

KOLASIB 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 Kolasib for taking part in compiling the huge information to shape up Kolasib 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 Kolasib 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



Keeping in view of the importance of Agricultural economy and the farming community, the inventory of Agriculture of KrishiVigyan Kendra Kolasib District is confident of providing basic and valuable information related to identification of boundaries, different cropping systems, existing farming systems, the local resources, climate, land and water management, energy, labour etc. It is a known fact that majority of the farming community are still at large about different Schemes and plans scheduled for them by the Government and several NGO's. Through this publication, we want to highlight our highest consideration to the farming community and their problems in a comprehensive manner using an interdisciplinary approach that complements the existing research development activities and modern technology related to Agriculture and allied sectors.

Earlier, the non-availability of information as the farming systems prevailing and practical in different agro-climatic regions was felt at different levels. In this inventory of Agriculture, we have compiled all the available information on various research and development organizations relevant to the district's agriculture to the best of our capabilities.

The outcome of the findings are summarized and published in the present form for the benefit and upliftment of the farming community and agriculture economy.

We sincerely acknowledge the support received from different Departments of the District for providing valuable information. Our thanks are due to all the staff of KVK Kolasib for the support extended for bring this inventory in the present form.

We dedicate this inventory to the farming community and we hope the book will be highly useful as day to day reference material for those engaged in the task of nation building through agriculture development.

(Lalrosanga Khiangte)

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CHAPTER – I DISTRICT IN GENERAL

Kolasib district is situated in the northern most regions of the state surrounded by Aizawl district in the south & east and Mamit district in the west and Assam state in the north. The geographical area of the district is 1382.51Sq.Kms. This is 6.56% of the state total geographical area. It is situated in between 23° - 5' to 24° - 35' North Latitude and 92° - 3' to 93° East Longitude . The District is covered by Humid Sub-tropical Hill Zone and Humid mild tropical zone.

Kolasib town is the headquarters of the district where various District Offices viz. Agriculture Department, Horticulture Department, A.H & Vety. Department, ICAR Research Complex, KVK etc. are located in Kolasib Town. Animal Husbandry and Veterinary Department has 3 Veterinary Dispensaries and 7 Regional Health Centres. The district has three sub-divisions viz. Kolasib, Vairengte and Kawnpui .Agriculture is the main occupation in the district. There are 16881 cultivators, 1048 agricultural labourers, 311 industrial labourers and 9199 other workers. Adjacent to the National Highways and district road, a good number of Agriculture/Horticultural link roads has been constructed which serve for transportation of Agricultural and Horticultural products from the interior areas of the district.

The district consists of two R.D Block and 31 villages. The district has Bairabi village which is the only place where communication by railway (the only rail head in Mizoram) is available. The total population of the district at present is 83054 which is 7.6% of the state population. The total number of household is 12255. The population density is 60.07/sq.km against the state average of 51.73/sq.Km. The demographic patterns of the district are indicated in the table below:-

Table: Demographic Pattern of Kolasib District.

| Geographical Area (Ha.) | No. of Villages. | No. of Households | Population | | |
|------------------------------------|-----------------------------|------------------------------|-------------------|---------------|--------------|
| | | | Male | Female | Total |
| 138251 | 31 | 12255 | 42456 | 40598 | 83054 |

**As per 2010-2011 Census.*

The literacy percentage of the district is 94.54% which is more than the state average literacy rate i.e., 91.85%. Total number of workers in the district is 32388 out of which 9578 number of families are involved in cultivation. Among these farming community/household 7930 are jhum cultivators, 1648 are WRC Cultivators while 104nos of families are engaged in sericulture activities

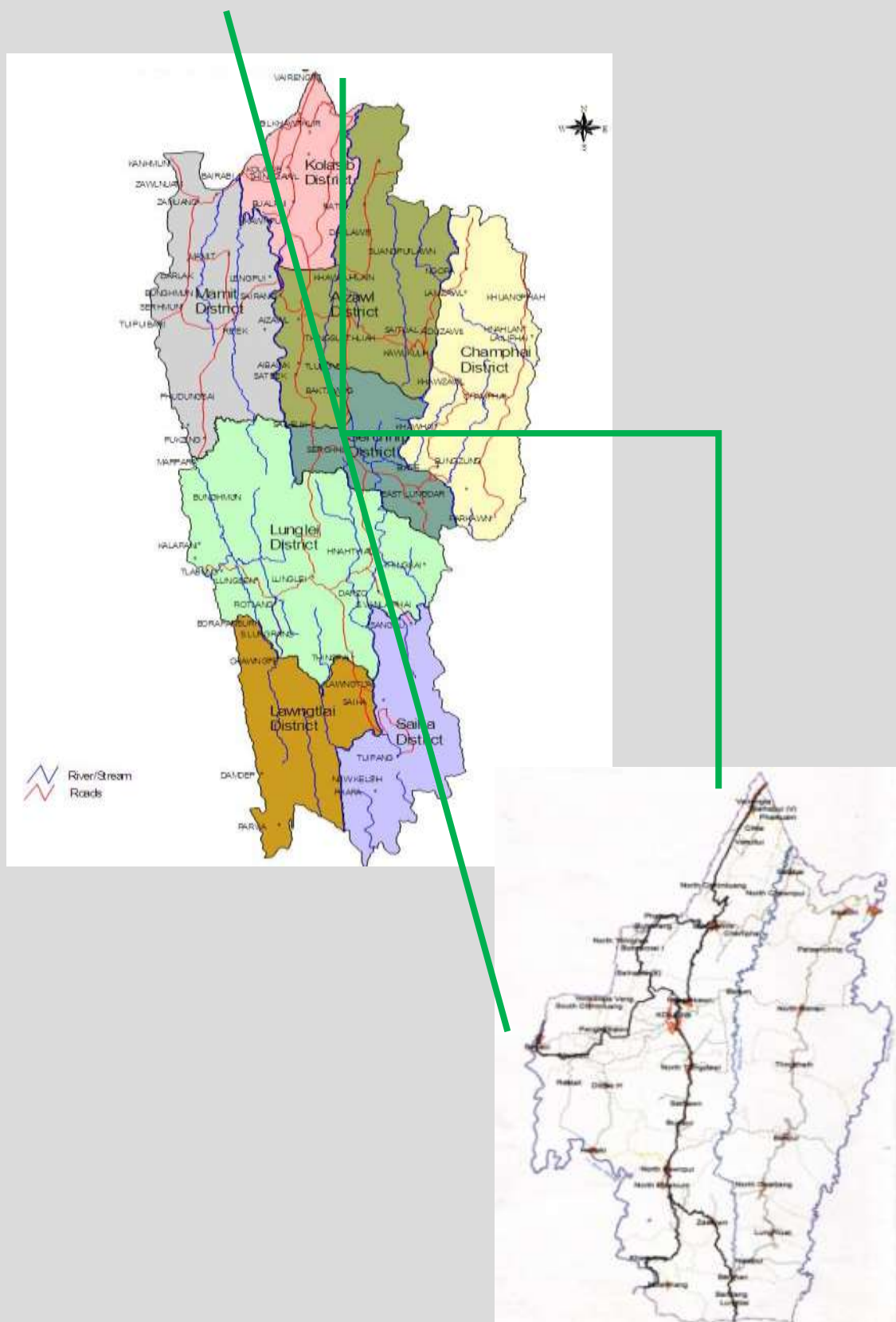


Fig: Location of Kolasib District

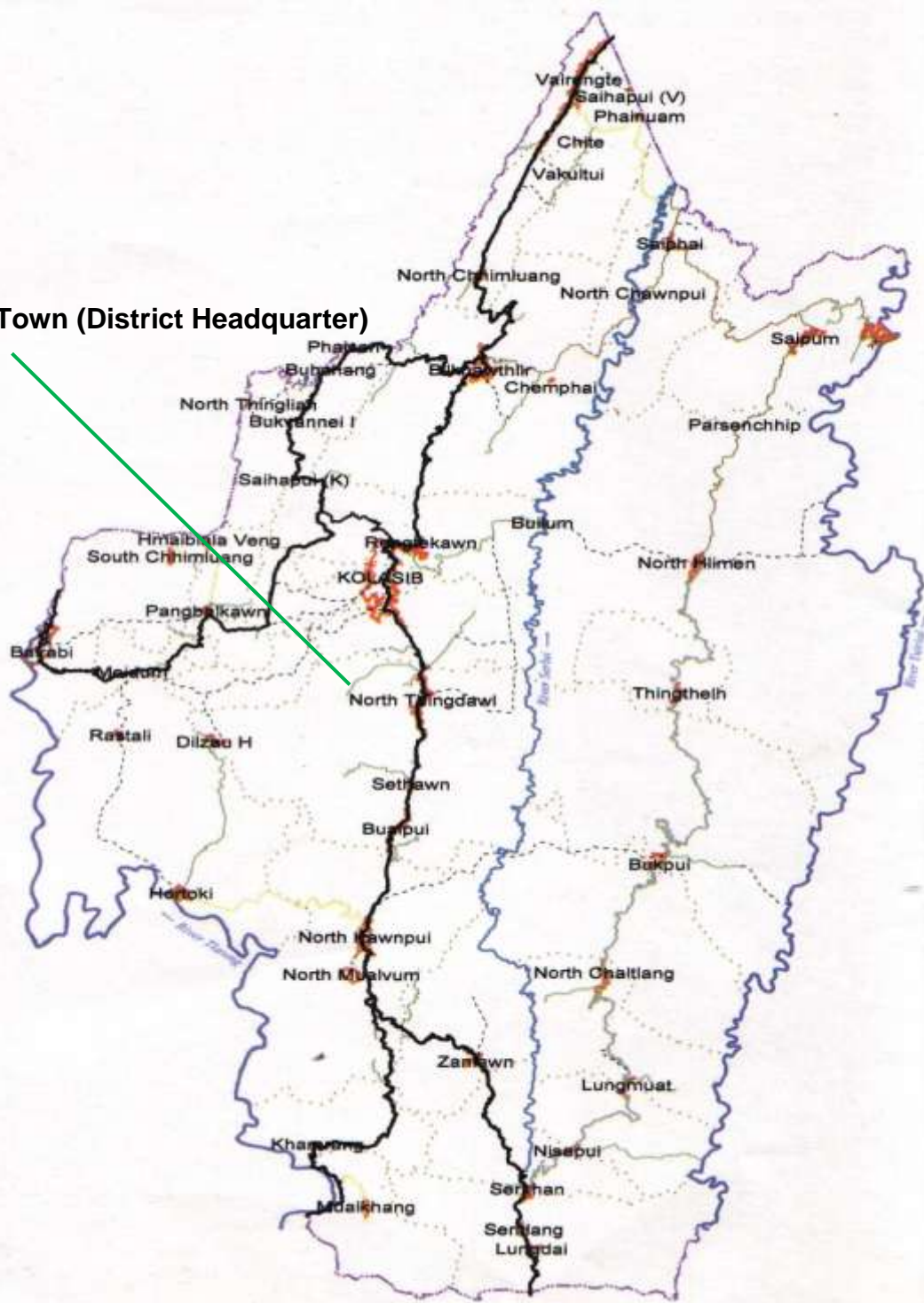


Fig. Map of Kolasib District

CLIMATE

Kolasib district is the northern part of Mizoram state which enjoys moderate climate owing to its tropical location. It is neither very hot nor too cold throughout the year. It falls under the direct influence of the south west monsoon which receives an adequate amount of rainfall during the monsoon season. The average rainfall of Kolasib district is 2703 mm per annum and highest rainfall during a particular month was 852 mm recorded during August and July. The salient thermo-characteristics of the district is that temperature do not fluctuate much throughout the year. The highest temperature observed during past decade was 35⁰c in the month of July. The warmest months with mean daily maximum at about 26⁰c and mean daily minimum at about 23⁰c was observed during June and July. The temperature started to fall down from the month of November and it is minimize in December and January.

Table: Spread of ACZ and AES in Kolasib District

| Agro-climatic Zones | Agro-ecological Situation | Villages Covered | Approximate Area in Ha. | Percentage of Total Area |
|------------------------------|----------------------------------|--|--------------------------------|---------------------------------|
| Humid Sub-Tropical Hill Zone | I | N.Hlimen, Bukpui, Thingthelh, N.Chaltlang, Lungmuat, Nisapui, Serkhan, Lungdai | 35223 | 25.48 |
| | II | Khamrang, Kawnpui (N), Kawnpui (S), Bualpui, Thingdawl, Zanolawn. | 28178 | 20.38 |
| Humid Mild Tropical Zone | III | Kolasib, Bilkhawthlir, Vairengte, Pangbalkawn, N.Chhimluang. | 30820 | 22.30 |
| | IV | Hortoki, Bairabi, Meidum, Bukvannei, Buhchangphai, Phaisen, Saihapui | 44030 | 31.84 |

| | | | | |
|--|--|--|--|--|
| | | (V), Phainuam, N.Chawnpui, Saiphai, Saipum, Builum. | | |
|--|--|--|--|--|

TOPOGRAPHY

The topography in general is undulant with broken mountainous / hilly ranges and between them lies the valley lands suitable for cultivation of field crops. The hills are suited for Horticultural practices wherever the slopes are gentle/moderate. The soils in hills are rich in humus due to forest cover. However, in abandoned jhum lands the situation is reverse. The soil in general is acidic- pH ranging between 4.5 - 6, deficient in base material, medium in organic carbon, low in available phosphorus and high in potash. The predominant soil taxonomy is Hapladults and Udonthernts wherein moisture retention capacity is very low.

Though the District mainly comprises of hilly terrain there are low lying valley lands in few pockets, where altitude is rather low having warm and humid climate facilitating paddy cultivation. In fact, this district has many such rice pockets. The altitude ranges between 36 - 900 meter MSL in the district.

FOREST

The forest cover type of Kolasib district is mainly tropical wet evergreen forest and tropical semi evergreen forest associated with moist deciduous forests. Moist deciduous forests are commonly found in small pockets on the hill slopes. The vegetation consists of a mixture of several species. Depending on the density of the canopy cover the forest have been divided into dense/closed, medium dense and less dense forest.

a. Dense/Closed forest:

This class includes natural forests, which are not disturbed by any biotic factors like shifting cultivation and other human activities. Evergreen and semi evergreen forest covers major portion of this area. Vast dense forests are found near Sethawn, Nisapui, Lungmuat, Dilzau and Builum villages.

b. Medium dense forest:

The forests that have a crown cover neither too thick nor too thin are classed under this category. It is distributed throughout the whole district in small patches.

c. Less dense/Open forest:

This type of forest includes forest, which were once disturbed and affected by biotic factors like shifting cultivation and human activities. This forest are categorised by those lands where shifting cultivation had been practiced and then left fallow for over a year, the resultant new vegetation of which, regenerated to form new forests. Forests of this class are commonly found near Bualpui, Bairabi, Hortoki, Meidum, North Chatlang villages.

d. Bamboo

It is mostly found in lowlying areas near streams and rivers. It constitutes the large cover among the land use classes. The dominant bamboo species found in this area are *Dendrocalamushamiltonii*, *D.longispathus* and *Meloccanabambusoides* (*M.bacifera*).

e. Forest Plantation:

Forest plantation are distributed throughout the district. Some has large coverage while most of them with area below the minimum mapable unit. The prominent forest plantations are given below

- (a) **Teak (*Tectonagrandis*):** Teak plantation is the most pre dominant forest plantation found in the district. It has replaced primary forest in many places. They are usually planted along the road side and is found abundantly at Khamrang, Bikhawthlir, Vairengte, North Chhimluang, Meidum etc.
- (b) **Gmelina (*Gmelinaarborea*):** Gmelina plantations are found to be distributed in small patches within Kolasib district like Kawnpui, Bikhawthlir etc.
- (c) **Miscellaneous plantation:** It includes any other forest plantations other than Teak and Gmelinaeg. Rubber (*Heveabengalensis*). Rubber plantations are found at Tuichhuahen, Phainuam and Mualkhang villages in small patches.

Table: Details of forests in Kolasib District

| Sl.No. | Category | Area (Sq.Km.) | % |
|---------------|-----------------------|--------------------------|----------|
| 1. | Forest | | |
| | 1.1 Dense | 131.10 | 9.70 |
| | 1.2 Medium Dense | 114.25 | 8.26 |
| | 1.3 Less Dense | 204.94 | 14.83 |
| | 1.4 Bamboo | 657.40 | 47.55 |
| | 1.5 Forest Plantation | | |
| | 1.5.1 Teak | 5.76 | 0.42 |
| | 1.5.2 Gmelia | 0.32 | 0.02 |

WATER RESOURCES:

The district is blessed with several rivers. The major rivers flowing through the district are Tlawnglui, Chhimluang, Chemlui, Serlui etc. Among the major water resources, Serlui river is the main sources of water within the district which cover about 55km length and 1.5 km wide.

a. Rivers: Nil

b. Streams: Nil

c. Beels/lakes: Nil

PORTS

There is no port available at Kolasib District.

Demography

As per 2011 census, 44.16 % population of Kolasib districts lives in rural areas of villages. The total Kolasib district population living in rural areas is 37,077 of which males and females are 19,097 and 17,980 respectively. In rural areas of Kolasib district, sex ratio is 942 females per 1000 males. If child sex ratio data of Kolasib district is considered, figure is 973 girls per 1000 boys. Child population in the age 0-6 is 6,681 in rural areas of which males were 3,387 and females were 3,294. The

child population comprises 17.74 % of total rural population of Kolasib district. Literacy rate in rural areas of Kolasib district is 89.72 % as per census data 2011. Gender wise, male and female literacy stood at 91.58 and 87.72 percent respectively. In total, 27,270 people were literate of which males and females were 14,387 and 12,883 respectively.

CULTURE AND EDUCATION

The district is famous for its centres of reputation in learning and culture. There is one college - Kolasib College, under Mizoram University and a number of public and private schools.

The Major Higher Secondary School in Kolasib are; St. John's Higher Secondary School, Kolasib, C. Zakhuma Higher Secondary School(CZS), Kolasib, Madonna Open School.

HEALTH CARE SECTOR

In Kolasib District, there are 1 (one) Community Health Centre, 5 (five) Primary Health Centres viz. Bukpui, Kawnpui, Lungdai, Bilkhawthlir and Bairabi, 26 (twenty six) Health Sub-Centres and 8 (eight) Sub-Centres. Health and Public Welfare Programmes being run in District are Malaria Eradication Programme, Leprosy eradication Programme, TB Control Programme, Family Welfare Programme and other Health Programmes.

BANKING AND ALLIED SECTOR

The state bank of India in the district is well developed and is the central co-operative bank of the district. It has 3 branches: Kolasib, Bilkhawthlir, Kawnpui. Other banks available at present are Mizoram Rural Bank, Mizoram Co-operative Apex Bank, Canara Bank.

LOCAL BODIES AND RURAL DEVELOPMENT

Kolasib District is divided into 2 (two) Rural Development Block viz, Thingdawl RD Block and Bilkhawthlir RD Block. There are 21 villages in Thingdawl RD Block and 24 villages in Bilkhawthlir RD Block. Each village have separate village council. The District has 3 assembly constituencies viz, Tuirial, Kolasib and Serlui. In Kolasib different rural Development Programme like MNREGS, IAY, SAGY etc. have been taken up.

CHAPTER – II AGRICULTURAL SCENARIO OF THE DISTRICT

CROPS

With a geographical area of over 1,38,251 hectare and perched on the high hills, Kolasib district has difficult terrain, and hills are separated by rivers flowing north to south, thus creating innumerable hurdles in intra-district communication. The major rivers flowing in the district are Tlawng and Serlui which are fed by number of tributaries. These rivers flow from south to north and ultimately confluence to Barak river of Assam. The district gets an average annual rainfall of about 2600 mm and well distributed in late April to October. The surface and sub-soil being highly porous, its retentivity of water is low. Consequently, the district faces the unique paradoxical problem of scarcity of water in the midst of plenty. However, the people of the district have developed an innovative practice of harvesting roof top rain water to meet their day to day water requirement for household activities. Drinking water problem in the Kolasib district has been greatly solved by the water supply scheme of the government. The total area under different types of paddy is 6969 hectare including shifting cultivation areas. The district is having the highest potential of wet rice cultivation (WRC) and other field crops in Mizoram in places like Chemphai, Saphai, Saipum, Chawnpui, Chitephai, Phainuam, Buhchangphai, Phaisen, Bukvannei, Saihapui etc. The cropping system throughout the district is diverse since it is dependent upon soil, micro-climatic conditions and socio-economic status. In horticulture (fruit crops etc.) Areca nut is extensively grown. Others are Orange, Passion fruits, Banana, Hatkora.

Papaya, Pineapple etc. The net sown area is 12747 ha and gross cropped area is only 15600 ha. The cropping intensity is only 122%. The cropping intensity is to be increased to attain self sufficiency in food production. According to the Agriculture Department's figure of 2008-2009 the total production of paddy stood at 9818 MT. During the same year the area under all fruits crops was 2530 ha with production for all fruits crops to be 5754 MT. The Forest production is mainly timber tree species like Gomari, Teak and bamboo, broom-grass etc. The forests are continuously under great pressure of shifting cultivation

Table: Land use pattern of Kolasib district

| Taluk | Area in Hectare | | | | | | | | |
|---------------|-------------------|-------------|-----------------------------|------------------|--|-----------------|---------------|--------------------|------------------------|
| | Geographical area | Forest area | Land under Non-agricil. Use | Cultivable waste | Land under miscellaneous tree crops and groves | Current fallows | Net sown area | Gross cropped area | Cropping intensity (%) |
| Thingdawhl | 92153 | 56864 | 6959 | 560 | 17515 | 4850 | 5405 | 6850 | 5.86 |
| BBilkhawthlir | 46098 | 18336 | 5631 | 532 | 11157 | 3100 | 7342 | 8750 | 15.93 |
| Total | 138251 | 75200 | 12590 | 1092 | 28672 | 7950 | 12747 | 15600 | 9.22 |

Source: C-DAP, Kolasib District

LIVESTOCK

VETERINARY AND ANIMAL HUSBANDRY IN DISTRICT

Agriculture has always been the backbone income generation of our country and our state as well. More than 80% of the rural people are engaged in agriculture and allied sectors. Animal Husbandry contributes substantially to the State Gross Domestic Product. The State government has implemented four (4) Dairy development projects within the state under Intensive Dairy Development Projects (IDDP), one of the projects have been maintained by the Kolasib Dist. The plant capacity amounts to 5000 lts/day. Mizos by tradition are animal rearers and possess the basic knowledge of animal husbandry. Majority of the district are non-vegetarian with no religious taboo for any kind of meat, thus this results in a high demand for

meat and egg production. Therefore, animal husbandry plays a vital role in filling the gap of demand for animal and its product in Kolasib District.

Cattle Production System.

The cattle production within the district is rather low when compare to the marginal demands of the localites. The cattle are reared for meat and milk products and hardly for drought work. The meat is highly relished by the localites since there is no religious taboo to restrict the intake. The meat rate is Rs.200/kg. Buffaloes and Mithuns are less in number in the area and are reared mainly for meat purpose. Majority of the cattle farmers are poor and cannot meet the demand of their animals feed thus resulting in low milk production. The present practice in the district is stall fed system and the fodders are procured from the nearby forests area of the farm. Most of the cattle reared are indigenous cattle (3947 nos.) and cross breed (2017 nos.) and no known farmers bred the pure breed. One of the reasons can be that indigenous cattle can be managed under low input system than the exotic ones which requires higher input. Majority of the farmers are unaware of the way to process the dairy products e.g., Ghee, Dahi, Lassi, etc.

Milk production is obtained mainly from Cross bred Cattle and Indigenous cattle with negligible contribution from Buffalo. As per reports of the Integrated Sample survey, estimated total milk production during 2009-2010 was 10633 Tonnes. The per capita availability of milk per day in Mizoram is worked out to be 33 gms against the Indian Council of Medical Research recommendation of 210Gms/day / person. The shortfall over the recommendation is 159 gms/day/head. The State has availed assistance from Central Government of India for implementation of Intensive Dairy Development Project (IDDP). Four projects are implemented under this scheme, viz., IDDP-I, IDDP-II, IDDP-III, IDDP-IV at four different districts. The 4th IDDP is located at Kolasib District which is known as Kolasib Multi-commodity Milk Producer's Union Limited. This plant has a capacity of 5000lts/day and the milk marketed on an average in ltr/day is 750-800.

Pig Production System.

The most common animal farming in the district is Pig Farming System and are reared mainly for meat purpose. There is no distinction among the people within the

district in terms of pig rearing since almost all the families reared pigs. The people as a whole relish the pork meat comparatively to the other meat products. The major constraints in piggery development within the district are the inadequate breeding stock, management practices and farmers unaware of the inbreeding depression. The cross bred of Hampshire and Large White Yorkshire the most common pigs that are bred. Pork is the most preferred meat and it can be marketed in the all the areas near and far. The meat cost Rs. 160/kg in the district.

A) Housing System

a. Backyard System

This system is the most common practiced in the district. The pigs are housed either in concrete or wooden type. Walls are also made of the same and roofing is mainly of CGI sheets or thatch. The sheds are constructed as per the convenient of the famers' land.

b. Scavenging System

In this kind of system, pigs are let loose to feed and will return to their shed at night time. This system is reared by few farmers only within the district.

B) Feeding practices

The feeding practices depend on the income of the farmers. Since majority of the farmer in the district are with low income generation they do not give recommended pig feed at all though they are well aware of the importance, due to this, pigs thrive on the locally available feeds within the area. Generally, feed consists of kitchen waste, wheat bran, tapioca, wild banana and some other locally available plants. It is well cooked before they are fed. KVK through OFT and extension education give vitamins and other supplements to the progressive farmers.

Disease and General Health Care

The farmers do not give importance to regular health checkup. Regular deworming, routine vaccination, supplementation of vitamins and minerals etc., are not at all practice even though farmers are well aware through trainings and extension workers. This can be due to low income generation since it involves money and for some farmers it can be solely due to ignorance. In the past year even though there was an outbreak of Swine Fever in the District, till date some of the farmers did not know or give importance to vaccination. Some of the common health problems

encountered in the area are- Swine Fever, Salmonellosis, Piglet Anemia, Skin infection, Parasitic infestation, Swine Erysipelas etc. One major problem is inbreeding depression, farmers are unaware of the defects that can occur due to inbreeding. Kolasib KVK has tackled the incidence of Swine fever, Swine Erysipelas, Skin Infection and Piglet diarrhea through innovative measures by the veterinarian.

Goat Production System

Goat rearing is not common in the district and it is confined to small and marginal farmers where it is reared mainly for meat purpose. The farmers practice tethering system of farming where the goats are loosely tied with a rope to a tree for browsing or are let loose in the nearby forest to obtain feeds from the nearby areas.

Poultry Production

The consumption of poultry meat and egg is considerably high. Majority of the farmers rear by backyard system, mostly desi birds are bred. There are no proper breeds that are bred by the farmers. However, the district production is considerably low when compared to the local demands and the cost is essentially high amounting to Rs.180 /kg. ICAR in the District has introduced improved breed -Vanaraja.

Rabbitry

Few farmers are engaged in Rabbitry farming and adopt the backyard system of farming. The farmers mostly rear Angora breed. They are fed mainly on Motor chana, black gram, chopped fodder etc. The skins are processed as per the convenience of the farmers.

Marketing Of Livestock, Poultry And Their Products

There is no proper organized marketing system in the district. The meat markets have inadequate infrastructure facilities. The meat and egg prices also vary from time to time. Since there is low production the supply cannot meet the demands of the district. Many farmers slaughtered the pig in an open area in an unhygienic manner and often leave the area with no proper sanitation care which causes nuisance for the dwellers of the nearby areas.

Table: Production and productivity of livestock including poultry in Kolasib District

| Particulars | 2003 (17th quinquennial) | 2007 (18th quinquennial) | % variation over 2003 to 2007 |
|--------------------|--|--|--|
| Cross bred cattle | 8800 | 10713 | 21.74 |
| Indigenous cattle | 26770 | 24244 | -9.44 |
| Buffalo | 5730 | 5832 | 1.78 |
| Mithun | 1740 | 1939 | 11.44 |
| Goat | 16980 | 15710 | -7.48 |
| Sheep | 1060 | 974 | -8.11 |
| Pig | 217180 | 267361 | 23.11 |
| Fowl | 1107890 | 1234150 | 11.40 |

Source: Directorate A.H & Vety Mizoram

FISHERIES

The fisheries sector plays a vital role towards production of food protein from aquatic base teleostom (fishes) in the State of Mizoram. Besides providing livelihood and uplifting socio-economic status of the poor farmers connected with Agriculture and Allied Sector since a long time.

The Department of Fisheries is an important productive sector under the Government of Mizoram. The Department of fisheries at Kolasib District was establishing on August 8th, 2008. Their main objectives are:

1. Enhancement of inland fish production through freshwater aquaculture with supporting facilities to improve sustainable livelihood opportunity.
2. Enhancement of fish seed production for self-sufficiency or optima stocking of the culture fishery resources.

3. Enhancement of production in capture fisheries (reservoirs and rivers) sector adopting culture based capture fisheries and conservation of fishery resources.
4. Welfare of fisher folk/fish farmers and empowerment through efficient fishery extension services through intensification of training and demonstration of the latest technology of fish farming to fish farmers.
5. Inland fish marketing ensuring commercial linkage with focus on post-harvest infrastructure involving competent stakeholder.
6. Development of ornamental and cold water fisheries for diversified income generation.
7. Development of data base for inland fishery statistics.
8. Strict observance of provision of existing Fishery Act of the State (Mizoram Fishery Act, 2002 and subsequent amendment)

Address for communication

District Fisheries Development Officer

District Fisheries Office

Kolasib District

P. O.- 796081

Phone – 03837- 222125

CHAPTER – III CONSTRAINTS IN AGRICULTURAL PRODUCTION

CROPS

The main constraints in crop cultivation is non- availability of high quality planting material, high production cost. As the most of the farmers practice Jhum cultivation transportation cost and proper maintenance to their farm is difficult. Also soil erosion is the main problem in hilly region which result to low productivity. Knowledge on water management practices and methods of scientific cultivation of crops is lacking among the farmers. Lack of proper marketing channel to get maximum profit to the farmers is limiting factor. Due to climate change pest and disease become bottleneck in maximising agricultural production.

Table: Crop-wise major production constraints

| Sl. No. | Crop | Constraints |
|---------|-------------|--|
| 1 | Paddy | Use of low yielding variety, high incidence of Rice blast disease, high infestation of pest like Grasshopper, Yellow stem borer, Gundhi bug, Improper application of chemical fertilizers (Urea, SSP, MOP) |
| 2 | Maize | Stem borer infestation, Less productivity. |
| 3 | Potato | Blight disease causing drying of the plant, Local variety resulting less productivity, Problems of post-harvest processing. |
| 4 | French Bean | Low productivity, Low marketing value, Local variety resulting less production |
| 5 | Mustard | Low yielding variety (Local variety), Marketing of harvested seeds. |
| 6 | Cabbage | Lack of technical know- how for cultivation, Marketing of the product. |
| 7 | Sugarcane | Lack of knowledge for cultivation, Disease (red rot) and termites infestation, Non-availability of good quality seeds (Setts). |
| 8 | Ginger | Rhizome rot, storage pest of seed ginger, improper fertilizer |

| | | |
|----|----------|---|
| | | application |
| 9 | Arecanut | Lack of scientific management, mites infestation, old and unproductive palms. |
| 10 | Banana | Lack of scientific management, lack of irrigation facilities, rhizome weevil and stem weevil infestation. |
| 11 | Orange | Lack of scientific management, lack of adequate planting materials, citrus decline, die back. |

LIVESTOCK

- (a) Inadequate credit supports since most of the farmers are poor economic condition.
- (b) Lack of improve and quality breed of livestock for high productivity.
- (c) Lack of knowledge in livestock and poultry production system among the farmers.
- (d) Weak veterinary healthcare services and insufficient facilities for good quality livestock production.
- (e) Large number of indigenous livestock and poultry with poor productivity.
- (f) Farmers reared livestock mostly for subsidiary income hence limiting their production capacities.
- (g) Poor involvement of corporate sectors in the livestock industries.
- (h) Insufficient training programme and awareness campaign for farmers about feeding system and scope of rearing livestock.

FISHERIES

- 1) Hatcheries or nurseries for fingerlings are very unsystematic and not scientific.
- 2) Insufficient availability of fingerlings.
- 3) Lack of scientific knowledge in fish farming and production system in the district.
- 4) Lack of awareness campaign, seminars and trainings about fish culture for transfer of technology from trained human resources.
- 5) Lack of farmers participation in fish culture activities.
- 6) Lack of sufficient marketing networks.
- 7) Lack of financial support and services.
- 8) Poor communication and transport facilities

CHAPTER – IV INSTITUTIONAL SUPPORT FOR AGRICULTURAL DEVELOPMENT OF THE DISTRICT

There are several institutions in the district devoted for the development of agriculture and related fields. State Government department, Government undertaking are very active and contribute substantially towards the overall agricultural development of the district.

CROPS

1. Department of Agriculture

The District Agriculture Officer is the Head for the Department who took control of all administration and technical works of the department. All the Administration and Establishment works of the office are look after by the District officer with the help of Head Assistance, UDC, LDC and other office clerk.

The DAO is the apex office to supervise and monitor agricultural development activities. All the technical works are look after by District Agriculture Officer with the help of Sub – Division Agriculture Officers, Subject Matter Specialist, Agriculture Extension Officers and Asst. Agriculture Inspector and Gram Sevak at Field level. Two Sub – Divisional Offices under District Agriculture Officer headed by Sub-Divisional Agriculture Officer – Kolasib Sub Division and Bilkhawthlir Sub Division.

There are 7 (seven) circle offices manned by AAI/Gram Sevak. Bilkhawthlir Circle and Vairengte Circle are under Bilkhawthlir Sub-Divisional Office at Bilkhawthlir. Kolasib Circle, Bairabi Circle, Kawnpui Circle, Bukpui Circle and N. Hlimen Circle are under Kolasib Sub-Divisional Office at Kolasib.

Thingdawl Agriculture Farm which is –12 km from Kolasib is the main research centre under Kolasib District.

Address for communication

- 1) District Agriculture Officer

Kolasib District

P. O. - 796081

Phone - 03837-220024

Fax – 03837- 222075

Email: daokolasib@gmail.com

- 2) Sub Divisional Agriculture Officer

Kolasib Sub-Division, Kolasib

P. O.- 796081

Phone - 03837- 220507

- 3) Sub- Divisional Agriculture Officer,

Bilkhawthlir Sub-Division

Bilkhawthlir

P. O. - 7960

Phone - 03837- 220507

2. KrishiVigyan Kendra (KVK), Kolasib

The Kendra started functioning on 1978 under the administrative control of State Agriculture Department, and from 2008 it function under Department of Agriculture (Research and Education). The Kendra is situated at Vengthar, Kolasib, which is about 82 kms from Aizawl, capital of Mizoram. The operational area of KVK is the entire district and its location is depicted in fig 2.



Fig: Location and Operational Area of KVK

a) Mandates:

- i) To conduct On Farm Testing trials for identifying technologies in terms of location specific sustainable land use systems.
- ii) To organise Front Line Demonstration on various crops to generate production data and feedback information in farmer's field's.

- iii) To organise trainings to update the extension personnel with emerging advances in agricultural research on regular basis.
- iv) To organise short and long term vocational training programmes in agriculture and allied fields for the farmers and rural youth with emphasis on learning by doing for higher farm production and generating self-employment opportunities to the youth.

b) Programmes

i) Training Programmes

The KVK is imparting regular training programmes of various duration in agriculture and allied fields for farmers, farm women and rural youth. There are two types of training programmes: scheduled training programmes for which training topics and dates are fixed by the Kendra and applications are invited from the farming community and youth for the programmes through wide publicity in print and electronic media. The second type of training programmes are organised to meet the specific demands from individual farmer, farmer's groups, voluntary organizations, development departments, etc.

The major topics of the training programmes conducted at KVK are as follows:

Horticulture:

- 1) Production of off-season Tomato under low cost poly-house
- 2) Techniques of nursery raising for winter vegetables
- 3) Seed production in vegetables
- 4) Production of King chilli under low cost poly tunnel
- 5) Citrus Rejuvenation
- 6) Techniques of plant propagation suitable for major fruit crops of Mizoram
- 7) Production of quality planting material
- 8) Cultivation of Brussel Sprouts, Broccoli etc.
- 9) High density planting of pineapple
- 10) Cultivation of summer vegetables.

Agronomy:

- 1) Economics of chemical weed management in Maize
- 2) Chemical weed management in non-cropped area.
- 3) Importance of *Rhizobium* inoculation in Pea
- 4) System of Rice Intensification (SRI)
- 5) Advantage of fodder maize – African Tall
- 6) Package of practices for cultivation of lentil
- 7) Zero Tillage
- 8) Effective and efficient utilization of chemical weedicides
- 9) Integrated nutrient management in rice.
- 10) Intercropping .

Plant Protection:

- 1) Eco- friendly management of soil borne plant pathogen
- 2) Cultural and mechanical management of some important pest of rice
- 3) Biological management of important diseases of vegetable crops
- 4) Safety uses of plant protection chemicals and equipments
- 5) Epidemiological study of prevalent pest of rice
- 6) IPM in vegetable crops
- 7) Uses and importance of bio-pesticides in management of cereals crops
- 8) Management of Lepidopteran pest of rice using *Trichogramma* spp.
- 9) IPM in ginger
- 10) Cultivation practices and management of Mushroom

Agro-Forestry:

- 1) Training on the concept of Agroforestry
- 2) Agro-forestry: An alternative to shifting cultivation
- 3) Neem cultivation under Agroforestry
- 4) Nitrogen fixing trees under Agro-forestry
- 5) On-site training demonstration on agro-forestry
- 6) Reforestation of jhum land
- 7) Intercropping under Agro-forestry
- 8) Training on alley cropping
- 9) Jackfruit cultivation and its management.

10)Wasteland management with MPTs under Agro-forestry

Soil Science:

- 1) Nutrient deficiency symptoms and its remedial measures.
- 2) Nutrient management in WRC
- 3) Acid soil management.
- 4) Liming- method, frequency and timing.
- 5) Role of micro nutrients in vegetable crops.
- 6) Utilization of soil testing kit
- 7) Use of bio-fertilizer in ginger and turmeric
- 8) Azolla its multiplication and uses
- 9) Vermicomposting
- 10)Green manuring.

Animal Husbandry:

- 1) Dairy cow management and fodder cultivation
- 2) Goat management - a profitable enterprise
- 3) Rabbit management
- 4) Enrichment of fodder crops and silage making
- 5) Broiler chicken production
- 6) Backyard poultry rearing
- 7) Diseases of cattle and their control measures
- 8) Mastitis and its preventive measures
- 9) Pig farming
- 10)Feeding management of milch cows during summer
- 11)Artificial insemination and pregnant animal management
- 12)Clean milk production
- 13)Fodder preservation
- 14)Artificial insemination in cows & Pigs
- 15)Layer farming and management

Home Science:

- 1) Value addition of fruits and vegetables
- 2) Zero energy cool chamber
- 3) Processing of fruits and vegetables to minimize post harvest loss
- 4) Apron, table mat, door mat, pot holder etc. Stitching and tailoring
- 5) Sanitation
- 6) Household budget management
- 7) Handloom and handicraft
- 8) Infant dietary management
- 9) Tie and dye
- 10) Baking

ii) Front Line Demonstration:

Organising Front Line Demonstration on newly released technologies in horticultural, field crops and animal sciences under farmer's field conditions to generate production data and feedback information is one of the mandates of the Kendras.

iii) On Farm Testing:

On farm testing programmes aim at testing the new technologies developed at research centres in the fields of crops, horticulture, animal husbandry to ensure their suitability and sustainability to specific locations and to suggest or modify or refine the technology in real farm situation with the active participation of the farmers.

iv) Farm Advisory Services:

The Kendra organizes field visits as per the requirements of farmers to solve specific field problems. The Kendra also encourages the farmers in remote and distant locations to use communication media to contact the centre to solve their immediate field problems.

v) Exposure visit:

The Kendras organizes exposure visit for selected farmers to various research centres and fields of progressive farmers.

vi) Farmers visit to the Kendra:

Farmers are encouraged to visit the Kendra in person to discuss and solve their specific field problems and to get hands-on knowledge on the latest technologies available in agriculture and allied fields.

vii) Exhibition, Kisan Mela, Camps etc.:

The KVKs organise exhibition at the same time participate in exhibitions organised by other department, depicting its various activities and providing on the spot consultancies to the visitors. Farmers and others visit the pavilions of KVK and avail the facilities offered there including seeds and planting materials.

viii) Other Extension activities:

The Kendra also organizes the following programmes:

- a) Field day
- b) Farmers day
- c) Film show
- d) World environment day
- e) Green Mizoram
- f) Talk show
- g) Veterinary activities.

Address for communication

Senior Scientist and Head

KrishiVigyan Kendra

Kolasib District

P. O.- 796082

Kolasib

Phone/Fax – 03837- 220360

Email: kvkkolasib@gmail.com

Website: kvkkolasib.mizoram.gov.in

3. AGRICULTURE TECHNOLOGY MANAGEMENT AGENCY (ATMA)

ATMA is an autonomous institution set up at district level to ensure delivery of extension services to farmers. It is a society of key stakeholders involved in agricultural activities for sustainable agricultural development in the district. ATMA is a focal point for integrating Research and Extension activities and decentralizing day-to-day management of the public Agricultural Technology System (ATS).

The ATMA at district level would be increasingly responsible for all the technology dissemination activities at the district level. It would have linkage with all the line departments, research organizations, non-governmental organizations and agencies associated with agricultural development in the district. Research and Extension units within the project districts such as ZRS or substations, KVKs and the key line Department of Agriculture, Animal Husbandry, Horticulture and Fisheries etc. would become constituent members of ATMA.

Aims:

Making extension system farmer driven and farmer accountable by disseminating technology to farmers through new institutional arrangements viz, Agricultural Technology Management Agency (ATMA)

Objectives:

- 1) Encouraging multi-agency extension strategies involving public private extension service providers.
- 2) Ensuring an integrated, broad based extension delivery mechanism consistent with farming system approach with a focus on bottom up planting process.
- 3) Adopting group approach to extension in line with the identified needs and requirements of the farmers in the form of CIGs & FIGs and consolidate them as Farmers Producers Organizations.
- 4) Facilitating convergence of farmer centric programmes in planning, execution and implementation.
- 5) Addressing gender concern by mobilizing farm women into groups and providing training to them.

Functions:

- 1) Policy Reforms
- 2) Institutional Restructuring
- 3) Management Reforms
- 4) Strengthening Research – Extension – Farmers Linkages
- 5) Capacity Building & Skill Upgrading
- 6) Empowerment of Farmers
- 7) Mainstreaming of Women in Agriculture
- 8) Use of Media & Information Technology
- 9) Financial Sustainability
- 10) Changing role of Government

Address for communication

Agriculture Technology Management Agency (ATMA)

District Agriculture Office (DAO)

Kolasib

P. O.- 796081

Phone – 03837- 220126

Fax - 03837- 222075

Email: atmakolasib@gmail.com

4. LEAD BANK:

The lead bank acts as a leader for coordinating the efforts of all credit institutions in the allotted districts to increase the flow of credit to agriculture, small-scale industries and other economic activities included in the priority sector in the rural and semi-urban areas, with the district being the basic unit in terms of geographical area. The State Bank of India functions as lead bank in the district.

Address for communication

Chief Manager
State Bank of India
Lead Bank Office
Kolasib District
P. O.- 796081

5. OTHER BANKING INSTITUTION:

Other banks such as Mizoram Rural Bank, Mizoram Apex Bank in the district also have special schemes for the promotion of Agriculture and allied fields in the district.

6. FARMERS CLUBS AND VOLUNTARY ORGANIZATIONS :

There are several voluntary organizations and farmers groups very active in the district with the aim of overall development of the farming community.

7. POLYTECHNIC COLLEGES AND VOCATIONAL HIGHER SECONDARY SCHOOLS:

There is one polytechnic college which is soon to be function. There is no vocational higher secondary school in the district.

LIVESTOCK

1. Department of Animal Husbandry & Veterinary Department

The State Department of Animal Husbandry & Veterinary Department has a network of establishment to counter the needs of the farming community.

| Sl. No. | VETERINARY INSTITUTION & OTHER INFRASTRUCTURE | Kolasib |
|---------|---|---------|
| 1 | Hospital | 1 |
| 2 | Dispensary | 4 |
| 3 | Rural Animal Health Centre (RAHC) | 8 |
| 4 | Artificial Insemination Centre | 5 |
| 5 | Cattle Breeding Farm | 1 |
| 6 | Pig Breeding Farm | 2 |
| 7 | Poultry Farm | 1 |
| 8 | Rabbit Farm | 1 |
| 9 | Feed & Fodder Farm | 1 |
| 10 | Dairy Plant | 1 |
| 11 | Surveillance Check post | 1 |
| 12 | Hatcheries | 1 |

Address for communication

District AH &Vety officer

Kolasib District

P. O.- 796081

Phone – 03837- 220014

2. Department of Dairy development

Kolasib Multi commodity Milk Producer's Union Limited (KOMUL)

Kolasib Multicommodity Milk Producer's Union Limited was established on 12th July 2005 with the objective of producing pasteurised milk, clean milk production and upliftment of dairy farmers.

KOMUL strength comprises of Manager, Assistant Manager and nine Muster roll. The dairy farmers within Kolasib district form a Society and submit their milk

production to KOMUL daily at the rate of Rs38/litre. The average daily milk collection reaches around 450 litres/day. Dahi and Paneer are produced as by-products. Besides this they supply to Anganwadi centre at Thingdawl Block and Bilkhawthlir Block.

Address for communication

Manager,
KOMUL
Kolasib District
P. O.- 796081
Phone – 03837- 221669

3. POULTRY DEVELOPMENT CENTRE: Nil

FISHERIES

Department of fisheries

The Department of Fisheries is an important productive sector under the Government of Mizoram. The Department of fisheries at Kolasib District was established on August 8th, 2008. Their main objectives are:

1. Enhancement of inland fish production through freshwater aquaculture with supporting facilities to improve sustainable livelihood opportunity.
2. Enhancement of fish seed production for self-sufficiency or optimum stocking of the culture fishery resources.
3. Enhancement of production in capture fisheries (reservoirs and rivers) sector adopting culture based capture fisheries and conservation of fishery resources.
4. Welfare of fisher folk/fish farmers and empowerment through efficient fishery extension services through intensification of training and demonstration of the latest technology of fish farming to fish farmers.
5. Inland fish marketing ensuring commercial linkage with focus on post harvest infrastructure involving competent stakeholder.
6. Development of ornamental and cold water fisheries for diversified income generation.

7. Development of data base for inland fishery statistics.
8. Strict observance of provision of existing Fishery Act of the State (Mizoram Fishery Act, 2002 and subsequent amendment)

Address for communication

District Fisheries Development Officer

District Fisheries Office

Kolasib District

P. O.- 796081

Phone – 03837- 222125

CHAPTER-V RESEARCH AND DEVELOPMENT ORGANIZATIONS RELEVANT TO DISTRICT'S AGRICULTURE

a. CROPS

1. Indian Council of Agriculture Research for NEH region, Kolasib, Mizoram

ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib-796081, Mizoram was established in 1975 to cater the research needs of the state in the fields of Agriculture, Horticulture, Animal Husbandry, etc. The Centre has 32.32 ha land located at an altitude varying between 650 – 700 m MSL. The centre has a mandate to come out with suitable land use system as an alternative to shifting cultivation.

Mandate of the Institute

Development of sustainable farming systems for different agro-climatic and socio-economic zones of Mizoram

1. Improvement in the productivity of different crops, live stocks and aquatic fauna through the development / screening of varieties and agro-techniques
2. Improvement in rain-fed agriculture through watershed based approach
3. Development of local competence through training on agriculture and allied sectors
4. Development of effective linkages with state line departments, financing agencies and SAUs / CAUs operating in the region
5. 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
6. Germplasm exchange, research update in a collaborative mode with other national and international agencies

Research Agenda

Farming systems research and agro-forestry interventions through water shed based approach

1. Development and screening of suitable crop varieties
2. Development of efficient cropping systems
3. Soil and nutrient management
4. Development of technologies for organic food production
5. Diseases and pest management
6. Improvement of fruits, vegetables and spices including floriculture and hi-tech horticulture
7. Soil and water conservation
8. Post harvest technology
9. Improvement of important livestock and poultry
10. Development of animal health cover measures
11. Molecular genetic studies in IPR perspective
12. Testing and refinement of evolved technologies at farmers' field and their dissemination
13. Use of Information Technology in Agriculture and also market intelligence

Challenges Ahead

1. Food and nutritional insecurity
2. Natural resources degradation
3. Poor soil health and acute shortage of water
4. Low Level of Farm diversification
5. Lack of improved breeds, high cost of animal feeds and lack of scientific production technology for animals
6. Non-availability of seeds /quality planting materials of crops
7. Climate change and agriculture.
8. Patenting and IPR issues
9. Trans boundary disease management
10. Lack of socio-economic studies and efficient transfer of technology models

Future Thrust Areas

1. Livelihood improvement of Jhumias.
2. Identification of location specific varieties of rice, maize, rapeseed-mustard, French bean, chilli, vegetables, fruits and development of package and practices.
3. Development of IFS models for different locations.
4. Efficient utilization of biomass.
5. Development of INM package for major crops and cropping system.
6. Development of integrated pest management package for major insect pests of crops.
7. Management of fruit flies in vegetable and fruit ecosystems.
8. Evaluation research on conservation agriculture with land configuration and residue management.
9. Rainwater harvesting and its efficient utilization through micro irrigation.
10. Making awareness programmes on IPR issues in agriculture and initiation of patenting of banana, giant Cavendish, French beans and bird's eye chilli, maize.
11. Trans-boundary disease surveillance and management in pig and poultry.
12. Post harvest technology and value addition.

Address for communication

Joint Director

Indian Council of Agriculture Research (ICAR)

Kolasib District

P. O.- 796081

Phone – 03837- 220041

Fax: 03837- 220560

Email : basantasinghsoibam@rediffmail.com

2. Coffee Board, Kolasib

Coffee Board is located in sub-locality, Bualpui locality, Kolasib District. It was established in the year of 1987. The Latitude of Coffee Board is 24.1100698. The Longitude of Coffee Board is 92.6894403. The Latitude and Longitude of Coffee Board is 24.1100698 and 92.6894403 respectively. 24.1100698 Latitude and

92.6894403 Longitude can be mapped to closest address of Coffee Board, National Highway 27, Bualpui, Mizoram, India. The Board has established a Mini Coffee Curing Works at TEC, Bualpui (Mizoram) during the year 2008 to process coffee produced in the state of Mizoram, Tripura and Manipur for better return.

Their main objectives are- as advisory on Coffee cultivation especially from Seed to Cup, market orientation and research activities on cultivation practices, processing, management etc.

Address for communication:

Senior Liaison Officer

Ph. 03837- 220270, Mb- 9485140603

Email- sloksb@gmail.com

Website - indiacoffee.org.

LIVESTOCK

There is no relevant research and development organization related to livestock in the district.

FISHERIES

There is no relevant research and development organization related to Fisheries in the district

CHAPTER-VI PLANS AND SCHEMES FOR PROMOTION OF AGRICULTURE

a. CROPS

1. State Government Schemes

New Land Use Policy (NLUP)

Jhum or Shifting Cultivation, a traditional means of agriculture based on indigenous knowledge system as the major form of livelihood for Mizoram farming community was a viable proposition in the past. But increased population growth, changes in the land use pattern, resulting in loss of soil fertility, natural forest and shrinkage of Jhum cycles have rendered Jhum practices unsustainable leading immediately to the problems of food security and increased poverty. In the absence of viable alternative livelihood option, about 3 lakh work force in Mizoram are engaged in low productivity Jhum practices eking out a subsistence or distress living. Long term impact on economy will be still more disastrous owing to destruction of rain forest of 1.5 lakhs acres of land every year, heavy soil erosion and resultant ecological imbalance. Any developmental initiative needs to address the problems of Jhum practices on priority and the solution lies in providing viable alternative livelihood opportunities to Jhumia families. Developmental process in the context of Mizoram started as late as 7th plan did not address the problems of Jhum practices effectively and therefore stagnation in rural economy persists with increasing incidence of poverty and deprivation. The present Government, on assuming office in December, 2008 planned a programme of activities called “New Land Use Policy” to progressively wean away Jhumia families from destructive Jhum practices and open opportunities for more productive and sustainable livelihood options.

Main aims and objectives

The NLUP, in its final shape and structure, is a versatile and encompassing mechanism for a stable State economy, environment protection and land reforms and reclamation. The broad and primary aims and objectives are as follows:

1. Provide sustainable income to farming families who comprise nearly three-fourths of the total population of Mizoram by weaning them away from the destructive and unprofitable shifting cultivation practice

2. Provide urban poor with livelihoods by encouraging small scale industries and petty trades
3. Converging schemes funded by the Government of India (Centrally Sponsored Schemes) to NLUP for better utilization of funds and avoidance of duplication of works
4. Land reclamation and forestation by introducing permanent farming systems and land reforms
5. Environment protection and restoration through various means such as expansion of rain catchment areas for recharging rivers, springs and underground water, encouraging rearing of domestic animals and poultry for increased meat production to discourage hunting to protect the fauna etc

Ultimate Objective

The ultimate objective of the NLUP is a happy, self sufficient and prosperous population living in a healthy natural environment where both humans and the animal kingdom live side by side without infringing on each others' area thus providing a rich and buoyant bio-diversity and at the same time contributing towards the fight against global warming. One among the long-term objectives worth mentioning is Mizoram becoming eligible for carbon financing under the Clean Development Mechanism of the Kyoto Protocol. Initiatives are being taken to link up with Government of India's Green Programme to reach this objective.

Participant Departments:

Since NLUP is a project primarily to provide sustainable form of livelihood to beneficiaries, a trade needs to be selected for such livelihood and each beneficiary family is allotted one trade from their choice of a Participant Department. The following are the Participant Departments in Kolasib District:

- 1) Agriculture Department
- 2) Horticulture Department
- 3) Sericulture Department
- 4) Fishery Department
- 5) Environment & Forests Department
- 6) Soil & Water Conservation Department
- 7) AH & Veterinary Department
- 8) Industry Department

2. Centrally Sponsored Schemes

i. National Food Security Mission (NFSM)

National food security mission has been launched as a Centrally Sponsored Scheme funded by Central Government. It envisages to focus on districts which have high potential but relatively low level of productivity performance at present.

Address for Communication

Joint Secretary

National Food Security Mission

Dept. of Agriculture & Cooperation, Ministry of Agriculture

KrishiBhawan, New Delhi – 110 001

Phone: 011 – 23381176

E-mail: khullar.m@nic.in, krishidir@gmail.com

Website: www.nfsm.gov.in

ii) RashtriyaKrishiVikasYojana (RKVY)

Concerned by the slow growth in agriculture and allied sectors, the National Development Council resolved to launch the special Additional Central Assistance Scheme RKVY. The main objective of the scheme is to achieve 4% annual growth in agricultural sector during the XIth Plan by ensuring holistic development of agriculture and allied sectors. The basic features of this scheme are:

1. Incentives to States so as to increase public investment in agriculture and allied sectors.
2. Provide flexibility and autonomy to the state in the process of planning and executing schemes.
3. Ensure preparation of schemes based on agro climatic conditions, availability of technology and natural resources.
4. Ensure that local needs crops priorities are better reflected in the schemes.
5. Reduce yield gap in important crops, through focussed interventions.
6. Maximise returns to farmers.
7. Bring about quantifiable changes in production and productivity.

For achieving this, the state will have to initiate specific projects with definite time-lines and clear objectives for agriculture and allied sectors. Each district will formulate District Agricultural Plan by including all resources available and by integrating the District Plans; the state will prepare a Comprehensive State Agricultural Plan.

The major components of the scheme include: Integrated development of major food crops such as paddy, coarse cereals, pulses, oil seeds etc; agriculture mechanization; activities related to enhancement of soil health; development of rain-fed farming systems in and outside watershed areas; as also integrated development of watershed areas, wastelands, river vallies; support to state seed farms; integrated pest management scheme; encouraging non farming activities; strengthening market infrastructure; strengthening of infrastructure to promote extension service; activities relating to enhancement of Horticulture production and popularization of micro irrigation; animal husbandry and fisheries development; organic and bio-fertilizers and innovative Schemes.

LIVESTOCK: Nil

FISHERIES: Nil

CHAPTER – VII. FARM MACHINERY SUITABLE TO THE DISTRICT

1. VST Shakti 130DI Power Tiller.

VST Shakti 130DI Power Tiller developed by VST Tillers & Tractors Ltd. is the commonly used Power Tiller in the district. It is used for all types of tillage operation especially in WRC-I (valleys & plains) and WRC – II (hill slope terrace). It is useful for pulverizing the soil after rough ploughing by tractors with disc plough or disc harrow, as well as for final puddling in case of submerged rice cultivation (WRC). It is particularly useful for tillage operations in hill slope terraces, as wider use of tractors for tillage operations is limited by the topographical nature of the district. The engine power is transmitted to ground wheels through V-belt pulley. The rotary attachment does the tillage operation and the rotary consist of three rows of disc mounted with 6nos. of curved blades in opposite direction alternatively on each disc.



2. Spring Tyne Cultivator:

Cultivators are used for land preparation both in dry and wet soils. It is also used for interculture purpose by adjusting the tyne in wider row crops. It is also used for puddling purpose. Cultivator consists of a frame, tynes with reversible shovels, gauge wheel, hitch system and heavy-duty springs. The function of spring is to save the cultivator tyne from breaking when some hard object comes in contact with the shovel or under the tyne. The shovels are made of heat-treated steel for longer life. The implements are mounted type and are controlled by the hydraulic system of the tractor.



3. Rotavator:

It is used for preparing seedbed in a single pass both in dry and wetland conditions. It is also suitable for incorporating straw and green manure in the field. It consists of a steel frame, a rotary shaft on which blades are mounted, power transmission system and gearbox. The blades are of L-type, made from medium carbon steel or alloy steel, hardened and tempered to suitable hardness. The PTO of tractor drives the rotavator. Rotary motion of the PTO is transmitted to the shaft carrying the blades through gearbox and transmission system. A good seedbed and pulverization of the soil is achieved in a single pass of the rotavator.



4. VST 8-row rice transplanter:

VST Shakti 8-row Rice Transplanter developed by VST Tillers & Tractors Ltd. It is a single wheel driven and fitted with diesel engine. The machine is riding type and it transplants seedlings from mat type nursery in 8 rows in a single pass. The drive wheel receives power from the engine through V-belt, cone clutch and gearbox. A propeller shaft from the rear box provides power to the transplanting mechanism mounted over the puddle float. The float facilitates the transplanter to slide over the puddle surface. The tray containing mat type nursery for 8 rows is moved sideways by a scroll shaft mechanism, which converts rotary motion received from the engine through belt pulley, gear and universal joint shaft into linear motion of a rod connected to the seedling tray having provision to reverse the direction of movement of tray after it reaches the extreme position at one end. Fixed fork with knock out lever type planting fingers are moved by a four bar linkage to give the designed locus to the tip of the planting fingers.



5. Cono Weeder.

The cono weeder is used to remove weeds between rows of paddy crop efficiently. It is easy to operate, and does not sink in the puddle. The weeder consists of two rotors, float, frame and handle. The rotors are cone frustum in shape, smooth and serrated strips are welded on the surface along its length. The rotors are mounted in tandem with opposite orientation. The float, rotors and handle are joined to the frame. The float controls working depth and does not allow rotor assembly to sink in the puddle. The conoweeder is operated by pushing action. The orientation of rotors create a back and forth movement in the top 3cm of soil.



6. Self Propelled Vertical Conveyor Paddy reaper

It is an engine operated, walk behind type harvester suitable for and windrowing cereals & Oilseed crops. The reaper consists of engine, power transmission box, lugged wheels, cutter bar, crop row dividers, conveyor belts with lugs, star wheels, operating controls and a sturdy frame. The engine power is transmitted to cutter bar and conveyor belts through belt pulley. During forward motion of the reaper, crop row dividers divide the crop, which come in contact with cutter bar, where shearing of crop stem takes place. The cut crop is conveyed to one side of the machine by the conveyor belt fitted with lugs and is windrowed in the field. The crop is bundled manually and transported to the thrashing yard.



7. Tractor Operated Maize Dehusker cum Sheller.

It is used for dehusking and shelling of maize cobs simultaneously. Maize dehusker cum sheller are of two type namely, spike tooth type and axil type. In the spike tooth type sheller, pegs are staggered at varying height for better shelling efficiency. The spike are placed in six rows with six pikes in each row. The sieves have 1.25cm diameter opening to separate the shelled maize from husk. In axil flow type thrashers, pegs are provided on the upper periphery of the drum to convey the crop to the outlet.



8. Manual/Pedal Operated Paddy Thrasher.

It consist of wire-loop type threshing cylinder, power transmission system, mild steel sheet body and foot pedal. The threshing cylinder consists of wire-loops of 'U' shape embedded in wooden or metallic strips joined to two discs. A shaft carries the threshing cylinder and is connected to the transmission system. The transmission system consists of meshed gears or sprocket-chain mechanism. The larger gear or sprocket is connected to foot/pedal bar with links. The foot/pedal bar is always in raised position. On pressing the pedal, the threshing cylinder starts rotating. For operation, paddy bundle is held in hands and earhead portion of the crop is placed on the rotating cylinder. The wire-loop hits the earheads and grains get detached from the rest of the crop.



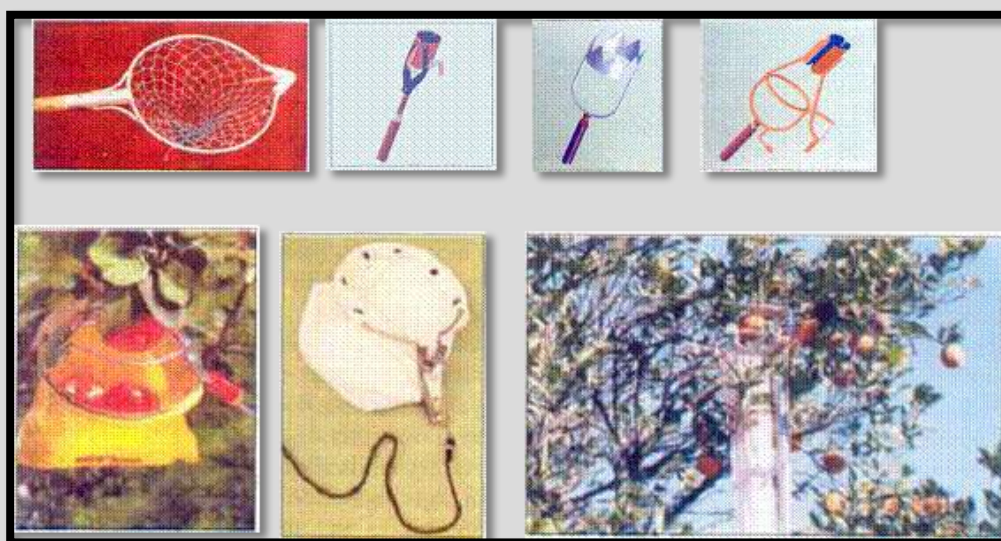
9. Power Operated Portable Paddy Thrasher

The operation is similar to manually operated portable paddy thrasher wherein, paddy bundle is held in hands and earhead portion of the crop is placed on the rotating cylinder. The wire-loop hits the earheads and grains get detached from the rest of the crop. It consists of wire-loop type threshing cylinder, power transmission system, mild steel sheet body and foot pedal. The threshing cylinder consists of wire-loops of 'U' shape embedded in wooden or metallic strips joined to two discs. A shaft carries the threshing cylinder and is connected to the transmission system. The transmission system consists of meshed gears or sprocket-chain mechanism. Unlike the manually operated thresher, the larger gear or sprocket is connected to electric motor which drives the rotation cylinder.



10. Manual fruit harvester.

It is used for harvesting of fruits like M.Orange, Mango, Apple etc. It consist of one fixed blade and another moving blade actuated by a spring. There is a net basket attached to it to collect/plucked fruits. The long handle facilitates reaching fruits from ground. During harvesting, the fruit pedicel is adjusted to rest on fixed blade and pressing the lever at the grip end of the handle actuates the moving blade. The overall length of the tool is about 3000mm and the weight of the cutting head is 1.3kg.



11. Rain Shelter Cultivation (low cost Poly Tunnel).

Low cost Poly Tunnel, an effective rain shelter can be successfully utilized for cultivation of low volume and high value vegetable crops during off-season, particularly during the rainy season. As the name suggested, the structure is made of low cost materials such as bamboo, which is locally available and the roofing can be done with UV stabilized polythene sheet. The sides can be kept open to ensure ample ventilation or can be provided with insect proof netting or shade net.





CHAPTER – VIII. ANNEXURE

Telephone directory of important agriculture and related departments/offices/ in Kolasib District.

| Sl. No. | Name | Phone |
|-----------|---|---------------------------|
| 1 | District Agriculture Office | |
| | a) Lalnunzira (DAO) | 03837-222075/ 9436146508 |
| | b) Lalmalsawma (SDAO) | 03837-220507/ 9862796842 |
| | c) Lalengliana (SMS) | 943653659 |
| | d) Joseph Lalnuntluanga, AEO | 9436158710 |
| | e) Biakhmingthanga, AEO | 8794544720 |
| | f) Lallawmzuali, AEO | 8974286843 |
| | g) Zohmingmawii, AEO | 8415848584 |
| | h) Lalsawmliana, SDAO, Bilkhawthlir | 03837-265356/ 9436350860 |
| 2. | Divisional Horticulture Office | |
| | a) Lalthlamuana, DHO | 03837-220272/ 8974338178 |
| | b) T. Liankung, ADHO | 9436151320 |
| | c) R. L. Peka, HDO | 8731006229 |
| | d) VanlalremruatiHnamte, HEO, Hqrs. | |
| | e) Hunlawmawma, HEO, Kolasib Circle | 8729985656 |
| | f) P. C. Lalmalsawma, HEO, Bukpui Circle | 9862927625 |
| | g) Lalrintluanga, HEO, Manager, Thingdawl Farm | 8118910937 |
| 3 | Indian Council of Agricultural Research (ICAR) | |
| | a) Dr. K. A. Pathak, Joint Director | 03837- 220041/ 9436143020 |
| | b) Sh. T. Boopathi, Scientist (Entomology) | 9436372523 |

| | | |
|----------|--|--------------------------|
| | c) Dr. B. K. Singh, Scientist, Horti-Vegetable Science | 9436372766. |
| | d) Dr.Lalhruaipuii, Scientist (Animal Science) | 9612155176 |
| | e) Dr. S. Lungmuana, Scientist (Soil Science) | 8794278798 |
| | f) Dr. Y. Ramakrishna, Farm manager | 9436158901 |
| 3 | District Veterinary Office | |
| | a) Dr. C. Lalrintluanga, DVO | 03837-220014/ 9436151207 |
| | b) Dr. R. Zothanmawii, VS, SVH Kolasib | 03837-220643/ 9612585094 |
| | c) Dr.Lalmakzuala, VAS Lungdai | 03837-271343/ 9436143507 |
| | d) Dr. HVL. Hmangaihzuala, Manager, Thingdawl Farm | 9436754782 |
| | e) Dr. K. Lalbiaknungi, VAS Vairengte | 03837-261044/ 9436143928 |
| | f) Dr. Ruby NgurnunmawiiSailo, VAS Kolasib | 9863360638 |
| | g) Dr. Philip Lawmsangzuala, VAS Bairabi | 9436786155 |
| | h) Dr.Lalnunsangi, Manager, KOMUL | 03837- 221669 |
| 4 | KrishiVigyan Kendra, (KVK) | |
| | a) LalrosangaKhiangte, Sr. Scientist & Head | 03837-220360/ 9436152440 |
| | b) P. C. Lalrintluanga, SMS (Hort.) | 9436146318 |
| | c) C. Lalfakawma, SMS (Plant Protection) | 8399069138 |
| | d) Dr. Rebecca Lalmuanpuii, SMS (Agro-forestry) | 9612319368 |
| | e) Dr. David , Malsawmdawngliana, SMS (Animal Science) | 8974242814 |
| | f) Lalramengi, SMS (Agronomy) | 9612207848 |

| | | |
|----------|---|------------------------------------|
| | g) Carolyn Zothansiami, (Soil Science) | 9485177868 |
| 5 | District Fisheries Development Office | |
| | a) C. Laldawngliana, DFDO | 03837- 222125/ 8974112800 |
| | b) J. Lalremruata, FEO | 9612688553 |
| | c) Zohmingthanga, FEO | 9862279166 |
| | d) Lalthangzaua, AFO | 8014341204 |
| | e) R. Lalbiakthanga, AFO | 9436145952 |
| 6 | Shaurabh Sharma, District Forest Officer | 03837-222099/221700/ 8729981933 |
| 7 | Lallungkhama, District Officer, Soil & Water Conservation | 03837-222128/ 9436377511 |
| 8 | P. C. Saikia, Sr. Liason Officer, Coffee Board | 03837-220270/ 9402112854 |
| 9 | Rambuatsaiha, Deputy Project Director, ATMA | 9862266556 |
| 10 | Dr. V. Zodinsanga, Deputy Project Director, ATMA | 9862364464 |













Staff information

| Sr · N o. | Name of Staff | Designation | Area & Discipli ne of Work | CORRE CT & Valid Contact Number | Email address |
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| 14. | ZOMINGTHANGI | SUPPORTIN G STAFF | - | 9862244 304 | - |
| 15. | C.LALBIAKZUALI | SUPPORTIN | - | 9862076 | - |

| | | | | | |
|--|--|---------|--|-----|--|
| | | G STAFF | | 130 | |
|--|--|---------|--|-----|--|



Group photo of staff,kvk Kolasib

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