agriculture
14.	Role of Intercropping in soil fertility and crop production
15.	Critical period in crop weed competition
16.	Disaster management
17.	Climate change and Agriculture
18.	Role of Intercropping
19.	Vermicomposting
20.	Baby corn production
21.	Advantages of Intercropping
Plant Protection	
1.	IPM and IDM of Paddy for disease management
2.	Management of Fruit flies
3.	Seed treatment of Paddy for disease management
4.	Eco friendly management of stored grain pests and Neem- a bio pesticide for insect pests management
5.	Rhizome treatment of Ginger
6.	Management of fruit flies in cucurbits

7.	IPM and IDM of tomato
8.	<i>Trichoderma</i> - a potential bio agent for soil borne diseases
9.	Management of bacterial wilt of Tomatoes by using Streptomycin
10.	Use of baffle traps for monitoring and management of gundhi bug
11.	ITK in Paddy
12.	Use of bio- pesticides in Cabbage
13.	Do's and Don't in pesticides use
14.	Management of white flies in Polyhouse
15.	Use of bio- agents in Paddy
16.	IPM and IDM in Citrus
17.	Uses and advantages of bio- pesticides
18.	IDM of Soft rot in Ginger
19.	Bio pesticides for sustainable agriculture
Horticulture	
1.	Integrated nutrient management
2.	Planting of ginger
3.	Nutrient management of ginger
4.	Physiological disorders of tomato
5.	Use of Vermicompost in vegetable cultivation
6.	Nursery raising on raised bamboo structures
7.	Package and practices of tomato cultivation
8.	Production of low volume high value crops
9.	Integrated nutrient management of vegetables
10.	Intercropping of vegetables
11.	Integrated nutrient management of tomato
12.	Intercropping in citrus orchard
13.	Package of practices of pea cultivation
14.	Intercropping in citrus orchard
15.	Package of practices of broccoli
16.	Organic farming

17.	Training and pruning of citrus
18.	Rejuvenation of orchards
Fisheries	
1.	Scientific methods of Pond Preparation and pond management
2.	Composite fish culture
3.	Methods of fish feed preparation with locally available materials.
4.	Integrated fish farming
5.	Breeding techniques of Indian Major Carps
6.	Methods of fish feed preparation with locally available materials.
7.	Integrated fish farming
8.	Importance of liming and manuring in pond
9.	Prospects of Aquaculture in Socio-Economic Development.
10.	Integrated fish farming
11.	Common fish diseases and its management
12.	Ornamental Fisheries and its prospects in North Eastern Region of India.
13.	Breeding techniques of Indian Major Carps
14.	Common fish diseases and its management
15.	Prospects of Aquaculture in Socio-Economic Development.
16.	Importance of liming and manuring in pond
17.	Paddy cum fish culture

ii. Front Line Demonstrations

It is one of the mandates of the Kendra to organize Front Line Demonstrations on newly released technologies in horticultural, field crops, fisheries under farmer's field so as to generate production data and feedback information. The demonstrations are conducted in the farmers' fields of selected operational village.

iii. On Farm Testing

On farm testing are conducted for identifying technologies in terms of specific sustainable land use systems and to suggest or modify or refine the technology in real farms with the active involvement of the farmers. The technologies are tested at farmers' fields in various disciplines of agronomy, horticulture, plant protection, fisheries etc.

a. Farm Advisory Services

KVK Jaintia Hills is regularly attending to solve the problems of the farmers by providing farm advisory services to them. It also encourages the use of modern day technology through mobile phones particularly to farmers from remote areas.

b. Farmers' Study Tours/ Exposure Visits

Farmers' Study Tours/ Exposure Visits are organized by KVK Jaintia Hills with the objective to provide an opportunity to the farmers to learn and acquire new ideas and insights on different aspects of agriculture. This helps the farmers to learn by seeing and studying.

c. Farmer's visit to the KVK

Farmers are encouraged to visit the KVK in person so as to help them in discussing and solving their problems. This also improves rapport development between farmers and the scientists.

d. Exhibition/Kisan Melas

KVK Jaintia Hills regularly participates in exhibitions organized by the state departments of agriculture and allied sectors, local bodies and other organizations working in the

field of agriculture. The Kendra usually depicts its various activities and provide spot consultancy to the visitors.

e. Vocational Training for Rural Unemployed Youth

The Kendra also organizes vocational training for the rural unemployed youth to encourage them to take up agriculture based activities as a vocation. It regularly organizes such vocational trainings on vermicomposting, value addition of horticultural products, mushroom cultivation, value added fish products etc.

g. Linkages with other organizations/institutes

KVK Jaintia Hills is instrumental in developing linkages with other organizations/institutes so as to effectively reach the farming community. Such linkages are established with the state department of agriculture and other allied departments, National Bank for Agriculture & Rural Development, Protection of Plant Varieties & Farmers' Rights Authority, Guwahati, other voluntary organizations like the JHDS, SURE etc which are operating in the district.

h. Other extension activities

KVK Jaintia Hills also undertake different extension activities as follows:

- ✚ Method demonstration
- ✚ Lectures delivered
- ✚ Diagnostic Visits
- ✚ Scientist visit to farmer's field
- ✚ Farmer's visit to KVK
- ✚ Group Discussion
- ✚ Film Shows
- ✚ Advisory helpline
- ✚ Exposure trip
- ✚ Field Day
- ✚ Radio talk

Address for communication:

Programme Coordinator

Krishi Vigyan Kendra, Jaintia Hills

Rymphum P.O Jowai 793150

Meghalaya Phone No.: 0365-2223343

Email: kvkjhd@gmail.com Website: www.westjaintiahills.nic.in

3. Agricultural Technology Management Agency (ATMA)

It is a registered body of key stakeholders involved in agricultural activities for sustainable agricultural development in the district. It aims at integrating research and extension activities and decentralizing day-to-day management of the public Agricultural Technology System (ATS). At state level it operates under the Jt. Director of Agriculture (Research & Training), Govt. of Meghalaya, who acts as the Nodal Officer. The ATMA is constituted by drawing members from all research and extension units within the district like the Krishi Vigyan Kendras and the key line departments of Agriculture, Animal Husbandry, Fisheries, Sericulture, Agro industries etc. The Meghalaya Agriculture Management and Training Institute (MAMETI) is the agency formed at the state level to provide human resource development support for the effective functioning of the ATMA at the district level. The office of ATMA, West Jaintia Hills District is located at Jowai with the Deputy Commissioner of the district as its Chairman.

i. Objectives

1. To identify location specific needs of farming community for Farming system based approach development.
2. To set up priorities for sustainable agriculture development with farming systems approach.
3. To draw plans for production based system activities to be undertaken by farmers/ ultimate users.
4. To execute plans through line departments, training institutions, NGOs, farmers organizations and allied institutions.

5. To coordinate efforts being made by various line departments, NGO's, farmers organizations and allied institutions to strengthen research extension farmers; linkages in the district and to promote collaboration and coordination between various State funded technical departments.
6. To facilitate the empowerment of farmers/ producers through assistance for mobilization, organization into associations, cooperatives etc for their increased participation in planning, marketing, technology dissemination and agro processing etc.
7. To facilitate market interventions for value addition to farm produce.

ii. Functions:

1. Strategic planning
2. Networking and Coordination
3. Integrated extension delivery
4. Information Management
5. Farmer facilitation and empowerment
6. Training and capacity building
7. Fund Management
8. Participatory Technology Development
9. Monitoring and evaluation

Address for communication:

Project Director, ATMA
District Agriculture Office,
Department of Agriculture
West Jaintia Hills District
Jowai

4. Lead Bank

Under lead bank scheme, each district is assigned to different banks to act as a consortium leader to coordinate the efforts of banks in the district, particularly in matters like branch expansion and credit planning. For both the districts of West Jaintia Hills and East Jaintia Hills, the State Bank of India functions as the Lead Bank.

5. Other banking services

All nationalized banks and other financial sectors are operational in the district. Special schemes for the development of the farmers are being provided by the Meghalaya Cooperative Apex Bank (MCAB), Meghalaya Rural Bank (MRB), Union Bank of India (UBI), and State Bank of India (SBI) through their different branches within the district.

6. Farmers Club and Voluntary organizations

Farmers' Clubs are grassroot level informal forums. Such Clubs are organised by rural branches of banks with the support and financial assistance of NABARD for the mutual benefit of the banks concerned and rural people. Voluntary organizations are also active in the district for the promotion of agriculture.

7. Polytechnic Colleges and Vocational higher secondary schools

Jowai Polytechnic – The courses offered in the institute are as follows:

- (1) Automobile Engineering
- (2) Architectural Assistantship and
- (3) Costume Design & Garment Technology (for women only)

It has an intake capacity of 30 students in each discipline. The construction of the buildings in both the Polytechnics is completed and now they have shifted to the new buildings.

8. Meghalaya Basin Development Authority (MBDA)

The Meghalaya Basin Development Authority (MBDA) is headed by the Chief Secretary, government of Meghalaya and is responsible for the strategy and steering the overall implementation of programmes under Integrated Basin Development and Livelihoods Program (IBDLP) while at the district level the District Basin Development Units (DBDU), headed by the Deputy Commissioner of the district, is the district level institutional mechanism for the conceptualizing and implementing the initiatives under the IBDLP. The aims and objectives for which the Authority is established are as under:

- ✚ To sustainably develop the river basin resources, which shall ultimately lead to promoting the sustainable livelihood and gainful employment opportunities for the residents of river basins, independent or through the convergence of initiatives? To, without any motives to earn profit, enhance and improve the livelihood for the poor in the state of Meghalaya.
- ✚ To increase sustainable income generating cultivation systems and establishment of micro/small scale/ medium scale bio-industrial units.
- ✚ To enable people's participation to select livelihood activities most suited to their resources, skills and interest.
- ✚ To address the felt needs and priorities of women and increase their participation in local institutions and decision making process.
- ✚ To promote micro finance including saving and thrift and micro insurance projects.
- ✚ To provide business development service including demonstration, training, consultancy and advisory service on all matters relating to technical, organisational, management commencement and expansion of the enterprise, purchasing techniques, production, purchases, sales, material and cost, quality control, marketing, advertising, publicity, personnel' information technology services, development and transfer, backward and forward business linkage promotion and horizontal linkage among enterprises, export and import to and for institutions/concerns/bodies/associations/corporations/public and local authorities/trusts/cooperative societies.
- ✚ To help in promoting sustainable enterprises at micro and small scale especially to the poor by way of providing equity, debt financing, leasing, insurance and other means and mechanisms that may be necessary for promoting livelihoods on the basis of basin resources.

- ✦ To rotate and utilize the resources of the authority for ongoing building up of new enterprises by exciting the enterprises that has achieved the sustainable scale and viability, through appropriate mechanisms.
- ✦ To act as a catalyst in facilitating mobilization of financial resources to micro/small/medium scale enterprises to benefit the poor.

LIVESTOCK

1. The Department of Animal Husbandry and Veterinary

- ✦ It is entrusted with the responsibility of all aspect of Livestock and Poultry Development, like, production, processing and marketing of livestock and poultry and their products through augmentation of production of milk, meat, eggs and wool. Animal health care service and prevention of animal diseases is a priority for maintenance of a healthy stock for optimum production. Creation of suitable infrastructure for breeding, feeding and management of livestock and poultry, processing of milk, meat and eggs and marketing of livestock and livestock products is also given due importance. Besides, the Department is engaged in providing the required training and extension support to livestock producers so as to promote scientific rearing of livestock and poultry amongst them with consequent generation of employment avenues in the rural areas.
- ✦ To bring about a developmental change in livestock and poultry sector, number of programmes and infrastructure development were undertaken by the Government where the activities of the Department were mainly centered round the following broad objectives:
 - ✦ Providing protection to livestock and poultry from the ravages of diseases through treatments and preventive vaccinations.
 - ✦ Introducing improved breeding techniques for upgrading the local stock.
 - ✦ Ensuring better Animal Husbandry practices through adoption of Extension and Research.
 - ✦ Building up of adequate technical and professional man-power through Education and Training.
 - ✦ Encouraging setting of Livestock and Poultry Industries.

a. District Animal Husbandary and Veterinary Officer

At the District level, the department is headed by the District Animal Husbandary and Veterinary Officer assisted by one Sub Divisional Animal Husbandary and Veterinary Officer at Amlarem Civil Sub Division, four Senior Animal Husbandary and Veterinary Officers and twenty one Animal Husbandary and Veterinary Officers. He is also assisted by five dairy officers who attend to the dairy sector in the district.

Veterinary Institutions in the district are provided in the table below:

b. Government farms available in the district are as follows:

Sl. No.	Location	Controlling Officer
1	Sheep & Goat Farm, Saitsama	District A.H & Veterinary Officer, Jowai
2	Fodder Farm, Saitsama	District A.H & Veterinary Officer, Jowai
3	Cattle Farm, Khliehtyrshi	Manager, Cattle Farm, Khliehtyrshi.
4	Poultry Farm, Jowai	Asstt. Poultry Development Officer, Jowai/
5	Pig Farm, Thadlaskein	District A.H & Veterinary Officer, Jowai
A 6	Vocational Training Centre, Khliehtyrshi	District A.H & Veterinary Officer, Jowai

Address for communication:

District A.H. & Veterinary Officer

West Jaintia Hills, Jowai.

03652 – 220811

Sl No	Name of District.	Particulars				
		Vety. Hospitals	Vety. Dispensaries	Vety. Aid Centres	Mobile Vety. Dispensaries	Vigilance Unit
5	West Jaintia Hills	1	15	8	2	1
6	East Jaintia Hills	-	5	4	1	1

FISHERIES

1. Department of Fisheries

The Department of Fisheries was created in the year 1974. Prior to this it was under the Department of Agriculture. Its Vision is to develop fish culture and to create more water area. The Department maintains data in a catalogued and index form computerize all appropriate records and facilitate access through a country-wide network on different systems. The Directorate Office issues necessary instruction and guidelines etc. to the subordinate Office at the District & Sub-Divisional level with a view to streamline the developmental activities of the Department.

2. Meghalaya State Aquaculture Mission (MSAM)

Meghalaya with its vast inland fishery resources offers tremendous scope for developing the fisheries sector, but lags behind in harnessing the potential of these natural resources. Though the state is predominantly a fish consuming State, the supply of fish is inadequate to meet its growing demand, making the State import fish from Andhra Pradesh. The Government of Meghalaya has identified fisheries as a key sector and has decided to launch the Meghalaya State Aquaculture Mission (MSAM) co-terminus with the Twelfth Five Year Plan period (2012-13 to 2016-17). The MSAM has the following major objectives:

1. Development of existing water bodies and creation of additional water area for large scale fish production, including reclamation/rehabilitation of marshy and swampy lands,
2. Conservation of native, endangered and traditional species of Meghalaya and developing breeding farms of commercially potential species on a large scale,
3. Creation of mass awareness, capacity building, exposure training and skill development of all the stakeholders and technical support for long term sustainability of fishery sector,
4. Capturing emerging opportunities in the fisheries sector.

CHAPTER V RESEARCH AND DEVELOPMENT ORGANIZATION RELEVANT TO DISTRICT'S AGRICULTURE

I. Central Potato Research Station (CPRS), Shillong Meghalaya

The station is located in Shillong, Meghalaya. The station is situated in 27°N and 91°E. The place is about 1500m from mean sea level. The station has been established in the year 1959. The main programmes are screening of germplasms and hybrids for resistance to late blight, bacterial wilt and potato tuber moth and development of production technology and varieties suitable for the North Eastern Himalayan hills. The station also produces truthful quality seed tubers through aeroponics and tissue culture for local requirement.

Mandate

The mandate of AICRP-Potato is to coordinate and monitor multilocation trials on newly developed potato hybrids, agronomic practices related to crop production, identification of remunerative potato based cropping systems, plant protection measures and post-harvest technology, all aimed at increasing production, productivity and utilization of potato in the country. The programme also acts as linkage between different stakeholders related to potato production and utilization.

Objectives

The overall objective of AICRP (Potato) is “Varietal development and identify improved production technologies for potato in different agro-climatic regions” to help achieve high total factor productivity across the country, which is expected to be accomplished through the following specific objectives:

- ✚ Development/identification of improved potato varieties according to consumer's preference and user group and different target environments.
- ✚ Identification of appropriate agronomic practices and profitable potato based cropping systems for different regions.
- ✚ Monitoring of diseases/pests and other problems of potato in varied agro-climates and develop appropriate measures for their control/management.
- ✚ Identification of areas suitable for production of disease-free potato seed.

- ✚ Development of technologies for minimizing post-harvest losses.
- ✚ Technology assessment and refinement.
- ✚ Development of linkages with Agricultural Universities, State Departments of Agriculture/Horticulture, KVKs and other developmental/extension agencies.

Contact Address:

CPRS, Upper Shillong

East Khasi Hills District-793 009

Meghalaya

Phone: (0364)2560885 (O), 2224325(R)

Fax: 2560097

Email: cprs.shillong@yahoo.co.in

II. Agricultural Technology Information Centre (ATIC), ICAR Research Complex NEH Region, Umiam Meghalaya

Agricultural Technology Information Centre (ATIC) started functioning from 2001 in Umiam, Meghalaya in the premises of ICAR Research Complex for NEH Region. This is a single window system to allow optimistic interaction between farmers and scientists for effective technology transfer and livelihood improvement. The outstations regional centers and Krishi Vigyan Kendras situated in different districts are also involved and part of the system for meeting the requirements of the farmers in various areas of farm activities.

Presently, the centre is functioning in the ATIC Building along the proposed Highway and is opposite to the Headquarters of the ICAR Research Complex for NEH Region, Umiam (Meghalaya).

Objectives

- ✚ To build up required confidence among farmers and to strengthen linkage between the institute and the farmers.
- ✚ To provide diagnostic and advisory services such as soil testing, plant health clinic, and disease identification and veterinary services etc.

- ✚ To sale and distribute improved products emerging as a result of research being done at the institute like seed, plants, livestock, breeds, fish seeds, poultry trains and processed products ect.
- ✚ To provide an overview of improved technology through published literatures and other communication materials.
- ✚ To overcome technology dissemination loss and to provide direct access to farmers to improved expertise as well as products of technology.
- ✚ To provide an opportunity to different divisions as well as the centres to have resource generation through sale of their technologies.

Mandates

- ✚ To render farm advisory services through multidisciplinary approach to problem serving.
- ✚ To offer single window delivery system for agricultural information as well as products and technologies developed by the institute in order to develop quality service to clientele.
- ✚ To provide all information to the farmers under one roof.

Services

- ✚ Diagnosis of plant/crop problem
- ✚ Management of field problems
- ✚ Analysis of soil samples
- ✚ First hand information to approaching farmers

Contact address:

Agricultural Technology Information Centre (ATIC)
ICAR Research Complex ,NEH Region
Ri Bhoi District-793 009, Meghalaya

III. ICAR Research Complex for North Eastern Hill Region, Umiam Meghalaya

ICAR Research Complex for North Eastern Hill Region was established in the year 1975 by the Indian Council of Agricultural Research to provide an adequate research base for supporting agricultural development in the North Eastern Hill region of the country. It is the first institute of its kind setup by ICAR which encompasses all the disciplines of agriculture, horticulture, animal sciences, agricultural engineering, agro forestry and fishery to cater to the research needs of the tribal areas of NEH Region including Sikkim. The headquarters of this Institute is located at Barapani (Meghalaya) while its regional centers are located at Basar (Arunachal Pradesh), Imphal (Manipur), Kolasib (Mizoram), Jharnapani (Nagaland), Lembucherra (Tripura) and Gangtok (Sikkim). Besides the Institute has ten Krishi Vigyan Kendras (KVKs) attached to different centers for providing on/off campus training to the practising farmers, school drop outs and farm women in the field of agriculture and allied sectors.

Mandate of the Institute

- ✚ Development of sustainable farming systems for different agro-climatic and socio-economic zones of the region
- ✚ Improvement in the productivity of different crops, live stocks and aquatic fauna through the development / screening of varieties and agro-techniques
- ✚ Improvement in rain-fed agriculture through watershed based approach
- ✚ Development of local competence through training on agriculture and allied sectors
- ✚ Development of effective linkages with other development departments, financing agencies and SAUs / CAUs operating in the region
- ✚ To maintain database and act as a repository of information centre on agriculture and allied sectors and to provide consultancy in the above areas including plant and animal bio-technology
- ✚ Germplasm exchange, research update in a collaborative mode with other national and international agencies

Contact address

ICAR RC - NEH Region.

Umroi Road, Umiam

Meghalaya. Pin - 793 103

Email: icarneh@gmail.com

Phone (0364) 2570257

Fax (0364) 2570355

IV. Regional Office of Coffee board

During 1940's, the coffee industry in India was in a desperate state due to the II World war resulting in very low prices and ravages of pests and diseases. At this time, the Government of India established the 'Coffee Board' through a constitutional act "Coffee Act VII of 1942" under the administrative control of Ministry of Commerce and Industry. The Board comprises 33 members including the Chairman, who is the Chief Executive and appointed by the Government of India. The remaining 32 members represent the various interests such as coffee growing industry, coffee trade interests, curing establishments, interests of labour and consumers, representatives of governments of the principal coffee growing states, and Members of Parliament.

Research Department

Organized research in coffee was initiated during 1925 by the erstwhile Mysore Government by setting up the Mysore Coffee Experiment Station near Balehonnur in Chikmagalur district. After formation of the Board the research station was brought under its administrative control. Presently the Research Department of the Board with its headquarters at the Central Coffee Research Institute and five regional stations has a sanctioned strength of 113 scientific personnel and is involved in development of improved varieties with tolerance to major pests and diseases and standardization of technology for improving production, productivity and quality.

Extension wing

The Extension wing of the Board is a vast network of extension units located in all the major coffee growing zones with a sanctioned strength of 278 technical personnel. The

extension personnel are involved in dissemination of latest technologies to the growers, organizing capacity building programmes to the growers and farm workers, implementation of various development support, risk insurance and labor welfare schemes of the Board and other activities like crop estimation, crop losses etc.

Contact Address

Junior Liaison Officer

Coffee Board, Upper Nongthymmal

Near NEHU Campus, SHILLONG - 793 014

Meghalaya

Phone : 0364 – 2535870

Mobile no.: 9436958717

E-mail : jlocbhshg@yahoo.co.in

V. North Eastern Space Applications Centre (NESAC)

North Eastern Space Applications Centre (NESAC) Spectacular development of space technology and its applications is no longer remaining a vision out of reach for the common people. Satellite based communication network has linked the entire nation cutting across the geography, language and the society. Ever since the birth of Department of Space (DOS) in 1972, Indian space programme has achieved unique distinction of crossing several milestones while developing indigenous technology and providing technological support for socioeconomic benefit for millions of people of the country.

Soon, the technological advancement of space technology and its applications have proliferated rapidly to the remote areas including the North Eastern Region of the country. Realising the need of special attention in terms of technological support in managing rich natural resources and improving the poor infrastructure and communication linkages, North Eastern Space Applications Centre (NESAC) was established as a joint initiative of Department of Space (DOS) and the North Eastern Council (NEC) and came into being on 5th of September, 2000. The Centre is all set to augment the developmental process in the region by providing the advanced space technology support. NESAC has now moved to its permanent building in October 2008.

Scientific Programmes

The scientific programmes of the Centre are guided by the needs of the region and are reviewed by NESAC Society and GC. In addition, a High Power Committee (HPC) has recommended a Master Plan of Action (MPA) for utilization of space technology in the developmental process of the NER. Sixteen major thrust areas have been identified for implementation by NESAC over a period of five years during the 11th Five Year Plan period. During the current year, NESAC has taken up and completed several projects covering the NER states in the areas of natural resources management, infrastructure planning, health, education and space science research.. The Centre has implemented a number of applications projects sponsored by user agencies in the region, national/regional projects coordinated by ISRO-DOS Centres and research and developmental projects under Earth Observations Applications Mission (EOAM), Satellite Communications, Disaster Management Support (DMS) and Space Science Programmes.

Contact Address:

Director

North Eastern Space Applications Centre (NESAC)

Department of Space, Government of India

Umiam -793103 (Meghalaya)

Telephone: +91 364 2570140/141

Fax: +91 364 2570139 **Email:** director@nesac.gov.in

VI. College of Post Graduate studies

The College is ideally located on the Umroi (Shillong- Guwahati by-pass) road (NH) at Umiam (Barapani) in Ri-Bhoi district of Meghalaya about 13 km from the Umroi (Shillong) airport. Shillong, the capital city of Meghalaya is about 20km away. Regular bus and taxi facilities are available throughout the day from Guwahati and Shillong. Its location near the ICAR Research Complex for NEH Region, Botanical Survey of India, National Bureau of Plant Genetics Resources and the North East Space Application Centre gives an additional advantage to the students and the staff. The rich bio-diversity and the excellent ambience of the region make the place an ideal study centre. The mesmerizing landscape and the nearby Umiam lake add to the charm of the idyllic environment.

Goals:

- ✚ To produce globally competitive post-graduates in the field of Agriculture.
- ✚ To develop appropriate technologies to help Indian farming system, particularly in the North-Eastern Region, to be sustainable and profitable.
- ✚ To transform Agriculture and allied activities into profitable enterprises and thereby create food and nutritional security for people of the North-Eastern Region of India

Mission:

- ✚ To achieve excellence in teaching, research and extension education in the field of Agriculture.

Vision:

- ✚ To impart higher education in different branches of Agriculture.
- ✚ To foster the advancement of learning and prosecution of research in Agriculture.
- ✚ To undertake such other activities as may deem fit from time to time to uplift the socio-economic status of farmers in the North Eastern Region.

VII. Research in CPGS (CAU):

Research carried out in the College addresses the major issues pertaining to the agricultural development and upliftment of the farming community of North Eastern Hill (NEH) region. Moreover, research projects have been formulated based on research-able issues under major thrust areas formulated by the CAU. Projects both extramural and intramural research carried out by faculties focused on the major thrust areas already formulated for respective schools and approved in Research Council Meeting, CAU, Imphal. In addition some prioritized areas of research areas are addressed under the P. G. student's research programme.

Contact address:

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I. Regional office of the Indian Meteorological Department, Upper Shillong Meghalaya

The India Meteorological Department was established in 1875. It is the National Meteorological Service of the country and the principal government agency in all matters relating to meteorology, seismology and allied subjects.

Mandates

- ✚ To take meteorological observations and to provide current and forecast meteorological information for optimum operation of weather-sensitive activities like agriculture, irrigation, shipping, aviation, offshore oil explorations, etc.
- ✚ To warn against severe weather phenomena like tropical cyclones, norwesters, duststorms, heavy rains and snow, cold and heat waves, etc., which cause destruction of life and property.
- ✚ To provide meteorological statistics required for agriculture, water resource management, industries, oil exploration and other nation-building activities.
- ✚ To conduct and promote research in meteorology and allied disciplines.
- ✚ To detect and locate earthquakes and to evaluate seismicity in different parts of the country for development projects.

IX. Directorate of Plant Protection Quarantine & Storage

Department of Agriculture & Cooperation (DAC) in the Union Ministry of Agriculture promotes the Integrated Pest Management (IPM) approach under the scheme “Strengthening & Modernization of Pest Management” through 31 Central Integrated Pest Management Centres (CIPMCs) located in 28 States and one Union Territory.

Mandate:

The mandate of these Centres is pest/disease monitoring, production and releases of biocontrol agents, conservation of biocontrol agents and Human Resource Development in IPM by imparting training to Agricultural Extension Officers and farmers at the grassroots levels by organizing of Farmers' Field Schools (FFSs) in the farmers' fields.

Objective:

- ✦ Maximise crop production with minimum input costs.
- ✦ Minimise environmental pollution in soil, water and air due to pesticides.
- ✦ Minimise occupational health hazards due to chemical pesticides.
- ✦ Preserve ecosystem and maintain ecological equilibrium.
- ✦ No or less use of chemical pesticides for minimum pesticide residues.
- ✦ To improve farming system.

Major activities:

- ✦ Monitoring of pests and diseases for forewarning
- ✦ Conservation of natural enemies in farmer's fields.
- ✦ Production and field releases of biocontrol agents.
- ✦ Promotion of ecofriendly IPM inputs like biopesticides/neem based pesticides.
- ✦ Human Resource Development by imparting IPM training to extension officers and farmers through FFSs/SLTPs/Short during IPM Programme.
- ✦ Popularise IPM technology among farming community.

Bio control Laboratories/ Units in India

CIPMCs	:	31 Nos.
ICAR/SAUs/ DBT	:	48 Nos.
State Biocontrol Labs	:	98 Nos
Private Sector Labs	:	141 Nos.
Total		318 Nos

Contact address:

Bio control Laboratories
P.O. Nonglyer, Upper Shillong-793009
East Khasi Hill district Meghalaya

X. Regional office of Spice Board of India

Spices Board (Ministry of Commerce and Industry, Government of India) is the flagship organization for the development and worldwide promotion of Indian spices. The Board is an international link between the Indian exporters and the importers abroad. The Board has been spearheading activities for excellence of Indian spices, involving every segment of the industry. The Board has made quality and hygiene the corner stones for its development and promotional strategies

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Spices Board was constituted on 26th February 1987 under the Spices Board Act 1986 (No. 10 of 1986) with the merger of the erstwhile Cardamom Board (1968) and Spices Export Promotion Council (1960). Spices Board is one of the five Commodity Boards functioning under the Ministry of Commerce & Industry. It is an autonomous body responsible for the export promotion of the scheduled spices and production development of some of them such as Cardamom.

Multi faceted activities:

- ✦ Promotion of exports of spices and spice products
- ✦ Maintenance and monitoring of quality of exports
- ✦ Development and implementation of better production methods, through scientific, technological and economic research.
- ✦ Guidance to farmers on getting higher and better quality yields through scientific agricultural practices.
- ✦ Provision of financial and material support to growers.
- ✦ Encouraging organic production and export of spices.
- ✦ Facilitating infrastructure for processing and value addition
- ✦ Registration and licensing of all spice exporters.
- ✦ Assistance for studies and research on better processing practices, foolproof quality management systems, improved grading methods and effective packaging techniques.
- ✦ Production of promotional and educative materials in a variety of media for the benefit of exporters and importers.
- ✦ Package of services for importers
- ✦ Helps importers and exporters in establishing mutual contact.
- ✦ Identifies competent supply sources for specific requirements of importers
- ✦ Processes and forwards foreign trade enquiries to reliable exporters.
- ✦ Organises a common platform for interaction between Indian exporters and international buyers through the World Spice Congress.
- ✦ Examines each complaint from importers for corrective and preventive action.
- ✦ Spearheads the quality improvement programme for Indian spices.
- ✦ Manages a comprehensive and up-to-date data bank for exporters and importers.
- ✦ Brings together international bodies, exporters and policy makers through contact group programmes.
- ✦ Makes India's presence felt in major international food fairs; conducts food festivals and cooking demonstrations.

Research and Services offered to grower of spices

- ✦ Scarification of Cardamom Seeds
- ✦ Supply of planting materials

- ✦ Supply of bioagents such as Trichoderma, Psuedomonas and EPN Cadavers
- ✦ Advisory services based on soil testing and leaf tissue diagnostics
- ✦ Weather forecasting services.
- ✦ Conducting spice clinics
- ✦ Training on mass production of bio agents and on Good Agricultural Practices
- ✦ Training to planters on scientific cardamom cultivation
- ✦ Plantation visit and recommendation for pest and disease control

XI. Department of Agriculture, Government of Meghalaya

The Department of Agriculture was created in 1882 as the Department of Agriculture, Assam. However on attaining statehood it was bifurcated and renamed as the Department of Agriculture, Meghalaya. The Department of Agriculture, Meghalaya has been functioning as an integrated entity comprising the various spheres of development in Agriculture, Horticulture and Minor Irrigation. The mandate of the department is to bring about increased crop production and productivity. However, for effective administration in streamlining the developmental activities, the Directorate of Horticulture was created in 1995 and the Directorate of Irrigation in 2001. The three directorates were in operation within the same administrative control of the Department till the Dec 2010 where the Directorate of Irrigation was carved out as a Water Resources Department.

Vision of the Department

To promote holistic, sustained and equitable intervention for attaining food security; conservation, management, protection and sustainable use of natural resources for improved livelihood; generating gainful rural employment opportunities to alleviate poverty and striving towards an overall balanced economic development of the farming community.

Mission of the Department

To propagate modern agricultural production techniques and scientific methods of farming for increasing crop output; making our farmers self reliant and to accelerate the economic growth of the State.

Goals of the Department

- ✦ Attaining Food Security and Sustainable Growth by increasing production of food grains and improving productivity.
- ✦ Augment Farmer's Income through growing of suitable horticultural crops
- ✦ Promote Commercial Agriculture through low volume high value crops
- ✦ Creation of need based Marketing Infrastructure including institutional support and supporting facilities
- ✦ Popularise Participatory Approach to agriculture management through watershed programmes and Self Help Groups at village level.

The Directorate of Agriculture was set up with the objective of implementing farmer oriented schemes of the State and Centre. The Directorate formulates various schemes for harnessing the potential of human and natural resources available in the State, for which active participation of the farming community in the implementation is of utmost importance. Functioning on a farmer first principle, it provides technical advice and services to the farmers. The policy of the Department is to evolve as knowledge based entity providing technology, skills and knowhow to the farming community. It is in this context that the advantages offered by information and communication technologies (ICT) has become a key differentiator where information sharing, knowledge networks including faster and efficient dissemination of information can empower the stakeholders and create economic growth.

The Directorate provides Agricultural Extension services to farmers including transfer of the latest technical knowledge to the farming community. The introduction of high yielding varieties, field demonstrations, imparting training to farmers to improve skills & knowledge to boost up the agricultural production and productivity are other complementary functions. The Directorate also assesses requirements of agriculture inputs well in advance and monitor timely supply of seeds, fertilizers and pesticides, implements, credit etc., to the farmers. The Directorate performs the statutory functions under various acts and regulations (i.e., quality control) to ensure supply of quality inputs i.e., Seeds, Fertilizers and Pesticides to farmers. It also carries out certain other facilitating functions such as,

1. Soil testing
2. Watershed management
3. Soil survey
4. Credit assessment / arrangements

5. Media production
6. Training to farmers
7. Arranging Plant protection campaigns/Diagnostic team visits whenever necessary
8. Monitoring and evaluation
9. Disaster management
10. Crop insurance
11. Agricultural mechanization
12. Extending technical assistance to various agencies etc.

**List of Horticultural Farms and Nurseries under the Department of Agriculture,
Meghalaya
under Directorate of Agriculture**

Sl. No	District	Farms
1	East Khasi Hills	Government Fruit Garden including Floriculture section
2	East Khasi Hills	Vegetable Research Station, Shillong
3	East Khasi Hills	Temperate Fruit Research Station including Tea plantation & Nursery Upper Shillong
4	East Khasi Hills	Horticulture Farm cum Nursery, Wahjain
5	East Khasi Hills	Horticulture Farm Cum Nursery, Pomshutia.
6	East Khasi Hills	Potato experimental and Research Station, Upper Shillong
7	East Khasi Hills	Model Floriculture Centre, Upper Shillong cum Horticulture Hub
8	West Khasi Hills	Horticulture Fruit Nursery, Phodkylla
9	West Khasi Hills	Horticulture Nursery, Nongstoin.
10	West Khasi Hills	Tea Experimental Centre, Riango.
11	Ri – Bhoi District	Pineapple Research station cum Horticulture Farm and Nursery cum Horticulture Hub, Dewlieh, Umsning
12	Ri – Bhoi District	Ginger Development Station, Umsning
13	Ri – Bhoi District	Tea Development Center, Umsning.
14	Ri – Bhoi District	Horticulture Farm Cum Nursery, Byrnihat
15	Jaintia Hills District	Horticulture Farm Cum Nursery cum Horticulture Hub,

		Thadlaskein
16	Jaintia Hills District	Horticulture Nursery, Saitsama.
17	Jaintia Hills District	Horticulture Farm Cum Nursery, Muktapur
18	Jaintia Hills District	Horticulture Farm cum Nursery, Mynkre
19	East Garo Hills	Horticulture Farm Cum Nursery, Samgong.
20	East Garo Hills	Sambrak Seed Farm, Sambrak
21	East Garo Hills	Sarangma Seed Farm. (Now converted into Horti hub)
22	West Garo Hills	Horticulture Farm Cum Nursery, Rongram
23	West Garo Hills	Horticulture Farm Cum Nursery, Zikzak
24	West Garo Hills	Horticulture Nursery, Damalgiri
25	West Garo Hills	Horticulture Farm Cum Nursery, Rangmalgre.
26	South Garo Hills	Horticulture Farm Cum Nursery, Cum Horticulture Hub, Mineng

FISHERIES

Meghalaya State Fisheries Research and Training Institute, Mawpun Meghalaya

The Meghalaya State Fisheries Research and Training Institute formerly known as Mawpun Research and Training Centre was established in the year 1969 – 70. Its farm is one of the oldest in the state.

Mandates

After upgradation, the Institute now aims at achieving the following mandates:

1. To train and build the skill and knowledge of Fish Farmers on Hatchery Management and Culture

Techniques of fish.

2. To serve as a demonstration centre to all fish farmers.
3. To serve as a fish seed production centre in order to cater to the ever growing demands of the State, for the Departmental farms as well as the fish farmers.

Mini Mission IV of the Meghalaya State Aquaculture Mission, concentrates on equipping the Fish Farmers partnering with the Government, with the necessary technical knowledge on Aquaculture and its recent/advance techniques to help achieve the Mission's Goal. The successful execution of the various components of the Aquaculture Mission will call for systematic building of the competencies of various stakeholders to the required degree. With the Inauguration of this Research and Training Institute, on the 2nd May 2013, a milestone in building capacities of Fish Farmers of the State has been achieved.

The target of the Institute is to train 80 nos. of Potential Fish Farmers in a month with an intake of 40 nos. per batch. In a year, 14 batches of trainings will be conducted which will equate to 560 nos. of persons per year.

LIVESTOCK

Department of Animal Husbandary & Veterinary, Government of Meghalaya.

Thrust Area

The thrust areas for overall development of the Livestock Resources of the State for future plans are as follows :-

1. Qualitative improvement in all classes of indigenous domestic stock e.g., Cattle Buffalo, Sheep, Pigs, Poultry, Ducks and Rabbit to improve the overall productivity in these animals.
2. In doing so, the aim will be to increase the per capita availability of milk, egg and meat.
3. This is to be achieved through creation of adequate infrastructure for animal production, health coverage, processing of animal products and organisation of an efficient marketing system to match the production so envisaged.
4. Production of fodder and balanced livestock feed will receive high priority to make animal production activities cost effective and remunerative to the farmers.
5. Greater participation of farmers will be sought for, and for this purpose, organisation of farmers co-operatives, involvement of N.G.Os in various activities will be encouraged.
6. Breeding facilities of cattle and buffaloes will be so organised that the cattle and buffalo owners need not travel a long distance to get the stock inseminated with frozen semen.
7. Breeding facilities for other animals extended through supply of quality breeding animals provided by the Govt.

8. The State Farms will supply the breeding animals of better germplasm. Facilities for training of local farmers and demonstration of latest systems of farming already created and strengthened further.
9. At the same time, the Department will encourage establishment of Commercially Viable Projects by private entrepreneurs, Co-operative societies.
10. Dairy Development will be given priority mainly for processing as pasteurised milk and/or milk products for sale in cities and towns in Meghalaya and adjoining States preferably through Co-operative efforts. Marketing facilities in rural areas also will be created for the interest of the rural people.
11. To establish modern abattoirs for Sheep & Goat and Pigs. Set up Poultry Dressing Plants and banning clandestine slaughter altogether. Modern beef slaughter houses need to be established in Shillong and Tura in the first phase.
12. To generate additional employment opportunities for the unemployed youths, commercial rearing of Khasi Hill Goats, improved pigs and poultry – egger & broiler – to be encouraged.

Objectives

The Department of Animal Husbandry and Veterinary is entrusted with the responsibility of all aspect of Livestock and Poultry Development, like, production, processing and marketing of livestock and poultry and their products through augmentation of production of milk, meat, eggs and wool. Animal health care service and prevention of animal diseases is a priority for maintenance of a healthy stock for optimum production. Creation of suitable infrastructure for breeding, feeding and management of livestock and poultry, processing of milk, meat and eggs and marketing of livestock and livestock products is also given due importance. Besides, the Department is engaged in providing the required training and extension support to livestock producers so as to promote scientific rearing of livestock and poultry amongst them with consequent generation of employment avenues in the rural areas. To bring about a developmental change in livestock and poultry sector, number of programmes and infrastructure development were undertaken by the Government where the activities of the Department were mainly centered round the following broad objectives: -

1. Providing protection to livestock and poultry from the ravages of diseases through treatments and preventive vaccinations.

2. Introducing improved breeding techniques for upgrading the local stock.
3. Ensuring better Animal Husbandry practices through adoption of Extension and Research.
4. Building up of adequate technical and professional man-power through Education and Training.
5. Encouraging setting of Livestock and Poultry Industries.

Infrastructures

The different infrastructures created within the department are as follows: -

Sl. No.	Infrastructure	1972	2012
1	Veterinary Hospitals	1	4
2	Veterinary Dispensaries	29	92
3	Veterinary Aid Centres	10	51
4	Mobile Veterinary Dispensaries	3	15
5	Vigilance Unit	-	3
6	Intensive Cattle Development Project	-	2
7	Stockman Centres	2	63
8	Key Village Centre		16
9	Cattle Breeding Farm	1	4
10	Poultry Farm	3	12
11	Pig Farm	2	13
12	Sheep & Goat Farm	1	2
13	Buffalo Farm	-	1
14	Duck Farm	-	1
15	Fodder & Fodder Seed Production Farm	-	2
16	Fodder Demonstration Farm	-	3
17	Feed Mill	-	2
18	Rabbit Farm	-	1
19	Check Post	-	4
20	Vaccine Depot	-	1
21	State Disease Diagnostic Laboratory	-	1

22	District Disease Diagnostic Laboratory	-	7
23	Vocational Training Centre	-	2
24	Dairy Plant	1	3
25	Chilling Centre	-	3
26	Creamery & Ghee making Centre	1	1

Total Numbers of Government Farms

Sl. No.	Items	East Khasi Hills	Ri Bhoi	West Khasi Hills	Jaintia Hills	East Garo Hills	West Garo Hills	South Garo Hills	State
1	Intensive Cattle Development Project	1	-	-	-	-	1	-	2*
2	Stockman Centre (with AI facilities)	7	12	1	1	6	8	-	35*
	Stockman Centre (without AI facilities)	2	11	2	-	-	11	2	28
3	Key Village Centres (with AI facilities)	-	-	-	-	3	3	-	6*
	Key Village Centres (without AI facilities)	-	-	-	8	-	2	-	10
4	Veterinary Institutions (with A.I. facilities)	5	2	2	4	1	8	1	23*

5	Check Post	-	1	1	1	1	-	-	4
6	<u>Cattle Breeding Farm</u>	1	1	-	1	-	1	-	4
7	<u>Buffalo Farm</u>	-	-	-	-	1	-	-	1
8	<u>Poultry Farm</u>	1	3	2	1	1	3	1	12
9	<u>Pig Farm</u>	4	1	3	1	1	2	1	13
10	<u>Sheep & Goat Farm</u>	-	-	1	1	-	-	-	2
11	<u>Fodder Demonstration Farm</u>	1	-	-	1	-	1	-	3
12	<u>Fodder & Seed Production Farm</u>	-	1	-	-	-	1	-	2
13	Feed Mill	-	1	-	-	-	1	-	2
14	<u>Rabbit Farm</u>	1	-	-	-	-	-	-	1
15	Vocational Training Centres	-	1	-	-	-	1	-	2
DAIRY									
16	Dairy Plant	1	-	-	1	-	1	-	3
17	Chilling Centre	-	-	1	1	1	-	-	3
18	Creamery & Ghee Making Centre	-	-	-	-	-	1	-	1

Government Farms & Other Infrastructure

1. East Khasi Hills District

Sl. No.	Location	Controlling Officer
1	Pig Farm, Pynursla	District A.H & Veterinary Officer, Shillong
2	Pig Farm, Mawryngkneng	Manager, Pig Farm, Mawryngkneng
3	Pig Farm, Sohra, Laitryngew	Sub-Divisional A.H & Veterinary Officer, Sohra.
4	Rabbit Farm, Nongpyiur	Deputy Director (IDP), Upper Shillong
5	Fodder Demonstration Farm, Upper Shillong	Deputy Director (IDP), Upper Shillong
6	I.C.D.P., Upper Shillong	Project Officer, I.C.D.P., Shillong
7	Poultry Farm, Mawryngkneng	Manager
8	I.D.P Cattle Farm, Upper Shillong	Deputy Director (IDP), Upper Shillong
9	Pig Breeding Farm Nongpyiur	Deputy Director (IDP), Upper Shillong

2. Ri Bhoi District

Sl. No.	Location	Controlling Officer
1	VFA, Training Institute, Kyrdemkulai	Principal, VFA Training Institute, Kyrdemkulai
2	Regional Pig Breeding Farm, Kyrdemkulai	Deputy Director , Regional Pig Breeding Farm, Kyrdemkulai
3	Fodder and Seed Production Farm,	Manager, Regional Crossbred Cattle Breeding Project, Kyrdemkulai
4	Vocational Training Centre, Kyrdemkulai	Instructor, Vocation Training Centre, Kyrdemkulai
5	Zonal Feed Mill, Bhoi	Manager, Zonal Feed Mill.
6	Regional Poultry Breeding Farm, Kyrdemkulai.	Sr. Manager, Regional Poultry Breeding Farm, Kyrdemkulai.
7	Regional Crossbred Cattle	Manager, Regional Crossbred Cattle Breeding

	Breeding Project, Kyrdemkulai	Project, Kyrdemkulai
8	Broiler Farm, Kyrdemkulai	Sr. Manager, Regional Poultry Breeding Farm, Kyrdemkulai.
9	Central Hatchery - Cum - Poultry Farm, Umsning.	Manager, Central Hatchery – Cum- Poultry Farm.

3. West Khasi Hills District

Sl. No.	Location	Controlling Officer
1	Pig Farm, Mairang	Sub-Divisional A.H & Veterinary Officer, Mairang
2	Pig Farm, Nongstoin	District A.H & Veterinary Officer, Nongstoin
3	Goat Farm, Nongshillong	District A.H & Veterinary Officer, Nongstoin
4	Poultry Farm, Mairang	Sub-Divisional A.H & Veterinary Officer, Mairang
5	Poultry Farm, Nongstoin	District A.H & Veterinary Officer, Nongstoin
6	Pig Breeding Farm, Nongkasen	District A.H & Veterinary Officer, Nongstoin

4. Jaintia Hills District

Sl. No.	Location	Controlling Officer
1	Sheep & Goat Farm, Saitsama	District A.H & Veterinary Officer, Jowai
2	Fodder Farm, Saitsama	District A.H & Veterinary Officer, Jowai
3	Cattle Farm, Khliehtyrshi	Manager, Cattle Farm, Khliehtyrshi.
4	Poultry Farm, Jowai	Asstt. Poultry Development Officer, Jowai/
5	Pig Farm, Thadlaskein	District A.H & Veterinary Officer, Jowai
6	Vocational Training Centre, Khliehtyrshi	District A.H & Veterinary Officer, Jowai

5. East Garo Hills District

Sl. No.	Location	Controlling Officer
1	Buffalo Farm, Songsak	District A.H & Veterinary Officer, Williamnagar
2	Pig Farm, Rongjeng	District A.H & Veterinary Officer, Williamnagar
3	Poultry Farm, Williamnagar	District A.H & Veterinary Officer, Williamnagar

6. West Garo Hills District

Sl. No.	Location	Controlling Officer
1	Intensive Cattle Dev. Project, Tura	Project Officer, I.C.D.P., Tura
2	Cattle Farm, Rongkhon.	Manager, Cattle Farm, Rongkhon
3	Vocational Training Centre, Tura	Instructor, VTC, Rongkhon
4	Feed Mill, Rongkhon	Manager, Feed Mill, Rongkhon
5	Broiler Farm, Assanangiri	District A.H & Veterinary Officer, Tura
6	Poultry Farm, Rongkhon	Manager, Poultry Farm, Rongkhon
7	Pig Farm, Rongkhon	Manager, Pig Farm, Rongkhon
8	Pig Farm, Gindo Waram Sangma	District A.H & Veterinary Officer, Tura
9	Fodder Demonstration Farm, Tura	District A.H & Veterinary Officer, Tura
10	Pig Farm, Dalu	District A.H & Veterinary Officer, Tura
11	Fodder & Seed Production Farm, Adugre	District A.H & Veterinary Officer, Tura

7. South Garo Hills District

Sl. No.	Location	Controlling Officer
1	Pig Farm, Baghmara	District A.H & Veterinary Officer, Baghmara
2	Poultry Farm, Baghmara	District A.H & Veterinary Officer, Baghmara

Dairy

Sl. No.	Location	District	Controlling Officer
1	Processing Plant, Central Dairy, Shillong	East Khasi Hills	Assistant Dairy Dev. Officer, Shillong
2	Chilling Centre, Nongstoin	West Khasi Hills	District A.H & Veterinary Officer, Nongstoin
3	Processing Plant, (R.D.E.C)	Jaintia Hills	Assistant Dairy Dev. Officer, Jowai
4	Chilling Centre, Gangdubi	East Garo Hills	Sub-Divisional A.H & Veterinary Officer, Resubelpara
5	Creamery & Ghee Making Centre, Tura	West Garo Hills	Assistant Dairy Development Officer, Tura
6	Processing Plant, Town Milk Supply, Ganol	West Garo Hills	Assistant Dairy Development Officer, Tura

Contact address:

Directorate of Animal Husbandry & Veterinary,
Government of Meghalaya,
Lumdiengjri, Shillong - 793 002,
East Khasi Hills District, Meghalaya.

Email: ahvt.meg@nic.in

CHAPTER VI PLANS AND SCHEMES FOR PROMOTION OF AGRICULTURE

Several organizations and institutions are responsible for promotion of agriculture and allied fields through development and implementation of specific plans and schemes. The major plans and schemes of various institutions are as follows:

CROPS

1. National Bank for Agriculture and Rural Development (NABARD)

i. Micro Credit Innovations- Kisan Credit Card

NABARD formulated a model Kisan Credit Card Scheme in consultation with major banks. As a pioneering credit delivery innovation, the scheme aims at providing adequate and timely support to the farmers from the banking institutions for their cultivation needs. Beneficiaries covered under the scheme are issued with a credit card and a pass book or a credit card cum pass book incorporating the name, address, particulars of land holdings, borrowing limit, validity period, a passport size photograph of holder etc, which may serve both as an identity card and facilitates

ii. Farmer's Club Programme

Farmers' Club is a voluntary organization, which is organized by rural branches of bank with the support and financial assistance from NABARD for the mutual benefit of the banks and concerned rural people. The banks and other promoting agencies are covering the rural people engaged in agricultural and agriculture base activities.

NABARD promotes the formation of farmer's club enabling them adoption of newer farm technologies and empowering them for collective bargaining both for procuring inputs and selling their produce.

iii. Scheme for "Capacity Building for Adoption of Technology" (CAT)

Technological upgradation and upgradation have been the hallmark of Indian agriculture. NABARD has been the forefront in facilitating and adoption of new technology by farmers/ entrepreneurs through various institutions/agencies like banks /corporate, NGO's,

SHG's and Farmer's Clubs. With a view to widen the horizon of new agricultural technology, it was felt that by taking traditional farmers on exposure visits or study tours to innovative agriculture centres, research institutions etc their tendency to adopt new technologies may be enhanced. The NABARD is therefore the agency responsible to extend 100% support towards the cost of such exposure visits.

Department of Agriculture

a. Directorate of Agriculture

STATE PLAN SCHEMES:-

The State Plan Schemes being implemented by the Directorate are as follows:

- I. 103-Seed Farms (02) Seed farm – Production of Cereals, Pulses, Oilseeds etc
Objective: Focussed and high quality seed production of cereals, pulses and oilseeds etc.
Pattern of Assistance: Supply of quality seeds to farmers for demonstration or for sale at 50% subsidy.
- II. 103-Seed Farms (04) Seed Testing Laboratory.
Objective: To ensure genetic purity of seeds, viability and germination of seeds through laboratory tests.
Pattern of Assistance: Free seed testing to all farmers
- III. 105-Manures and Fertilisers (04) Soil Testing Laboratory.
Objective: For analysing soil samples preceding application of fertiliser in correct dosage in farmer's field and to issue farmers with soil health card.
Pattern of Assistance: Free soil testing to all farmers
- IV. 107 Plant Protection (04) Bio-Control Laboratory
Objective: Aim to control pests and diseases including weeds and rodents through bio control agents.
- V. 108 Commercial Crops (32) Winter Cropping & Development of Cultivable Land
Objective: To ensure and motivate production and productivity of varied crops by exploiting the existence of irrigation projects and rainfed areas from mono cropping to vibrant multiple cropping pattern at farmer's field in clusters.
- VI. 108 Commercial Crops (33) Rice Development through cluster approach

- Objective: To achieve significant increase in production and productivity by adopting improved technology in clusters
- VII. 108 Commercial Crops (34) Accelerated Maize Dev. Programme through cluster approach
Objective: To achieve notable increase in Maize production by adopting crop and location specific production technology through cluster approach
- VIII. 108 Commercial Crops (35) Jute technology mission
Objective: To supply quality seeds to farmers at 50% subsidy and to take up demonstration programmes on jute.
- IX. 108 Commercial Crops (36) Fertiliser Distribution
Objective: To improve the soil nutrient potentiality in order to obtain higher crop productivity in the State. Transport subsidy for ferrying fertilizers from Guwahati railhead to the district headquarters, is also made available for the farmers to relieve them to a large extent.
- X. 108 Commercial Crops (37) Organic Manures
Objective: To popularise use of organic manures and also to provide subsidy to farmers for purchase of organic manures.
- XI. 108 Commercial Crops (38) Plant Protection including IPM
Objective: Aim to control pests and diseases through use of chemicals and to popularise use of integrated pest management techniques in farmer's field.
- XII. 108 Commercial Crops (39) Supply of Power Tillers/Pumps etc
Objective: To provide subsidized sale of power tillers and power pump set for farmers.
- XIII. 108 Commercial Crops (40) Land Reclamation
Objective: To reclaim land waste land/land development for cultivation of rice for small and marginal farmers.
- XIV. 108 Commercial Crops (42) Integrated Farming in Micro Watershed
Objective: The scheme is to popularise the concept of integrated farming in watershed areas.
- XV. 108 Commercial Crops (43) State Rice Mission

Objective: Increase rice production and productivity in the state to meet the consumption requirement and to bridge the deficit between demand and availability to consumers.

XVI. 109 Extensions and Training (02) Agriculture Information Unit.

Objective: To strengthen agriculture extension programme by disseminating news on the latest scientific and farmer friendly methods of cultivation. Organising crop seminars, crop competition, kisan mela and incentivising farmers through provision of farmer's awards in various categories.

XVII. 109 Extension and Training (03) Farmer's Training Institute (including clusters)

XVIII. Objective: FTI conducts specialised training in new areas where farmers were hitherto unexposed like news techniques and new technology including exposure and field tours to agriculturally advanced States.

XIX. 109 Extension and Training (06) Basic Agriculture Training Centre. (TREYSEFA Training for Rural Educated Youth for Self Employment Farm based activities)

Objective: To provide short term vocational training of 5 months duration for educated unemployed youths in agriculture enterprises.

i. 111 Agril. Economics & Statistics (03) Implementation of E Governance.

Objective: To usher a conducive environment for transformation of the departments core

services delivery systems and to facilitate better citizen friendly services

ii. 113 Agricultural Engineering (Mechanical) (02) Agriculture Engineering (Mechanical)

Objective: To provide hiring of power tillers and paddy reapers to farmers at 60% subsidy.

iii. 113 Agricultural Engineering (Mechanical) (12) Popularising of improved agriculture

implements etc.

Objective: To accelerate agro production, improved implements are given to the farming community at 50% subsidy.

iv. 195 Assistance to farming co-operatives (02) Corpus fund on crop insurance (RKBY)

Objective: To provide insurance and financial aid to farmers for failure of notified crops following unforeseeable calamity, and acquaint farmers with latest technology to help stabilise farm income in critical years.

v. 800 Other Expenditure (13) Special Development Programme for areas border Assam

Objective: To uplift small and marginal farmers residing in areas bordering Assam with suitable crop enterprises

1. CENTRALLY SPONSORED SCHEMES: -

There are 3 number of CS schemes. These are as follows:

- i. Mini Mission on Jute Technology – Mission II
- ii. Scheme under AICRIP, Upper Shillong
- iii. Support to State Extension Programme for extension reforms (ATMA)

2. CENTRAL SECTOR SCHEME: -

There are 3 number of CSS schemes with 100% central share. The Schemes are:

1. Strengthening computer applications in States/UT (AGRISNET)
2. National Project on Management of Soil Health and Fertility
3. Seed Village Programme.
4. Agricultural Census.

3. MACRO MANAGEMENT OF AGRICULTURE :- (Centrally Sponsored Schemes - CSS) (100% Central Assistance)

1. National Watershed Development Project for Rainfed Area (NWDPR)
2. Field Demonstration of Rice (Sali Paddy and Boro Paddy)
3. Demonstration of System of Rice Intensification (SRI)
4. Crop Development Program- Integrated Cereal Development, Program for Maize/Integrated Pest Management (IPM)Integrated Nutrient Management(INM)
5. Land Development and Water Conservation measures
6. Primary marketing and extension activities
7. Maize intercropped with Soyabean

Directorate of Horticulture

A. STATE PLAN SCHEMES –

A list of the important schemes is given below:

1. 105-Manures and Fertilisers (10) Fertiliser Distribution.

Objective: To improve the soil nutrient potentiality in order to obtain higher crop productivity in the State. Transport subsidy for ferrying fertilizers from Guwahati railhead to the district headquarters, is also made available for the farmers to relieve them to a large extent.

2. 105-Manures and Fertilisers (11) Organic Manures

Objective: To affirm that Vermiculture, Vermicompost and composting of organic matters are viable alternative manures to chemical fertiliser and to motivate farmers in this line. Field trials of available recycled organic manures are given priority.

3. 107 Plant Protection (06) Plant Protection including IPM.

Objective: Aim to control pests and diseases including weeds and rodents of Horticultural crops by distribution of pesticides and equipments at 50% subsidy.

4. 108 Commercial Crops (21) Plantation Development (Arecanut, Cashewnut, Coconut).

Objective: To boost up the area and production of plantation crops like Arecanut, Cashewnut, Coconut in the State adopting new strategies in line with the tea package scheme. Assistance is provided for raising plantation of minimum area of 0.5 Ha for a period of three years.

5. 108 Commercial Crops (22) Spices Development- Ginger, Turmeric, Black Pepper, Large Cardamom, Coriander, Cinnamon and Chillies.

Objective: To assist Spice growers by distribution of quality planting materials.

6. 108 Commercial Crops (23) Tuber Crops Development- Potato, Tapioca, Colocasia.

Objective: To boost up production of potato by providing quality HYV seeds, chemicals and equipments at 33% subsidy. The scheme also aims to popularise and encourage cultivation of tapioca, colocasia, sweet potato etc.

7. 108 Commercial Crops (24) Mushroom Development – Regional Centre for training and of mushroom.

Objective: Training to farmers in the method of mushroom cultivation, production and supply of quality spawn and pasteurized compost to farmers for crop production.

8. 108 Commercial Crops (27) Indigenous Crops Development.

Objective: To identify and document indigenous plants and the areas where potential species of commercially viable varieties are abundant; domesticating and raising them in selected cultivator's land or in Government run farms for research and multiplication programmes.

9. 108 Commercial Crops (41) Tea Development Scheme.

Objective: The Scheme aims at continuing tea plantation in the tea development centre and to raise seedlings in the nurseries for subsequent release to the farmers.

10. 109 Extension and Training (07) Horticulture Information Scheme.

Objective: To give strong support to agriculture extension programmes by communicating agriculture information on scientific methods of cultivation etc. to extension staff and farmers through various media.

11. 109 Extension and Training (11) Capacity Building of Departmental Personnel.

Objective: The scheme aims to equip departmental officers and staffs with the latest technical know-how and skills including upgrading knowledge in the field of horticulture.

- 12.119 Horticulture and Vegetable Crops (12) Establishment of Directorate of Horticulture (TFC)

Objective: To meet the infrastructural costs associated with up scaling horticultural development in the State.

13. 119 Horticulture and Vegetable Crops (15) Vegetable Development Scheme.

Objective: To promote vegetable production in the State by providing high yielding/hybrid seeds of different crops; provision of garden tools at 33% subsidy including demonstration in farmer's field.

14.119 Horticulture and Vegetable Crops (16) Grant-in-aid to Agri & Horti Society

Objective: Promotion of horticulture and specially floriculture by organising flower shows, exhibitions etc. through the Agri-Horti Societies in Shillong and Tura.

15.119 Horticulture and Vegetable Crops (17) Development & Maintenance of Orchard cum Horti Nurseries.

Objectives: For production and multiplication of good, high yielding, diseased free planting materials for distribution to farmers

16.119 Horticulture and Vegetable Crops (19) Fruit Development (including Citrus, Fruits).

Objective: To promote fruit production in the State by providing improved planting materials, budded plants of different fruit trees; provision of plant and grafts, garden tools, implements at 33% subsidy including demonstration in farmer's field.

17.119 Horticulture and Vegetable Crops (24) Floriculture Development Scheme.

Objective: To motivate the farmers to take up floriculture as a commercial venture through distribution of planting materials and other inputs at 50% subsidy.

18.119 Horticulture and Vegetable Crops (28) Development of Strawberry Cultivation.

Objective: To provide farmers with quality and improved varieties of strawberry planting materials so as to encourage area expansion under this crop such that commercialisation horticulture under this crop is achieved.

19. 119 Horticulture and Vegetable Crops (32) Integrated Tribal Development

Objective: Orange orchard (Bri Soh) project being implemented in Ri-Bhoi district which is funded by NABARD, implemented by RRTC Umran and participated by the Department through transfer of technology, and funding upto 20% of the cost of project.

20. 119 Horticulture and Vegetable Crops (33) Integrated Basin Development

Objective: To make available to the farmers good quality planting materials including other inputs with full package of practices, free of cost.

21. 119 Horticulture and Vegetable Crops (34) Vegetable Garden Development scheme.

Objectives: To make available nutritious crops to every household having available kitchen garden of more than 200 Sq. Metres area for cultivation of organic vegetables.

22. 119 Horticulture and Vegetable Crops (35) Maintenance of Horticulture hubs

Objective: To meet the various operational and running costs of maintaining the various horticulture hubs set up in the State.

24. 2435 Other Agril. Programme (01) Marketing and Quality Control (101) Marketing Facilities

Objective: Collection and reporting of reliable and accurate data on market intelligence and market sentiments for important agricultural commodities in the State, to be utilised for formulation and implementation of agriculture price policies. Sale of storage bins, metallic bins etc at 50% subsidy.

25. 2435 Other Agril. Programme (02) Fruit Processing Centre.

Objective: For utilisation of surplus fruit and vegetables and conversion of the same to marketable processed products like jam, jelly, squashes, thereby creating a market for fruit growers.

26. 800 Other Expenditure (10) Post harvest marketing

Objective: Creating of post harvest marketing infrastructure in the State including rural market hubs/farmer's market.

27. 800 Other Expenditure (18) Development of Micro Irrigation (Drip Sprinklers) General Areas.

Objective: To popularise drip irrigation system, drip sprinklers for high value fruits and vegetables in protected cultivation

28. 111. Agril Economics & Statistics (05) Implementation of e- Governance

Objective: Implementing automation, translation and transformation of processes and services of the directorate in order to ensure delivery of improved services to citizen.

B. CENTRAL SECTOR SCHEME:

Horticulture Mission for development of North Eastern Region (HMNEH). (Being implemented by Meghalaya Small Farmers Agri-Business Consortium (MgSFAC) through the respective District Horticulture Officers.

1. MINI MISSION II

Area Expansion of Crops – Orange, Pineapple, Banana, Peach, Plum, Pear, Vegetables, Cashewnut, Turmeric, Ginger, Chillies, Anthurium, Rose, Bird of Paradise, Lilliums.

On Farm Water Management – *Creation of Water Sources like Community Tanks, Tube Wells,*

Hydrants, Drip Irrigation, Green House, Low Cost Tunnel, Shade Nets etc.

Transfer of Technology – *Training of Farmers*

Organic Farming – Vermicompost Units

Agricultural Equipments – Diesel Engine, Power Tiller, Electric Motor

Women Self Help Groups – Seed Money for Women SHG @ Rs.5000/- per group

2. MINI MISSION- III

Development and Strengthening of Marketing Infrastructure and Rural Primary Markets
Which is implemented by Meghalaya State Agricultural Marketing Board.

Contact Details:

1. Secretary MSAMB, Cleve Colony, Shillong-793003.

Website: www.megamb.gov.in

2. Director of Horticulture,

Cleve Colony, Govt. Fruit Garden.

Shillong-793003

Telephone No. 0364-2222

4. Livestock

A. Department of Veterinary & Animal Husbandary

i. Cattle Development: This is an integrated programme of Cattle Development including breeding, management practices and marketing of milk.

1. Intensive Cattle Development Project: The object of the scheme is to grade up local cattle through Artificial Insemination programmes with exotic breed, such as, Jersey and Holstein-Friesian to increase milk production.
2. Cattle Farm, Khliehtyrshi : The object of the scheme is (i) to support crossbreeding programmes in the State, (ii) to impart training farmers and field staff for management in cross bred cattle, (iii) to supply pure bred and cross bred breeding stock to other States in the Region, and, (iv) Supply of milk to the Central Dairy, Mawiong.
3. Poultry Development : The object of the scheme is to meet the requirement of breeding stock, table and hatching eggs for the farmers as well as popularise modern poultry and duck keeping amongst the farmers including training and extension services.

li District Poultry Farms : The object of the District Poultry Farms is to supply improved breeding stock to the farmers and create awareness amongst the rural people to take up poultry farming for egg production and broiler production for meat supply.

4. Sheep, Goat & Rabbit Development

i. Sheep & Goat Farm, Saitsama/Nongshillong : The object of the scheme is to rear improved sheep and goat to increase breeding stock to meet the requirement of sheep and goat in the State for meat purposes. Under the scheme, subsidy is provided to farmers for implementation of Goatery schemes. It aims at generating employment for the people and increase meat production.

5. Piggery Development

- ii. Pig Farms: The object of pig farms established in every district is mainly to produce improved breeding stock and supply such stock to the farmers. It is also to create awareness amongst the rural people to take up Piggery farming with improved breeding stock.

6. Feed and Fodder Development

1. Fodder Demonstration and Seed Production Farm : The fodder farms and the fodder seed production farms have been established to meet the requirement of fodder in the Govt. Cattle Farms and to provide fodder seeds for different fodder farms of the State

2. Feed Milling Plants: The object of the scheme is to supply mixed feed to Government farms as well as to private breeders at competitive rate.

3. Feed Analytical Laboratory: The object of the scheme is to analyse feed ingredients and mixed feed of state Farms as well as those coming from other States/sources.

Administration, Investigation & Statistics

7. Livestock Census: The object of the scheme is to take complete count of the Livestock and Poultry population once in every 5 years and to analyse and interpret the data with ultimate aim of releasing them for various uses by Government and public alike.

8. Sample Survey for Estimation of Major Livestock Products: The object of the scheme is to conduct Integrated Sample Survey for estimation of major livestock and poultry products, e.g., milk, meat and eggs and to study the utilisation of livestock and poultry products and existing practices of utilisation/marketing of such products in the State. This is done on regular basis throughout the year.

9. Research

Disease investigation, Clinical Laboratory and Vaccine Depot : The object of the schemes is to investigate different kinds of diseases to help diagnosis of livestock and poultry diseases. The Vaccine Depot is to arrange supply of different vaccines to control various

diseases of livestock and poultry in the State. The Clinical Laboratory is to examine various samples for efficient diagnosis of prevalent diseases of livestock and poultry in the State.

10. Education and Training

1. Studies in Veterinary Science etc. : The object of the schemes is to send local students for training in the B.V.Sc. course outside the State and VFA Training School , Upper Shillong to meet the requirement of Technical Manpower.
2. Training of Officers/Workshop : The object of the scheme is to send the officers for training in specialised fields outside the State.
3. Vocational Training Centre : The object of the scheme is to impart short training to farmers/beneficiaries on proper management, feeding and health care of livestock and poultry.

B. Centrally Sponsored and Central Sector Schemes.

The Department is also implementing various Centrally Sponsored Schemes under different heads. The important schemes are:

- Professional Efficiency Development.
- Assistance to State to Control Animal Disease (ASCAD)
- Rinderpest Surveillance and Containment Vaccination Programme
- Sample Survey of Major Livestock and Livestock Census
- National Project for Cattle and Buffalo Breeding Programme
- Livestock Insurance Scheme.

a. Fisheries

Meghalaya with its vast inland fishery resources offers tremendous scope for developing the fisheries sector, but lack behind in harnessing the potential of these natural resources.

Though the state is predominantly a fish consuming State, the supply of fish is inadequate to

meet its growing demand, making the State import fish from Andhra Pradesh. The Government of Meghalaya has identified fisheries as a key sector and has decided to launch the Meghalaya State Aquaculture Mission (MSAM) co-terminus with the Twelfth Five Year Plan period (2012-13 to 2016-17).

The MSAM has the following major objectives:

- a) Development of existing water bodies and creation of additional water area for large scale fish production, including reclamation/rehabilitation of marshy and swampy lands.
- b) Conservation of native, endangered and traditional species of Meghalaya and developing breeding farms of commercially potential species on a large scale.
- c) Creation of mass awareness, capacity building, exposure training and skill development of all the stakeholders and technical support for long term sustainability of fishery sector.
- d) Capturing emerging opportunities in the fisheries sector.

Norms of the Scheme

1. The minimum water area eligible for financial assistance under the scheme “Livelihood Mission” shall not be less than 0.10 hectares and the assistance is limited to 0.10 hectare only even where the pond area is more than 0.10 hectare.
2. The scheme envisages 60% assistance under the SPA, 25% credit linkage with the MCAB and 15% own contribution of the farmer partner. The applicants should have the financial capacity to bear 15% cost of the projects, as his/her own contribution.

CHAPTER VII FARM MACHINERIES AND FARM TOOLS SUITABLE TO THE DISTRICT

Tillage and Land Clearing Implements

1. Grass slasher (Wait)

The most commonly used tool by farmers to clear the bushes is “wait”. It is a traditional tool and its approximate cost is Rs. 300



2. Brush cutter

A brush cutter is a [hydraulically](#)-powered [attachment](#) used in [forestry](#) that features a multi-toothed cutting wheel. The device can cut grasses and bushes up to 2 cm diameter with height up to 1.5 meter. The cutting wheel turns at a high rate of speed and, in the process, grinds down through trees and brush. It can be used to reduce branches, foliage and other unmarketable forest byproducts into mulch and chips or as a vegetation management tool for clearing away trees and other types of foliage from the sides of highways or for reducing understory vegetation.



3. Spade (Makhu)

It is a long-handled gardening tool with a thin metal blade, used mainly for formation of bunds, ridges, furrows and irrigation channels. The hand is made of pine wood and its approximate cost is Rs. 350/-



4. Traditional plough

A plough is a [tool](#) (or [machine](#)) used in farming for initial cultivation of soil in preparation for sowing seed or planting to loosen or turn the soil. Ploughs are traditionally drawn by working animals such as cattle. Plough may be made of wood, iron, or steel frame with an attached blade or stick used to cut the earth. It has been a basic instrument in agriculture. Its approximate cost is Rs. 1500/-



5. Kamco super di Power tiller

This compact engine is designed to generate continuously 12hp of power for the most demanding jobs, and with a lower weight - per output rating. It is widely used in agriculture during land preparation. Its approximate cost is Rs. 1,96,505/-



Specifications

Model	: KMB 200 DI
Horse Power	: 12
Wheel Track	
Maximum	: 930 mm
Minimum	: 690 mm
Tyre size	: 6.00*12
Ground Clearance	: 203 mm
No.of speeds	
Forward	: 6
Reverse	: 2
Tilling	: 4
Travelling speed	: 15 kmph (Max.)

Tilling width	600 mm
Tilling depth	190 mm
No.of blades	20
Tilling capacity	1 hectare/8hrs.
Overall dimensions	L : 2250 x W : 820
Height	1030 mm
Weight	485 Kg
Engine	
Model	DI 120
Type	Direct Injection, Horizontal, Four stroke, Diesel, Single Cylinder, Water Cooled
Horse Power	12
RPM	2000
Fuel tank capacity	10.7 Litre
Capactiy	744 cc

5. Kamco power tiller mode

6. I KMB 200

This Power Tiller is a versatile machine primarily used for preparation of land for farming operations. With suitably designed accessories the machine can be used for a large number of specific operations like tilling, ploughing, weeding, pumping, puddling, leveling, hulling, ridging etc. It is designed to function in both wet and dry soil condition. Its approximate cost is 1,89,134 Specifications.

Model	
Engine	: ER 90
Type	: Tiller KMB 200, Rotary, diesel-powered, water-cooled, with radiator
HP	: Continuous 9
RPM	: 2000
Fuel consumption	: 1.5 litres per hour
Fuel tank capacity	: 10.70 litres
No. of speeds	
Forward	: 6
Reverse	: 2
Tilling	: 4
Wheel track	
Maximum	: 930 mm
Minimum	: 690 mm
Tyre size	: 6.00 x 12
Ground clearance	: 203 mm
Travelling speed	: 15 kmph (Max.)
Tilling width	: 600 mm
Tilling depth	: 190 mm
No. of blades	: 20
Tilling capacity	: 1 hectare/8hrs.
Overall dimensions	: L : 2250 x W : 820
Height	: 1030 mm
Weight	: 485 Kg
Light Unit	: 12 volts, 40 Watts
Trailer body	: 1830*980*350 mm

Sowing Implements

7. Traditional row marker

The device has been designed to mark the rows at equal distance to promote row farming especially in terraced and valley land cultivation. Sowing in rows facilitates intercultural operations like weeding, earthing, etc. easier and better. It is made of locally available materials and highly economical



8. SRI Row marker

In SRI, proper spacing in the planting of seedlings is one of the essential principles underlying the technology. A spacing of 25 x 25 cm in a uniform square pattern is normally adopted. However practical adaptability of planting single seedling in square method becomes very tedious under field conditions and farmers find it difficult to mark the recommended spacing with the conventional method of using rope as marker. The SRI Row marker is

- ✚ Labour saving
- ✚ Weeding is easy

✚ More yield

Its approximate cost is Rs. 1500/-



Hand Tools and Weeding Devices

9. Hand fork

The device consists of comb like structure which is used to collect cut grasses, weeds and cut crops lying in the field. This reduces labour consumption as compared to manual collection.



10. Secature

A small pair of shears for pruning, having a pair of pivoted handles, sprung so that they are normally open, and usually a single cutting blade that closes against a flat surface.



11. Cono Weeder

This is a multipurpose weeding device which can be used for weeding in between the rows. These facilities to operate in standing postures thus reducing the drudgery of operation. Cono weeder is manually operated weeding equipment with long handle. The blades are fitted on two set of cones to perform weeding operation in between the paddy rows without bending the posture of the operator thus reducing drudgery of work. It performs well in standing water condition.

Specifications

Dimensions	: 1.74m ´ 2.0m ´ 0.94m
Weight	: 6.7 kg
Number of persons required	: 1



Width of coverage : 140 mm
Field capacity : 0.36 ha/h
Its approximate cost is Rs. 1000/-

12. Khurpi

A khurpi is a type of tool used for gardening in small plots, removing weeds and sometimes also sowing. Its front part is made of mortar and the back handle can be made of wood. Its approximate cost is Rs. 100/-



13. Garden rake

It is used for weeding purpose and reduces drudgery. Its approximate cost is Rs. 250/-



14. Tree Pruner

Pruners provide extra long reach for fast, easy and safe tree pruning in those hard-to-get-at applications.



Protection equipments

15. Knap sack sprayer

A sprayer is a device used to spray a liquid. In agriculture, a sprayer is a piece of equipment that is used to apply herbicides, pesticides, and fertilizers on agricultural crops. Its approximate cost is Rs. 2150/-

Specifications

Capacity:	16 Litres
Gross Weight:	4.14 Kg
Box Dimension:	8 X 17.5 X 21 Inc
Average Working Pressure:	300 Kpa
Minimum Discharge:	500 ml/min



Harvesting and Post Harvesting Tools

16. Harvesting (Improved Sickle)

It is a serrated blade sickle suitable for cutting grasses and harvesting of different crops like maize, paddy etc. The wooden handle has a bend at the rear end for better grip and to avoid hand injury during use. The blade is of self-sharpening i.e. when the teeth wear out; a simple grinding at the face enables exposures of new teeth. It costs Rs. 30/-

- Length of cutting edge, mm : 225
- Weight, kg : 0.25
- Radius of curvature, mm : 260



type
rear

Its approximate cost is Rs. 100/-

17. Power Reaper

KAMCO Power Reaper is ideally suited for harvesting of paddy . It harvests at the rate of 3-4 hours per ha. Since the fuel used is kerosene, cost of operation is the lowest and it helps the farmer to harvest his field at the lowest ever cost. Its approximate cost is Rs. 1,09,536/-

Specifications Model : KR 120	
Dimensions	
Overall length	: 2390 mm
Overall width	: 1470 mm
Height (Up to Handle)	: 900 mm
Weight	: 116 KG
Working Capacity	: 3 -4 hr/hectare (1.2-1.8 hrs/acre)
Applicable Plant Height	: 60-120 cm
Crop release	: Right side of machine (viewed from rear)
Engine	
Type	: Single Cylinder,4 stroke ,side valve ,Air cooled Engine
Fuel	: Petrol Start,Kerosene run
Rated HP	: 3.5
Max . HP	: 3.85
R.P.M	: 3600
Specific Fuel Consumption	: 339 gm/H.P hr
Fuel Tank Capacity	: Kerosene 4 Ltr ,Petrol 0.4 litres
Air cleaner	: Oil Bath Type
Starting	: Recoil starting
Travel	

Forward speed	: 59.0 m/min
Reverse	: 50 m/min
Applicabilty	: Dry field & Wet field
Operation & Control	
Main Clutch	: Dog Clutch
Harvesting Clutch	: Dog Clutch
Cutting	
Cutting Device	: Reciprocating Knife Bar
Cutting Height	: Adjustable 10-30 Cm grounded level
Cutting width	: 120 cm



18. Pedal paddy thresher

It is a manually operated paddy thresher consisting of threshing cylinder, pedal and grain shield. Threshing cylinder is fitted with wire loops to perform threshing operation by combing action.

Specification

Dimension : 1.25m x 0.65m x 0.63m

Output capacity : 40-50 kg/hr

Threshing efficiency : 98 %

Its approximate cost is Rs. 6000/-



19. Traditional threshing stone

The tool is cheap and effective in threshing of paddy, hence preferred in rural areas.



20. Traditional winnowing tool (Chaladiang kaweh kba)

It is used in cleaning and winnowing of paddy grains. It is made of bamboo sticks and “U” shaped.. Widely used by rural farmers.



Miscellaneous

21. Turmeric grinder

It is electrically operated, stainless steel fitted with 3 HP motor, 220 volt single phase. Its approximate cost is Rs. 22, 500/



22. Traditional seed drying pan (shalini)

It is made up of bamboo stick and used for drying seeds. Its approximate cost is Rs. 120/-



23. Traditional carrying basket (Khoh)

It is made up of bamboo stick and used for handling and transportation of FYM in agricultural fields. Both men and women operate it. Its approximate cost is Rs. 180/-



24. Traditional seed storage basket for Ginger (Khoh buh symbe)

It is made up of bamboo stick and used for storing of ginger rhizome seeds .The bamboo sticks are knitted together tightly and its approximate cost is Rs. 400/-



25. Traditional harvesting basket for vegetables(Polo)

It is made up of bamboo stick and used for collecting harvested vegetables.The bamboo sticks are knitted loosely for aeration and cooling of harvested vegetables from the fields. Its approximate cost is Rs. 200/-



26. Watering Can

It is used for kitchen gardens and nurseries and has a capacity of 5litres & 10 litres. Its approximate cost is Rs. 300/-



CHAPTER VIII ANNEXURE

Telephone Directory of Important Agriculture and Related Departments/offices in Jaintia Hills District

SL NO	NAME OF Department	ADDRESS	TELEPHONE NO (code-0364)
1.	District Agricultural Officer,Jaintia Hills	New Hill, Jowai-793150	223724/9863094290
2.	District Horticulture Officer, Jaintia Hills	New Hill, Jowai-793150.	223249/9436106030
3.	Research Officer District & Local Research Station and Laboratories,Jaintia Hills Dist.	Rymphum, Jowai-793150	-
4.	Agricultural Engineer(Mech), Jaintia Hills Dist	Rymphum, Jowai-793150	223930
5.	Executive Engineer(Irrigation), Jaintia Hills Dist.	Rymphum, Jowai-793150	-
6.	Divisional Soil& Water Conservation Officer(Territorial),Jaintia Hills Dist.	Moomon, Jowai-793150	-
7.	Divisional Soil& Water Conservation Officer(Cash Crop),Jaintia Hills Dist.	Moomon, Jowai-793150	-
8.	District A. H. Veterinary. Officer, Jaintia Hills Dist	Mynthong Jowai-793150	-
9.	Superintendent of Fisheries, west Jaintia Hills Dist.	Ladthlaboh,Jowai-793150	-
10.	District Sericulture Officer, Jaintia Hills Dist	Ummulong	9612939228

11.	District Agricultural Officer, East Jaintia Hills	Khliehriat	-
12.	District Horticulture Officer, East Jaintia Hills	Khliehriat	-
13.	Sub-Divisional A. H. Veterinary. Officer, Khliehriat	Khliehriat Sub- Division, Khliehriat	-
14.	Sub-Divisional A. H. Veterinary. Officer, Amlarem	Amlarem	-
15.	Fishery Officer, Khliehriat Sub- division, Khliehriat, Jaintia Hills Dist.	Khliehriat	-
16.	Fishery Officer, Khliehriat Sub-division, Amlarem, Jaintia Hills Dist.	Amlarem	-
17.	Block Development Officer, Laskein Jaintia Hills Dist	Laskein	-
18.	Block Development Officer, Thadlaskein Jaintia Hills Dist	Thadlaskein	-
19.	Block Development Officer, Khliehriat, Jaintia Hills	Khliehriat	-
20.	Soil & Water Conservation Range Officer, Khliehriat, Soil & Water Conservation Range, Jaintia Hills	Khliehriat	-
21.	Soil & Water Conservation Range Officer, Lumshnong(T), Soil & Water Conservation Range, Jaintia Hills	Khliehriat	-

22.	Block Development Officer,Amlarem Jaintia Hills Dist	Amlarem	-
23.	Soil & Water Conservation Range Officer, Amlarem(CC), Soil & Water Conservation Range, Jaintia Hills	Amlarem	-
24.	Block Development Officer,Saipung,Jaintia Hills	Saipung	-

Departmental Farms			
SL NO	NAME OF Department	ADDRESS	TELEPHONE NO
1.	Horticulture Farm Cum Nursery	Thadlaskein	-
2.	Horticulture	Saitsama	-
3.	Horticulture Farm Cum Nursery, Muktapur	Muktapur	-
4.	Horticulture farm Cum Nursery, Mynkre	Mynkre	-
5.	Cattle Farm, Khliehthyrsi	Khliehthyrsi	-
6.	Poultry farm, Jowai	Jowai	-
7.	Pig Farm, Thadlaskein	Thadlaskein	-
8.	Sheep and Goat Farm, Saitsama	Saitsama	-







Staff of KVK Jaintia hills

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