

CHAPTER – 1 : INTRODUCTION

Concerned by the slow growth in the Agriculture and allied sectors, the National Development Council (NDC), resolved that a special Additional Central Assistance Scheme, named National Agriculture Development Programme (NADP/RKVY) be launched. The NDC also felt that Agriculture Development strategies must be reoriented to meet the needs of farmers and called upon the Central and State governments to evolve a strategy to rejuvenate agriculture with a commitment to achieve four per cent annual growth in the agricultural sector during the 11th plan. To implement this, formulation of action plans by means of developing District Agriculture Plans (DAP) is recommended. It is of the view that such plans would also reflect the felt needs of the farmers and stakeholders. Such District Agriculture Plans aim at moving towards projecting the requirements for development of Agriculture and allied sectors of the district including animal husbandry and fishery, minor irrigation projects, rural development works, agricultural marketing schemes and schemes for water harvesting and conservation, etc. keeping in view the natural resources and technological possibilities in the district.. This plan thus, present the vision for Agriculture and allied sectors within the overall development perspective of the district apart from the financial requirement and the sources of financing the agriculture development plan in a comprehensive way. Once the preparation of District level agriculture planning exercise is completed, the operationalization of such plan is essential. This follows the preparation of a comprehensive State Agricultural Plan (SAP) by integrating the District level agriculture plans. The DAP therefore could integrate multiple programmes that are in operation in the district concerned, include the resources and activities indicated by the state, combine the resources available from the other programmes and finalize the plan.

1.1 Methodology Adopted for Preparation of C-DAPs and SAP

The preparation of the District Agriculture Plan (DAP) is thus an elaborate, exhaustive and integrative process and therefore every care is taken in ensuring that the DAPs are properly and comprehensively made. The task of preparing such District Agriculture Plan was carried by the District Agriculture Office, in Coordination with DAPU, BAPU and with the village level units. The consultation was also carried with the officials of Department Horticulture, Agricultural Engineering, Marketing, Animal Husbandry and Fisheries, Seed certification, soil conservation, sericulture, agriculture marketing, PWD etc. In what follows, the procedure adopted to prepare the plan is discussed. The State Agricultural Plan (SAP) was prepared by consolidating all the eight district agricultural plans with overall objective of accelerating agriculture and allied sectors over a period of time. This plan paves ways to stimulating various activities which contributing expected growth in the long run.

1.2 Major Areas of Focus

- (a) Strengthening of Market Infrastructure and marketing development;
- (b) Integrated development of major food crops like paddy, coarse cereals, minor millets, pulses, oilseeds;
- (c) Activities related to enhancement of soil health and water conservation;
- (d) Introduction of Modern Methods of Cultivation and Agriculture mechanization;
- (e) Initiatives for use of Integrated Pest Management schemes;
- (f) Development of rainfed farming systems in and outside watershed areas, as also Integrated development of watershed areas, wastelands, river valleys;
- (g) Strengthening of Infrastructure to promote Extension Services;
- (h) Activities relating to enhancement of horticultural production and popularization of micro irrigation systems;
- (i) Animal husbandry and fisheries development activities;
- (j) Study tours of farmers;
- (k) Organic and bio-fertilizers;
- (l) Possible Innovative schemes to encourage all sectors development.

1.3 Collection of Data

The preparation of district level plan involved basically collection of base line and bench mark details. So a template is developed to collect these particulars from the district. In order to dovetail the ongoing schemes, with the action plans, the current ongoing agriculture programs.

1.4 Formulation of District Planning Unit

To facilitate the involvement of local representatives in the preparation of plans, planning units in each district was formulated. The composition of the district planning units is as follows:

Officials of Line Departments from Agriculture, Horticulture, Agricultural Engineering, Marketing, Animal Husbandry and Fisheries, Seed certification, Public Works Department, local leaders, Knowledgeable persons, elected representatives, etc. the task were fulfilled.

1.5 Sensitization Workshop

A series of Sensitization Workshop was conducted for the committee members, planning unit members and officials from line Departments *viz.*, Agriculture, Horticulture, Agricultural Engineering. Also several meetings were held National Agriculture Development Programme under the Chairmanship of Secretary to Government of state. The objectives of National Agriculture Development Programme, preparation of District Agriculture Plans, State Agriculture Plan and Formulation of Project proposals under stream - I and stream - II were discussed in the workshop.

1.6 Stages of Planning

1.6.1 Preparatory Activities

Task-1: Conduct of state level workshop for orientation for preparation of CDAPs, selection of agri. and allied departments to be part of planning process, planning unit's roles and responsibilities of the selected department in the preparation of C-DAPs.

Task-2: Guided for constitution of Planning Teams namely; DAPU, BAPU and PAPU at district, Block and Village levels.

Task-3: Preparation of Planning Modules and Reading Materials to be used for the capacity building of the members of DAPU, BAPU and PAPU.

Task-4: Preparation of Format (Primary Data Collection at Village Level) for participatory assessment of local situation [Natural, Human, performance status of the activities in practice, Backward-Forward linking facilities (input, services and output) and price] and local need / choice.

Task-5: Preparation of Sector wise Department Schedules for collection of data for assessment of establishment setup, manpower strength, ongoing development activities, funds flow (tied & untied) under plan and non-plan heads and utilization by line department at District Level.

Task-6: Estimation of economics (land and labour productivity) of the departments of agriculture and allied under- Advance practice, Moderate practice, Traditional practice and Average status.

Task-7: Piloting of the Schedules / Formats

Activity-2: Data Collection and Plan Preparation

Task-1: Conduct of capacity building training of Planning Teams

(a) DAPU by TSI

(b) BAPU by DAPU

(c) PAPU by DAPU (Village level unit)

Task-2: Delivery of Planning Tools

- Primary Data Collection Schedule as per guidelines.
- Sectoral Department Schedule (establishment setup, manpower strength, ongoing development activities, funds flow (tied & untied) by plan and non-plan and utilization)
- Participatory assessment of development need / potential and decision making through structured schedule. District Level, Block Level, Village Level

Task-3: Estimation of economics of Agriculture and agro-based activities

- a. Advance practice – HYV with full package.
- b. Moderate practice – HYV with mixed use of advanced package.
- c. Traditional practice
- d. Average status –

Task-4: Conduct of capacity building training on software.

- (i) 'Data Entry and Analysis Software' for Operator (selected members at district level).

Task-5: Data Entry, Compilation and Aggregation of data as per structured format.

Task-6: Organisation of the plan report in chapters

Task-7: Preparation of Draft Report.

1. Statistical profile has been prepared at the level of each planning unit. This helped to understand the development perspective of the district.
2. Vision was prepared combining both development perspective and aspiration of the people.
3. The strengths across the agriculture and allied sectors have been documented on the basis of the resource endowment, production and productivity.
4. The Weaknesses confronted in the existing pattern of development also have been identified with respect to the status of productivity, skill and infrastructure available.
5. The Opportunities that benefit most in the district have been identified by making necessary information about technology and external market available to the groups and individuals at grassroot level.
6. The Threats that may confront also have been visualized and enlisted.

7. People's choices and preferences have assessed for Income Generating (IG) activities and Infrastructure facilities
8. Assessment of Investment requirement of the preferred activities and also the gap with the resources that are expected to be available during the plan period has been made.
9. The growth potential of the proposed investment has been worked out and presented.
10. Physical and financial dimension of the plan have been set and phased.

1.7 The required Changes in the management practices aimed in the proposed plan-

- Adoption of resources conservation technologies at large scale.
- Farm productions system for land owing families.
- Soil health sustainability through the applications of fertilizers & other mgt practices.
- Effective pest management strategies including weed & nematodes based on economic threshold value.
- Augmentation of the existing water applications through rain water conservation and demand management.

1.8 System approach: 1. Market infrastructures and marketing opportunities, and some of the policy issue related to subsidy..

2. Collected and discussed the feed back regarding on-Farm and Off-Farm activates.

3. Farmer inability to invest in the productivity enhancement as majority of farmers belongs to resources poor category.

4. Livelihood support system for landless families.

5. Profitability and sustainability of cropping system and return

1.9 VISION STATEMENT

Sustainable Rural Livelihood by Rebalancing and Accelerating Agriculture Growth through an Integrated and Diversified Farming System.

1.10 Priority setting

- Conservation, development and sustainable management of water resources.
- Soil health improvement
- Popularizing resource conserving technologies.
- Encourages multiple land use by increasing cropping intensity and intercropping.
- Integration of crop husbandry with vegetable and horticultural crops, animal husbandry, mushroom cultivation and other non crop based farming.
- Bridging yield gaps of crops, animals and other enterprises.
- Human resources development of rural youths, farm women, other disadvantaged groups and field staff.
- Paradigm shift from production oriented farming to market oriented agriculture with the promotion of Agro processing industries.

1.11 Objectives of SAP

Considering the above situation the present database/information system was developed with the following objectives

1. Analysis on the existing farming practices.
2. Collection and analysis of secondary data on agriculture and allied sector.
3. Identification of production constraints and technological gap.
4. Documentation of existing marketing pattern.
5. Formulation of strategies and action plan for different agricultural production system to increase productivity.

1.12 Expected Outcome

- This document will provide better and clear understanding of prevailing agricultural and allied sector's present status, constraints and existing technological gaps in district.
- This document is put forward to provide an insight to identify the development opportunities and potentialities for employment generation in the field of agriculture and allied sector.
- This document will support the state government to develop agriculture and allied sector and will help in reforming policies and action plans.

1.13 Preparation of Draft Action Plan and Presentation in District Sectoral Heads Meeting

Based on the baseline information and proposals, draft action plan was prepared and this was presented in the District sectoral heads Meeting under the chairmanship of Director, Agriculture. This meeting was attended by the officials from line departments and the representatives of autonomous councils. The feedback received in the meeting were incorporated before finalization of the State Agriculture Plan. The Strategic Research Extension Plan ATMA, Potential linked Credit plan of NABARD of the district and Vision 2020 of KVK documents were also reviewed and relevant details have been incorporated in the draft report.

CHAPTER – 2

MIZORAM AT A GLANCE

With a geographical area of over 21,087 Sq km and perched on the high hills of the North Eastern part of the country, Mizoram possibly has the most difficult terrain, over 80% of the total geographical area being hilly and with steep hills separated by rivers flowing North to South thus, creating innumerable hurdles in intra-state as well as inter-state communication. This landlocked area is bounded by foreign countries on all sides except for a small stretch that rubs shoulder with Assam, Manipur and Tripura. Its International border, which is about 722 km, is almost 3 times longer than its border with the mainland. The State gets an average annual rainfall of more than 2445mm and that too in a concentrated period of 6 months resulting in the working season in a year greatly restricted. At the same time, surface sub-soil being highly porous, it's retentivity of water is low. Consequently, the State faces the unique paradoxical problem of scarcity of water in the midst of plenty. As per 2001 Census the total population of the State is 8.89 lakhs. The decadal growth rate (1991-2001) is 28.8 percent. Density of population according to 2001 Census is 42 persons per Sq.km. There are more than 1.76 lakhs households. Vast majority of the population are scheduled tribe – the percentage being 94.50. More than 50% of the total population lives in over 700 villages. The State's economy is pre-dominantly agricultural with more than 60% of the total work force engaged either directly or indirectly in agriculture. However, agriculture still remains under-developed and the primitive method of jhum (shifting cultivation) predominates. Both production and productivity are relatively low. Of the total area, only 21 percent is put on the paddy/seasonal crops. As high as 63 percent of the total crop area is under jhum cultivation. According to the departmental figure of 2007- 2008 total production of paddy stood at 15688 lakhs MT. During the same year the area under fruits was a little more than 21559The forest production is mainly timber, bamboo, broom-sticks etc. The forest are continuously under great pressure of shifting cultivation. Although in the field of education Mizoram has made tremendous progress

over the years, which pushed up the literacy level, percentage of literacy being nearly 88.50%, (next only to Kerala). In pure statistical terms it is a big achievement, but qualitatively the picture is not that bright because nearly 60% of the educated population are unskilled and only 10% of the total work force are reportedly skilled. This is one grey area which has to be taken care of urgently. The State has 8 Administrative Districts and 24 Development Blocks. There is no land tenure system. Of late a programme for limited cadastral survey as a preliminary step towards formulating a land tenure system, particularly in the urban conglomerations, has been taken up.

2.1 Indicators of Development

To analyse the economic development of a particular region or a State there can be various indicators or parameters. One has to ask what has been happening to poverty? What has been happening to unemployment? And what about inequality in the State? How about the education and literacy? How about the availability of basic minimum services? What is the infrastructure facility position etc. Let us now try to analyse post independence economic development of Mizoram using few selected indicators

2.2 Education and Literacy

Mizoram is a late starter in education. Only in 1903, the first formal Primary Schools were opened in a few villages. In villages, opening of Middle School was only in 1944. The first High School was established in 1944 and the first undergraduate college got opened in 1958. At the beginning girl child was often discriminated as far as education was concerned. Most parents did not like to send their daughters to school on the plea that girls after they became adults, were to go to their husband's home. But the progress in education and literacy is very significant in Mizoram. In 1941 literacy percentage in Mizoram was only 19.05. But in 1991, the literacy rate became 82.27 per cent, second highest in India. Women literacy in 1991 was

78.60, highest in the whole North-East. Presently the State claims to have 96 per cent literacy (highest among the Indian States). In the Educational Development Index Ranking prepared by the Education Division of the Planning Commission in 1995-96, Mizoram got the first rank.

According to the Annual Report 1997-98, Ministry of Human Resource Development, Department of Education, the total number of recognised educational institutions in the State (in 1996-97) was: 1263 Primary Schools, 702 Middle Schools, 375 High Schools/Higher Secondary Schools, 29 Colleges, 2 Professional Education Institutions. Recently a Women Polytechnic School was opened in Aizawl. At present Mizoram has 360 recognised village libraries. Surprisingly Mizoram is the only State in the North-East which does not have its own University.

Though the progress in literacy and educational institutions etc is quite considerable, alarmingly the school drop out rate is very high, higher than the National average. In 1996-97 drop out rate (provisional) in Mizoram is :- Class I to V 58.10 per cent, Class I to VIII 67.60 and Class I to X 72.06 per cent.

Progress made by women in Mizoram is commendable. As stated earlier, at the beginning, girl child was discriminated by parents as far as their education was concerned. But now this become a thing of the past. The only two Ph.D Degree holders among the Mizos in Hindi are females. First Ph.D in English among the Mizos is also a lady. Three Mizo women were also awarded prestigious Padma Sree by the President of India. There are some Mizo women who are honoured with National Award for Teachers. Once, the State has even had a lady Minister (Minister of State) in the Assembly. All these signify the progress of women in the State.

2.3 Per Capita Net State Domestic Product

Development/Progress in per Capita Net State Domestic Product (NSDP) in the State is quite good. NSDP at current prices: Rs.1289 in 1980-81, Rs.4026 in 1988-89, Rs.6599 in 1992-93, Rs.7517 in 1993 and Rs.9570 (Provisional) in 1995-96.

Per Capita assistance during the Eight Plan in Mizoram is Rs.4664 in 1992-93, Rs.5346 in 1993-94, Rs.6527 in 1994-95, Rs.7786 in 1995-96, Rs.8244 in 1996-97, total for the whole plan being Rs.32,567, second highest in the North-East States (highest is Arunachal). Below Poverty Line (BPL) percentage in the state according to 'Focus on the Poor' is 25.66 (lowest in the North East).

Infrastructure facilities for government offices increased considerably after Statehood (1987) in particular. More than thirty new buildings (Cement concrete with multi storeyed) were constructed and occupied in the State capital. To name a few – Directorate of Information and Public Relations, Land Revenue Directorate, Art and Culture, Environment and Forest, Sericulture, Power and Electricity, Public Health Engineering, PWD, Directorate of Horticulture, Food and Civil Supplies, Agriculture etc. A number of offices/Directorate owned departmental bus for the benefit of their employees.

2.4 Road Development

Prior to Independence, the types of roads found in Mizoram were merely 6 feet wide bridle paths. First road constructed after independence in Mizoram was jeepable road between Aizawl (Capital of Mizoram) and Lunglei (Second Capital) via Serchhip started in 1950. For quite long, in the absence of other reliable dependable communication like water ways, railway, communication by air, road communication was the sole communication, the only link Mizoram had with other parts of India and is the life line of the people. The

position has changed considerably now. The new Lengpui Airport has now been commissioned in 1998 eases the communication bottleneck that the state always has. In 1996, road density in Mizoram was 31.14 kms per 100 square kms. To have total connectivity as desired by the Government of India Construction of about 1210 kms of road would still be required.

The increase in number of vehicle in the State is rather fast. In 1951 total number of vehicle in Mizoram was 14 only. In 1960 the number rose to 199. According to the records of the Transport Department (September 1996) the total number of vehicles (all types) in Mizoram is 19,280. Assuming the population of Mizoram as 8,12,280 in 1996 as compared to 6,89,756 (1991 census), there is a vehicle for every 42 persons. In other words the pollutants emitted by a single vehicle is shared by 42 persons. But in reality, almost 70 per cent of the total vehicle is in Aizawl District and almost 50 per cent is in Aizawl town itself. This means that every 18 person of Aizawl town shares a single vehicle.

Since a few years back there is a railway connecting Mizoram with other parts of India. The rail head reaches Bairabi. This greatly eased the transport problems of the State. Essential items can be delivered from the Bairabi Station.

2.5 Other infrastructural and basic amenities position

According to Centre for Monitoring Indian Economy (CMIE) Index of Infrastructure 1992-93, Mizoram is 63 per cent, one of the lowest in the North-East States. And in the 10th Finance Commission Index of Economic and Social Infrastructure, Mizoram is given 62 per cent, second lowest in the North East. (CMIE weightage is power 20%, irrigation 20%, Roads 15%, Railway 20%, Post Office 5%, education 10%, health 4% and banking 6%).

The Mizo State in 1991 possessed 14 hospitals, person per bed is 627. In 1993-94, population per post office is 1920, lowest in the North-East. Number of schools per 100 sq km in 1993 is 9.3. Telephone connection per lakh population in 1992 is 692, highest in the North-East. Percentage of house hold having electricity in the State (1991) is 59, safe drinking water 16 (lowest in NE), Toilet is 70 (highest in NE).

In respect of water supply, though a significant progress had been made in the post independence period, yet much more needs to be done. Till today, even in the State Capital, Aizawl Greater Water Supply meant to feed 80,000 people is shared by about two lakh people. This signifies the magnitude of water scarcity in Mizoram. The coverage of rural water supply in the State as on 31.10.1994 is:-

- a. fully covered at the rate of 40 litre per capita per day.....164 nos.
- b. partially covered below 40 pcd.....496 nos.
- c. not covered.....55 nos.

The magnitude of water scarcity in the state is slightly reduced after the commissioning of Kolasib Greater water supply in 1999.

2.6 Power

Planned power development in Mizoram can be said to have started only from 1975-76 when Assam State Electricity Board ceased to function in Mizoram. Integrated Rural Energy Planning Programme was introduced in Mizoram during 1985-86. At present there are nine blocks covered under IREP. The achievements in IREP in various blocks in the State upto 1995-96 are

2.7 Industry & Agriculture

The entire Mizoram is a notified backward area and is categorised under No Industry State. The first Industrial policy of Mizoram came into force since 1989. According to CMIE data (January 1996, India's Industrial Sector) number of Large & Medium size industries in Mizoram (in March 1994) is one. Number of SSI Unit (as on 31st March 1995 in the state is 2080. Sick SSI units as on March 1994 are 119. Fruit Juice Concentrate Plant at Chhingchhip has recently been commissioned is now actively engaged in production activities. The shell limestone deposit found in the state brings new hope for starting shell limestone processing industry.

In Agriculture, the progress made is rather slow. The entire population in the state in the past used to engage themselves in agriculture. The method used is shifting cultivation or jhuming. During the past five decades, changes have been made to some extent. Mechanisation in a limited extent has been introduced in WRC with the help of the tractors, power and other implements. According to the CMIE figure Mizoram foodgrain production in thousand tonnes in 1995-96 is 123 tonnes. Foodgrains yield (kg. Per hectare) is 1540 kg (third highest in the North-East).

2.8 GROSS DOMESTIC PRODUCT (GSDP) :

The Gross Domestic Product (GSDP) of the State at factor cost at constant (1990-2000) prices in the year 2007-08 is likely to attain a level of Rs.2,34,370 lakhs against the quick estimate of GSDP for the year 2006-07 of Rs.2,22,057 lakhs. The growth in GSDP during 2007-08 is estimated at 6.74 percent as compared to the growth rate of 7.50 percent in 2006-07. At the National level, the growth in GSDP during 2007-08 is estimated at 8.7. Percent as compared to the growth rate of 9.6 percent in 2006-07. The overall growth rate of 6.74 percent in GSDP during 2007-08 has been mainly due to the growth rate of over 8 percent in the sectors of financing, insurance, real estate, business services, community, social and personal services. Though more than 60% of the population area engaged in Agri and Allied activities, the share of Agriculture in the Net Domestic Product (NSDP) is merely 30% at current prices during 1998-99. It is imperative to substantially improve upon Agri and Allied Sector to raise NSDP and therefore, there is the urgent need for aggressive developmental intervention to enhance productivity and income of cultivator. The follow table shows the growth of NSDP and per capita income from 1999-2000.

Table : 1 The growth of NSDP from 1999-2000

Year	GSDP (Rs. in lakhs)		NSDP (Rs. in lakhs)		Per Capita Income (In Rupees)	
	At Current Prices	At Constant (1999-2000) Prices	At Current Prices	At Constant (1999-2000) Prices	At Current Prices	At Constant (1999-2000)
1999-2000	155006	155006	140951	140951	16443	16443
2000-2001	173742	162718	156728	146256	17826	16635
2001-2002	194653	1773328	175199	155499	19430	17245
2002-2003	216579	191263	193268	170451	20896	18429
2003-2004	232498	197429	208337	176015	21963	18555
2004-2005	245457	205628	218116	183939	22417	18904
2005-2006	272086	210513	239787	185768	24029	19616
2006-2007 (Q)	299566	222057	262857	196712	25682	19220
2007-2008 (A)	330509	234370	288701	207339	27501	19750

Q : Quick Estimates A : Advance estimates (source statistical handbook Mizoram).

The state could be in for some external shocks in the months to come, primarily having to do with a general slowing down of the Indian economy (which could impact, the level of the inter-governmental fiscal transfers) and the adverse impact from 'mautam' resulting from bamboo flowering.

2.9 Sectoral Performance:

Since the attainment of statehood in 1987, Mizoram has made considerable progress, particularly in social sector development-e.g., it ranks second only to Kerala in terms of literacy, has exceptionally good performance in terms of low infant mortality and death rates and has seen a decline in the decadal rate of growth of population. A large chunk of the population is associated with construction activities and services sector, of which Government is a

predominant component. Fiscal correction initiatives in recent have limited the scope for expansion of employment in Government. The economic performance of Mizoram has been constrained mainly due to its geographical situation; its remote location and the hilly terrain which result in high transportation costs. Also low population density lead to high costs of service delivery.

2.10 Fiscal Performance :

If the fiscal health of a Government is to be summarized in terms of a single indicator, it would be the gross fiscal deficit (GFD), i.e., the requirement of debts to implement its spending decisions both related to capital and current expenditures. High ratios portend high debt in the future along with increasing debt service liability, which in turn puts a squeeze on the resources available for developmental spending. The state has succeeded in substantially raising its own revenues (both tax and non-tax) since 2001-02, particularly from 2005-06. It has also managed to contain the growth of expenditures, so that revenue surplus is sustained since 2003-04, and helped to bring down the fiscal deficit to more reasonable levels from 2006-07. In Mizoram, GFD has fluctuated from 21.6% in 2000-01 to 4.22% in 2007-08 (revised estimates); it is targeted at 3.6% of Gross State Domestic Product (GSDP) in 2008-09 in an attempt to come closer to the target set in the Fiscal Reform and Budget Management (FRBM) Act. As has been mentioned, a redeeming feature is that revenue balances (which indicate the state's ability to finance its current expenditures out of its current resources) have come down from a deficit of 11.13% in 2000-01 to a surplus of 5.1% of GSDP in 2008- 09.

2.11 Revenue :

Central Transfers being a special category state, the public finances of Mizoram are heavily dependent on the transfers from GoI. Trends in central transfers clearly show that Mizoram continues to rely substantially on the center for its revenues. Central transfers as percent of revenue receipts have consistently been hovering around 90-92%. Own Receipts, over the period 2001-02 to 2007-08, revenue receipts exhibit an average annual growth of more than 18%. Central transfers (shared taxes and grants), constituting the

larger share of total revenue receipts, grew at about the same rate as the total, while the relatively small component of own receipts grew faster at about 22% annually on an average. In terms of the 2007-08 (revised estimate) figures, the state's own receipts constituted only a little over 8% of the revenue receipts. Adding the share of central taxes, this percentage rises to about 23% of total revenue.

2.12 Expenditures :

Overall Expenditure Profile. Public expenditure led growth strategy is manifested in high government expenditure in Mizoram. As a ratio to GSDP, total expenditure has increased from 68% to almost 82% between 2001-02 and 2007-08 (RE). Revenue expenditures have been covering between 57-59% of GSDP in the recent years. The increase in total expenditure, therefore, has been contributed mainly by increase in capital expenditure, especially by the increase in capital outlay. Within revenue expenditures, general services show a modest average annual growth of about 8.5% with interest payments showing an even lower rate of a little above 5%. Social services and economic services grew at about 10% and 12% respectively. The relative growth rates are significant for the reason that general services have claimed a share of revenue expenditures lower than social services, but higher than economic services. Given that the latter two broadly constitute the developmental expenditures, both components should ideally be higher than the general services. It is likely put general services which become the smallest part of the three components in the near future. Managed an increasing trend during 2004-05 to 2007-08 but registered a sharp fall in 2008-09. Given the non-discretionary nature of the bulk of revenue expenditure (salary, pension, interest), the fall in capital outlays in 2008-09 could be attributed to state's attempt to bring down fiscal deficit in line with the FRBM target.

2.13 Fiscal Discipline :

GoM enacted the Fiscal Responsibility and Budget Management (FRBM) Act in 2006 (and its relevant Rules in 2007) with the objectives of, among other things, eliminating the revenue deficit and reducing the fiscal deficit to 3% of GSDP by 2008-09. Consequently, GoM has taken the following steps towards implementing fiscal reforms:

Setting up a Public Expenditure Review Committee;

- Conducting the Finance Minister's Half Yearly Review.
- Preparing the Medium Term Fiscal Policy Statement, the Fiscal Policy Strategy Statement, and the Macro Economic Framework Statement;
- Establishing the Debt Consolidation and Relief Facility, and the Consolidated Sinking Fund;
- Making arrangements for management of public debts, and
- Taking a structural adjustment loan for tax, fiscal and socioeconomic reforms.

Mizoram an agrarian economy still imports a large quantity of food stuff, fruits, vegetables, fish and livestock like pig, cattle, goat, poultry essentially required for the over all food supply of the people. A large quantity of such items are presently imported from other states particularly neighboring states of Assam, Tripura and Manipur. Some quality is also imported through informal boarder trade from Myanmar. Though accurate import figures are not available, the statistics as collected by Trade and Commerce Department, Mizoram as below would indicate roughly the present trend of imports :

Table.2 : Import of Agriculture, Horticulture and Livestocks items etc.

Items	Unit	2003-04 (in unit)	Approx Market Value (Rs. Perunit)	2004-05 (in unit)	Approx Market Value (Rs. Perunit)	2005-06 (in unit)	Approx Market Value (Rs. Perunit)	2006-07 (in unit)	Approx Market Value (Rs. Perunit)	2007-08 (in unit)	Approx Market Value (Rs. Perunit)	2008-09 (in unit)	Approx Market Value (Rs. Perunit)	Amount (2008-09) (in Rs.)
Vegetables	Qtl	41209	1570	59005	1600	48585	1750	28688	2000	244558	2350	22678	2550	57828900.00
Pineapple	Qtl	3355	1450	15590	1500	48201	1500	3195	1750	13707	1800	2010	2000	402000.00
Cattle	No	3585	12000	1334	12000	410	12000	429	14000	5059	16000	3242	17000	55114000.00
Pig	No	6473	10000	4595	12000	6574	12000	85	14000	26	14000		15000	-
Goat	No	11873	1800	1298	1800	6019	1800	521	2000	4483	2000	5931	2500	14827500.00
Dog	No	502	700	796	700	938	800	1413	1000	No. import due to permit cancellation by Govt.				
Poultry	Tukri	2389	3000	3130	4000	4070	4000	5932	4200	2141	4200	1989	4800	1591200.00
Fish	Tukri	12373	2000	11613	2300	11201	2500	24639	2500	1194	2500	10971	3000	32913000.00
Betel Leaves	Tukri	28753	600	52011	600	42619	700	51638	700	3455	800	29344	2000	58688000.00
Egg	Boxes	90841	400	132462	400	67786	720	31269	450	47244	520	41411	630	26088930.00
Betel nuts	Qtl	24152	1000	27656	1200	51806	1400	33532	1500	22718	1500	29152	1600	46643200.00
Potato	Qtl	28747	1000	40228	1000	42310	1200	62691	1500	29733	1800	32986	2000	65972000.00
Tobacco	Qtl											1920	20000	38400000.00
Fruits	Qtl											565	5000	2825000.00
Grand Total														404911730.00

Value of commodities imported during 2008-09

Rs. 4,04,91,1730.00 (i.e. Rs. 40.50 Crores)

Mizoram has the potential to attain self-sufficiency in most of the items through development of Agriculture and Allied Sector and correspondingly generating income and employment for the farmers.

1. A part from attaining self-sufficiency in such basic food items, with increased production there is scope to access markets within the country and even export markets of neighbouring countries particularly Bangladesh. Mizoram is having about 700 km bordering Bangladesh with 150 million population. Available statistics indicate that Agriculture account for 33.3 percent of GDP of Bangladesh; but this sector suffered a setback from 1997-98 when its annual growth rate dropped from 6.4 % in 1996-97 to 3.1 % in 1997-98. As per production figures released by Bangladesh statistics during 2000, Bangladesh produce 6,24,735 MT of vegetables as against its requirement of 1,05,85,000 MT and 14,94,120 MT of fruits as against its requirement of 63,51,000 MT. Deficiencies in vegetables and fruit production are 99,60,265MT and 48,56,889MT respectively. Though updated figures are not available requirement of items like Ginger, Chilli Oranges, Sesame and Vegetables are on the increase aggravating deficiencies of such produces in Bangladesh. Mizoram can take advantage of the available Bangladesh market for such produces.

2. Apart from fruits and vegetables, Bangladesh has a large requirement of Bamboo to feed its medium size paper mill at Chandraguna, Chittagong and Chotak Paper Mill near Shylhet. Requirement of Bamboo for Chandraguna Paper is 1,00,000 MT green Bamboo annually and their Bamboo forests has been largely depleted. Similarly Chotak Paper at Shylhet also require similar quantity of Bamboo. In fact an agreement was earlier made with one Nitol Group of Industries in Bangladesh in 2007 for export of Green Bamboo of 300 MT on daily basis through Suter Kandi L.S.C Karimganj, Assam. But this agreement could not be materialized for various reasons and the primarily reason being the political turmoil in Bangladesh in the few last years. However now with the installation of a new stable and democratic government in Bangladesh, atmosphere is conducive to bilateral trade with Bangladesh. In fact some quantity of Ginger, Turmeric, Sesame and also Bamboo are now being dispatched to Bangladesh through informal trade channels.

CHAPTER - 3

STATUS OF AGRICULTURE AND ALLIED SCTORS IN MIZORAM

3.1 Topography

The State's topography is, by and large, mountainous with precipitous slopes forming deep gorges culminating into several streams and rivers. Almost all the hill ranges traverse in the North-South direction. The eastern part of Mizoram is at a higher elevation compared to the western part. The average height of hill ranges is around 920m, although the highest peak, the Blue Mountain (also called the Phawngpui), goes upto 2165m. There are 15 major rivers in this State, out of which seven rivers, namely Tuivawl, Tuvai, Tuirini, Tlawng, Tut and Teirei flow northward and ultimately confluence with Barak river of Assam valley. Other five rivers namely, Mat, Tuichang, Khawchhaktuipui, Tiau and Chhimtuipui (Kolodyne) flow towards south. The remaining three rivers namely Tuichawng, De and Khawthlangtuipui flow to the west. In the south of Mizoram, the Karnaphuli flows in the northward direction and then enters Bangladesh. The river Kolodyne of Southern Mizoram flows southern and enters Myanmar. River Kolodyne and River Karnaphuli are large rivers and are navigable to a great extent, leading respectively to the ports of Akyab in Myanmar and Chittagong in Bangladesh.

3.2 Climate

Mizoram has a pleasant climate. The upper part of the hills are predictably cold, cool during the summer, while the lower reaches are relatively warm and humid. Storms break out during March-April, just before or around the summer. During winter, the temperature varies from 11°C to 21°C and in the summer it varies between 20°C to 29°C. The entire area is under the direct influence of the South West monsoon. It rains heavily from May to September and the average rainfall in Aizawl is 208 cm. The entire Mizoram receives an annual rainfall of 2455.9 mm, more or less evenly distributed excepting the South-Western parts that generally receive slightly higher amount of rainfall.

The rainy season normally starts from May and lasted up to October it rains heavily during this period.

3.3 Soils

The soils of Mizoram are dominated by sedimentary formation. These are generally young, immature, mostly developed from parent materials such as fereginous sandstones and shale. The soils in the foot hills are collocium deposit and in plain areas alluvial deposits are predominant. Three soil orders such as ultisols, inceptisols and entisols are found in Mizoram. The soils as a whole are well drained except in few valley flat lands. The soils in general have low inherent fertility viz. bases and mineral reserves. The soil in the hills are strongly acidic in reaction, where as the soils in alluvial deposits are less acidic in nature. The surface soils of the hilly terrains are dark, highly leached and poor in bases, rich in iron and have pH values ranging from 4.5 to 5.5 (highly acidic). They are well drained, deep to very deep, rich in organic carbon, low in available phosphorus content and high in available potash. The surface soil textures are loam to clay loam with clay content increasing with depth. The percentages of clay, silt and sand within 50cm of the surface in most cases are 20-30% and 25-45% respectively. The pH and organic carbon contents decrease and clay increases with depth. The base saturation above a lithic or paralithic contact is mostly low (below 35%). They are capable of providing substantial oxygen supply for plant growth and have capability to retain moisture and maintain supply through the growing seasons of most crops. Soils of the valley flat lands are brown to dark brown, poor in bases, moderately acidic with pH ranging from 5.5 to 6.0, medium to high in organic carbon content, low available phosphate and medium to high available potash. These are deep to very deep but moderately to poorly drained. The texture of the soil is mostly sandy loam to sandy clay loam. The percentage of clay, silt and sand in the upper 50cm ranges 15-35% 5-34% and 40-75% respectively. Clay contents do not increase with depth.

3.4 Land Tenures

Land within Mizoram, like some other states of Northeast, is in the customary ownership of the communities. Village land falling within the jurisdiction of a village is controlled by the Village Council and land distribution is done as per the customary practice to the villager for jhuming and other farming activities. But the customary community ownership is now undergoing certain modification to meet the needs in the face of changing land use opportunities. Terrace and valley land is considered as private land with permanent, heritable and transferable rights through the issue of land settlement certificate (title) by the competent authority. However lack of mortgagable title to the land does constrain access to bank finance. The emergence of private rights over land has contributed to the concentration of land, particularly the better land, in the hands of a few affluent persons within the community disturbing the former egalitarian character of tribal society. As a consequence, tenancy arrangements are also becoming more common, usually in respect of terrace and valley land, although at present they probably represent less than 10% of the land area. All tenancies are governed by customary practices and are usually on a crop share basis with rents fixed at 33-50% of the production. Most of such tenants are coming from the neighboring state of Assam and earn their livelihood at the cost of the local population.

3.5 Land Use Pattern

Mizoram has the most variegated hilly terrain in the eastern part of India. The hills are steep and are separated by rivers which flow either to the north or the south creating deep gorges between the hill ranges. The average height of the hills is about 900 meters. The highest peak in Mizoram is the Phawngpui (Blue Mountain) with a height of 2210 meters. The land use pattern of the State has been affected primarily by land capability as determined by characteristics of micro and mini watersheds. Besides, several social and legal factors such as land tenure system, etc. also affect the land use pattern. Details of the land use status of the State are given in the table below. The total cropped area in 2003-04 was 1.27 lakh hectares, of which only 5,000 ha are sown more than once. The gross irrigated area was only 12.4 per cent of the total cultivated area. Table showing land use statistic for 2006-2007 & 2007-2008 is as below :

Table 3 : Land Use Statistics of Mizoram

Sl.No.	Particulars	2006-07	2007-08
1	Geographical Area	2108.700	2108.700
2	Reporting Area for Land Utilization Statistics (total 1 to 5)	2108.700	2108.700
3	Not Available for Cultivation (a+b)	134.040	130.050
	a) Land put to non-agricultural Land	125.420	125.430
	b) Barren and Unculturable Land	5.620	8.620
4	Other Uncultivated Land Excluding Fallow Land a+b+c	79.230	77.209
	a) Permanent Pastures and Other Gazing Land	5.235	5.230
	b) Land under Miscellaneous Tree-Crops and Groves not Included in Net Area Sown	68.765	66.749
	c) Cultivable Waste	5.230	5.230
5.	Fallow Lands (a+b)	207.543	210.928
	a) Fallow Lands Other than Current Fallows	166.078	165.981
	b) Current Fallows	41.465	44.947
6.	Net Sown Area	94.187	92.813
7.	Total Crop Area	105.575	102.903
8.	Area Sown More than Once	5.000	1.437
	Total Irrigation Area	16.360	14.169
	Area Irrigated for the year	11.388	9.446

Source : Statistical Hand Book of Mizoram 2008

3.6 Agriculture

Agriculture occupies a very important place in the economy of Mizoram. In the Economical Classification of Workers as per 1991 Census, majority of the population i.e. 61.37% are cultivators who are engaged in agricultural activities mostly by practicing 'Jhum' cultivation. Meanwhile, the share of agriculture alone in the net domestic product (NSDP) is merely 30% at current price during 1998-99. As per the Agriculture Census (1995-96-the latest census), there were 65,919 operational holdings with a total operated area of 85,000 hectares. Out of 13 the total number of holdings 42.04% is marginal 39.0% small, 17.83% semi medium 1.11% medium and 0.01% large holdings. The economic life of the Mizo has always been centered around jhum or shifting cultivation. The crops grown in the jhum are mixed. The principal crop is paddy and others are maize, cucumber, beans arum ginger mustard sesame, cotton etc. After clearing the burnt jhum, seeds for crops other than paddy are sown. Towards the end of April near the full moon time, paddy is sown. Mainly two types of paddy seeds are sown in the same field – early paddy and principal paddy. Yield of early paddy is rather poor but it ripens early and provides sustenance till the principal paddy is harvested. There is vast scope for cultivation of tapioca, sugarcane, cotton, pulses and oilseeds in the State. Some pulses like cowpea, rice beans and French beans are cultivated in the jhum. Oilseeds crops like sesame, mustard and soybean are growing well in the state. In spite of the fact that agriculture is the mainstay for about 60% of the population of Mizoram, only 5% of the total area is under cultivation and about 11% of the total cultivated area is under irrigation. Paddy continues to remain the chief food crop and the staple food of the Mizo. It occupies almost 50% of the total cropped area and more than 88% of the total area under food grains. In spite of the fact that the rice being the most important crop occupying the largest share in area and production, Mizoram is still not self sufficient in rice production. Moreover there was decline of production in last few years for various reasons as shown below

Table 4 : Area and Production of Important Crops of Mizoram State

Name of Crop	2003-2004		2004-2005		2005-2006		2006-2007		2007-2008	
	Area (ha)	Production (MT)	Area (ha)	Production (MT)	Area (ha)	Production (MT)	Area (ha)	Production (MT)	Area (ha)	Production (MT)
Paddy	59196	114630	57085	107661	55754	99021	52847	42091	54541	15688
Maize	10481	20282	10505	19788	11742	22703	10775	20969	7328	729
Pulses	4892	4313	6741	7971	2972	2737	5054	5833	5048	2632
Oil Seeds	7532	5478	5817	5321	4816	5429	4075	3755	3755	748
Sugarcane	1393	36174	1357	13565	1383	45953	1340	12187	12187	826

Source: Statistical handbook, Mizoram 2008.

The total production of paddy fluctuated from 1.14 lakh MT in 2003-04 to 1.07 lakh MT during 2004-05 and .99 lakh MT 2005-06 to .42 lakh MT in 2006-07 and .42 lakh MT in 2006-07 to .15 lakh MT in 2007-08. Fall in production particularly in 2006-07 and 2007-08 is due to rodent devastation of crops in the wake of gregarian flowering of bamboo. Damage was so extensive that intensive programme of rodenticide was taken up and about 14,55,568 nos. of rodent population was killed saving a portion of the produces in 2007-2008. Apart from increase in rodent population, during gregarian flowering of bamboo other insects like Thangnang (treebug) multiply manifold and cause extensive damage of crops.

3.7 Decline of Jhum Cultivation & Urgency for corrective measures :

In economical classification of workers as per 2001 census majority of Mizoram population i.e 60%, are cultivators and are engaged in Agricultural activities mostly practicing Jhum cultivation. In the olden days with availability of vast area of land including forest land, smaller size of population and in view of self-sustaining families/ rural economy, the Jhum practices were a viable proposition. But the impact of increased pressure on land, particularly forest land led to shrinkage of 10 years Jhum cycle to 3-4 year cycle lowering productivity and production thus rendering Jhum practice uneconomical. Other factors, in addition to pressure on land causing decline in Jhum cultivation include :

- a. Sustained initiative for Jhum control as a matter of Government Policy for last several years and awareness campaign about adverse impact of Jhum practice in Mizoram economy.
 - a.. Switch over to other livelihood activities like horticulture, terrace farming, Animal husbandry, contract works, wage earnings from construction works etc.
- b. Various developmental activities opening avenues for easier option like contract etc as distinct from hard work involved in Jhum practices.

3.8 Reasons for decline of income from Jhum practice:

- a. Pressure on land has made Jhum size small and shrinkage of Jhum cycle cause low productivity resulting in poor income for the farmers.
- b. Availability of food stuff through PDS system and import of many items from other states. As a result farmers experienced adverse impact of over production when they lose out in competition with traders from outside and or do not have access to remunerative markets. Crops like ginger, turmeric and hatkora etc are few instances where farmers are frequently forced to distress sale.

3.9 Impact on forest land and decline in Jhum area :

It is estimated that an average area of 2.00 lakhs acres of Forest cover are annually destroyed by slashing and burning of trees for Jhum land in Mizoram. There is a decline of Jhum practice and the area utilized for Jhum cultivation during last 10 years is as below:-

Table 5 : The area utilized for Jhum Cultivation during last 10 years

Year	Area under Jhum in Ha
1997-1998	68,114
1998-1999	68,392
1999-2000	36,285
2000-2001	35,798
2001-2002	40,305
2002-2003	41,356
2003-2004	43,447
2004-2005	40,969
2005-2006	40,100
2006-2007	41,465

3.10 Horticulture Crops

Agro-climatic conditions in Mizoram are found to be very suitable for growing a wide range of horticulture crops covering fruits, vegetables, ornamental crops, plantation and spice crops. Among fruits, mandarin orange is the dominant fruit crop, covering a total area of 5,395 ha with a total production of 34,366 MT during 2006-07 and an area of 6,395 ha with a production of 41,567 MT in 2007-08. The next important fruit crop is passion fruit recording an area of 1,109 ha and production of 4,979 Mt in 2006-07 and an area of 8944 ha with production of 4,4720 MT in 2007-08. The State Govt. has also laid emphasis on the development and expansion of a high market potential fruits like passion fruit, orange, Hatkora, banana, etc. The major vegetables grown in Mizoram are tomato, brinjal, beans, peas, squash, mustard, cabbage, etc. Among tuber crops, potato, sweet potato and colacasia are major ones grown. The climate in the State is suitable for the cultivation of spices. Ginger, turmeric, chilly, pepper, cinnamon and large cardamom grow very well in the State. At present ginger, turmeric and chillies are commonly cultivated. On hill slopes, cinnamon of the wild variety is available in plenty. Large cardamom is thriving well in higher altitudes of 600 m and above. Ginger is traditionally cultivated in the jhum land grown in an area of 4,639 ha with a production of 45,000 MT in 2005-06. Cropwise data on area and production of major horticulture crops is given as below :

Table 6: Area, Production & Yield rate of Principal Horticulture Crops in Mizoram

Name of Crop	2006-2007			2007-2008		
	Area (in ha)	Production (MT)	Yield MT/Ha	Area (in ha)	Production (MT)	Yield MT/Ha
Orange	5395	34366	6.37	6395	41567	6.5
Banana	5020	119676	23.84	6220	151519	24.36
Passion Fruit	1109	4979	4.49	8944	44720	5.00
Arecanut	1562	4436	2.8	1562	4451	5.85
Ginger	3428	55432	16.17	3587	57010	15.89
Birdeye Chillies (Dry)	792	1077	1.36	100	200	2.00
Turmeric	535	10074	18.83	4175	83500	20.00
Chow Chow (Squash)	664	24455	36.8	714	26418	37.00
Cabbage	236	3684	15.6	200	5000	25.00

Source : Statistical Handbood, Mizoram 2008

The area under floriculture has grown from 22.8 ha in 1997-98 to 71 ha in 1999-2000 with rose accounting for 30 per cent share, followed by aster and anthurium. Flowers like anthurium, roses, Bird-of -Paradise, gladiolus, chrysanthemum etc. are grown successfully round the year. Anthurium has been exported outside the State regularly. The State has a wide spectrum of orchids growing from lower elevation to high hills. The cut flowers are airlifted and marketed in Kolkatta. Mizoram has a wide spectrum of orchids growing from the lower elevations to the high hills. The orchids grown in the high hills fetch a good price in the market at Delhi and Calcutta. More than 200 varieties of orchids have been identified in Mizoram till now. In view of the right agro-climatic conditions prevailing in Mizoram, there is an immense potential growing Orchids for large scale commercial purposes. Flowering for 2007-08 is as below :

Table 7 : Flowers Production in Mizoram (2007-08)

Sl.No.	Name of Crop	Area of Sq.m	Production in No. of Flowers	Yield per Sq.m
1	Anthurium	239800	7194000	30 Nos.
2	Rose	44768	2014560	45 Nos.

Source : Statistical Handbood, Mizoram 2008

3.11 Bamboo

Mizoram, with an area of 21,090 sq. km has an abundant reserve of bamboo forest covering 1,254,400 ha, contributing to 14% of all India bamboo distribution. Bamboo is distributed throughout the State between 400-1520 m. altitudes. Melocanna baccifera (Mautak) is the major species of bamboo found in Mizoram. The total annual production of bamboo is estimated as 3,237,689 MT. In all 21 species of bamboo have been recorded in the forest of the State. Out of these species, Melocanna baccifera is the predominant and occupies 95% of the bamboo-afforested land in the State. It is often distributed in tropical and subtropical riverine reserve and valleys, and grows profusely in the drainage areas of the Tlawng, Tut, Teirei, Langkaih and Barak rivers in West Aizawl. It is a very versatile species, the culms grow to 10 metres height and are strong and durable with slender fibres and inconspicuous nodes which render them ideal for house building, weaving, pulping and the production of small softwood products such as incense sticks, chopsticks and toothpicks. The shoots can also be eaten, and are of high quality. The estimated total bamboo resources in the State stood at 6.54 lakh MT, and the consumption is only 14,020 MT, leaving a surplus of 3.09 lakh MT. Per capita consumption of Bamboo is 4.41 in rural area and 1.81 in urban area.

3.12 Other Crops

Sesame: Sesamum (Chawhchhi) is one of the most important edible oil seeds cultivated in Mizoram. It is grown as mixed crops in jhum land. The prospect for its cultivation has vast potential in Mizoram. Sesamum is usually rich in oil (50%) and protein (18-20%). 100gm of seeds provide 592 calories. Sesamum produce in Mizoram is mainly marketed to Assam. Traders used to collect the produce from farmers and carry to nearby market i.e. at Karimganj / Silchar. Traders purchase the Sesamum from farmers @ Rs.15/- to Rs.18/- per kg. Sesamum is a short-gestation crop. The production can be increased or decreased according to demand.

Cotton: Cotton is the most important fibre crop cultivated in the State. It is sown as mixed crop in jhum land. It is grown mainly in the western belt of Mizoram. There is vast potential for cultivation of cotton in the State. At present the utilization of cotton is for making quilts, pillows, cushions, etc., as there is no cottage industry for other purposes like making threads etc. The approximate cost of cotton is Rs.50.00 per kg.

Tung: Tung (*Aleurites montana*) is seen all over Mizoram. Tung is generally grown in homestead and garden land in a scattered manner. Sometimes, it is grown in jhum lands in compact blocks having 275 plants per ha. The tung oil is used largely in paint industry and is considered as the best of the available oils in India. At present, castor, linseed and other oils are generally used in the paint industry and tung oil could easily replace the other oil used. Thus, there will be no difficulty in marketing tung oil. At present, there are two tung oil extraction units near Aizawl. The oilcakes can be used as fertilizer for the fields. Tung oil is marketed at the rate of Rs.40 per kg (ex-factory), and is presently imported into India from China. Given the right technology, tung oil extraction in Mizoram can be very profitable as an item of import-substitution.

Tea: The tea produced in Mizoram has a distinct touch of quality and flavour similar to teas grown at high altitudes in the Nilgiris and Darjeeling. Biate has the largest area under tea, followed by Ngopa, Khawdungsei, NE Bualpui, Pawlrang, Tlungvel. The tea estates are managed by co-operatives.

3.13 Development of Horticulture : POTENTIAL HORTICULTURAL CROPS

The State of Mizoram with its ideal agro-climatic conditions is suitable for cultivation of fruits, vegetables, spices, plantation crops, medicinal and aromatic plants and flowering plants. It goes without saying that, there exist tremendous scope aimed potentialities for growing of all these crops. In fact, few crops have already attained commercial importance in the State. Despite poor management, these are yielding some economic benefit to the growers. The fruit crops like mandarin orange, hatkora, banana, passion fruit, grape, some vegetable crops like beans, potato, cole crops, squash etc. spices like ginger, bird's eye chillies, turmeric etc. are highly popular and have good economic bearing. The present area under various horticulture crops namely fruits, vegetables, spices and condiments including plantation crops has been reported to be 45,015 ha. This is only 7.13% of the estimated potential area of 6.31 lakh ha. available for the development of horticulture. This show that the growth of horticulture crops in the State during the earlier plan period has been quite slow despite enormous scope. The present Scheme for development of Horticulture in Mizoram envisages multifaceted dimensions with the basic strategies for the exploitation of the conducive agroclimatic conditions by growing horticulture crops suitable under different conditions, expansion of area under various crops with appropriate growth rate for utilisation of maximum land resource, appropriate use of suitable production technologies, gainful utilisation of man power augmentation of productivity level, generation of higher income to growers and augmentation of marketable surplus to cater the need of the State and outside market etc. The scheme also aims at providing good quality planting materials to the farmers, popularizations of organic farming, Agri/ Horti. tools and implements, and strengthening of infrastructure.

3.14 EXISTING GROWTH OF HORTICULTURE CROPS

The present area under various horticulture crops namely fruits, vegetables, spices and condiments including plantation crops has been reported to be 45,015 ha. This is only 7.13% of the estimated potential area of 6.31 lakh ha. available for the development of horticulture. This show that the growth of horticulture crops in the State during the earlier plan period has been quite slow despite enormous scope.

3.15 AREA EXPANSION OF DIFFERENT CROPS IN THE STATE:

To encourage the farmers by way of ensuing family and adequate supply of inputs and other technical assistance. Emphasis has to be given on cultivation of fruits like mandarin orange, passion fruit, Banana, Pineapple, Papaya and Kiwi. The strategy to be adopted for development of horticulture under the expansion programme would be confined to compact area with communication facilities. This will ensure better supervision and extension services, easy transportation of inputs to production areas as well as marketing of the produce. In such areas, high value crops with longer shelf life will be grown to extend economic gain to the growers.

Adoption of “Integrated Approach” in various crops has to be taken up for advanced and important solution for boosting up the productivity of different crops. Due to dry spell period during February-May in the district, well developed irrigation system is required. Installation of drip irrigation system in orchards would ensure optimum availability of water to crops throughout the year. Drip irrigation should also be supplemented with water tanks such as community water tank available near the orchard. For vegetable and floriculture crops, sprinkler irrigation is the best option for supplementing rain water especially during dry spell.

3.16 FRUITS

Fruit crops such as oranges, banana, pineapple, passion fruit, etc. which have been growing satisfactorily in the State despite poor management practices have been given topmost priority. The land which cannot be used for cultivation of cereal crops can be profitably utilized for fruits thereby generating income to the growers and the state as a whole. The State with its ideal agro-climatic conditions is highly suitable for cultivation of all kinds of fruits ranging from tropical to temperate fruits. As such, it goes without saying that there exist tremendous scope and potentialities for growing of all these crops. Infact few crops already have attained commercial importance in the State despite poor management and these are yielding some economic benefit to the growers. The fruit crops like mandarin orange, banana, passion fruit, pineapple etc. are highly popular and have good economic bearing. Details of Division wise break-up is given at Annexure - The Department proposed to integrated various components under Technology Mission like Community Water Tank, Tube wells, Drip Irrigation, Training of Farmers etc. so that the farmers gets the maximum benefits to increase the production of crop as a whole.

Mandarin Orange

An area of 500 Ha. has been covered under Technology Mission, The coverage has to be enlarged. Since satisfactory results are seen and also, the farmers are taking keen interest in taking up the scheme.

Banana

Since banana is performing very well in the state, better quality varieties like 'Grand Naine' and 'Tall cavendish' is being introduced for commercial cultivation. Since 'Grand Naine' is an export variety, it is being introduced for export purpose.

Passion fruit

This particular fruit has short gestation period but gives good economic bearing. Therefore, many farmers prefer this crop.

Papaya

The agro-climatic condition of the state is suitable for production of Papaya. An export oriented variety of papaya i.e. 'Hawaiian Solo' is being introduced for commercial production.

3.17 VEGETABLES

The State is far from being self-sufficient in vegetable production even for local consumption especially during rabi season. Major thrust on off-season vegetables has been given to reap better economic benefit besides catering the needs of the State. Growing of Horticulture crops other than vegetables is long gestation programme where no return is gained in the initial year. Further, in the earlier years of plantation lots of interspaces are left out as such without any use by the plants. These interspaces can be gainfully utilized through cultivation of vegetable crops to generate additional income to the growers to sustain the cost of management practices of the long gestation fruit crops besides getting some additional income. This will also ensure optimum utilization of land realizing maximum productivity per unit area.

Chow-Chow

Since Chow - Chow shows good potential and has high productivity under Mizoram conditions, it can be encouraged

Cabbage (off - season)

Since the state is far from being self sufficient in vegetables especially during rainy season, cultivation of off-season crops is a good option. The crop has given good economic return to the farmers. The state is far from being self sufficient in vegetables especially during rainy season, ,

Tomato

Tomato cultivated under green house aids in production of better quality off-season crops. The green house grown tomato gives better and more yield.

Capsicum

Cultivation of capsicum under Green House enables production of off-season crop. Off season crops yields better economic return.

3.18 SPICES

Emphasis has to be given for spices crops of high cost low volume like bird's eye chillies, black pepper, etc. which will extend economic gain to the growers. This is due to inadequate road network in many of the potential areas. Besides, major thrust have to give on , turmeric, as this crops has already given proved performance under the existing level of management. It is proposed to cover new areas of 300 Ha. under this expansion programme. Besides, like incentive organic farming, on farm handling etc. to give farmers, the maximum benefits to increase the production.

Turmeric

This is one of the most widely used spice of the state. It grows very well even without proper management. Therefore, the area under this crop is to be extended in order to meet the local demand as well as for export.

Bird's eye Chilli

Mostly, this crop is marketed in dried form. Hence, it is non bulky and has long keeping quality making it easy to transport. The state has high productivity and since transportation problem does not arise for this crop. The spices crops will be grown in various parts of the State depending upon their suitability.

3.19 FLOWERS

The mild climate of the hills in the district has the unique advantage of growing almost all types of flowers round the year. Flowers like rose, anthurium, B.O.P etc. can be grown successfully round the year. Regarding marketing of cut flowers, there may not be much hurdles in its disposal as the state is well connected by air with Kolkata etc. However, improved packaging and quality of flowers will be an important factor. It may be mentioned here that to compete with export market, the plants shall have to be raised under controlled condition so as to maintain the desired quality of the products. Bringing more area under cultivation of flowers like Anthurium, Bird of Paradise (BOP), Rose etc. by way of distributing quality/planting materials to the growers is advisable.

Besides integrating various components like community water tank, tube-wells, shade nets, greenhouse, training etc. so that the farmers gets the maximum benefit to increase the production.

Anthurium

World class varieties of this flower was introduced in the state with a view to export it. It has shown excellent performance when grown under shade house. It is proposed to cover so as to increase surplus production for sale outside the state. Since it is a moisture loving crop, provision of sprinkler/drip irrigation system would enhance production and quality of flowers. Old plantation requires maintenance in order to maintain the quality and productivity.

Bird of paradise

Due to its long shelf life, this flower is encouraging for export. The crop has shown good performance and therefore, expansion of area will yield good results This flower in combination with Anthurium flower will have advantage in packing, considering weight and volume.

Rose

There is always a demand for rose in the market. However, for year round production, cultivation under greenhouse is recommended.

Passionfruit (*Passiflora edulis*) :

Passion fruit is a very well known fruit crop in Mizoram. It is found naturally growing wild even in the jungle. The climatic condition of the state is ideal for cultivation of this fruit crop. Few farmers have taken-up Passion fruit cultivation successfully as their livelihood and incentive have been triggered amongst the farming community in the state. But due to high initial cost/investment to be incurred for the establishment of Passion fruit garden, most farmers do not afford to take-up its cultivation. Trailing support is required by this crop for which galvanized iron wire is normally used so as to establish permanent structure which is very expensive. The technology and skill for establishment and maintenance of Passion fruit garden has been improved by the state Horticulture Department recently. In earlier years, passion fruit used to be harvested during June and July months only, but today, Passion fruit can be harvested throughout the year in Mizoram with the adoption of improved technology, having peak harvesting months in June, July and October and rest of the months are lean season, but fruits are available throughout the year. The processing plant at Chhingchhip can extract Passion fruit Juice and they are extracting it even today. The machine for concentration of the juices including its tetra-packaging facility has been procured and being installed which will facilitate in marketing Passion fruit juices in a concentrate form. Low volume, high value and long storage-life products are the required items for Mizoram due to its remote location. Concentrated juice of Passion fruit can be one of it. Model project with costing per hectare is at annexure –V(a). It is proposed to take up 3700 hectares in 5 years by 3700 households and during 1st year 2009 – 10,740 hectares by 740 households will be taken up for cultivation. Physical and Financial targets are shown at annexure – V(j)

Mizoram is located between 21.58' to 24-35' North latitude and between 92'-15° to 93° - 29° East Longitude with an area of 21,087 sq.m. and a population of about 8 lakhs. The entire land is generally Hilly ranging in attitude between 50 mts. to 2300-mts. above sea level. It has an average rainfall of 254 cm. per annum with Sub- Tropical Climate in the higher altitude while the lower altitude is falling in tropical climate which may divide the entire area into half with the temperature ranges in between 11° -32°C with relative humidity of 60-80%. The Soil is generally fertile and due to its congenial monsoon tropic and sub-tropic climate, the agro-climate condition is suitable for Cultivation of Agriculture and Horticulture Crops.

Being endowed with favourable agro-climate condition, Mizoram is suitable for growing tropical, sub-tropical and even some of temperature fruits. It is, according to the Directorate of Agriculture, Mizoram, Aizawl, having 4.5 lakhs hectares of cultivable land,. out of which 1:00 lakhs hectares is utilized for permanent cultivation including fruit plantation while the remaining 3.50 lakhs hectares are still utilized for the devastating and unproductive jhumming (Shifting) cultivation of Paddy. According to the Director of Horticulture, about 1600 Hectare have been covered for fruit plantation with the total yield of about 75,000 MT. The major fruit crops are, Orange, Pineapple, passion Fruit, Banana, Mango, Papaya, Guava, jack fruit, Grapes, Pear, Litchi and Apple.

3.20 THE STATUS OF MAJOR FRUIT CROPS :

The major fruit crops targeted for processing in the MIFCO's Fruit Processing Plant are Passion Fruit, Pineapple, Orange and other Citrus fruit amongst which Passion Fruit is taking 80% of its requirements. As such, Passion fruits is the main fruit to be processed. The Status of its cultivation and production in the past 4 (four) years are as follows :-

- (i) Area in Hectares
- (ii) Production in M.T

Table 8 Fruits Production

Year	Passion		Pineapple		Orange & Citrus	
	Cultivated Area	Production	Cultivated Area	Production	Cultivated Area	Production
1995-96	738	3475	1019	7137	6932	2772
1996-97	794	3959	1033	7154	7017	2806
1997-98	827	4207	1075	7431	7203	2868
1998-99	817	587	1140	7795	7683	3029

Source : Directorate of Horticulture.

Other Citrus Fruits : Valencia, Hatkora, Assam Lemon, etc.

SUGGESTED INTERVENTIONS FOR DEVELOPMENT OF FRUIT PRODUCTION:

In the state condition is suitable for cultivation of fruit crops and the status of the fruit crops has show Pineapple, Orange and other Citrus fruits like Lemons, Valencia, Hatkora are attaining adequate production with considerable surplus for processing. The future development of fruit cultivation is, therefore, required to be stressed upon the production of Passion Fruit of both varieties i.e. Purple and Yellow (Golden) varieties for the following main reasons :-

- i. The agro-climatic condition and the hilly topography of Mizoram is quite suitable for the cultivation of Passion Fruit.
- ii. The method of cultivation is simple and easy to understand to the growers.
- iii. The productivity and monetary return is much higher and more paying than other fruits.
- iv. It is less vulnerable to the attack of insects, pests and bad weather if attended properly.
- v. It gives due to convenience for large-scale commercial plantation as the methods cultivation permits.
- vi. Passion fruit gives due advantage to other fruits for processing for its convenience and tolerance of handling which is added by the availability of suitable processing technology for quantity products.
- vii. Passion Fruit is considered as one of the most valued fruits for its exotic taste, aroma and nutrient value and its fruit juice is the costliest as it is almost double of grapes and mango Juice in the international market with very huge demand ; this marketing prospect gives due advantage for its development of cultivation.

CURRENT STATUS OF PASSION FRUIT PRODUCTION

Two popular variety viz Purple (*Passiflora Edulis*) and Golden/Yellow (*Passiflora Flavicarpa*) are grown in Mizoram successfully while purple variety mostly grown in higher altitude (above 900 m) and golden/yellow in lower (below 900m). The Horticulture Department is taking good efforts and have identified about 900 hectares under plantation from their operation of mini-mission II of technology mission in the past 3 years. However the production is still very low and the processor (MIFCO) could hardly get 8 MT of Passion Fruit during the year 2003-2004. This showed that the raw material supply is almost will due to lack of processable surplus and the processor is suffering losses which thus insist to think of the way and means of getting steady source of raw material.

3.23 Strategies for Development of Horticulture Sector:

The district has sufficient in fruit production specially higher producer of passion fruit, grapes and citrus among the fruits. In case of vegetables, approximately 80 % of production and 60 % area comes under a single crop i.e. Ginger and the district are dependent on import of other vegetables from external sources.

The present vision document emphasis on certain approaches/strategies to fulfill the gap of other vegetables and fruits as well as opening the new horizons of market for export, are as follows :-

- Expansion of area 20 % form base year under fruit cultivation.
- Expansion of area 15 % for other vegetables except ginger.
- Production of off season vegetables.
- Increase in productivity.

Basic steps to make the district self sufficient and increase in export potential.

- Production of disease free quality planting materials for different horticultural crops.
- Identification and promotion of location specific high yielding varieties.
- Rejuvenation of old orchard and high density planting.
- Scientific orchard management and laying out.
- Application of balance fertilizer doses.
- Introduction of micro irrigation (drip irrigation) for fruit crops.
- Application of the principles of IPM, IPNM.
- Introduction and promotion of hybrids specially for vegetables.
- Production of off season vegetables through green houses and poly houses.
- Linkage with global market for organic certified products e.g. ginger, bird eye chili and passion fruit etc.
- Post harvest management, processing and value addition of horticultural products
- Introducing New technology like tissue culture and propagation.
- Strengthening sound research and extension policy and planning for district.

3.20 Animal Husbandry & Veterinary

Promotion Animal Husbandry and Veterinary activities is essentially relevant for programmes because of great potential for generating income and employment in rural sector. Other important benefits which will accrue from such promotional activities will be as below :

- a. The Livestock production and Agriculture are intrinsically linked, each one being dependent on the other and both are crucial for the overall food supply of the people.
- b. Livestock provides large share of draught power, the dung produced from dairy farming which is an important organic manure.
- c. The dairy sector contributes one of the largest share in Agriculture GDP. Mixed crop –livestock farming are commonly practices in the state The Department while chalked out programmes were guided by the recommendation of Indian 2001 report on population growth trend, projected availability of livestock and increasing demand for milk, meat etc was also taken note of while targets were proposed for Animal Husbandry programmes.

Table 9. Mizoram Livestock Population: District wise (As per 8th Quinquennial Livestock Census -2007)

Species	Mamit	Kolasib	Aizawl	Champhai	Serchhip	Lunglei	Lawngtlai	Saiha	Total
Cattle :									
1.Cross bred	135	2017	5860	572	436	1293	183	217	10713
2.Indigeneous	1972	3947	1436	6556	1263	2360	2943	3717	24244
Buffaloes	208	112	263	3183	985	112	147	882	5832
Mithun		11	107	1105	171	0	0	545	1939
Sheep	77	43	86	564	31	4	125	44	974
Goats	1780	2244	1576	706	571	2799	5231	803	15710
Pigs	23351	25132	74340	36705	23692	37384	24901	21856	267361
Horse & Ponies	8	0	142	831	128	65	0	201	1375
Dogs	2662	1936	12435	4139	1825	6215	4200	2160	35572
Rabbits	92	133	196	180	86	21	140	28	876
Poultry	110324	95924	311434	266391	84164	175616	93549	104433	1241835

Table 10: Mizoram Livestock Population: District wise
(As per 17th Quinquennial Livestock Census-2003)
d.

Sl No.	Species	Mamit	Kolasib	Aizawl	Champhai	Serchhip	Lunglei	Lawngtlai	Saiha	Total
1.	Cattle:	114	1240	5457	346	352	963	177	154	8803
	1.Cross bred	2188	4720	2792	6663	1366	2276	2006	4756	26767
2.	Buffaloes:	214	9	374	3053	967	109	138	863	5732
3.	Mithun			64	1091	184	3		396	1738
4.	Sheep		13	25	712	144	37	97	30	1058
5.	Goats	2277	3039	2996	1185	737	2807	1818	3120	16979
6.	Mules				4					4
7.	Pigs:	18318	20774	66040	24186	17907	27272	6850	14130	195477
	1.Crossbred.	2945	2763	1155	6051	161	4680	2436	1516	21707
8.	Horse & Ponies	33	12	188	921	503	75	5	296	2023
9.	Dogs.	2778	2249	11628	5857	3072	5604	3036	2796	37020
10.	Rabbits	17	81	180	226	111	43	271	17	946
11.	Fowls:	15552	13920	146196	44430	27629	61762	11450	7080	328019
	1.Improved	94410	67591	145660	151607	48316	106747	49063	116481	779875
12.	Duck	892	4673	429	430	422	1226	405	25	8502
13.	Turkey	2	25							27
14.	Others		10	2047			17	49		2123

Table 11 : Marketing Infrastructure :

Sl.No.	Particulars	2007	Per Capita Availability	ICMR Recommended	Shortfall over recommendation
1	Milk Production (in thousand litres)	16505	51 gm/day/head	210 gm/day/head	159 gms/day/head
2	Egg Production (in lakh)	402	45 nos. head/year	180 nos. head/year	135 nos. year/head
3	Meat Production (tons)	11430	35 gm/head/day	110 gm/head/day	75 gms/head day

Statistics as above will indicate that there is a great potential for generating income and employment and increased production can be absorbed in the local market for a long time progressively obviating the present practice of importing from outside.

Table 12 : Existing Marketing Infrastructure is as below :

Sl.No.	Name of Institution	Location	Capacity	Funded by	Owned by
1	Mizoram Multi Commodity Producers co-op Union	Aizawl	15 TLPD	GOI	AH & Vety.
2	District Milk Union	Lunglei	5 TLPD	GOI	AH & Vety.
3	District Milk Union	Kolasib	5 TLPD	GOI	AH & Vety.
4	District Milk Union	Champhai	5 TLPD	GOI	AH & Vety.
5	Animal Feed Plant	Aizawl	50 tones/day	GOI	AH & Vety.
6	Modern Slaughter House	Aizawl	100 Animals/day	NEC	AH & Vety.
7	Pork & Poultry Processing Plant	Aizawl	50 Animals/day	NEC	MIFCO

Table 13 : Livestock Products of Mizoram State

Sl.No.	Year	Milk (in MT)	Eggs (in lakhs)	Mear (in MT)
1	2006-2007	15998	348	8761
2	2007-2008	16505	402	9430

Source : NEDFi Databank

Pork consumption in particular is very high. The traders who organize import sell the same in the local market. Eggs are also sold in the local market and generally shopkeepers collect them from the villagers and like livestock a large quantity is brought into the State for meat purposes.

3.20.1 Cattle Production

The farmers in Lunglei district rear cattle for ploughing, milk and manure and the unproductive animals are sold for meat purpose. There is a saying that milk is not much relished by the tribal people but owing to the increase in literacy rate peoples concern over balanced nutrition, milk and milk products is gaining popularity amongst the tribal communities. There is a bright scope of cattle rearing within the district and the state as a whole. The total number of crossbred and indigenous cattle population in the district is 183 and 2360 respectively (As per 18th census, 2007). Majority of the cattle population are indigenous non-descript type. The indigenous bullocks are short, sturdy and suitable for ploughing. The cows are smaller in size, usually kept to produce offspring and produce very less milk. There is no scientific document to justify their low productivity or reproduction capability.

The state AH & Veterinary department, Govt of Mizoram has initiated crossbreeding programmes (exotic germplasm of Jersey & H.F) under various centrally sponsored cattle development programmes. As compared to the rural areas, the population of crossbred cattle are more in the urban areas which indicate the need for strengthening A.I services or natural service through crossbred bulls in the rural areas.

3.20.2 Rearing System

A. Free range or open grazing system: The indigenous non-descript cattle are reared under this system. In this system, the cattle are kept loose in the open fields, road side, reserve forest and river banks for grazing without any attendants. They are brought back home in the evening and are tied in the locally made cattle shed. No concentrate feed is fed although some farmers provide salt in the evening.



B. Restricted grazing system: The indigenous non-descript cattle are reared under this system. The animals are tied with a rope in the road side, forest areas or uncultivated fields for grazing.

C. Intensive stall fed system: The cross bred cattle are reared under this system. Available green fodder and jungle grasses are fed. No concentrate feed are fed. Broken rice and kitchen waste are also a regular component of the feed. Some farmers provide salt in the evening.



3.20.3 Feeding practice

Commercial feed are least bothered by the rural farmers. This is partly due to high cost, unavailability or lack of knowledge of its importance. Instead they prefer to use their own feed composition. Feed ingredients like wheat bran, boiled broken rice, atta, mustard oil cake are commonly used. These ingredients are mixed along with salt in different proportions in a bucket with water and are fed to the cows three times a day.

Small section of the rural farmers plant some hybrid fodder procured from State AH & Veterinary Department which is not sufficient to meet the requirements. The farmers collect green grasses from reserve forest, unprotected forest areas and are mixed with jungle grasses. Maize stovers, paddy straw and banana leaves are also fed.

Milk marketing

Different types of milk marketing system prevail viz;

- A.** Direct selling: The farmers sell raw milk directly to the consumers at the rate of Rs 40/L. The milk quality varies as there is no assessment on the quality of milk.
- B.** Sale of milk by middle man.
- C.** Sale of milk through co-operative societies
- D.** Sale of milk by dairy processing plants

Integrated Dairy Development Project (IDDP)

The state AH & Veterinary Department collect raw milk from various breeder within Lunglei town at the rate of s. 24/L which are pasteurized and then sold to the people at the rate of Rs.26/L. At present IDDP produce 800 litres of milk every day which is not sufficient to meet the demands.

3.20.4 Pig Production

Pig is the most important livestock in the state and plays a major role in the livelihood of the small farmers. The pig population in the district is 37384 (As per 18th census, 2007). Majority of the pig population are indigenous non-descript type. Crossbreds of various exotic germplasm (Large black, Yorkshire and Hampshire) are available which is more populated in urban areas of the district. This implies that the crossbred pigs are either less popular in rural areas or the local

people are unaware of the beneficial aspects of the crossbred pigs. Pork is one of the most preferred meats as there is no taboo for pork eating amongst tribal population. Majority of the farmers rear pig for pork while few raise for breeding purpose. There is a great potential for pig production but hardly any attempt has been made to record systematically and analyze the pig rearing system followed by the farmers.



Housing Practice

The pigsty is constructed with locally available materials like bamboo and wood on the road side or nearby the house on the slope area with a raised platform. Iron vessels are used for boiling feeds. Tyres or craved woods (Thingphek) are used as feeding trough. Supply of water mostly depends either on rain water or nearby streams.

Breeding practice

Majority of the farmers rear the indigenous non-descript type while few raise crossbreds. Only few farmers' rear boars for breeding which are used by other farmers who do not raise boars for mating in exchange of either money or piglets. First service is given to the female pigs at the age of 10-12 months. The average litter size is usually 8-10 numbers. Unlike urban areas in the region, A.I is not much popular amongst rural farmers.

Feeding practice

Unlike the scavenging system commonly seen in other parts of the country, stall feeding is followed. Majority of the farmers feed kitchen waste which is mixed with locally available fodder and weeds like Japan hlo (*Mikaria micrantha*), Anhling (*Solanum nigrum*), Mautak (*Melocanna baceifera*). The feeds are boiled before offering to the pigs to kill harmful insects or parasites. Feeds are offered twice a day in the morning and evening. Owing to the high cost of concentrate feed only few farmers can afford to feed concentrate feed. Feed supplement like mineral mixture, vitamins are not usually added to the feeds.

Health care practice

It is interesting to note that majority of the pig farmers give attention to the health of their pigs. The farmers approach the nearby Veterinary doctors or Paravet for consultation or treating ailing animals. Vaccination and deworming are done although there are fewer sections that are still unaware.

Pig marketing

Generally farmers sell pigs when it reach minimum one year of age. They sell on live weight basis to the trader or the farmer himself slaughter. Pork retailing market in rural market are through informal system with least concern for hygienic measures. There is anadequate infrastructure and pork is sold in open air. The need for effective supervision and training on scientific methods of slaughter and handling of pork and slaughter house as food safety measures is the need in view of the present scenario.

3.20.5 Poultry Production

Since time immemorial poultry has been an inseparable component of every household amongst the rural people of this region. Commercial poultry farming is gaining importance in the rural areas owing to the cheaper capital investment followed by early income.

The district harbors about 175616 (As per 18th Livestock census 2007) numbers of poultry (Fowl, duck). Majority of the fowl population are indigenous non-descript type. Non domesticated jungle fowl could be seen in unprotected forest areas.

Rearing system

A. Backyard farming: Indigenous non-descript chickens are reared in this system. The birds are housed in a traditionally designed shed made of locally available materials like bamboo, wood etc.

The birds are fed broken rice in the morning and they are let loose for scavenging in nearby localities throughout the day. In the evening they are fed broken rice before the birds enter their respective cages.

Laying nest is made separately with bamboo which is hanged on the wall of the poultry shed. Dry bracken fern leaves are used as bedding material as there is a belief that it protect newly hatched chicks from external parasites like lice. Vaccination and deworming are not usually done.



B. Intensive small scale commercial broiler farming: With increase in the demand of chicken and owing to the cheaper capital investment and fast income commercial broiler farming is gaining importance amongst rural farmers. Commercial broilers are housed in a shed made of locally available materials like bamboo, wood etc. with no particular health care cover.



Feeding practice

No local feed industry or company exists and feeds are procured from neighbouring states which contribute to the high cost of feed. Few entrepreneurs feed starter, grower and finisher ration.

3.21 Fisheries

Fisheries comprise fish from mostly fish ponds, and traditional integrated rice-cum-fish culture in paddy fields. Rivers and their tributaries are harnessed for production of fish to supplement the annual production. Consumption of fish in the State is much higher than the State's own production. Presently, 2,640 ha of water area has been brought under pond fish culture and another 400 ha under paddy-cum-fish culture. About 7,000 families are engaged in fish farming while another 2,000 are involved in riverine (capture) fishery. The State produced only 3,758 MT from culture sector in 2006-07 and 2413 MT in 2007-08 and another 300 MT from other sources against the total requirement of 10,395 MT for a projected population of 9.45 lakhs calculated at 11 kg per capita per year consumption, while the import of fish into the State in the same year was 7,830 MT. Mizoram has 24,000 hectares of potential area available for fish farming. Due to poor economic condition of the rural people and financial constraints of the State Government, it has not been possible to exploit the potential. So far only 2,640 hectares of water area has been brought under pond fish culture. There are another 400 hectares under paddy-cumfish culture integrated farming with wet rice cultivation. Besides the area, 6,000 hectares of water area are also available in the riverine sector in the form of rivers and streams. Production from culture sector alone is estimated at 3,500 MT by 2005-06. The total production from all these resources are estimated to be 3,800 MT against the requirement of 10,395 MT based on the projected population at the end of 2004-05 of 9,45,000 calculated with per capita requirement of 11 kg. Thereby at the end of 2004-05 the State is in a position to meet only 3.97 kg per capita leaving a shortfall of 7.03 kg per capita from the State own production.

It is estimated that Mizoram has a potential area of 24,000 hectares available for fish farming, out of which only about 10.5 percent has been exploited so far. As against this the demand of fish for the State's population of 9.45 lakh in 2004-05 was 10,395 M.T, calculated at per capita consumption of 11kg by the Fisheries Department of the state. This demand will further increase with the increase of State's population and earning capacity of the people. This in itself justifies a major investment for the required development of fisheries in the state to bridge the gap between the demand and supply, besides generating self and regular employment.

Table 14 Existing water bodies under fish farming in the state is 2840 hectares as per District wise

Sl.No.	Name of District	Existing Water Area under Fish Culture
1	Aizawl 'E' including Champhai and Serchhip District	446.3 Ha
2	Kolasib	761.0 Ha
3	Mamit	578.0 Ha
4	Lunglei	343.2 Ha
5	Saiha including Lawngtlai District	711.5 Ha
Total		2840.0 Ha

Apart from the available water bodies as above, there are more than 40,000 unexploited WRC plots or land. These available unexploited WRC land can form a sizeable fishery resources towards comprehensive fisheries development of the state.

Present Scenario, Strategy and targets for production of table size fish and fish seed.

The Mizos have traditionally three species of animals and birds which they use for their religious ceremonies, rituals and also for their consumption of meat. These were semi domestic mithuns, pigs and fowls. Every house hold had fowls and pigs, but only the better off people could afford to have mithuns. The propagation of Yorkshire (white) breed of pigs was so extensive that all the villages have a large number of this exotic species. Similarly, in the poultry development of the exotic species - Rhodes Island Red (RIR) and white Leghorn, received popular acceptance. As against the development of cattle, piggery and poultry there has been a sharp decline in the numbers of mithuns.

Mizoram has about 2,000 hectare of water area under fish culture. The state does not have much fallow water bodies which could be reclaimed for 'pisciculture'. The existing lakes have potential for pisciculture. An age old method of fishing followed in Mizoram is to put a barrier in the flow of a river or stream by putting stones, felled trees, bamboos etc. and catch fish through cages put in the openings. Now many private fisheries are coming up in the potential areas of flowing water which can be impounded. There is good prospect of fisheries

development in the Demagiri area. Because of the Kaptai Dam in Chittagong Hill Tracts in Bangladesh, a huge water body with abundant fish has come up in this area. The basic aim of the Department is targeted towards augmenting the production level of the state to meet per capita requirement of 11kg of table size fish as per yardstick laid down by North Eastern Council (NEC) within a period of 7-10 years. Thereby, it is further aimed at settlement of the existing Jhumia families in fish farming venture permanently in order to bring an end to the devastating practice of jhum cultivation. With the per capita requirement stated above, the state required 11,176 M.T of table size fishes against the projected population at the end of 2007-08. The available resource of 2840 Ha in the pond culture sector and 6000 Ha in the Riverine sector could produce only 3750 M.T annually offering 3.7kg per capita leaving a shortfall of 7.3kg. With the passage of time and increase in population, the state would require about 16,000 M.T against the projected population at the end of 2014-2015. Therefore, with average productivity rate of 2 M.T per Ha, almost 6000 Ha – 6500 Ha of new water body have to be brought under fish farming. In respect of fish seed production, the Department is producing merely 2.0 million fish seed against the requirement of 28.4 million annually with the available seed production facilities in the Department. The rest of the requirement of seed is generally met from the private seed farms located within Mizoram and Assam. Therefore, a serious need is felt for developing seed farms in the private sector to meet the present and future fish seed requirement from the state itself. Therefore, the development strategies are aimed at:-

- i. Creation and development of new water bodies for fish farming and integration of Giant freshwater prawn in feasible areas.
- ii. Augmentation of unit area productivity through modern and improved technology of fish farming.
- iii. Supply of input such as lime, fish seed, Prawn PL, fish feed including nets and gears to the farmers.
- iv. Development of new fish seed farms with hatchery in the private sector to meet the increasing fish seed demand.
- v. Development and establishment of marketing network for effective marketing of table size fishes produced locally and to offer remunerative price to the fish producers.
- vi. Disseminating technical knowhow of modern and improved method of fish farming to the farmers through training and demonstration.

3.22 Sericulture

The art of weaving cotton and silk fabric has long been closely associated with the culture and tradition of women of Mizoram. Sericulture was introduced in the erstwhile Mizo district of the then Assam State during 1949. However, due to communication constraints, law and order problems etc., and sericulture activities remained dormant. Subsequently, the State made major advances in sericulture in the last decade, and now provides subsidiary income to about 5,000 families in the State. Mulberry sericulture is practiced in the districts of Aizwal, Kolasib, Champai etc., and the progress made in area expansion and cocoon/ raw silk production is given in the table below:-

Table 15 : Production of Cocoons & Silk Yarns in Mizoram

Sl.No.	Name of Cocoons	Unit	Production	
			2006-2007	2007-2008
1	Mulberry	MT	48.00	45.00
2	Muga	No. (in Lakhs)	3.60	2.50
3	Eri	MT	3.80	4.00
4	Oak Tasar	No. (in Lakhs)	1.50	1.00
5	Silk Yarn	'000'	4960	4.30
6	No. of seeds/cuttings distributed to farms		7960	12040

Source : Statistical Handbook, Mizoram

Mizoram has an independent Department of Sericulture headed by a Director with a total of 281 employees of which 184 are technical staff. The table below indicates details of infrastructural facilities available both under State and Central sectors for development of mulberry silk industry in the State.

Table 16 : Infrastructural Facilities Available for Mulberry Silk in the State

Sl.No.	Facility	Units (State)	Units (Centre)
1	Research Extension Centre	0	01
2	Mulberry Farms	12	0
3	Chowki Rearing Centres	6	0
4	Technical Service Central	02	0
5	Weaving Centres	01	0
6	Dyeing Centre	01	0
7	Sericulture Training Institute & Demonstration Farm	01	0
8	Seed Preservation Centre	01	0
9	Reeling & Spinning Centre	01	0
10	Silk Reeling & Twisting Factory	01	0

Source: Deptt. Of Sericulture, Mizoram

3.22.1 Importance of sericulture in development

The art of silk production is called sericulture that comprises cultivation of mulberry, silkworm rearing and post cocoon activities leading to production of silk yarn. Sericulture provides gainful employment, economic development and improvement in the quality of life to the people in rural area and therefore it plays an important role in anti poverty programme and prevents migration of rural people to urban area in search of employment. Hence several developing nations like China, India, Brazil, Thailand, Vietnam, Indonesia, Egypt, Iran, Sri Lanka, Philippines, Bangladesh, Nepal, Myanmar, Turkey, Papua New Guinea, Mexico, Uzbekistan and some of the African and Latin American countries have taken up sericulture to provide employment to the people in rural area.

3.22.2 Multipurpose use of sericulture

Apart from silk, there are several other bye-products from sericulture. The mulberry fruits are rich in minerals and vitamins and from the roots, barks and mulberry leaves several ayurvedic and herbal medicines are prepared. Some of the woody mulberry trees provide timber which are resistant to termites and the timber is used for making sports items, toys etc. The mulberry branches after silkworm feeding are generally dried and used as fuel particularly in the villages.

The foliage of mulberry is used as a fodder for cattle. The mulberry trees are also planted in the embankment area for protection of the soil to prevent soil erosion, and mulberry trees are planted as avenue trees. The silkworm pupae are rich in oil content and pupal oil is used in cosmetic industry and the remaining pupal cake is a rich source of protein suitable for poultry and fisheries. In some tribal population, the people eat eri pupa as a source of protein and nourishment. The silkworm litter is used for bio-gas production and used as a fuel for cooking in the rural area. Thus sericulture not only provides silk for fashionable clothings, it also provides several very useful by products to the human society. Therefore, sericulture development provides opportunities to improve the living standards of people in the rural area in developing countries.

3.22.3 Future demand for silk

The present global silk production is fluctuating around 70, 000 to 90, 000 M.T. and the demand for silk is annually increasing by 5%. With the increase in population and also with the increased demand for fashionable clothing items due to fast changing fashion designs in developed countries, the demand for silk is bound to increase even more. For increasing the silk production we require highly productive mulberry varieties and silkworm races and also silkworm races tolerant to adverse climatic conditions and diseases which can come mainly from the sericultural germplasm resources and also from the wild relatives of *Bombyx* available in the natural habitats.

3.22.4 Present status of silkworm germplasm at global level

Though accurate data are not available on the silkworm germplasm in different countries of the world, an approximate information indicate that there are 4310 silkworm germplasm accessions available in different countries. There is every likelihood that some of these silkworm accessions are duplicated; for instance the silkworm germplasm from China, Japan, France, Russia and India might be represented in the germplasm collection of other countries since these are the principal source of sericultural germplasm and also several countries might have exchanged some silkworm germplasm for silkworm breeding and hence a proper

documentation on the availability of silkworm germplasm in different countries is very much required.

A very recent compilation of silkworm genetic stocks indicate that there are around 3000 genotypes of *Bombyx mori* at the global level, which includes mutants, parthenoclones, polyploids and geographical races (Nagaraju *et. al* 2001). In fact much of the genetic diversity of *Bombyx mori* is derived from the inbred lines of land races and elite stocks evolved by the silkworm breeders and also from hybridisation of different geographical races; mainly the Japanese, Chinese, European and tropical races, which are distinct for several economic characters. The geographical races also possess several heritable characters for a variety of morphological, biochemical and quantitative characters. Among the four geographical races, the bivoltine and univoltine races of temperate origin and multivoltine races of tropical origin differ widely and exhibit contrasting characters. The bivoltine and univoltine races produce high quantity of good quality silk, whereas the multivoltine races are hardy, tolerant to pathogen load and thereby resistant to diseases compared to the bivoltines but produce low amount of poor quality silk. Thus, these geographical races are very valuable genetic stocks for further improvement of silkworm races and evolution of superior breeds of *B. mori*. Apart from a rich biodiversity of geographical races, there are also a large number of mutants. The silkworm genetic stocks include more than 500 mutants for a variety of characters viz., serosal colours; larval and adult integument colours; skin markings and body shapes; cocoon colours and shapes; physiological traits such as diapause, number of larval moults and timing of larval maturity; food habits and biochemical features such as digestive amylase, blood and egg esterases, larval integument esterase, alkaline and acid phosphatases; haemolymph proteins; silk production and fibroin secretion; homeoproteins and body plan determination etc. and the various mutants, gene locus and phenotype were documented recently .

Apart from the geographical races and mutants there is a large genetic stock of *B.mori* evolved by the breeders mostly utilising the geographical races and mutants of larval, pupal and cocoon colour variants of sex limited races, particularly in Peoples Republic of China, Japan, India and erstwhile United

Soviet Socialist Russia (USSR) and some of these breeds are commercially exploited in these countries for silkworm rearing to produce raw silk and the remaining breeds are maintained in the silkworm germplasm of these countries as breeders genetic stocks and they are utilised as the genetic material in the silkworm breeding programmes for evolution of more superior and elite races. Thus, the geographical races, mutants and the elite breeders stock constitute the major portion of the present day silkworm germplasm at the global level apart from the parthenoclones, triploid, polyploids and wild relatives of *Bombyx* and *Bombycidae*

3.22.5 Importance of conservation of silkworm genetic resources

During the recent years, biodiversity conservation programmes have drawn the attention of many countries including developing nations, because of the genetic erosion due to indiscriminate use of bio resources and damage to the environment, destruction of forest, human interference in eco-system, upsetting the equilibrium of the biosphere.

Improvement in silkworm race heavily depended on the geographical races of *B. mori* and the wild relatives of *Bombyx* were not explored, unlike in agriculture. Whereas in agricultural, horticultural and sericultural crop improvement programme the wild species of several crop plants have contributed very valuable genes for resistance to diseases and pests and tolerance to adverse agroclimatic conditions and similar exploitation of genes from wild relatives of *B. mori* have not been reported.

Biodiversity is the result of evolution that is a continuous phenomenon induced by natural selection pressure and the population of organisms evolve through adaptation to the biotic and abiotic stress. Ever since *B. mori* was domesticated, the species does not survive in the wild state in natural condition and also does not survive without human care and hence natural selection induced genetic diversity in *B. mori* is rather very limited to voltinism. Hence, it is very essential to conserve and utilise the wild relatives of *Bombyx mori* to broaden its genetic diversity, apart from the geographical races, mutants, sex-limited races, evolved breeds and breeders genetic stocks. The wild relatives of *Bombyx* are very

vulnerable and the vulnerability at different spatial and temporal scales are not known. The design of biodiversity network in sericulture involving the complementarity of wild relatives and domesticated *B. mori* is also not well established. Therefore, conservation of wild as well as domesticated seribiobiodiversity resources is very essential for sustainable development of sericulture (Fig-3) since loss of genetic resources of domesticated and wild relatives of *Bombyx* species along with their unique genes may disadvantage future generation.

3.22.5 SERICULTURE IN MIZORAM

Mizoram occupies an important position on account of its unique flora and fauna. The climate here is congenial for the healthy growth and development of sericulture industry, which covers mulberry, oak tassar, eri and muga culture, the last three being commonly known as non-mulberry culture. Eri culture is one of the most predominant sericulture in the region. The muga culture is unique and confined particularly to the Brahmaputra Valley and is not found in any other part of the world.

Silk culture or sericulture is the rearing of insect that produces silk yarn. It is an extremely delicate work that requires patience throughout the entire cycle of rearing silk moths from egg to cocoons. Silk, is acclaimed as the queen of all the textiles, having all the desired qualities of textile, viz., fibre-strength, elasticity, softness, coolness and affinity to dyes. Muga silk is golden yellow in colour, which makes its very attractive. The world demand for natural silk textiles is soaring. Traditional silk producing countries like Japan, Korea, Brazil and Russia have drastically cut production due to socio-economic reasons. India, taking advantage of the situation, has launched a massive developmental Scheme on sericulture. The export of silk has been registering a steady growth of 30% annually. The world silk demand according to a survey conducted by the International Silk Association (ISA) is steadily increasing due to the enhanced awareness about natural fibres and preference for silk fibres. Silk fibres are mostly woven on handlooms, which are quite popular in the domestic as well as export markets.

3.22.6 Availability & Varieties of Sericulture:

Sericulture is not an organized commercial activity as is the case of mulberry. It is prevalent mainly amongst the tribals in hill districts. The lower Brahmaputra Valley is the traditional home of eri spinners and weavers, producing bulk of eri yarn and fabric. The eri cocoons are utilized locally. In Mizoram Muga culture is a new introduction. Presently 3.5 to 4 MT of mulberry cocoon are produced annually in the State. The production of mulberry raw silk has shown incremental trend during the last few years as a result of different schemes launched during IX and X Plan periods. The topography and climate of the State are congenial for the production of Bivoltine silk and also sustain seed production activity to cater to the needs of the neighbouring States. However, adherence to age-old traditional practices and use of primitive reeling and spinning devices in most of the areas are the limiting factors for slow growth of silk production and utilization. Besides, non adoption of improved technologies, absence of market infrastructure and supporting linkages are the other major constraints for the development of the silk industry. Major quantity of cocoons is flowing out of the State due to lack of adequate marketing and reeling facilities and traditional practices of value addition. The non-conversion of huge quantity of mulberry cocoon into silk is depriving the State from employment and sustenance of the industry. Thus there is urgent need to organize the above sector to augment the production of yarn/fabric for additional income generation and employment.

3.23 Forestry

About 20% of Geographical area is under dense forest while reserved/protected forest constitute 38 percent the geographical area. The three forest types occurring in the State are tropical wet evergreen, tropical moist deciduous and sub-tropical pine forests. Mizoram is rich in wild flora & fauna, both in variety and abundance. About 88,400 ha of the forest area of the State is under two National Parks and four wildlife sanctuaries. Dampa Tiger Reserve is located in the State. More than 400 medicinal plants and 22 species of Bamboo have been reported to exist. Total forest produce during 2002-2003 was valued at 304.83 lakhs. Before 1980, an estimated 7,900 hectares of plantations was done in the State. The average annual plantation peaked to 20,500 hectares during 1985-90. The rate declined to 6,800 ha during 1998-99. Plan-wise progress of plantations and breakup of species are given in following tables :

Table 17 : Forest Plantations by All Agencies

Period	Area in '000' ha
1951-80	7.91
1980-85	76.88
1985-90	102.78
1990-91	17.38
1991-92	14.46
1992-97	73.19
1997-98	9.14
1998-99	6.82
Total	308.55

Source : NAEB, MoEF, 1999

Table 18 : Species Wise Plantations by Forest Department

Species	Area in '000' ha	Percentage
Tectona grandis	64.49	34
Gmelina arborea	53.92	28.4
Pinus spp.	32.63	17.2
Michelia spp.	11.36	6
Others	27.15	14.3
Total	189.54	100

Sources: Mizoram Forest Department

North Eastern region including Mizoram is characterized by rich and abundant resources (forest etc) but paradoxically the people are still in poverty in the midst of plenty. In the absence of alternative livelihood activities most of the people depend primarily on the exploitation of these resources. As a result there is increasing pressure on forest land with aggravating land degradation problem without mechanism for resources regeneration. Such is the case in the region which is considered as one of the two areas of bio-diversity “Hotspot” in Indian sub-continent. Given this context various intervention has been directed at resolving both problems of poverty and natural resource degradation in this region. In Mizoram too one of the interventions was the 1st NLUP initiative during 1985-91 which was however, abandoned by the succeeding Government in 2002 and therefore the problems persists and needs to be addressed. The change matrix reveals that there had been an overall decrease of 562 sq. km. of dense forest. This is the result of degradation of 653 sq. km. to open forest and 453 sq. km. to non forest. The decrease is also associated with conversion of 464 sq. km. of open forest, 56 sq. km of scrub and 24 sq. km of non forest to dense forest. The loss of forest cover in the state is mainly due to intense shifting cultivation practice.

CHAPTER - 4

Strength, Weakness, Opportunities and Threat (SWOT) Analysis and Identification of critical gaps

4.1 PROBLEMS TO BE ADDRESSED

Mizoram is basically an agrarian economy being dependent on subsistence-oriented agriculture interlinked with other land based activities such as livestock and forestry etc. In the past in view of availability of vast Jhum land and Small population, the farming community could maintain, though low, a satisfying level of equilibrium. But increased population growth, changes in land use pattern resulting in loss of fertility and natural forest has profoundly impacted the economy rendering Jhum practices unsustainable. All the tribal societies in the North East including Mizoram are undergoing rapid transformation as they come to terms with new developments impacting the socio-economic fabric of the tribal society. Their traditional lifestyle in conditions of adequate access to land for jhum cultivation provided a satisfactory subsistence livelihood. Now, rapid population growth has increased pressure on available land resources, forcing communities to seek alternative means of ensuring their livelihoods through urban employment, cash crop development, wage labour and exploitation of timber resources. Some have been more successful than others resulting in widening disparities both between and within communities. Modifications in land tenure arrangements have opened the door to land

grabbing with the result that the traditionally egalitarian tribal communities are becoming increasingly economically stratified. Mizoram like other States in the North Eastern Region represents a unique socio-cultural framework and faces similar if not the same set of problems. These factors have not always been taken into account in the design and implementation of development programmes within the region. As a result, the impact of development initiatives has generally fallen short of expectations. Stagnation in the rural economy persists and low productivity of jhum cultivation continues on a wide scale. Yields from jhum are low with paddy averaging 900 kg/ha. Before population pressure exerted its influence on demand for crop land, fallow cycles of 10 years or more were largely self-perpetuating and shifting cultivation was a relatively stable method of exploiting wooded hillsides. With the increased demand for land to maintain

household food security, the jhum cycle has been reduced to 3 to 5 years and in 28 some villages, down to two. As a result crop yields have gone down due to reduced fertility. Recent analysis of satellite imagery of the project area has also revealed significant encroachment of forest land over the last 7 to 8 years by jhum farmers. A significant change in cropping pattern has occurred in response to the decreasing fallow cycle with a trend towards increased commercialization of jhum cultivation. The shortening of the Jhum cycle (down to 3-5 years for many communities) with its impact on declining fertility has resulted in continued encroachment on the forest resources and progressive land degradation. The environmental consequences in an area renowned for its rich biodiversity are severe. Most families recognize that Jhum cultivation is no longer a sustainable livelihood system but they lack knowledge or conviction of alternative development options and the means to adopt them. Paddy cultivation is declining in jhum lands under force of declining productivity to be replaced by higher value products for the market such as vegetables to provide cash to buy food grains. Settled agriculture on terraces and valley lands is dominated by rice cultivation. Technology is backward with limited use of HYV fertilizers and yield are low at 1.2 to 1.5 MT/ha . Limited areas of horticultural and plantation crops have been planted in recent years, but the choice of crops has been production rather than market-oriented, resulting in severe marketing problems for crops. In spite of the fact that agriculture is the mainstay for about 60% of the population of the State, only 5% of the total area is under cultivation and about 11% of the total cultivated area is under irrigation. It has remained backward industrially which can be attributed to physical isolation, lack of mineral resources in the state, distance from the heart of the country coupled with communication, etc. problems. In the small scale sector are the rice-milling, oil and flour milling, mechanized bamboo workshop, saw milling, brick making and furniture workshop. Lack of employment opportunities is a major handicap in the state. The state government, the primary employer, has more than 45,000 people on the rolls and is bursting at the seams. There is an equal number of educated unemployed with no large industries and just about 3,000 small scale units. Unemployment figure is soaring in the state, as seen in the following table:

The state has numerous areas of advantages and strengths which enable it to propel itself on to higher level of trajectory of economic development if these strengths are fully exploited.

In this sector, the agro-climate condition favours the development of all kind of the horticulture crops. This conclusion is drawn in accordance with the findings of Agro-Climate regional planning (ACRP) exercise undertaken by the Planning Commission since 1998. The ACRP take in to account resources endowments, strategy for balance regional development, comparative advantages, and choice of priority activities for the region, infrastructure needs and investment in its approach. The findings of ACRP regarding the District point out the strategies for agricultural development are through soil and water conservation and settle farming. In addition, there has been a paradigm shift in the state government's agriculture policy from the practice of mono crops cultivation of land use through shifting cultivation to diversification of crops by introducing location specific crops through settled farming. A follow up policy called Land Use Policy is chalked out and implemented with limited success. In recent years, the state government is making great stride towards bringing land under horticulture crops through a new policy – Mizoram Intodelhna Project.

Another strength is that it is well endowed with good drainage system and abundant rainfall. Major rivers of Mizoram like Chhimtuipui Rivers, Tuichawng River, Ngengpui River and Thega River as well as minor ones like Tuiphal, Sekulh, Chikhurlui and Sahri offer great potential for development of minor irrigation. Moreover the region receives one of the highest average rainfalls in India at about 250 – 300cm. Both factors will play crucial role in the development of the agriculture sector of the District.

Another strength is the possibility of transforming farming practice along the line of organic farming by using only manures since consumption of fertilizers has always been negligible. Organic farming is a production system that avoid of largely excludes the use of chemical fertilizers, pesticides and growth regulators. Instead, it relies upon crop rotation with leguminous crops, addition of crop residues, green manures, bio- fertilizers and bio pesticides. The objective encouraging organic farming in the district are to developed a sustainable

agriculture system which maintain soil fertility and ensure adequate food production. Besides it is well recognize that organic products are preferred to conventional agriculture product due to the absence of harmful chemical residues in it.

Another area of strength is development of inland waterways along the Chhimtuipui River. This in turn will facilitate the expansion interconnectivity with neighbouring country like Myanmar. Recently, there has been a proposal of waterway from Hruitezawl to Akyab Sea Port for the facilitation of border trade with Myanmar. RITES Company has been engaged to prepare Detailed Project Report on this proposal. Another likely outcome, if this project is successful, is that sea route from Hruitezawl to Kolkata can be developed and this will turn bring about socio-economic well being to the people through expansion of trade and services.

Availability of fresh water sources like stream and rivers which are perennial in nature for the expansion of rural water supply in interior part of the region. Availability of basic community assets like community hall and playground. According to the reports of the Mizoram statistical hand book 2003, the Lawntlai District has 31 community halls, Saiha District has 9 and Kolasib has 19. Where as playgrounds are concerned Lawntlai has 61, Serchhip has about 38, Saiha 23 and Kolasib has 34. This is crucial for the development of backward tribes who constantly need social cohesion and cooperation in protesting and the safeguarding their interest. Most of the village studies conducted by sociologist establish the correlation between the community assets and social cohesion and cooperation. The availability of community assets like community halls provide people a place for frequent interaction at a short notice. This in turn built close intimacy, cooperation and cohesions among the people. However, it should be added that, the present condition of all the community assets are in very pathetic state. They are very likely to be an economic waste unless a swift intervention is taken through BRGF.

Despite all the areas of strength mention above, suffer from various weaknesses.

The following are some of the areas of weaknesses:

In this sector, faced constraints in the form of:

- a) High run off water, increasing depletion of ground water due to excessive survey. Exploitation, depletion of fertility of soil due to 'Jhum' cultivation, expansion of wasteland and inundation due to frequent change of course by the rivers.
- b) Lack of quality seed and planting material.
- c) Inadequate post harvest infrastructure and unorganized market.
- d) Lack of systematic records of land and surveys especially cadastral survey.
- e) High cost of inputs, little scope for farm mechanization, suitability of only minor irrigation and exorbitant cost of transport.
- f) Destructive practice of jhuming cultivation.
- g) Lack of accurate data on stock of inventory and limited research and development activities by concern departments.
- h) Lack of rain water harvesting structure to supplement meager water supply during lean season for consumption and agricultural purpose.
- i) Lack of awareness on the part of the farmers regarding seeds, soil condition, weather etc.
- j) Lack of proper land use planning.

The communication networks especially the roads are in bad shape. Even the road which traverses through major economic centers like Saiha, Tuipang are in dilapidated state. There are certain economic centres which have the most deplorable roads connectivity like Chamdur, Vathuampui, Longpuighat and Vaseikai even Chawnhu Village which lie adjacent to Lawngtlai town, continues to deprive of good road connectivity although it has great potential in coffee plantation. Most of the region where WRC has been successfully practice on a limited scale still faces the problem of bad road connectivity which hamper their economic prosperity to a great extends. Most of the villages are inaccessible especially in rainy season due to frequent landslide and improper management. There has always been a dire necessity to improve the road network to help the people of remote areas of the District.

3.2 SWOT Analysis of Agriculture of Champhai District :

Strength:

- a. Availability of abundant land resources with organic enriched, fertile soil.
- b. Less use of chemical and fertilizer in the entire district.
- c. Farmers attraction and awareness toward cultivation of cash crops (tea, turmeric)
- d. Potential area for production of various cereals crops and pulses due to suitable agro-ecological conditions .
- e. Availability of abundant low land in foot hills (valley) suitable for paddy (Wet Land Rice Cultivation (WRC)).
- f. Slopes of the terrains are suitable for growing cash crops, jhum paddy along with fruit crops.
- g. Farmers having basic (traditional) knowledge of crop cultivation.
- h. Availability of enough man power (labour), their nature of hard working and desirousness for learning.

Weakness:

- a. Soil erosion by run off and acidity in the soil in all the region of the district.
- b. Jhuming or shifting cultivation practice on hill slopes.
- c. Poor soil fertility management, unawareness about green manuring, composting etc.
- d. Imbalance use of fertilizers specially blind use of urea.
- e. Reluctance of farmers towards modern varieties and their package of practices, faith in traditional seeds and way of farming.
- f. Cultivation with very low input and unawareness/negligence for use of available natural resources.
- g. Rampant use of diseased seedlings as a planting material.
- h. Heavy and long spell of rainfall caused land slide and soil erosion and due to this problem, communication and transport system paralyzed in the district.

- i. Lack of awareness regarding soil testing.
- j. Lack of knowledge on integrated management like –IPM, IPNM, IWM.
- k. Reluctant to adopt HYVs of paddy because traditional rice variety is much tastier than HYVs. (i.e. Preferences is mostly by taste of the variety)
- l. Seed treatment is not in practice due lack of awareness.
- m. Farmers having non commercial mindset, they are only dependant on traditional cultivation practices for crop production resulting in low productivity.
- n. Unavailable suitable varieties for the location and their package of practices .
- o. Lack of knowledge and awareness on the use of farm implements.
- p. Non-availability of Farmers Interest Group (FIG) and Self Help Groups(SHGs).
- q. Insufficient government credit institution and its linkages with farming community.
- r. Un availability of agriculture based enterprises.
- s. Lack of proper channel of market and traditional way of selling the produce.

Opportunities:

- a. Scope for promotion of organic farming and its trade at national & global level.
- b. Promotion of Horticultural crops especially Passion fruit, Orange, Grapes & Pineapple in various pockets of the district.
- c. Good scope for promoting organic tea.
- d. Favourable condition for cultivation of medicinal and aromatic plants in the entire district.
- e. Improvement in productivity by introduction of different location specific varieties and their packages of practices.
- f. Production and distribution of various disease free, certified seeds and planting materials.
- g. Opportunity to promote micro-irrigation technology during dry spell (Nov-Feb)

- h. Scope of land reforms and reclamation through proper soil nutrient management.
- i. Higher production potential for WRC and winter season vegetable specially cole crops.
- j. Higher market potential due to nearness of international border and open trade.
- k. Good scope of establishing agriculture based industries and generation of employment.
- l. Application of Post Harvest technology and value addition in the products.

Threats:

- a. Heavy and long spell of rainfall which causes soil loss, land slide and severe infestation of insect pests and diseases.
- b. Frosty weather during winter which causes crop loss and attack of pests and diseases.
- c. Flowering in bamboo which caused sudden population growth of rodents causing famine in the areas.
- d. Attack of wild buffaloes on crops during winter season.
- e. Farmers dependency on government schemes on agriculture, horticulture and allied sectors.
- f. Higher rate of population growth 39 % approx. (decadal) which cause small size of land holding.
- g. Jhum cultivation still prevails in this areas which causes deforestation and heavy soil loss through erosion.
- h. Urbanization of villages and migration of farm labours into the urban areas.
- i. No fixation of price in agriculture produces and availability of proper markets.

Table 12 SWOT Analysis Matrix

Sl. No	Strength	Weakness	Opportunities	Threats
1.	Growing of bird eye chillies as mixed cropping in hill slope jhuming in extensive area will give good economic enzyme as the price of Bird eye chilly is very high	Jhuming condition is labour demanding and low in productivity to generate good income	Good and reasonable prices for bird eye chillies and ordinary chillies	Market of chillie depend on outside state businessmen and not sustained
2.	If all the potential valleys under irrigated paddy cultivation is covered by double cropping with field pea, the buy back policy will give good earning	Less area covered with good irrigation sources. Lack of awareness to utilize ground water by farmers as well as govt.	Establishment of public private partnership (PPP) in field pea introduced state dept. of Social Welfare since 2005	Poor management of soil acid water lack of techniques to use mulching in Rabi crops
3.	Maize and soyabean are purchased with reasonable price by state department for Animal feed.	Lack of adequate seed supply (improved seeds) and lack of awareness to grow market oriented crops by farmers	Fixing of reasonable price by state govt. to purchase maize and soyabean for feed plant under Vety Deptt.	Lack of awareness in organizing community market through GIG/Commodity based interest groups
4.	Hybridization of local domestic animal is the on going programme of state Very Dept.	Slow progress in up gradation breeds of animals	Hybridization of local breeds of animals as on going scheme of state Dept.	Lack of proper management for general growth of health care of domestic animals
5.	There is a very good scope of cultivating grapes, passion fruits, ginger, avocado, kiwi, banana, mango etc. in view of agro climatic condition and vat land resource	Lack of processing facilities for Horti. Cross and lack of techniques in post harvest technology	Awareness of farmers for permanent farming through Horti. Orchards of grapes, passion fruit, bananas, jatropha etc. and as contract farming in some fruit/crops mentioned aboved	Lack of suitable alternative to jhuming easily adoptable by farmers of Resources Poor
6.	Gaining popularity in silkworm rearing among farming families	Lack of awareness campaign from concern Depart. Or private companies both in sericulture and fisheries	Vast area for cultivation of mulberry and gaining popularity among farmers in respect of Sericulture development as a whole.	Undesirable jungle burnings
	Adoption of paddy cum pisciculture in WRC areas and in ponds		Gaining nutritive value of fishes among the community for market opportunity	Heavy soil fertility loss due to jhuming in hillslopes and continuous pruning water in irrigated paddy field

Sl. No	Strength	Weakness	Opportunities	Threats
1.	Vast potential for rainfed paddy and other crop under jhuming	Low productivity from Agril. Crops resulting tendency of farmers to change into other farming system	Fast vegetative growth or new growth after jhuming enabling formation of fertile top soil	Continuous jhum shifting cultivation causing deforestation soil erosion etc.
2.	Persisted to hill slope jhuming as traditional method by majority of farmer	Free grazing of animal causing serious problems to crop production due to damage by domestic animals	Less density of production	Continuous shifting cultivation and increase farming families may exhausted the land holding size etc. also the jhum cycle shall gradually become unproductive
3.	Possibilities of mix cropping (paddy and other crop.) to get variety of production from the same field	Lack of effort to improve animal farming and cropping system by the farmer	Optimum rainfall, temperature, humidity and good fertile soil for agril. Crops	The animal farming system is very poor and unproductive. The animal waste is not properly utilized for farming.
	Easy method of getting yield	Low income from paddy, animals.	Good vegetative cover providing shelter to rain drops splash erosion and rill erosion	s
	Free grazing and rearing of animals		Presence of well established biodiversity in the forest	

Sl No	<i>Strength</i>	<i>Weakness</i>	<i>Opportunities</i>	<i>Threats</i>
1	Vast potential area for rainfed paddy cultivation and maize cultivation	Top hills and higher elevated hillslopes more inductive to soil erosion	Vast area for expansion of Horti. Orchard under grapes, passion fruits, avocado, kiwi and jatropa	Deforestation and high range of erosion due to shifting cultivation practices
2	Majority of the farming community depends on jhuming	Scarcity of perennial water source for irrigation in orchards	Higher altitudes and less insect pest disease appearances	Lack of sustainable markets for Horti. (fruit) production
3		Most of the farmers depend on hill slope jhuming which was found undesirable and low in productivity	Implementation of source CSS projects like NWDPPRA, WDPSCA and IWDP, Tech, Mission etc. in some areas.	Lack of awareness by farmers for community marketing
4	Expansion of Horti. Orchard under grapes, passion fruits and ginger as commercial cropping in higher cultivation	Lack of awareness in self sufficiency or organic manures	Well established bio diversity	Farmers dependency on Govt. for market orientation
5	Awareness of farmers in permanent farming through fruit crop cultivation in hill slopes as mentioned above.	Depends on govt. for improvement of their farming system	Major farming communities depend on this farming system	Lack of awareness in upgrading of domestic animals
	Rearing of improved cows and upgrading of local cows			Inconvenience for double cropping under shifting cultivation

SI No	Strength	Weakness	Opportunities	Threats
1	Use of Agril. Waste as fodder gives strength in animal rearing specially in improved cows	Persistency in shifting cultivation leading to low productivity and soil erosion	Good forest cover and vegetative cover to protect soil from erosion	High rainfall causing oil acidity and soil erosion
2	Expansion of fish ponds cum water harvesting dam crops irrigation in top hills	No. HYV paddy varieties being established for hill areas under shifting cultivation	Optimum weather conditions for hill slope paddy, potato, cabbages, radish etc	Loss of fertile topsoil due to cultivation at steep slopes
3	Awareness in using animal waster and agriculture waste as compost materials and fish meal	Difficulties in Transportation of farm productivity to market/village /town	Lack of water sources for peiculture during dry season	Lack of water sources for pisculture during dry season
4	Vast area suitable for vegetables such as potatoes, radish, carrots, cabbage etc. in higher alleviated hill slopes, including maize	Less chances of expansion in fish ponds due to scarcity of good water source and steep slopes.		Poor transportation leading to back wardness in modern techniques of Agriculture etc.

SI No	Strength	Weakness	Opportunities	Threats
1	Irrigated paddy (WRC) in river valley and flat lands	Lack of good communication	Vast forest coverage giving good	Undesirable jungle burning

	having good scope and more potential	road ways	protection of soil against rain drop splash erosion	
2	Bottom hills and lowland having potential for double cropping	Practice of shifting cultivation mono-cropping giving low yield.	Practice of shifting cultivation mono-cropping giving low yield.	Un methodical use of chemical fertilizers
3	Heavy and fertile soils good for cultivation of ginger and papaya, guava, banana etc.	Low productivity due ot manage ment in in WRC paddy	Variety of medical plant species (availability)	Threats in use of chemical'/poisons etc. in rivers
4	Vast forest cover for better ecological balance and biodiversity	Lack of awareness in double cropping	Some areas are covered by NWDPRRA, WDPSCA, IWDP etc. for natural resources management	Lose of biodiversity through mono cropping in orchards, jhums and WRC paddy field
5	Free grazing for cattle	Lack of improved animal varieties in cows, pigs and poultry birds	Vast area for extension of Horticulture and animal rearing	Heavy soil loss in shifting cultivation practices
6	Less animal diseases	Lack of good variety	Great forest and river resources such as in river resources fishes, snails, crabs, prawn	Deforestation due to cultivation jungle burning
7	Less insect/pest and diseases			Free anima grazing problems

Sl No	<i>Strength</i>	<i>Weakness</i>	<i>Opportunities</i>	<i>Threats</i>
1	Vast area for cultivation of maize and soyabean	Poor drainage facilities in irrigated paddy	Credit availabilities	Lack of interest youths in farm works
2	Vast area for shifting cultivation for jhum ginger and other crops	Poor management of soil, moisture and other natural resource	Hardworking laborers in tradition	Gradual losses of soil fertility due to soil erosion in hill slopes
3	High rainfall, humid condition, temperate, well drained suitable for horticulture orchards- passion fruits, grapes and floriculture	Low productivity of local paddy varieties	Implementation of IWDP, NWDPR, WDPSA and Tech, mission	Lack of proper management in Horti. Crops and Agril. Crops in : IPM, INM and moisture
4	Majority of population engaged under Agriculture Horti. For occupation	Imbalance uses of chemical fertilizers	Good potential area for Horti. Crops of grapes., passion fruits, papaya, banana, floriculture, Jatropha	Lack of knowledge and skill in pruning/training
5	Well communicated road ways	Lack of effort for double cropping	Contract farming under initial staff for floriculture, passion fruit, jatropha	Undesirable jungle burning causing death to orchard crops useful bacterial
6	No communication problems in language and printed media	Lack of effort in organizing FIGs for better market opportunities	Less problem in insect pest and diseases.	Lack of legal awareness to control animal and protect the crops and natural resources
7	Well establish local paddy varieties	Lack awareness in fishery and fish meals production.		Lack of awareness to create market opportunities and formation of FIGs
8	Well establish paddy cum pisciculture in WRC farm ponds			

Sl No	<i>Strength</i>	<i>Weakness</i>	<i>Opportunities</i>	<i>Threats</i>
1	Adoption of jhuming by	Shifting cultivation is	Getting yield of	Fast way of

	majority of farming community in respect rainfed paddy, maize, sugarcane and other vegetable a mixed crops	labour demand done in remote area, prone to erosion and low productivity	different commodities from unit consumption	deforestation and soil erosion, high-rainfall leading to acidic soil formation under jhuming
2	Hybridization and better feed management programme gives more income and adopted by innovative and progressive farmers	Low progress in hybridization programme and availabilities of concentrated foods for farmers	On going extension programmes of state Govt.	Lack of proper care and management for animals, lack of awareness to use animal waste, spread of undesirable diseases
3	Fat spreading of grapes, passion fruits, ginger, papaya and improve bananas and vast area for its expansion	Lack of proper management in Training, printing, INM, IPM and irrigation etc	Vast area available for Horti. Orchards and suitable agro climatic conditions	Lack of processing unit and post harvest management, lack of market infrastructure facilities and unsustainable markets in the area.

3.3 SWOT ANALYSIS OF HORTICULTURE

Strength :

- a. Suitable agro climatic and agro ecological condition for growing various fruit crops.
- b. Farmers having traditional wisdom on cultivation of fruit crops.
- c. Potential area available for cultivation and production of Passion fruit, Grapes, Orange, Pineapple, Turmeric, Ginger etc.
- d. Slopes of terrains are favourable for fruit and vegetable production.
- e. Less use of chemicals, fertilizers and pesticides in horticultural crops.
- f. Availability of abundant low land in foot hill for winter vegetable products.
- g. Farmers having traditional knowledge of identification of various medicinal plants.

Weaknesses :

- a. Poor storage facilities of fruits and vegetables.
- b. Poor transport and communication service in the district due to the ecological condition.
- c. Lack of knowledge and infrastructure on post harvest technology.
- d. No proper marketing system.
- e. Non availability of processing units for fruit crops.
- f. Use of poor quality of seedlings/planting materials lead to citrus declining.
- g. improper establishment of orchards.
- h. Poor soil management, insect pest management and disease management.

Opportunities :

- a. High density population planting in various fruit crops and mixed and inter cropping.
- b. Awareness on various post harvest techniques lead to help in getting good price.
- c. Production and supply of disease free planting material and seedlings of various fruits and vegetables.
- d. Establishment of processing industry specially for Grapes and Passion fruit.
- e. Promotion of farmers for establishment of new orchards as well as rejuvenation of old orchards in the district.
- f. Attracting buyer by taking organic certificate of fruit crops.
- h. Generating employment through cultivation of high rate low volume crops.

Threats :

- a. Declining of citrus and other orchards due to higher infestation of insect pest and diseases, lack of nutrient management etc.
- b. Due to remoteness of area and perishable in nature of produce more chances of damage.
- c. Disturbances of natural balance due to privilage of jhum practice.
- d. No fixation of price of horticulture produces by government.
- e. Heavy rain and landslide is also experiences as threat for horticultural crop cultivation.

3.4 SWOT ANALYSIS OF ANIMAL HUSBANDRY AND VETERINARY**Strength :**

- a. Favorable and varied climatic condition which leads to rearing of a variety of animal species suiting their adaptability
- b. District having enough area coverage with grasses, bushes and forest trees.
- c. Farmers having traditional knowledge and practice of rearing live-stocks.
- d. Non vegetarian food habit of tribal (indigenous) population is good strength for live-stock development in the district.
- e. Wide animal and plant –biodiversity of the district leads for germplasm and feed resource exploration.
- f. Unparallel and positive attitude of people is an excellent strength for development of this sector.

Weakness :

- a. Remoteness and transportation bottlenecks are hindering the desired growth of this sector.
- b. Due to heavy rainfall and high humidity animals are vulnerable to various disease and parasites.
- c. Tendency of farmers to raise live-stock on zero or very negligible inputs.
- d. Lack of organized marketing channel.
- e. Lack of processing and value addition facilities.
- f. Due to absence of abattoirs, slaughter house byproducts are wasted.
- g. Inadequate vaccine facilities and their storage caused to failure in desired health of live stock.
- h. Lack of sound breeding and production policy.
- i. Lacking live stock raiser’s organization and co-operatives .
- j. No proper linkage of farmers with credit institutions.
- k. Lacking of superior germ plasm because germ plasm production centre are very few in number and poorly managed due to financial crunches.

Opportunity :

- a. Development of improved varieties of pig and poultry through systematic breeding in wild and indigenous breeds.
- b. Meat revolution through industrialization of pork production.
- c. Due to popularization of duck egg and meat there is wide scope of promotion for duckary along with poultry in the district.

- d. Promotion of unconventional lives stock like dog and pigeon because they are also used as meat by the sizeable section.
- e. Opportunity existing for the promotion of slaughter house, by product processing, value addition and marketing.
- f. To develop feed formula for pig and poultry by incorporating indigenous and resources including medicinal herbs, shrubs & tree leaves.
- g. To organize farmer by their different groups and developing cooperate sector on live stock farmers.

Threats:

- a. Increasing trend of land degradation due to the unhealthy practice leads to forest loss is the big threat to this sector.
- b. Due to the adjacent location of district with Myanmar spread of diseases is the threat.
- c. Non availability of byproducts utilization facility leads the threat to public health in pig populated pockets.
- e. Higher growth trend in prices of feed ingredients and other input in also experienced as a threat.
- f. Natural calamities and due to high humidity and rainfall infestation/attack of various pests and diseases.

3.5 SWOT ANALYSIS OF FISHERY SECTOR

Strength

1. Vast area of land is available for the establishment of ponds.
2. Perennial source of water is readily available.
3. Climatic condition is suitable for development of fishery.
4. High demand for fish.
5. Majority of the farmers are willing to take up fish farming.

Weakness

1. Scarcity of exotic fingerlings.

2. Lack of technical guidance.
3. Absence of Ice Plant.
4. Poor financial condition of farmers to take up fish farming.
5. Poor transport and communication.
6. Acidity of water body.

Opportunities

1. Under India's Look East Policy, recently, there has been a proposal of waterway from Hruitezawl to Akyap (Myanmar) Sea Port for the facilitation of international trade.
2. Extension services to popularize fish farming.
3. Establishment of cold storage facility (Ice Plant).
4. Facilitation of marketing facility.
5. Popularization of value added fish product.
6. Establishment of hatcheries.

Threats

1. Scarcity and high cost of fish feed.
2. Siltation of fish ponds due to the practice of shifting cultivation.
3. Competition with other districts and foreign countries like Bangladesh and Myanmar.
4. Natural calamities such as flood, landslide/ landslip, etc.

3.6 SWOT ANALYSIS for Sericulture

STRENGTH :

1. Climatic condition ideal for Mulberry and Castor plants.
2. PH of Soil optimum.
3. Agrarian life style of Jhum cultivation ease the mind set of the people to switch-on Sericulture readily.
4. Mizoram Govt. flagship programme (i.e. Sericulture sector/activities).
5. Short gestation period (i.e. 1 year)

WEAKNESS :

1. Non-traditional.
2. Communication poor.
3. Infrastructure (viz. Grainage house, Godown, etc.) inadequate.
4. Illiteracy on livelihood.
5. Minority area.

OPPORTUNITIES :

1. Hilly terrain unsuitable for wet rice cultivation, good for Mulberry and Castor.
2. An excellent sector for replacement of Jhum cultivation.
3. Minority areas.
4. Introduction of Sericulture easy due to BPL areas.
5. Mixed & Subsistence Agri. economy.

THREATS :

1. Consumer ignorance.
2. Fair weather road.
3. Lack of technological know-how.

3.7 Challenges for the state as whole region and specific to the District

Water-related sectors

Overall, in the water-related sectors, it seems that links into community-based institutional arrangements are limited or do not exist, be it for watershed management, early warning systems, or adaptation to the recurrent floods. This goes for both state and central government initiatives. These institutional arrangements also influence the management instruments that have been chosen and the way they are being implemented. There is significant knowledge about water resources in the region, but the knowledge is still incomplete and it is partially inaccessible.

With a lack of access to data and information by the wider public, decision making takes place within agencies but without much outreach,

and accordingly accountability to the public is very limited. Global experience has shown that such a situation leads to low performance and to little consideration of impacts on the ground, as indicated by the degree to which investments effectively reach beneficiaries. Stakeholders (water users, marooned flood victims, citizens without access to basic electricity in rural areas, young people without jobs) then feel abandoned and look for other sources of livelihood, for example by leaving the region or even by participating in violence.

The challenge then is to reverse this trend and instead build a more accountable institutional framework. This implies strong political will to counteract the tendency of a society to follow the path it has already taken due to the political or financial cost of changing. Similarly, improvements in inland water transport, so important.

Forest sector

Regard to forests, the resource management instruments, including monitoring devices, cataloging (for example of biodiversity), and definition of forest use rights, are strongly conditioned by the centralized approach defined by existing formal laws and regulations. Plans do exist, but incentives (for both government agencies and stakeholders) to apply them seem to be lacking, as very few are being implemented. The organizational management form for forest management requires review in order to create functioning structures to enable forest agencies at different levels to work jointly with communities to find ways of building sustainable livelihoods.

Sector Regional-level activities Local-level activities

Water resources

Create an appropriate institutional framework for river basin management, including an interstate river basin organization with a clear mission and mandate Undertake comprehensive strategic participatory river basin management and planning covering several states (Brahmaputra and Barak basins) including trade-off analysis of different development and management options (e.g. floods, hydro, wetlands, environmental flows, etc.) Implement and maintain effective water monitoring systems Develop and support regionwide and basin-level research on water resources Create new or align existing state agencies for water resource management that can effectively interact with the interstate

river basin organization Develop groundwater resources Manage wetlands, restore and preserve beels Manage watersheds

Flood and erosion management

Develop and implement an operational plan to enable strategic investments in annual maintenance of flood management structures Carry out structural interventions to enhance erosion management Develop an appropriate flood and erosion monitoring system with information available to all stakeholders Develop a functional flood warning and community alert system Develop a functional plan to start addressing drainage issues Review and adjust existing agencies' internal

incentive structures (including budget allocations and accountability structures) to enhance delivery of services Enhance communities' capacities to "live intelligently with floods" through strengthening coping mechanisms, supporting and learning from innovations, improving basic health services Develop local capacity to link into and respond to a broader flood warning system Analyze local needs for watershed management to control local erosion and landslides in tributaries – "landscape management" – and work with communities to develop local watershed management actions

Hydropower Assess potential benefits and tradeoffs between hydropower and flood management benefits/costs and continue dialog on different options Develop scenarios to harness hydropower at the basin level (sequencing, integration with for example considerations for flood management benefits, inclusion of local stakeholders) Develop small/mini/micro/pico hydel projects in a more targeted manner Ensure benefits (for example electrification of villages, job creation) and minimize costs (for example displacement, erosion of cultural values) at local level from large hydel by developing and implementing functioning benefit-sharing mechanisms to improve people's livelihoods

Sector Regional-level activities Local-level activities

Inland water transport

Analyze and develop opportunities for linkages between India and its neighbors in order to break Northeastern Region isolation and enhance options for trade Invest in multimodal transport infrastructure strategically, reinforcing the existing NW-2 to support regional connectivity with neighbors and peninsular India Develop local-level infrastructure for community water transport on secondary rivers, improving access to markets and to social infrastructure (for example health, education)

Forest and biodiversity management

Build up a regional systematic knowledge base on biodiversity and forest resources
Develop institutional arrangements that take into account the specific social and cultural background of the Northeastern Region
Assess options for regional ecotourism and create an enabling institutional framework
Carbon trading: Reclassify northeastern forests to enable carbon trading
Support communities in recovering and building on their traditional structures for forest management
Develop appropriate knowledge sharing and extension service mechanisms for rural communities to develop sustainable economic activities (for example diversified agriculture, ecotourism)
Work with local communities to find out their interest in preserving forests through carbon finance.

4.6 SWOT ANALYSIS OF SOCIO-ECONOMIC STATUS

Strength

1. Presence of Autonomous District Council for development of Socio Economic condition.
2. The people are open and willing to accept innovations.
3. The people are ambitious and ready to take up new challenges for better Socio-economic condition.

Weakness

1. Remoteness of the District for the speedy economic development.
2. Poor transport and communication facilities.
3. The District has the lowest literacy percentage in the state.

Opportunities

1. Under India's Look East policy recently there has been a proposal of waterway from Hruitezawl to Akyap (Myanmar) seaport for the facilitation of International trade.
2. There is a vast scope for establishment of market facilities.
3. Establishment of Cold Storage facilities.
4. Value addition of commodities.

Threats

1. Competition with other districts and foreign countries like Bangladesh and Myanmar.
2. Illegal immigrants from Bangladesh and Myanmar.
3. Natural calamities.

CHAPTER – 5 PERFORMANCE GAP ANALYSIS OF DIFFERENT SECTORS

1.1 Production gap Analysis of agriculture sector

Farming in the mountainous area :

The main method of agriculture in Mizoram is cultivation, or jhuming. The mountainous country with its steep slopes and narrow valleys and a few level areas led to the tradition of felling forests on the steep slopes, burning the

remains of the forest and growing crops without terraces and terraces and without contour cultivation. The growing method in a prepared plot is usually based on pit planting, where the plants are sown or planted (rice) into pre-prepared holes and filled with newly crumbled soil in order to prepare a bedding that is suitable for the plant's development in the compacted soil.

This practice, which leads to severe soil erosion (as well as environmental damage), eventually results in reduced yields, abandonment of the plots and moving on to other plots. The Mizoram Government understands the implications and disadvantages of the method and proposed to implement a programmed that will lead to permanent cultivation of the land by a transition to terrace farming by construction of terraces on the moderate slopes.

In terrace farming plots, where plantation crops such as Banana, Coffee, Cardamoms, Oranges, Hatkora, etc. are grown, the crop cycle is longer and the roots' band in the ground prevents soil loss.

Irrigation without terraces is less feasible in mountainous cultivation, so annual crops grow during the monsoon (Kharif) season only. In terraced plots, if there is water, crops are also grown during the rabi season and are irrigated manually with a hosepipe. In most places this is not possible because there is no water. There is no mechanization in the cultivated plots and produce is also transported manually.

Farming in the valleys :

A number of valleys and narrow valleys along the rivers are available. The area is divided into small leveled plots with a maximum size of half a hectare. They are prepared according to contours with a system of dirt irrigation canals lined with mounds of earthy at their borders in order to enable flooding. The principal crops are rice, pulses, oilseed and some vegetables.

Most of the activities take place in the monsoon (Kharif) season. During the winter (Rabi) season, there is no water supply for irrigation, except in the few locations, where water is pumped from the river and used to irrigate two cycles of rice crops. Some of the plots are cultivated using animals, while others are cultivated using tractors up to 25HP. A combination of drainage problems, medium to heavy soil and ploughing in wet soil creates a profile of very compacted soil under the top layer. Proper drainage and cultivation procedures to reduce the soil compaction are conditional for agricultural reclamation in the valleys.

The low profitability of agriculture produce allows use of fertilizer. In addition, the severe shortage of organic manure and compost prevents amelioration of the soil. The Government distributes seeds free of cost, or with a 50% subsidy, as part of a plan to improve farming performance. For the same reason (low profitability), herbicides and plant-protection materials are used in a limited extent.

Table -19 Gap in Research/Extension/Adoption and Proposed Extension Strategy for Improving the Productivity/ Income from Rain-Fed Paddy in the district (Transplanted)

SL. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing Time Method	June – July Transplanted (From Nursery – Field)	Mid April-May Transplanting	Full	Lack of awareness and Shortage of Water	Awareness Generation (Exposure, State level, District Level, Farmers Level.	Training of Water use efficiency & method demonstration
2	Varieties	Biruchuk (Local) Manipur (Local)	IR-64, Pant-12	Full	Lack of awareness Lack of seed supplied	Field Demonstration	Training, demonstration and exposure visit
3	Seed Rate (per Ha.)	50-60 Kg/Ha	40-45Kg/Ha	Full	Lack of awareness	Field Demonstration	Training & demonstration
4	Seed Treatment	No application	Bavistin	Full	Lack of awareness Lack of Chemical	Awareness Generation	Training & demonstration

SL. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
5	Organic Manure (tons/Ha)	No application	10 t + Ha	Full	Lack of supply Lack of awareness	Training & supply of FYM	Training & demonstration, rearing of animals
6	Fertilizer	No application	60:40:40 Kg/Ha	Full	Lack of awareness Financial problem	Demonstration at Field Level	Training & demonstration on INM
7	Micro Nutrient	Nil	Sulphur @ 20Kg/Ha	Full	Lack of awareness	Awareness Generation	Training & demonstration
8	Pest Management	Cultural & Mechanical	IPM technology	Partial	Lack of awareness	Awareness Generation	Training & demonstration on IPM
9	Disease Management	Cultural & mechanical	Carbentazim, Dithene-M45	Full	Lack of awareness	Field Demo	Training & demonstration
10	Post Harvest		Dry storage into Rodenticide management	Partial	Lack of awareness	Demonstration of improved method	Training & demonstration
11	Weed Management	Manual & Mechanical	Butachlor @ 30 Kg/Ha.	Partial	Lack of awareness	Training & Demo	Training & demonstration

**Table – 20 Gap in Research/Extension/Adoption and Proposed Extension Strategy
for Improving the Productivity/ Income from Mustard (Rabi Oilseed**

SL. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing Time Method	October – November Broadcasting		Nil	Lack of awareness and Shortage of Water	Awareness Generation (Exposure, State level, District Level, Farmers Level.	Training of Water use efficiency & method demonstration
2	Varieties	M-27	M-27	Nil	Lack of awareness Lack of seed supplied	Field Demonstration	Training, demonstration and exposure visit
3	Seed Rate (per Ha.)	25 Kg./Ha	10-15Ka/Ha	Full	Lack of awareness	Field Demonstration	Training & demonstration
4	Seed Treatment	No application	Melaxy @ 6 Gm/Kg	Full	Lack of awareness Lack of Chemical	Awareness Generation	Training & demonstration
5	Organic Manure (tons/Ha)	No application	2-3 Tone/Ha	Full	Lack of supply Lack of awareness	Training & supply of FYM	Training & demonstration, rearing of animals
6	Fertilizer	No application	40:30:15NP K	Full	Lack of awareness Financial problem	Demonstration at Field Level	Training & demonstration on INM
7	Micro Nutrient	No application	Sulphur @ 20Kg/Ha	Full	Lack of awareness	Awareness Generation	Training & demonstration
8	Pest Management	No application	IPM Technology	Full	Lack of awareness	Awareness Generation	Training & demonstration on IPM

SL. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
9	Disease Management	No application	Dithane –M-45	Full	Lack of awareness	Field Demonstration	Training & demonstration
10	Post Harvest	Cultural & Method	Conventional method	Partial	Lack of awareness	Demonstration of improved method	Training & demonstration
11	Weed Management	Manual/Mechanical	Manual & Chemical	Partial	Lack of awareness	Training & Demonstration	Training & demonstration

Table – 21 Gap in Research/Extension/Adoption and Proposed Extension Strategy for Improving the Productivity/ Income from Pea (Rabi Pulse)

SL. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing TimE Method	October – November Direct-sown	September-mid-November Line sowing with proper spacing	Full	Lack of awareness and Shortage of Water	Awareness Generation (Exposure, State level, District Level, Farmers Level.	Training of Water use efficiency & method demonstration
2	Varieties	Un identified	NP-29	Full	Lack of awareness Lack of seed supplied	Field Demonstration	Training, demonstration and exposure visit
3	Seed Rate (per Ha.)	130-180Kg/Ha	Bigha 100-120Kg/Ha	Full	Lack of awareness	Field Demonstration	Training & demonstration
4	Seed Treatment	Nil	Rhizobium culture & phosphical	Full	Lack of awareness Lack of Chemical	Awareness Generation	Training & demonstration
5	Organic Manure (tons/Ha)	Nil	FYM @ 4-5 Tone/Ha	Full	Lack of supply Lack of awareness	Training & supply of FYM	Training & demonstration, rearing of animals
6	Fertilizer	Nil	20:50:0 NPK	Full	Lack of awareness Financial problem	Demonstration at Field Level	Training & demonstration on INM

SL. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
7	Micro Nutrient	Nil	Sulphur @ 20 Kg/Ha	Full	Lack of awareness	Awareness Generation	Training & demonstration
8	Pest Management	Nil	IPM Technology	Full	Lack of awareness	Awareness Generation	Training & demonstration on IPM
9	Disease Management	Nil	Bavistin	Full	Lack of awareness	Field Demonstration	Training & demonstration
10	Post Harvest	Nil	Proper satire to reduce the moisture content	Full	Lack of awareness	Demonstration of improved method	Training & demonstration
11	Weed Management	Manual	Hand weeding/Herbicides	Partial	Lack of awareness	Training & Demonstration	Training & demonstration

**Table – 22 Gap in Research/Extension/Adoption and Proposed Extension Strategy
for Improving the Productivity/ Income from Kharif Pulse**

SL. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing Time Method	July-August Direct sowing	June -July Direct sowing proper spacing	Full	Lack of awareness and Shortage of Water	Awareness Generation (Exposure, State level, District Level, Farmers Level.	Training of Water use efficiency & method demonstration
2	Varieties	Local	Prabhat, T-21	Full	Lack of awareness Lack of seed supplied	Field Demonstration	Training, demonstration and exposure visit
3	Seed Rate (per Ha.)	20-25Kg/Ha	12-15Kg/Ha	Full	Lack of awareness	Field Demonstration	Training & demonstration
4	Seed Treatment	Nil	Rhizobium culture	Full	Lack of awareness Lack of Chemical	Awareness Generation	Training & demonstration
5	Organic Manure (tons/Ha)	Nil	@ 2-3 Tonne/Ha FYM	Full	Lack of supply Lack of awareness	Training & supply of FYM	Training & demonstration, rearing of animals
6	Fertilizer	Nil	20:50:0 NPK	Full	Lack of awareness Financial problem	Demonstration at Field Level	Training & demonstration on INM
7	Micro Nutrient	Nil	20 Kg Sulphur	Full	Lack of awareness	Awareness Generation	Training & demonstration
8	Pest Management	Nil	IPM Technology	Full	Lack of awareness	Awareness Generation	Training & demonstration on IPM
9	Disease Management	Nil	Spraying with Bavistin	Full	Lack of awareness	Field Demonstration	Training & demonstration
10	Post Harvest	Conventional method	Good storage to save moisture	Partial	Lack of awareness	Demonstration of improved method	Training & demonstration
11	Weed Management	Manual /Cultural	Manual & Chemical	Partial	Lack of awareness	Training & Demonstration	Training & demonstration

Table – 23 Gap in Research/Extension/Adoption and Proposed Extension Strategy for Improving the Productivity/ Income from Maize

SL. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing Time Method	April - May Direct sowing	April-May Direct sowing	Nil	Lack of awareness and Shortage of Water	Awareness Generation (Exposure, State level, District Level, Farmers Level.	Training of Water use efficiency & method demonstration
2	Varieties	Local	105 HYV	Partial	Lack of awareness Non availability of seeds	Field Demonstration	Training, demonstration and exposure visit
3	Seed Rate (per Ha.)	20-25Kg/Ha	17-20 Kg/Ha	Full	Lack of awareness	Field Demonstration	Training & demonstration
4	Seed Treatment	Nil	Agrosan GN	Full	Lack of awareness Lack of Chemical	Awareness Generation	Training & demonstration
5	Organic Manure (tons/Ha)	Application	2 Tonne/Ha	Full	Lack of supply Lack of awareness	Training & supply of FYM	Training & demonstration, rearing of animals
6	Fertilizer	Nil	80:40:40	Full	Lack of awareness Financial problem	Demonstration at Field Level	Training & demonstration on INM
7	Micro Nutrient	Nil	20 Kg/Ha	Full	Lack of awareness	Awareness Generation	Training & demonstration
8	Pest Management	Nil	IPM Technology	Full	Lack of awareness	Awareness Generation	Training & demonstration on IPM
9	Disease Management	Nil	Thiram/Carbendavine	Full	Lack of awareness	Field Demonstration	Training & demonstration
10	Post Harvest	Conventional method	Good store free from Rodent	Partial	Lack of awareness	Demonstration of improved method	Training & demonstration
11	Weed Management	Manual	Butachlor 25 Kg/Ha	Partial	Lack of awareness	Training & Demo	Training & demonstration

1.2 Production gap analysis of Horticulture Sector

The land use under pure horticultural orchard system also has high potentiality in the region. In case more area (jhum land) is available at a place in the selected site and the owners are too interested for growing of fruit trees collectively as co-operative farming type in order to bring their large area under horticulture then pure orchard can be done and land use pattern may be developed accordingly, keeping in view about the soil and water conservation aspects. This system of cultivating the land will be highly profitable in the long run and area will be developed as fruit growing belt.

The water and soil management practices are to be followed in a systematic manner so that the soil loss can be checked to a considerable stage. The following practices (management) are to be adopted while considering this land use.

- 1) The fruit plants like orange, banana, etc., are to be planted either half moon terraces or in contour bunds.
- 2) If the slope is below than 25.30° the intercropping is to be practiced for getting the subsidiary income to the farmers and the four rows planting of pineapple after 10 rows of fruit trees across the slope will be advisable in order to check the soil erosion.
- 3) The legume vegetable should be considered for the cultivation as intercrop so that soil fertility may be enhanced.
- 4) If planting is done only in half moon terraces the chopping of weeds in interspace areas is advisable and the filler crops should be taken.

Selection of crops and varieties: Suitability of crops depends upon the altitude, soil and climatic conditions. Say, as an example, Manipur state can roughly be divided into three land zones, viz.

- i) High hills: 900-2000 m above MSL (apple, peach, pear, plum, apricot, potato, cabbage, cauliflower, radish, beans, etc.)
- ii) Mid hills: Below 500 m (citrus, banana, pineapple, papaya, guava, ginger, turmeric, chilli, brinjal, tomato, bean, sweet potato, tapioca, colocasia, etc.)
- iii) Foot hills: Bordering areas of hills (jack fruit, areca nut, black pepper etc.)

Vast areas of the hills are suitable for cultivation of tropical, sub-tropical and temperate fruits.

Tropical	Cashew nut, banana, papaya
Sub-tropical fruits	Pineapple, citrus, guava, banana, gooseberry, etc.
Temperate	Apple, Peach, pear and plum
Spices	Chilli, turmeric, ginger, garlic
Vegetables	Tomato, chillies, brinjal, potato, radish, pea, colocasia, okra, pumpkin, bottle gourd, cucumber, carrot, cabbage, cauliflower, knol khol, French bean, winged bean, dolichos bean.
Tuber crops	Tapioca, sweet potato
Tree vegetables	Tree bean, tree tomato and drum stick
Suitable grasses for risers	<i>Stylosanthes guyanensis</i> , <i>Stylosanthes hamata</i> and Thinnapier, NB-21.

Table 24. Gap in Research / Extension / Adoption and Proposed Extension Strategy for Improving the Productivity / Income from Tomato

Sl. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing Time Method	Direct sowing October-November	Raising in Nursery, transplant & cultivate in Greenhouse.	Hesitate to adopt new technique	Lack of awareness, infrastructure facility	Assistance of infrastructure by the Government.	Motivation & training
2	Varieties	Local & open pollinated variety	Certified and Hybrid variety	Lack of facility	Financial constraint	Provision from the Govt.	Provide recommended seed free of cost
3	Seed Rate (per ha.)	100-200g/Ha	450-500g/Ha	Ignorance of farmer	Unwillingness to adopt	Impart training by Govt official	To conduct training.
4	Seed Treatment	No seed treatment given	Treat seed with Bavistin	Lack of facility	Financial constraint	Provision from the Govt	Provide to farmer free of cost
5	Organic Manure (tons / ha)	5-10 ton/Ha	15-20 ton/Ha	Lack of facility	Financial constraint	Provision from the Govt	Provide to farmer free of cost
6	Fertilizer	Not applied	60:80:120 kg NPK/Ha	Lack of facility	Financial constraint	Provision from the Govt	To make provision

7	Micro Nutrient	Not applied	Multiplex for vegetable	Lack of facility	Financial constraint	Provision from the Govt.	Provide to farmer free of cost
8	Pest Management	Tobacco decoction	IPM	Lack of facility	Financial constraint	Provision from the Govt.	Provide to farmer free of cost
9	Disease Management	Not usually applied	IPM	Lack of facility	Financial constraint	Provision from the Govt.	Provide to farmer free of cost
10	Post Harvest Management	Hand picked and directly sold in market	Early picking and packing in parcel	Ignorance of farmer	Unwillingness to adopt	Impart training by Govt. official	To conduct training.
11	Weed Management	Hand weeding	Hand weeding & weedicides	Ignorance of farmer	Unwillingness to adopt	Impart training by Govt. official	To conduct training.

Table 25. Gap in Research / Extension / Adoption and Proposed Extension Strategy for Improving the Productivity / Income from Potato

Sl. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing Time Method	Direct sowing, Sept, Oct, for Rabi & Jan. – Feb. for Kharif	Direct sowing, Sept., Oct. for Rabi & Jan. – Feb. for Kharif	Not available	NA	NA	NA
2	Varieties	Kufrijyoti	Kufrijyoti, Kufri Megha	Lack of knowledge	Lack of knowledge	Assistance from Govt.	Provision at free of cost
3	Seed Rate (per ha.)	10-12 Qtls / Ha	20 – 25 Qtls				
4	Seed Treatment	NIL	Treat with Mancozeb	Lack of knowledge	Lack of knowledge	Assistance from Govt	Provision at free of cost
5	Organic Manure (tons / ha)	5-6 qtls / Ha	10 – 20 Qtls	Lack of facility	Financial problem	Assistance from Govt	Provision at free of cost
6	Fertilizer	Not applied	20: 25 : 20 NPK	Lack of facility	Financial problem	Assistance from Govt	Provision at free of cost
7	Micro Nutrient	Not applied	Multiplex for vegetable	Lack of facility	Financial constraint	Provision from the Govt	Provide to farmer free of cost
8	Pest Management	Not applied	IPM	Lack of facility	Financial constraint	Provision from the Govt	Provide to farmer free of cost
9	Disease Management.	Not applied	IPM	Lack of facility	Financial constraint	Provision from the Govt	Provide to farmer free of cost
10	Post Harvest Management	Harvested & directly sold to Market	Surface dried, kept in shade for 10-15 days and graded	Lack of knowledge	Lack of knowledge	Awareness training	Awareness training Govt.
11	Weed Management	Hand weeding	Hand weeding & weedicides	Lack of knowledge	Lack of knowledge	Awareness training	Awareness training Govt.

Table 26. Gap in Research / Extension / Adoption and Proposed Extension Strategy for Improving the Productivity / Income from Rhizomatous

Sl. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing Time Method	Sown by dibbling in March – May	To be sown by dibbling in terrace during March – May	Lack of knowledge	Lack of knowledge	NA	Awareness campaign
2	Varieties	Local Variety	Local and Improved	Lack of facility	Lack of facility	NA	Provision from Govt.
3	Seed Rate (per ha.)	8-10 Qtls / Ha	12-15 Qtls	Financial constraint	Financial constraint	NA	Assistance from Govt.
4	Seed Treatment	No treatment giving	Treatment with Ceresan or Agallol	Lack of knowledge	Lack of knowledge	Provision from the Govt.	Assistance from Govt.
5	Organic Manure (tons / ha)	Not applied	25-30 ton / Ha	Financial constraint	Financial constraint	NA	Assistance from Govt.
6	Fertilizer	Not applied	75:50:50 Kg/Ha	Financial constraint	Financial constraint	NA	Assistance from Govt.
7	Micro Nutrient	Not applied	Multiplex for vegetable	Lack of facility	Financial constraint	Provision from the Govt	Provide to farmer free of cost
8	Pest Management	No treatment usually given.	IPM	Lack of knowledge	Lack of knowledge	Provision from the Govt.	Assistance from Govt.

Sl. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
9	Disease Management.	No treatment usually given.	IPM	Lack of knowledge	Lack of knowledge	Provision from the Govt.	Assistance from Govt.
10	Post Harvest Management	Clean and packed in Gunny bag	To be wash and sun dried for one day for green ginger. Removal of outer skin with split bamboo for dry ginger	Lack of knowledge	Lack of knowledge	Awareness campaign	Awareness campaign
11	Weed Management	Hand weeding	Hand weeding & mulching with green leaves	Lack of knowledge	Lack of knowledge	Awareness campaign	Awareness campaign

Table 27. Gap in Research / Extension / Adoption and Proposed Extension Strategy for Improving the Productivity / Income from Chilli

Sl. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing Time Method	Sown by broadcasting during March - April	Broadcasting and transplanting during March – April & cultivation in Greenhouse	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign
2	Varieties	Local	Local & improved variety	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
3	Seed Rate (per ha.)	5 Kg / Ha	5 Kg/Ha for broadcasting & 2 Kg /Ha for transplanted	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign
4	Seed Treatment	Not treated	Seed treatment with chemical	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign
5	Organic Manure (tons / ha)	Usually not applied	25 – 30 ton / Ha before transplanting	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
6	Fertilizer	Usually not applied	100:50:50 NPK / Ha	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
7	Micro Nutrient	Usually not applied	Multiplex	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
8	Pest Management	Usually not applied	IPM	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
9	Disease Management.	Usually not applied	IPM	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
10	Post Harvest Management	Sun drying	Dipping fresh chilli in Dipsol for 5 minutes and dry on racks with multitier wire net trays.	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
11	Weed Management	Hand weeding	Hand weeding & weedicide	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance

Table 28. Gap in Research / Extension / Adoption and Proposed Extension Strategy for Improving the Productivity / Income from Pineapple

Sl. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing Time Method	Planted in March – April	Adoption of high density planting	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign
2	Varieties	Queen	Giant Kew & Queen	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign
3	Seed Rate (per ha.)	10000 / Ha	15000 / Ha	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign
4	Seed Treatment	Not treatment giving	NA	NA	NA	NA	NA
5	Organic Manure (tons / ha)	Not usually applied	20 / Ha	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign
6	Fertilizer	Not usually applied	12 gm / plan of N & K & 4 gm / plan of P in two split doses	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign
7	Micro Nutrient	Not usually applied	Multiplex	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign

Sl. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
8	Pest Management	Not usually applied	IPM	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign
9	Disease Management.	Not usually applied	IPM	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign
10	Post Harvest Management	Harvested and directly sold in market	Application of plant growth regulator to alter fruit size and maturity	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign
11	Weed Management	Hand weeding	Hand weeding & Diuron as pre emergent spray	Lack of knowledge	Lack of knowledge	Not available	Awareness campaign

Table 29. Gap in Research income from Banana

Sl. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing Time Method	Planting of Sucker in March – April	Planting of Sword sucker of 2-3 Kg in March & April	Ignorance of farmers	Ignorance of farmers	Awareness campaign	Awareness campaign
2	Varieties	Tall and Dwarf Cavendish	Tall Cavendish, Grand naine	Financial problem	Financial problem	Assistance from Govt.	Assistance from Govt.
3	Seed Rate (per ha.)	800 Sucker / Ha	1000 Sucker / Ha	Financial problem	Financial problem	Assistance from Govt.	Assistance from Govt.
4	Seed Treatment	No seed treatment given	Not available	Not available	Not available	Not available	Not available
5	Organic Manure (tons / ha)	Not usually applied	120 Kg / Ha	Financial problem	Financial problem	Assistance from Govt.	Assistance from Govt.
6	Fertilizer	Not usually applied	100:50:100 Kg / Ha	Financial problem	Financial problem	Assistance from Govt.	Assistance from Govt.
7	Micro Nutrient	Not usually applied	Multiplex for fruit	Financial problem	Financial problem	Assistance from Govt.	Assistance from Govt.
8	Pest Management	Hand picking	IPM	Financial problem	Financial problem	Assistance from Govt.	Assistance from Govt.

Sl. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
9	Disease Management	Usually not applied	IPM	Financial problem	Financial problem	Assistance from Govt.	Assistance from Govt.
10	Post Harvest Management	Harvested and ripened in box	Application of ethylene in ripening room	Financial problem	Financial problem	Assistance from Govt.	Assistance from Govt.
11	Weed Management	Hand weeding	Hand weeding and application of Glycel	Financial problem	Financial problem	Assistance from Govt.	Assistance from Govt.

Table 30. Gap in Research / Extension / Adoption and Proposed Extension Strategy for Improving the Productivity / Income from Passion Fruit

Sl. No	Items of Package	Existing practice	Recommended Practice	Gap in Adopt	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Sowing Time Method	Planting of seedling in June & July	Planting of seedling and grafted in June & July	Lack of knowledge	Lack of knowledge	Awareness campaign	Awareness campaign
2	Varieties	Purple & Yellow Variety	Purple, Yellow & Kaveri (Purple x Yellow)	Farmers ignorance	Lack of knowledge	Awareness campaign	Awareness campaign
3	Seed Rate (per ha.)	400 / Ha	600 / Ha	Lack of knowledge	Lack of knowledge	Awareness campaign	Awareness campaign
4	Seed Treatment	Not usually applied	Bavistin for seed treatment	Farmers ignorance	Lack of knowledge	Awareness campaign	Awareness campaign
5	Organic Manure (tons / ha)	Not usually applied	10 qtls / Ha	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
6	Fertilizer	Not usually applied	100:50:100 NPK / Vine / Year	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
7	Micro Nutrient	Not usually applied	Multiplex	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
8	Pest Management	Hand packing	IPM	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
9	Disease Management.	Roguing	IPM	Financial problem	Financial problem	Govt. Assistance	Govt. Assistance
10	Post Harvest Management	Hand packing & processed in to squash	Processed in to nectar, squash and concentrated Juice	Farmers ignorance	Lack of knowledge	Awareness campaign	Awareness campaign
11	Weed Management	Hand weeding	Hand weeding	NA	NA	NA	NA

5.3 Production gap analysis of Animal Husbandry Sector

Table 31 Research / Extension / adoption Gap and Proposed Strategies for Improving the Productivity / Income from Cow

Sl. No	Items of package	Existing practice	Recommended practice	Gap	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Breed	Jersey	Jersey Crossed	No Gap			
2	Feed management	Intensive	Intensive				
	Green Fodder (Kg / day)	30-40	30-40				
	Dry Fodder (Kg / day)	0	10	Gap	Lack of awareness Non-availability	Creating awareness/procure and distribute	Training Procure & distribute
	Concentrate (gms / day)	2.5	4	Gap	Not affordable	Subsidy	Subsidy
3	Inter Calving Period (months)	12 months	11 months	Gap	Malnutrition	Good Management	Awareness, Training, campaign
4	Health Care						
	FMD	2 times	2 times				
5	General Management						
	Housing (Pucca / Kutcha)	Kutcha	Pucca	Gap	Non-affordable	Awareness	Bank Loan
	Drinking Water (lit / day)	20-30	30	Gap			
6	Milk Yield (lit./day)	10-15	15-20	Gap	Malnutrition	Awareness	Campaign

Table 32 Research / Extension / adoption Gap and Proposed Strategies for Improving the Productivity / Income from Goat

Sl. No	Items of package	Existing practice	Recommended practice	Gap	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Breed	Desi	Desi				
2	Feed management	Free range	Free range	-	-	-	-
	Green Fodder (Kg / day)	Ad lib	Ad lib	-	-	-	-
	Dry Fodder (Kg / day)	Nil	-	-	-	-	-
	Concentrate (gms / day)	0.2 kg	0.5 kg	Gap	Unaffordable	Subsidization	Subsidization
	Minerals (gm/day)	Nil	100 g	Gap	Unaffordable	Subsidization	Subsidization
	Vitamins	Nil	30 ml	Gap	Unaffordable	Unaffordable	Subsidization
3	Inter Calving Period (months)	200	180 days	Gap	Malnutrition	management awareness	Awareness campaign
4	Health Care						
	No of Vaccination						
	FMD	2	2	-	-	-	-

Table 33 Research / Extension / adoption Gap and Proposed Strategies for Improving the Productivity / Income from Pig

Sl. No	Items of package	Existing practice	Recommended practice	Gap	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
1	Breed	Cross	Hampshire	Gap	Non-availability	Awareness	Campaign
2	Feed management	Intensive Free Range	Intensive Semi Intensive	Gap	For hygienic measure	Subsidisation	Subsidisation
	Green Fodder (Kg / day)	0.5 Kg	0.5 Kg				
	Concentrate (gms / day)						
	(i) 0-56 days (piglet)	0.1	0.25	Gap	Unaffordable	Subsidisation	Subsidisation
	(ii) 56-180 days (Grower)	0.5	0.5-1	Gap	Unaffordable	Subsidisation	Subsidisation
	(iii) Fatten	1.5	2 – 3	-	-do-	-do-	-do-
	(iv) Breeding	2	3 – 4	-	-do-	-do-	-do-
3	Inter Farrowing period (months)	180-200/days	170-180days	Gap	Lack of awareness	Creating awareness	Training
4	Health Care (No of Vaccination)						
	(i) FMD	-	1	Gap	Fund constrain	Procure & distribute	
	(ii) Swine fever	1	1	-	-	-	
	(iii) Piglet Anaemia	2	2	-	-	-	
5	General Management						
	Washing (times / day)	1/week	1/day	Gap	Lack of awareness	Create awareness	Create awareness
	Cleaning (times / day)	2/day	2/day	-	-	-	-
	Housing (Pucca / Kutcha)	Semi-pucca	Pucca	Gap	Non-affordable	Subsidisation	Subsidisation
	Drinking Water (lit / day)	Lit/day	2 lit/day	Gap	Non-affordable	-	-

Table 34 Research / Extension / adoption Gap and Proposed Strategies for Improving the Productivity / Income from Poultry

Items of package	Existing practice	Recommended practice	Gap	Specific Reasons for Gap	Farmers Proposed Strategy	Strategy to Overcome gap
Breed	Kuroiler/Desi	WHL/RIR	Gap	Non-availability due to lack of funds	Subsidization	Subsidization
Feed management	Intensive/free range	Intensive/semi-intensive	Gap	For hygienic measures	Create awareness	Create awareness
Commulative concentrate (gms/bird)						
(i) 0-7 Days	10 gms	10 gms				
(ii) 20-28 Days	10 gms	20-30 gms	Gap	Unaffordable due to lack of funds	Subsidization	Subsidization
(iii) 35-42 Days	20 gms	40-50 gms	Gap	-do-	-do-	-do-
Vitamins (ml/day) For all ages	0.1ml	0.2 ml	Gap	-do-	-do-	-do-
Health Care (No of Vaccination)						
HVT MD						
RD F1	1	1	-	-	-	-
General Management						
Housing (Pucca / Kutcha)	Kutcha	Pukka	Gap	Unaffordable	Subsidization	Subsidization
Drinking Water (lit / day/ 100 Birds)						
(i) 0-7 Days	3 ltrs	3 ltrs				
(ii) 20-28 Days	10 ltrs	10 ltrs				
(iii) 35-42 Days	14 ltrs	14 ltrs				

1.3 Performance Gap analysis of Fishery Sector

Table 35 Gap analysis of Fishery Sector

<i>Sl. No</i>	<i>Item of package</i>	<i>Recommended Practice</i>	<i>Specific reasons for Gap</i>	<i>Gap</i>	<i>Farmers' proposed strategy</i>	<i>Strategy to overcome Gap</i>
1.	Culture Components a) Indian Major carp b) Exotic carp c) Prawn	Semi intensive composite culture with exotic carp Semi intensive composite culture with Indian Major carp Polyculture with carp take off stage along with trial	-	-	-	-
2.	Pond preparation a) Organic manure (kg/ha) b) Inorganic manure (kg/ha) c) Lime (kg/ha) d) Water depth	10,000kg/ha/yr (RCD) Urea-300kg/ha/yr 240kg/ha/yr 500kg/ha/yr 2.5 metres	SSP- Inadequate availability of the inputs and purchasing power of the farmer	80% gap	Supply at subsidised rate at least for one crop (initial crop)	As proposed by farmers through District level Departmental Sales emporium
3.	Weed control a) Manual b) Mechanical c) Chemical	Manual	-	-	-	-

<i>Sl. No</i>	<i>Item of package</i>	<i>Recommended Practice</i>	<i>Specific reasons for Gap</i>	<i>Gap</i>	<i>Farmers' proposed strategy</i>	<i>Strategy to overcome Gap</i>
4	Stocking size/No a) Prawn b) Fry c) Fingerlings	15000-20000/ha PL 12-18 12000-15000/ha 8000-10000/ha	Inadequate availability in the region Inadequate infrastructure for seed production and economic inability of farmers	5000 to 8000/ha 30%	- Supply of fish seeds at subsidised rate	Establishment of prawn hatchery in the state Creation of more infrastructure for seed production.
5	Feeding schedule a) Rice bran b) Oil cake c) Pelleted feed	1:1 ratio 4500kg annually 2500kg annually	Inadequate purchasing capacity on the part of the farmers	80%	Supply of feed at subsidised rate	As under column 2
6	Sample netting a) Monthly b) Quarterly c) Half yearly	Recommended monthly	Inadequate gears available with the farmers	Only 20% of the farmers adopted quarterly sample netting	As under column 5.	As under column 2.
7	Harvesting method	Through netting	As stated under col.6,90% of the farmers undertake harvesting by draining water	90%	As under column 5.	As under column 2.
8	Culture method	Semi intensive composite farming, integrated farming, polyculture of carp and prawn	The gap are already discussed under various item of package from 1-7.	1-7	As preceding columns	As preceding columns

5.5 (Table 36) Performance Gap analysis of Sericulture Sector

Items of packages	Existing practice	Recommended Practice	Problems diagnosed	Fr. Proposed extension strategy
Sowing – planting - Time - Method	April – May Pit system	April – May Pit system	-	-
Organic manure	No Application	10 tons	- Lack of awareness - Lack of finance	- Training & credit facility
Fertilizers (N:P:K)	No Application	220:80:80	- Lack of awareness - Lack of finance	- Training & credit facility
Pest - Leaf roller	Nuvan	Nuvan	- Lack of awareness	- Training & demonstration
Rearing method	Tray rearing	Tray rearing	-	-
Cocoon yield	30 kgs	80 kgs	- Lack of awareness on General management	- Training & demonstration

The agricultural practices in the region are broadly of two distinct types, *viz.*, (i) settled farming practised in the plains, valleys, foothills and terraced slopes and (ii) shifting cultivation practised on the hill slopes. In the hills, agricultural operations are carried out at a maximum elevation of 5000 m with 'slash and burn' method.

Shifting (Jhum) Cultivation

It is a primitive mode of agriculture evolved as a reflex action under the stress of the peculiar geophysical and ecological situations prevailing in the hills of the NE region. The system reflects a sort of community farming without heritable rights over the land. The practice starts with selection of forested land, clearing and burning of the forest before the onset of monsoon, planting of various crops in an intimate mixture by dibbling and harvesting. The land is abandoned after cultivation for a period of 2-3 years and cultivation is shifted to another site. The method of allotment of land varies from tribe to tribe. In most

cases it is decided upon by the village councils or by village elders, and size of the plots depends on the number of working hands in respective farm families. Consequent upon population pressure, the *jhum* cycle has, however, shrunk to 3-6 years or even less against, earlier practice of a cycle of 10-15 years resulting in soil degradation and ecological imbalance.

Indiscriminate destruction of forests in the *jhum* land, coupled with high rainfall, has resulted in heavy soil erosion and consequent silting of rivers causing floods in the lower reaches.

5.6 Exploring Potential Support System for Agriculture Development

The State has the benefit of a rich, and largely undiscovered resource base whose potential has yet to be fully investigated and exploited. Given the importance of the unique and immense biodiversity resources of the State, special attention needs to be given to the interface between the requirements of the communities and the need to ensure adequate protection of the biodiversity stock. Any Project intervention, therefore, to be provided for a unique opportunity to develop interventions in areas of potential conflict which extend the approaches designed for sustainable livelihood to take in the additional requirements for protection of the genetic stock.

Institutional Support

All the tribal communities in the North East have well defined traditional institutional structures comprising, with some slight variations, a village chief or headman and some form of Village Council. In Mizoram, however, there are elected Village Councils with powers to manage Village Administration, adjudicate customary laws and more importantly exercise certain authority for allotment of land for garden, farming etc. purposes. Agricultural activities in the state are supported by the various line departments of the state governments (agriculture, horticulture, soil conservation, irrigation, animal husbandry, forestry and sericulture). These departments operate through district, sub-divisional and field units. The greatest deficiency from the point of view of developing coherent strategies to natural resource management is that competing development opportunities for horticulture and other plantation crops generally handled by different agencies who approach farmers individually. There is a considerable depth of good technical knowledge amongst the line department staff which, because it is not being exploited to its full potential due to severe operating constraints, has contributed to demotivation and low output of the officers. Each state has a well organized network of Forest Department offices whilst the Autonomous District Councils (ADCs) have their own forest administration set-ups. However, forestry staff at all levels lack strategic orientation, adequate expertise, and proper motivation in planning, designing and implementing community participatory forestry programmes.

Extension Support

Agricultural extension is the responsibility of the Department of Agriculture (DAO) which at the field level is organized through circles, headed by and Agricultural Inspector, which cover two or more blocks, Agricultural Extension system is largely ineffective due to a lack of suitable technical messages and little support to staff in the form of field allowances and supply of inputs for field work. There is little research and technical support provided to extension staff and very little in-service training. Shifting cultivation is not included in their training, which leaves the majority of extension staff with a poor understanding of the real dynamics of shifting cultivation as practiced by the hill farmers. The Extension Education Institution (EEI) is the main training institution for the whole region and has dedicated staff to provide a wide range of courses. Forestry extension in the region is in a disorganized state but given suitable training, the manpower available in the Social Forestry Divisions can be effectively mobilized to provide extension services to the people. However, there is an urgent need to improve the infrastructure, materials, programmes and implementation mechanisms.

Research Support

The main research institutes in the NER are the Indian Council for Agricultural Research (ICAR) which has research station in each state (excepting in Assam), the Assam Agricultural University (AAU), the North Eastern Hill University (NEHU) in Shillong, the Central Agricultural University (CAU) in Imphal, the Tea Research Institute, Tocklai (in Assam), the Central Potato Research Station, the Regional Research Laboratories (RRL) of CSIR (working on essential oil extraction and medicinal plants) etc. Past research efforts have generally lacked a client –driven, on-farm, multi-disciplinary and development oriented approach and this has resulted in inappropriate models which are too complex and not replicable. But some new approaches are evident with both CAU and AAU's Regional Research Station in Diphu (Karbi Anglong) carrying out inter disciplinary field research programme with jhum farmers.

Marketing

Agricultural marketing is one of the weakest links in the agricultural economy of the region. The marketing system is unregulated and dominated by private traders and middlemen. The major part of the marketable surplus is sold individually in small quantities by farmers at periodic markets at the village level or to itinerant traders. It then passes through a hierarchy of primary and secondary assembly markets before reaching terminal markets in major cities outside of the region, principally Calcutta. Factors such as seasonality of production, perishability of produce, inadequate credit facilities, lack of market information, etc. compel growers to sell their produce at low and frequently unremunerative prices. The bargaining power of the farmers is weak and prices are dictated by the traders. Farmers also frequently borrow from traders/money-lenders increasing the level of exploitation.

Credit Facilities

The virtual lack of credit facilities in the NER has represented a major constraint to the promotion of development activities. Lending by the formal financial institutions is minimal and credit: deposit ratios are very low, indicating a large outflow of resources from the region. At present, no banking culture exists on either the demand or supply side. Tribals have no habit of savings. A major constraint on the banks' ability to lend is the lack of land titles under the customary land tenure arrangements to provide the necessary security, but this is frequently used to cover the banking sector's basic lack of willingness to lend due to other factors such as poor recoveries, difficulties of servicing small loans in difficult terrain, inadequate staff and low morale. Access to credit is affected by the patchy coverage of bank branches with large areas unbanked and by the complex and protracted banking procedures. As a result of the recent banking policies several loss-making branches have been closed down – all were located in rural areas. The cooperative sector is virtually nonfunctional with societies engaged in distribution of essential commodities but not advancing loans. As a result of the inadequacies of the formal credit system, communities remain dependent on informal sources of credit, obtained from relatives/friends and traders/money-lenders, for both consumption and productive purposes. Interest rates are high at around 10-20% per month. Production loans from traders are a major source of exploitation as borrowers are committed to sell their produce to the trader at vastly reduced prices in addition to paying high interest rates.

For the development of fruit production.

The Major constraints lying with the development of Agro-Processing Industries inadequacy of supply of raw material which are :-

- (a) High cost due to low yield
- (b) Low quality
- (c) Irregular source

Short duration of harvest seasons and in fact, the MIFCO, since commissioning of its pilot plants, have never get adequate supply of raw materials. As mentioned on the status of Agro-Food Processing Industries in Mizoram, the recent development under the MIFCO and Units in the private sectors are required to be fed with regular supply of raw materials of the following Agro-Horticulture Products for processing in different products on normal operation :-

Passion Fruit – for processing into concentrate

Squash and Ready-to-Serve - 20,000 M.T

Pineapple – for processing into concentrate

Squash Ready-to-Serve and for Canned fruits - 4,000 M.T

Orange & Other Citrus Fruits – for processing into

Concentrate Squash, Ready-to-Serve and

for Canned Fruits - 2,000 M.T

In view of the imbalance of supply and demand of raw materials and in the absence of effective and right steps taken for production development for the healthy growth of agro-food processing, the processor like MIFCO has to be come forward to take up backward linkage for the following reasons :-

- i. Availability of favourable agro-climatic condition with vast-fertile cultivable land.

- ii. Attitude of the people (rural growers) to grab the commercial plantation by changing over from devastating and unproductive jhumming with confidence and good will to MIFCO.
- iii. To do away with constraints and to facilitate its plants for increasing to its feasibility and viability by ensuring a regular source of quantity raw materials.
- iv. The compelling situation while its aims and objective as given in the Memorandum and Article of Association permits.
- v. In order to operate backward linkage, the MIFCO, therefore felt necessary to ORGANISE the production system by strengthening the plantation development through
- vi. Consolidation of land holding for the cultivation area after proper identification of its suitability and convenience for the plantation.
- vii. Introduction of improved method of cultivation technique to produce quality raw material.
- viii. Organizing the rural growers with proper awareness and know-how of the cultivation management system.

Grape

Grape has been cultivated for quite sometime in higher altitudes in areas like Hnahlan and Champhai in the eastern part of Mizoram. The variety being introduced and cultivated is identified as Bangalore - blue variety the same of which seems to have been commonly used for Sacramental wine in the past in the United States of America. Grape is extremely doing well even without provision of irrigation in the eastern high elevated areas under rainfed condition. These grape fruits are being processed locally for wine and grape juice which are sold in the market. Many farmers are earning their livelihood through grape cultivation and support their family and even constructed concrete structure home at such remote areas. Today, grape farming community formed society and established wineries at Hnahlan and Champhai. The quality of their wine will greatly improve and the same will find good market in the mainstream of wine market. There is a bright prospect for grape cultivators in Mizoram, not only for sustenance but even for prosperity.

Mandarin Orange (*Citrus reticulata*) :

Mandarin Orange cultivated in Mizoram is commonly known as 'Khasi Mandarin' by Indian Scientists. In earlier years, maximum plantation areas are in the western part of Mizoram. Mandarin orange used to be a major fruit crop in Mizoram, covering large areas of plantation, generating good income to the farmers. Mizoram oranges used to be marketed as far as Bangladesh in addition to Indian market. But due to citrus die-back disease, large area have been destroyed and declined which is called 'Sertam' in Mizo. Today, as technology improves, this citrus decline problem is gradually prevented while remedial operations and measures being taken. Recently, Israel technology is being adopted in citrus plantation right from production of quality planting materials to plantation including installation and provision of drip irrigation to citrus plants; a pilot project being executed at Rulpuihlim village. With the improved technology applied, citrus plants are expected to start fruiting within three years from its plantation in the orchard. As there never was a problem in marketing orange fruits and still no market problem even today, citrus industry in India and even in Mizoram has a very good prospect. Citrus plantation can be expanded at its maximum extent where Mizo farmers can adopt the technology of its cultivation.

Chow - chow (*Sechium edulis*) :

Mizoram is the largest producer of Chow - chow in India. The major growing areas are in Aizawl and Kolasib Districts. Many farming families are sustaining their families with the cultivation of chow chow. Mizoram climatic condition really favour its cultivation due to which the taste and flavour of Mizoram chow chow is preferable to other chow-chow produced

elsewhere other than in Mizoram. A well organized association known as 'Iskut Growers Association' is managing the marketing of chow-chow especially for outside the state consignments.

Green House Farming / Protected Cultivation :

Greenhouse farming is a novelty and new introduction in the State of Mizoram. Never before greenhouse was known for cultivation of vegetables, flowers etc., but today, it has become so popular and fascinated by most young educated unemployed youths. The productivity per unit area is very high and within a small

area under protected cultivation, one can have bumper harvest and support family. Although the initial investment for construction of greenhouse is high, yet the advantages is that the Greenhouse can be utilized repeatedly for years together, management is easier and cost effective, while quality of products are superior to open field cultivation in addition to higher productivity level per unit area. Therefore, to trigger incentives of educated unemployed youths, this programme can be one of the most promising programmes.

The method of cultivation has remained primitive the practice of jumping or shifting cultivation. For various reasons this method of cultivation has not undergone significant changes till today. The main reasons are: Lack of suitable land for wet rice cultivation (WRC), lack of adequate resources.

CHAPTER 6 STATE PLAN (PROPOSED PHYSICAL AND FINANCIAL TARGETS FOR XI PLAN)

6.1 DISTRICTWISE AND YEARWISE PHYSICAL AND FINANCIAL TARGETS AGRICULTURE

6.1.1 AIZAWL DISTRICT (Table 37)

Sl. No	Proposed Strategy	Activities	Unit cost in Rs	Target				
				2010-11		2011-12		Total
				Phy	Fin	Phy	Fin	
1	Enhancing seed replacement rate	Production incentive for HYV paddy seeds	-	-	-	-	-	-
		Distribution of certified seeds of paddy	1500/qt	50	0.75	75	1.125	1.875
		Distribution of certified pulse seeds	4500/qt	80	3.60	95	4.275	7.875
		Prodn. incentives for certified pulse seeds	-	-	-	-	-	-
		Distribution of certified oilseeds	3000/qt	30	0.90	40	1.20	2.1
2	Transfer of technology through crop demonstration	Mixed cropping demonstration with Maize	5000/ha	15	0.75	25	1.25	2.0
		Intercropping demonstration of Arhar based crops	5000/ha	5	0.25	5	0.25	0.5
		Intercropping demonstration of Maize based crop	5000/ha	10	0.50	15	0.75	1.25
		Demonstration of oilseeds	5000/ha	15	0.75	15	0.75	1.50
		Demonstration on pulse	4000/ha	10	0.40	15	0.60	1.00
		SRI method of paddy demonstration	7500/ha	15	1.125	15	1.125	2.25
		Hybrid rice demonstration	3000/ha	10	0.30	10	0.30	0.9
		Farmers Field School (rice, sugarcane, pulses, oilseeds)	17,000/No	20	3.40	25	4.25	7.65
		Varietals demonstration on pulses	5000/ha	10	0.50	10	0.50	1.00
		Varietals demonstration on Oil seeds	5000/ha	5	0.25	5	0.25	0.50
		Varietals demonstration on Maize	5000/ha	10	0.50	10	0.50	1.00
Promotion SRI Village		-	-	-	-	-		
3	Integrated Nutrient Management (FFS)	INM demonstration in rice	17,000/ha	20	3.40	25	4.25	7.65
		INM demonstration on sugarcane	17,000/ha	10	1.70	15	2.55	4.25
		INM demonstration on Oilseed	17,000/ha	6	1.02	8	1.36	2.38
		Supply of micro-nutrients	1000/ha	20	0.20	25	0.25	0.45
		Liming of acid soils	1,000/ha	100	1.00	130	1.30	2.30

4	Integrated Pest management (FFS)	IPM demonstrations on rice	17,000/ha	16	2.72	16	2.72	5.44
		IPM demonstrations on Rabi Oilseeds	17,000/ha	25	4.25	25	4.25	8.50
		IPM demonstrations on Rabi Pulse	17,000/ha	20	3.40	25	4.25	7.65
		IPM demonstrations on Kharif Pulse	17,000/ha	20	3.40	25	4.25	7.65
		IPM demonstrations on Kharif Oilseeds	17,000/ha	10	1.70	10	1.70	3.40
		IPM demonstrations on Sugarcane	17,000/ha	5	0.85	10	1.70	2.55
		IPM demonstrations on Maize	17,000/ha	20	3.40	30	5.10	8.50
		Supply of bio-pesticides for rice, pulse and Oilseeds	1,000	100	1.00	200	2.00	3.00
5	Promotion of Organic Farming	Establishment of Vermi - hatchery at Block Level	1,50,000/unit	6	9.00	12	18.00	27.00
		Demonstration on compost pit	15,000/unit	12	1.80	12	1.80	3.60
		Establishment of Vermi-compost units	15,000/unit	12	1.80	12	1.80	3.60
6	Farm Mechanisation	Subsidized sale of power tillers@ 50%	5,62,500/No	5	28.125	5	28.125	56.25
		Subsidy on rotavator @ 50%	25,000/No	20	5.00	20	5.00	10.00
		Subsidised sale of power thresher @ 50%	24,000/No	10	2.40	10	2.40	4.80
		Subsidised sale of post hole digger @ 50%	25,000/No	-	-	-	-	-
		Subsidised sale of bullock drawn/manual operated implements @ 50%	5,000/No	-	-	-	-	-
		Subsidised sale of diesel pump sets @ 50%	10,000/No	30	3.00	30	3.00	6.00
		Subsidised sale of sprayers @ 50%	1,600/No	60	0.96	80	1.28	2.24
		Subsidised sale of Harrow @ 50%	20,000/No	-	-	-	-	-
		Subsidised sale of Power thresher @ 50 %	24,000/No	-	-	-	-	-
		Subsidised sale of Reaper @ 50%	80,000/No	10	8.00	10	8.00	16.00
		Subsidised sale of Cono Weeder @ 50%	3,000/No	50	1.50	50	1.50	3.00
		Subsidised sale of Zero tillth seed cum Fert.Drill @ 50%	25,000/No	5	1.25	5	1.25	2.50
		Subsidised sale of Potato Planter 50%	30,000/No	5	1.50	5	1.50	3.00
		Subsidised sale of Raised Bed Planter @ 50%	25,000/No	-	-	-	-	-
		Subsidised sale of Animal Driven Tool Carrier @ 50 %	12,000/No	-	-	-	-	-
7	Infrastructure Development	Establishment of bio control laboratory		-	-	-	-	-
		Assistance for setting up cold storages at District Headquarters,Sub-Division HQs		-	-	-	-	-
		Support for establishment of Agri-clinics		-	-	1	20.00	20.00
		Construction of storage godown at District HQ.Sub-Division HQ		-	-	1	40.00	40.00

8	Technology Transfer	Training farmers groups on crop production technology (Village Level)	15,000/No	9	1.35	9	1.35	2.70
		Training farmers groups on crop production technology (District Level)	30,000/No	3	0.90	3	0.90	1.80
		Training of VEWs and other extension functionaries on crop production technology at District level	25,000/No	1	0.25	1	0.25	0.50
		Exposure visit of farmers within the state for 40 farmers	1,00,000/No	2	2.00	2	2.00	4.00
		Exposure visit of farmers outside the state for 20 Farmers	2,00,000/No	1	2.00	1	2.00	4.00
		Conducting field trials on Rabi/ Kharif	100000/No	2	2.00	2	2.00	4.00
		Training of farmers (Village Level) for 50farmers	10,000/No	9	0.90	15	1.50	2.40
		Training of farmers(District/State Level) for 30 farmers	20,000/No	2	0.40	3	0.60	1.00
		New crop varieties / new practices	-	-	-	-	-	-
9	Support to State Seed farm (Seed Production Farm)	Procurement of farm inputs	LS	LS	3.50	LS	6.00	9.50
		Machinery and equipment	LS	LS	5.00	LS	5.00	10.00
		Development of Farm Infrastructure	LS	LS	2.00	LS	2.00	4.00
10	Innovative Programme	Model Organic Farming	LS	-	-	-	-	-
		District Level Exhibition Show(Rabi/Kharif)	5,00,000/No	2	10.00	2	10.00	20.00
		Assistance for boring of tube well	24,000/No	10	2.40	15	3.60	6.00
11	Creation of Infrastructure	Potential Area Connectivity	5.00 /km	20	100.00	20	100.00	200.00
		Community Water tank	3.00/No	50	150.00	50	150.00	300.00
		Tube well	1.00/no	60	60.00	60	60.00	120.00
12	Production system	Rainfed Area Development for sustainable Agriculture (which includes terracing, irrigation systems and production)	1.50/Ha	200	300.00	250	375.00	675.00
		Solar fencing	5.00/ha	15	75.00	15	75.00	150.00
		Total			1226.6		1386.21	2612.81

(Table 38) 6.1.2 Proposed Strategies, Physical and Financial targets for Agriculture (Champhai District)

Sl. No	Proposed Strategy	Activities	Unit cost in Rs	Target				
				2010-11		2011-12		Total
				Phy	Fin	Phy	Fin	
1	Enhancing seed replacement rate	Production incentive for HYV paddy seeds	-	-	-	-	68.51	
		Distribution of certified seeds of paddy	1500/q	100 / 45	67.50	150 / 68	1.01	18.81
		Distribution of certified pulse seeds	4,500/q	50 / 38	17.10	50 / 38	1.71	18.81
		Distribution of certified oilseeds	3,000/q	50 / 8	24.00	50 / 8	2.40	26.4
2	Transfer of technology through crop demonstration	Mixed cropping demonstration with Maize	5,000/h	20	1.00	20	1.00	2.00
		Mixed cropping demonstration with Maize	-					
		Intercropping demonstration of Arhar based crops	5,000/h	10	5.00	10	5.00	10.00
		Intercropping demonstration of Maize based crop	5,000/h	20	1.00	20	1.00	2.00
		Demonstration of oilseeds	4,000/h	50	2.00	50	2.00	4.00
		Demonstration on pulse	4,000/h	50	2.00	50	2.00	4.00
		SRI method of paddy demonstration	7,500/h	100	7.50	150	11.25	8.75
		Hybrid rice demonstration	3,000/h	100	3.00	150	4.50	7.50
		Farmers Field School (rice, sugarcane, pulses, oilseeds)	17,000	12	2.04	12	2.04	4.08
		Varietals demonstration on pulses	5,000/h	10	5.00	10	5.00	10.00
		Varietals demonstration on Oil seeds	5,000/h	10	5.00	10	5.00	10.00
		Varietals demonstration on Maize	5,000/h	10	5.00	10	5.00	10.00
Promotion SRI Village	-	-	-	-	-	-		
3	Integrated Nutrient Management (FFS)	INM demonstration in rice	17,000/h	10	1.70	10	1.70	3.40
		INM demonstration on sugarcane	17,000/h	5	8.50	5	8.50	17.00
		INM demonstration on Oilseed	17,000/h	10	1.70	10	1.70	3.40
		Supply of micronutrients	1,000/h	100	1.00	100	1.00	2.00
		Liming of acid soils	1,000/h	1,000	10.00	1,000	10.00	20.00

4	Integrated Pest management(FFS)	IPM demonstrations on rice	17,000/h	50	8.50	50	8.50	17.00
		IPM demonstrations on Rabi Oilseeds	17,000/h	10	1.70	10	1.70	3.40
		IPM demonstrations on Rabi Pulse	17,000/h	50	8.50	50	8.50	17.00
		IPM demonstrations on Kharif Pulse	17,000/h	10	1.70	10	1.70	3.40
		IPM demonstrations on Khafir Oilseeds	17,000/h	10	1.70	10	1.70	3.40
		IPM demonstrations on Sugarcane	17,000/h	10	1.70	10	1.70	3.40
		IPM demonstrations on Maize	17,000/h	50	8.50	50	8.50	17.00
		Supply of biopesticides for rice,pulse and Oilseeds	1,000/h	400	4.00	400	4.00	8.00
5	Promotion of Organic Farming	Establishment of Vermi-hatchery at Block Level	1,50,000	5	7.50	5	7.50	15.00
		Demonstration on compost pit	5,000	50	2.50	50	2.50	5.00
		Establishment of Vermi-compost units	15,000	20	3.00	20	3.00	6.00
6	Farm Mechanisation	Subsidized sale of power tillers	56,250	40	2.25	40	2.25	4.50
		Subsidy on rotavator @ 50%	25,000	10	2.50	10	2.50	5.00
		Subsidised sale of power thresher @ 50%	24,000	3	7.20	3	7.20	14.40
		Subsidised sale of post hole digger @ 50%	25,000	5	1.25	5	1.25	2.50
		Subsidised sale of bullock drawn/manual operated	5,000	10	5.00	10	5.00	10.00
		Subsidised sale of diesel pump sets @ 50%	10,000	20	2.00	20	2.00	4.00
		Subsidised sale of sprayers @ 50%	1,600	50	8.00	50	8.00	16.00
		Harrow @ 50%	20,000	10	2.00	-	-	2.00
		Power thresher @ 50 %	24,000	5	1.20	-	-	1.20
		Reaper @ 50%	80,000	3	2.40	-	-	2.40
		Cono Weeder @ 50%	3,000	200	6.00	200	6.00	12.00
		Zero till seed cum Fert.Drill @ 50%	25,000	5	1.25	-	-	1.25
		Potato Planter @ 50%	30,000	5	1.50	-	-	1.50
		Raised Bed Planter @ 50%	25,000	50	12.50	-	-	12.50
Assistance for boring of Tube Wells	24,000	50	12.00	50	12.00	24.00		

7	Infrastructure Development	Establishment of bio control laboratory	-	-	-	-	-	-
		Assistance for setting up cold storage at Sub-Division HQ	3,00,00,000	-	-	1	3.00	3.00
		Construction of Farmers hostel and chowkider quarter at Departmental land at District HQ	1,00,00,000	1	1.00	-	-	1.00
		Construction of storage godown at District HQ and Sub-Division HQ	30,00,000	-	-	1	30.00	30.00
8	Technology Transfer	Training of farmers groups on crop production technology	10,000 / 50 farmers/3 days	30	3.00	30	3.00	6.00
		Training of VEWs and other extension functionaries on crop production technology at District level	20,000 / 30/3 days	3	6.00	3	6.00	12.00
		Exposure visit of farmers within the state	30,000/20 farmers	10	3.00	10	3.00	6.00
		Exposure visit of farmers outside the state	50,000/10 farmers	10	5.00	10	5.00	10.00
9	Innovative Programme	Block Level Farmers meet	2,00,000	4	8.00	4	8.00	16.00
		District Level Exhibition Show	4,00,000	1	4.00	1	4.00	8.00
10	Creation of Infrastructure	Potential Area Connectivity	5.00 /km	20	100.00	20	100.00	200.00
		Community Water tank	3.00/No	50	150.00	50	150.00	300.00
		Tube well	1.00/no	60	60.00	60	60.00	120.00
11	Production system	Rainfed Area Development for sustainable Agriculture (which includes terracing, irrigation systems and production)	1.50/Ha	200	300.00	250	375.00	675.00
		Solar fencing	5.00/ha	15	75.00	15	75.00	150.00
		Total			1037.845		1327.673	2365.518

6.1.3.1

KOLASIB DISTRICT (Table 39)

Proposed Strategies, Physical and Financial targets for Agriculture

Sl. No	Proposed Strategy	Activities	Unit cost in Rs	target				
				2010-11		2011-12		Total
				Phy.	Fin	Phy.	Fin	
1	Enhancing seed replacement rate	Production incentive for HYV paddy seeds	-	-	-	-	-	-
		Distribution of certified seeds of paddy	1500/q	100 / 45	6.7	150 / 68	1.01	1.68
		Distribution of certified pulse seeds	4,500/q	50 / 38	1.71	50 / 38	1.71	3.42
		Distribution of certified oilseeds	3,000/q	50 / 8	2.4	50 / 8	2.40	4.80
2	Transfer of technology through crop demonstration	Mixed cropping demonstration with Maize	5,000/h	20	1.00	20	1.00	2.00
		Mixed cropping demonstration with Maize	-					
		Intercropping demonstration of Arhar based crops	5,000/h	10	5.0	10	5.00	1.00
		Intercropping demonstration of Maize basedcrop	5,000/h	20	1.00	20	1.00	2.00
		Demonstration of oilseeds	4,000/h	50	2.00	50	2.00	4.00
		Demonstration on pulse	4,000/h	50	2.00	50	2.00	4.00
		SRI method of paddy demonstration	7,500/h	100	7.50	150	11.25	18.75
		Hybrid rice demonstration	3,000/h	100	3.00	150	4.50	7.50
		Farmers Field School (rice, sugarcane, pulses, oilseeds)	17,000	12	2.04	12	2.04	4.08
		Varietals demonstration on pulses	5,000/h	10	5.00	10	5.00	10.00
		Varietals demonstration on Oil seeds	5,000/h	10	5.00	10	5.00	10.00
		Varietals demonstration on Maize	5,000/h	10	5.00	10	5.00	10.00
Promotion SRI Village	-	-	-	-	-	-		
3	Integrated Nutrient Management (FFS)	INM demonstration in rice	17,000/h	10	1.70	10	1.70	3.40
		INM demonstration on sugarcane	17,000/h	5	8.50	5	8.50	17.00
		INM demonstration on Oilseed	17,000/h	10	1.70	10	1.70	3.40
		Supply of micronutrients	1,000/h	100	1.00	100	1.00	2.00
		Liming of acid soils	1,000/h	1,000	1.00	1,000	1.00	2.00

4	Integrated Pest management (FFS)	IPM demonstrations on rice	17,000/h	50	8.50	50	8.50	17.00
		IPM demonstrations on Rabi Oilseeds	17,000/h	10	1.70	10	1.70	3.40
		IPM demonstrations on Rabi Pulse	17,000/h	50	8.50	50	8.50	17.00
		IPM demonstrations on Kharif Pulse	17,000/h	10	1.70	10	1.70	3.40
		IPM demonstrations on Kharif Oilseeds	17,000/h	10	1.70	10	1.70	3.40
		IPM demonstrations on Sugarcane	17,000/h	10	1.70	10	1.70	3.40
		IPM demonstrations on Maize	17,000/h	50	8.50	50	8.50	17.00
		Supply of biopesticides for rice, pulse and Oilseeds	1,000/h	400	4.00	400	4.00	8.00
5	Promotion of Organic Farming	Establishment of Vermi-hatchery at Block Level	1,50,000	5	7.50	5	7.50	15.00
		Demonstration on compost pit	5,000	50	2.50	50	2.50	5.00
		Establishment of Vermi-compost units	15,000	20	3.00	20	3.00	6.00
6	Farm Mechanization	Subsidized sale of power tillers	56,250	40	2.25	40	2.25	4.50
		Subsidy on rotavator @ 50%	25,000	10	2.50	10	2.50	5.00
		Subsidized sale of power thresher @ 50%	24,000	3	7.20	3	7.20	14.40
		Subsidized sale of post hole digger @ 50%	25,000	5	1.25	5	1.25	2.50
		Subsidized sale of bullock drawn/manual operated	5,000	10	5.00	10	5.00	10.00
		Subsidized sale of diesel pump sets @ 50%	10,000	20	2.00	20	2.00	4.00
		Subsidized sale of sprayers @ 50%	1,600	50	8.00	50	8.00	16.00
		Harrow @ 50%	20,000	10	2.00	-	-	-
		Power thresher @ 50 %	24,000	5	1.20	-	-	-
		Reaper @ 50%	80,000	3	2.40	-	-	-
		Cono Weeder @ 50%	3,000	200	6.00	200	6.00	12.00
		Zero till seed cum Fert. Drill @ 50%	25,000	5	1.25	-	-	1.25
		Potato Planter @ 50%	30,000	5	1.50	-	-	1.50
		Raised Bed Planter @ 50%	25,000	50	1.25	-	-	1.25
Assistance for boring of Tube Wells	24,000	50	1.20	50	1.20	2.40		

7	Infrastructure Development	Establishment of bio control laboratory	-	-	-	-	-	-
		Assistance for setting up cold storage at Sub-Division HQ	3,00,00,000	-	-	1	3.00	3.00
		Construction of Farmers hostel and chowkider quarter at Departmental land at District HQ	1,00,00,000	1	1.00	-	-	1.00
		Construction of storage godown at District HQ and Sub-Division HQ	30,00,000	-	-	1	3.00	3.00
8	Technology Transfer	Training of farmers groups on crop production technology	10,000 / 50 farmers/3 days	30	3.00	30	3.00	6.00
		Training of VEWs and other extension functionaries on crop production technology at District level	20,000 / 30/3 days	3	6.00	3	6.00	12.00
		Exposure visit of farmers within the state	30,000/20 farmers	10	3.00	10	3.00	6.00
		Exposure visit of farmers outside the state	50,000/10 farmers	10	5.00	10	5.00	10.00
9	Innovative Programme	Block Level Farmers meet	2,00,000	4	8.00	4	8.00	16.00
		District Level Exhibition Show	4,00,000	1	4.00	1	4.00	8.00
10	Creation of Infrastructure	Potential Area Connectivity	5.00 /km	20	100.00	20	100.00	200.00
		Community Water tank	3.00/No	50	150.00	50	150.00	300.00
		Tube well	1.00/no	60	60.00	60	60.00	120.00
		Innovative- Oil Palm Mill	250.00/ No	1	250.00	-	-	250.00
11	Production system	Rainfed Area Development for sustainable Agriculture (which includes terracing, irrigation systems and production)	1.50/Ha	200	300.00	250	375.00	675.00
		Solar fencing	5.00/ha	15	75.00	15	75.00	150.00
		Total			1295.535		1599.305	2894.84

(Table 40) 6.1.4. Proposed Strategies, Physical and Financial targets for Agriculture Lawngtlai District

Sl. No.	Proposed Strategy	Activities	Unit cost in Rs	Phy :- No.of Unit / Quantity in Quintal Fin :- Rs. In Lakh				
				2010 -2011		2011- 2012		Total
				P	F	P	F	
1	2	3	4	5	6	7	8	9
1	Enhancing replacement rate	Production incentive for HYV paddy seeds	0.10	125	12.50	125	12.50	25.00
		Distribution of certified seeds of paddy	0.10	120	12.00	120	12.00	24.00
		Distribution of certified pulse seeds	0.12	70	8.40	70	8.40	16.80
		Production incentive for certified pulse seeds	0.13	50	6.50	50	6.50	13.00
		Distribution of certified oilseeds	0.15	10	1.50	10	1.50	3.00
2	Transfer of technology through crop demonstration	Mixed cropping demonstration with Maize	0.10	5	0.50	5	0.50	1.00
		Intercropping demonstration of Arhar based Crops	0.15	5	0.75	5	0.75	1.50
		Intercropping of Maize based crop	0.15	10	1.50	10	1.50	3.00
		Demonstration of oilseeds	0.13	5	0.65	5	0.65	1.30
		Demonstration on pulse	0.13	10	1.30	10	1.30	2.60
		SRI method paddy demonstration	0.10	50	5.00	50	5.00	10.00
		Hybrid rice demonstration	0.10	15	1.50	15	1.50	3.00
		Farmers Field School (Rice, sugarcane, pulses, oilseeds)	0.17	70	11.90	70	11.90	23.80
		Varietals demonstration on pulses.	0.09	5	0.45	5	0.45	0.90
		Varietals demonstration on Oil seeds	0.09	5	0.45	5	0.45	0.90
		Varietals demonstration on Maize	0.09	7	0.63	6	0.54	1.17
Promotion SRI Village	0.15	20	3.00	7	1.05	4.05		
3	Integrated Nutrient Management (FFS)	INM demonstration in rice	0.10	30	3.00	27	2.70	5.70
		INM demonstration on sugarcane	0.14	10	1.40	10	1.40	2.80
		INM demonstration on seed	0.12	5	0.60	5	0.60	1.2
		Supply of micronutrients	0.06	5	0.30	4	0.24	0.54
		Liming of acid soils	0.11	75	8.25	70	7.70	15.95

4	Integrated Pest management (FFS)	IPM demonstrations on rice	0.17	50	8.50	50	8.50	17.00
		IPM demonstrations on Rabi Oilseeds	0.17	5	0.85	5	0.85	1.7
		IPM demonstrations on Rabi Pulse	0.17	10	1.70	8	1.36	3.06
		IPM demonstration on Kharif Pulse	0.17	10	1.70	8	1.36	3.06
		IPM demonstration on Oilseeds	0.17	8	1.36	7	1.19	2.55
		IPM demonstrations on Sugarcane	0.17	20	3.40	17	2.89	6.29
		IPM demonstration on Maize	0.17	10	1.70	7	1.19	2.89
		Supply of bio-pesticides for rice pulse and Oilseeds	0.17	40	6.80	45	7.65	14.45
5	Promotion of Organic Farming	Establishment of hatchery at Block Level	0.15	10	1.50	7	1.05	2.55
		Demonstration on compost pit	0.15	15	2.25	18	2.70	4.95
		Establishment of Vermi-compost Unit	0.15	40	6.00	45	6.75	12.75
6	Farm Mechanization	Subsidized sale of Power tillers	0.35	20	7.00	20	7.00	14.00
		Subsidized on rotavator @ 50%	0.20	20	4.00	18	3.60	7.60
		Subsidized sale of Power thresher @ 50%	0.30	50	15.00	52	15.60	30.60
		Subsidized sale of Post hole digger @ 50%	0.20	40	8.00	37	7.40	15.40
		Subsidized sale of bullock drawn/manual operated implements @ 50%	0.15	50	7.50	53	7.95	15.45
		Subsidized sale of diesel pump sets @ 50%	0.25	10	2.50	12	3.00	5.50
		Subsidized sale of sprayers @ 50%	0.01	100	1.00	120	1.20	2.20
		Harrow sale of Sprayers @ 50%	0.05	15	0.75	13	0.65	1.40
		Power thresher sale of sprayers @ 50%	0.07	22	1.54	20	1.40	2.94
		Reaper sale of sprayers @ 50%	0.08	10	0.80	8	0.64	1.44
		Cono Weeder sale of sprayers @ 50%	0.06	20	1.20	25	1.50	2.70
		Zero till seed cum Fert. Drill sale of sprayers @ 50%	0.09	20	1.80	14	1.26	3.06
		Potato Planter sale of sprayers @ 50%	0.11	22	2.42	20	2.20	4.62
		Raised Bed Planter sale of sprayer @ 50%	0.10	10	1.00	9	0.90	1.90
Animal Driven Tool Carrier sale of sprayers @ 50%	0.10	15	1.50	11	1.10	2.60		

7	Infrastructure Development	Establishment of bio control laboratory	0.30	2	0.60	2	0.60	1.20
		Assistants for setting up cold storages at district HQ. sub - Division HQ.	0.30	5	1.50	5	1.50	3.00
		Support for establishment of Agri - clinics.	5.00	1	5.00	1	5.00	10.00
		Construction of storages go down at district HQ.sub-division HQ.	20.00	2	40.00	2	40.00	80.00
		Training Farmers Group on Crop production technology	0.50	6	3.00	6	3.00	6.00
8	Technology Transfer	Training og VEWs and other extension functionaries on crop production technology at District level	0.50	5	2.50	5	2.50	5.00
		Exposure visit of farmers with in the state	0.50	2	1.00	2	1.00	2.00
		Exposure visit of farmers out side the state	1.00	1	1.00	1	1.00	2.00
		Conducting field trails on new crop varieties/ new practice	0.60	5	3.00	4	2.40	5.40
9	Support to state seedfarm (Seed production farm)	Procurement of farms inputs	10.00	1	10.00	1	10.00	20.00
		Machinery and equipment	20.00	1	20.00	1	20.00	40.00
		Development of farm infrastructure	15.00	2	30.00	2	30.00	60.00
10	Innovative Programme	Model organic farming at Lawngtlai	20.00	1	20.00	1	20.00	40.00
		District level exhibition show	1.00	1	1.00	1	1.00	2.00
11	Creation of Infrastructure	Potential Area Connectivity	5.00 /km	20	100.00	20	100.00	200.00
		Community Water tank	3.00/No	50	150.00	50	150.00	300.00
		Tube well	1.00/no	60	60.00	60	60.00	120.00
12	Production system	Rainfed Area Development for sustainable Agriculture (which includes terracing, irrigation systems and production)	1.50/Ha	200	300.00	250	375.00	675.00
		Solar fencing	5.00/ha	15	75.00	15	75.00	150.00
		Total			1917.875		1970.875	3888.75

(Table 41) 6.1.5.. Proposed Strategy for Agriculture LUNGLEI DISTRICT

Proposed Strategy	Activities	Unit cost in Rs	Target				
			2010-11		2011-12		Total
			P	F	P	F	
Enhancing seed replacement rate	Production incentive for HYV paddy seeds	15000/ha	100	15	100	5	20.0
	Distribution of certified seeds of paddy	2000/Qtls	40	0.8	40	0.8	1.6
	Distribution of certified pulse seeds	50/kg	50	2.0	50	2.0	4.0
	Production incentives for certified pulse seeds	5000/Ha	100	5	100	5	10.0
	Distribution of certified oilseeds (Sesamum)	300/Ha	500	1.5	500	1.5	3.0
Transfer of technology through crop demonstration	Mixed cropping demonstration with Maize	5000/Ha	100	5	100	5	10.0
	Mixed cropping demonstration with Maize	-	-	-	-	-	-
	Intercropping demonstration of Arhar based crops	5000/Ha	100	5	100	5	10.0
	Intercropping demonstration of Maize based crop	5000/Ha	100	5	100	5	10.0
	Demonstration of oilseeds	5000/Ha	50	2.5	50	2.5	5.0
	Demonstration on pulse	5000/Ha	50	2.5	50	2.5	5.0
	SRI method of paddy demonstration	5000/Ha	100	5	100	5	10.0
	Hybrid rice demonstration	5000/Ha	50	2.5	50	2.5	5.0
	Farmers Field School (rice, sugarcane, pulses, oilseeds)	15000/Ha	50	7.5	50	7.5	15.0
	Varietals demonstration on pulses	5000/Ha	30	1.5	30	1.5	3.0
	Varietals demonstration on Oil seeds	5000/Ha	30	1.5	30	1.5	3.0
	Varietals demonstration on Maize	5000/Ha	30	1.5	30	1.5	3.0
Promotion SRI Village	1 lakh/village	20	20	20	20	40.0	
Integrated Nutrient Management (FFS)	INM demonstration in rice	10000	20	2	20	2	4.0
	INM demonstration on sugarcane	10000	10	1	10	1	2.0
	INM demonstration on Oilseed	10000	30	3	30	3	6.0
	Supply of micronutrients	-	-	-	-	-	-
	Liming of acid soils	500	1200	6	1200	6	12.0
Integrated Pest management (FFS)	IPM demonstrations on rice	5000	30	1.5	30	1.5	3.0
	IPM demonstrations on Rabi Oilseeds	5000	40	2	40	2	4.0
	IPM demonstrations on Rabi Pulse	5000	15	0.75	15	0.75	1.50
	IPM demonstrations on Kharif Pulse	-	-	-	-	-	-
	IPM demonstrations on Khafir Oilseeds	5000	20	1	20	1	2.0
	IPM demonstrations on Sugarcane	5000	10	0.5	10	0.5	0.10
	IPM demonstrations on Maize	5000	30	1.5	30	1.5	3.0
	Supply of biopesticides for rice, pulse and Oilseeds	-	-	-	-	-	-

Promotion of Organic Farming	Establishment of Vermi-hatchery at Block Level	200000	4	8	4	8	16.0
	Demonstration on compost pit	4500	200	9	200	9	18.0
	Establishment of Vermi-compost units	20000	50	10	50	10	20.0
Farm Mechanisation	Subsidized sale of power tillers	75000	20	15	20	15	30.0
	Subsidy on rotavator @ 50%	-	-	-	-	-	-
	Subsidized sale of power thresher @ 50%	-	-	-	-	-	-
	Subsidised sale of post hole digger @ 50%	-	-	-	-	-	-
	Subsidised sale of bullock drawn/manual operated implements @ 50%	-	-	-	-	-	-
	Subsidised sale of diesel pump sets @ 50%	15000	30	4.5	30	4.5	9.0
	Subsidised sale of sprayers @ 50%	1000	50	0.5	50	0.5	0.10
Infrastructure Development	Establishment of bio control laboratory	-	-	-	-	-	-
	Assistance for setting up cold storages at District Headquarters, Sub-Division HQs	150 lakh	3	450	3	450	453.0
	Support for establishment of agri-clinics	350 lakh	1	50	1	50	51.0
	Construction of storage godown at District HQ.Sub-Division HQ	5 lakh	4	20	4	20	24.0
Technology Transfer	Training farmers groups on crop production technology	15000	20	3	20	3	23.0
	Training of VEWs and other extension functionaries on crop production technology at District level	20000	2	0.4	2	0.4	0.8
	Exposure visit of farmers within the state	1 lakh	2	2	2	2	4.0
	Exposure visit of farmers outside the state	2.5 lakh	1	2.5	1	2.5	3.5
	Conducting field trials on new crop varieties / new practices	-	-	-	-	-	-
		-	-	-	-	-	-
Innovative Programme	Model Organic Farming at (Composit Farm)	-	-	-	-	-	-
	District Level Exhibition Show	50 lakh	1	5	1	5	6.0
Infra-structures	1)Construction of PAC (Potential Area Connectivity)	3 lakh	15	45	20	60	105.0
	2) Construction of staff quarter at District Hqrs. & Sub-Division/Circles	4 lakh	6	24	-	-	24.0
Administration	3) Office expenses TA/DA Stationary POL etc.	L.S.	L.S.	2.0		2	4.0
	4) Purchase of Computers & Projectors with accessories	L.S.		3.0			3.0
Creation of Infrastructure	Potential Area Connectivity	5.00 /km	20	100.00	20	100.00	200.00
	Community Water tank	3.00/No	50	150.00	50	150.00	300.00
	Tube well	1.00/no	60	60.00	60	60.00	120.00
	Innovative- Oil Palm Mill	250.00/ No	1	250.00	-	-	250.00
Production system	Rainfed Area Development for sustainable Agriculture (which includes terracing, irrigation systems and production)	1.50/Ha	200	300.00	250	375.00	675.00
	Solar fencing	5.00/ha	15	75.00	15	75.00	150.00
	Total			2465.675		2268.675	4734.35

6.1.6

(Table 42) Proposed Strategy for Agriculture – Physical and Financial targets for the XI Plan MAMIT DISTRICT

Sl. No	Proposed Strategy	Activities	Unit cost in Rs	Physical & Financial (Rs in Lakhs)				Total
				2010-11		2011-12		
				P	F	P	F	
1	2	3	4	5	6	7	8	
1	Enhancing seed replacement rate	Production incentive for HYV paddy seeds	-	-	-	-	-	-
		Distribution of certified seeds of paddy	1500/qt	50	0.75	75	1.125	1.875
		Distribution of certified pulse seeds	4500/qt	80	3.60	95	4.275	7.875
		Prod. incentives for certified pulse seeds	-	-	-	-	-	-
		Distribution of certified oilseeds	3000/qt	30	0.90	40	1.20	2.1
2	Transfer of technology through crop demonstration	Mixed cropping demonstration with Maize	5000/ha	15	0.75	25	1.25	2.0
		Intercropping demonstration of Arhar based crops	5000/ha	5	0.25	5	0.25	0.5
		Intercropping demonstration of Maize based crop	5000/ha	10	0.50	15	0.75	1.25
		Demonstration of oilseeds	5000/ha	15	0.75	15	0.75	1.50
		Demonstration on pulse	4000/ha	10	0.40	15	0.60	1.0
		SRI method of paddy demonstration	7500/ha	15	1.125	15	1.125	2.25
		Hybrid rice demonstration	3000/ha	10	0.30	10	0.30	0.60
		Farmers Field School (rice, sugarcane, pulses, oilseeds)	17,000/No	20	3.40	25	4.25	7.65
		Varietal demonstration on pulses	5000/ha	10	0.50	10	0.50	1.00
		Varietal demonstration on Oil seeds	5000/ha	5	0.25	5	0.25	0.50
		Varietal demonstration on Maize	5000/ha	10	0.50	10	0.50	1.00
		Promotion SRI Village		-	-	-	-	-
3	Integrated Nutrient Management (FFS)	INM demonstration in rice	17,000/ha	20	3.40	25	4.25	7.65
		INM demonstration on sugarcane	17,000/ha	10	1.70	15	2.55	4.25
		INM demonstration on Oilseed	17,000/ha	6	1.02	8	1.36	2.38
		Supply of micro-nutrients	1000/ha	20	0.20	25	0.25	0.45
		Liming of acid soils	1,000/ha	100	1.00	130	1.30	2.30

4	Integrated Pest management (FFS)	IPM demonstrations on rice	17,000/ha	16	2.72	16	2.72	5.44
		IPM demonstrations on Rabi Oilseeds	17,000/ha	25	4.25	25	4.25	8.50
		IPM demonstrations on Rabi Pulse	17,000/ha	20	3.40	25	4.25	7.65
		IPM demonstrations on Kharif Pulse	17,000/ha	20	3.40	25	4.25	7.65
		IPM demonstrations on Kharif Oilseeds	17,000/ha	10	1.70	10	1.70	3.40
		IPM demonstrations on Sugarcane	17,000/ha	5	0.85	10	1.70	2.55
		IPM demonstrations on Maize	17,000/ha	20	3.40	30	5.10	8.50
		Supply of bio-pesticides for rice, pulse and Oilseeds	1,000	100	1.00	200	2.00	3.00
5	Promotion of Organic Farming	Establishment of Vermi - hatchery at Block Level	1,50,000/unit	6	9.00	12	18.00	27.00
		Demonstration on compost pit	15,000/unit	12	1.80	12	1.80	3.60
		Establishment of Vermi-compost units	15,000/unit	12	1.80	12	1.80	3.60
6	Farm Mechanisation	Subsidized sale of power tillers@ 50%	5,62,500/No	5	28.125	5	28.125	56.25
		Subsidy on rotavator @ 50%	25,000/No	20	5.00	20	5.00	10.00
		Subsidised sale of power thresher @ 50%	24,000/No	10	2.40	10	2.40	4.80
		Subsidised sale of post hole digger @ 50%	25,000/No	-	-	-	-	-
		Subsidised sale of bullock drawn/manual operated implements @ 50%	5,000/No	-	-	-	-	-
		Subsidised sale of diesel pump sets @ 50%	10,000/No	30	3.00	30	3.00	6.00
		Subsidised sale of sprayers @ 50%	1,600/No	60	0.96	80	1.28	2.24
		Subsidised sale of Harrow @ 50%	20,000/No	-	-	-	-	-
		Subsidised sale of Power thresher @ 50 %	24,000/No	-	-	-	-	-
		Subsidised sale of Reaper @ 50%	80,000/No	10	8.00	10	8.00	16.00
		Subsidised sale of Cono Weeder @ 50%	3,000/No	50	1.50	50	1.50	3.00
		Subsidised sale of Zero tilth seed cum Fert.Drill @ 50%	25,000/No	5	1.25	5	1.25	2.50
		Subsidised sale of Potato Planter 50%	30,000/No	5	1.50	5	1.50	3.00
		Subsidised sale of Raised Bed Planter @ 50%	25,000/No	-	-	-	-	-
Subsidised sale of Animal Driven Tool Carrier @ 50 %	12,000/No	-	-	-	-	-		

7	Infrastructure Development	Establishment of bio control laboratory		-	-	-	-	-
		Assistance for setting up cold storages at District Headquarters,Sub-Division HQs		-	-	-	-	-
		Support for establishment of Agri-clinics		-	-	1	20.00	20.00
		Construction of storage godown at District HQ.Sub-Division HQ		-	-	1	40.00	40.00
8	Technology Transfer	Training farmers groups on crop production technology (Village Level)	15,000/No	9	1.35	9	1.35	2.70
		Training farmers groups on crop production technology (District Level)	30,000/No	3	0.90	3	0.90	1.8
		Training of VEWs and other extension functionaries on crop production technology at District level	25,000/No	1	0.25	1	0.25	0.5
		Exposure visit of farmers within the state for 40 farmers	1,00,000/No	2	2.00	2	2.00	4.00
		Exposure visit of farmers outside the state for 20 Farmers	2,00,000/No	1	2.00	1	2.00	4.00
		Conducting field trials on Rabi/ Kharif	100000/No	2	2.00	2	2.00	4.00
		Training of farmers (Village Level) for 50farmers	10,000/No	9	0.90	15	1.50	2.40
		Training of farmers(District/State Level) for 30 farmers	20,000/No	2	0.40	3	0.60	1.00
		New crop varieties / new practices	-	-	-	-	-	-
9	Support to State Seed farm (Seed Production Farm)	Procurement of farm inputs	LS	LS	3.50	LS	6.00	9.50
		Machinery and equipment	LS	LS	5.00	LS	5.00	10.00
		Development of Farm Infrastructure	LS	LS	2.00	LS	2.00	4.00
10	Innovative Programme	Model Organic Farming	LS	-	-	-	-	-
		District Level Exhibition Show(Rabi/Kharif)	5,00,000/No	2	10.00	2	10.00	20.00
		Assistance for boring of tube well	24,000/No	10	2.40	15	3.60	6.00
11	Creation of Infrastructure	Potential Area Connectivity	5.00 /km	20	100.00	20	100.00	200.00
		Community Water tank	3.00/No	50	150.00	50	150.00	300.00
		Tube well	1.00/no	60	60.00	60	60.00	120.00
12	Production system	Rainfed Area Development for sustainable Agriculture (which includes terracing, irrigation systems and production)	1.50/Ha	200	300.00	250	375.00	675.00
		Solar fencing	5.00/ha	15	75.00	15	75.00	150.00
		Total			1456.2		1615.81	3072.01

6.1.7

Proposed Strategies, physical and financial targets for Agriculture SAIHA DISTRICT (Table 43)

Sl. No	Proposed Strategy	Activities	Unit cost in Rs	Physical & Financial (Rs in Lakhs)				Total
				2010-11		2011-12		
				P	F	P	F	
1	2	3	4	5	6	7	8	
1	Enhancing seed replacement rate	Production incentive for HYV paddy seeds	-	-	-	-	-	-
		Distribution of certified seeds of paddy	1500/qt	50	0.75	75	1.125	1.875
		Distribution of certified pulse seeds	4500/qt	80	3.60	95	4.275	7.875
		Prodn. incentives for certified pulse seeds	-	-	-	-	-	-
		Distribution of certified oilseeds	3000/qt	30	0.90	40	1.20	2.1
2	Transfer of technology through crop demonstration	Mixed cropping demonstration with Maize	5000/ha	15	0.75	25	1.25	2.0
		Intercropping demonstration of Arhar based crops	5000/ha	5	0.25	5	0.25	0.5
		Intercropping demonstration of Maize based crop	5000/ha	10	0.50	15	0.75	1.25
		Demonstration of oilseeds	5000/ha	15	0.75	15	0.75	1.50
		Demonstration on pulse	4000/ha	10	0.40	15	0.60	1.0
		SRI method of paddy demonstration	7500/ha	15	1.125	15	1.125	2.25
		Hybrid rice demonstration	3000/ha	10	0.30	10	0.30	0.60
		Farmers Field School (rice, sugarcane, pulses, oilseeds)	17,000/No	20	3.40	25	4.25	7.65
		Varietals demonstration on pulses	5000/ha	10	0.50	10	0.50	1.00
		Varietals demonstration on Oil seeds	5000/ha	5	0.25	5	0.25	0.50
		Varietals demonstration on Maize	5000/ha	10	0.50	10	0.50	1.00
		Promotion SRI Village		-	-	-	-	-
3	Integrated Nutrient Management (FFS)	INM demonstration in rice	17,000/ha	20	3.40	25	4.25	7.65
		INM demonstration on sugarcane	17,000/ha	10	1.70	15	2.55	4.25
		INM demonstration on Oilseed	17,000/ha	6	1.02	8	1.36	2.38
		Supply of micro-nutrients	1000/ha	20	0.20	25	0.25	0.45
		Liming of acid soils	1,000/ha	100	1.00	130	1.30	2.30

4	Integrated Pest management (FFS)	IPM demonstrations on rice	17,000/ha	16	2.72	16	2.72	5.44
		IPM demonstrations on Rabi Oilseeds	17,000/ha	25	4.25	25	4.25	8.50
		IPM demonstrations on Rabi Pulse	17,000/ha	20	3.40	25	4.25	7.65
		IPM demonstrations on Kharif Pulse	17,000/ha	20	3.40	25	4.25	7.65
		IPM demonstrations on Kharif Oilseeds	17,000/ha	10	1.70	10	1.70	3.40
		IPM demonstrations on Sugarcane	17,000/ha	5	0.85	10	1.70	2.55
		IPM demonstrations on Maize	17,000/ha	20	3.40	30	5.10	8.50
		Supply of bio-pesticides for rice, pulse and Oilseeds	1,000	100	1.00	200	2.00	3.00
5	Promotion of Organic Farming	Establishment of Vermi - hatchery at Block Level	1,50,000/unit	6	9.00	12	18.00	27.00
		Demonstration on compost pit	15,000/unit	12	1.80	12	1.80	3.60
		Establishment of Vermi-compost units	15,000/unit	12	1.80	12	1.80	3.60
6	Farm Mechanisation	Subsidised sale of power tillers@ 50%	5,62,500/No	5	28.125	5	28.125	56.25
		Subsidy on rotavator @ 50%	25,000/No	20	5.00	20	5.00	10.00
		Subsidised sale of power thresher @ 50%	24,000/No	10	2.40	10	2.40	4.80
		Subsidised sale of post hole digger @ 50%	25,000/No	-	-	-	-	-
		Subsidised sale of bullock drawn/manual operated implements @ 50%	5,000/No	-	-	-	-	-
		Subsidised sale of diesel pump sets @ 50%	10,000/No	30	3.00	30	3.00	6.00
		Subsidised sale of sprayers @ 50%	1,600/No	60	0.96	80	1.28	2.24
		Subsidised sale of Harrow @ 50%	20,000/No	-	-	-	-	-
		Subsidised sale of Power thresher @ 50 %	24,000/No	-	-	-	-	-
		Subsidised sale of Reaper @ 50%	80,000/No	10	8.00	10	8.00	16.00
		Subsidised sale of Cono Weeder @ 50%	3,000/No	50	1.50	50	1.50	3.00
		Subsidised sale of Zero tillth seed cum Fert.Drill @ 50%	25,000/No	5	1.25	5	1.25	2.50
		Subsidised sale of Potato Planter 50%	30,000/No	5	1.50	5	1.50	3.00
		Subsidised sale of Raised Bed Planter @ 50%	25,000/No	-	-	-	-	-
Subsidised sale of Animal Driven Tool Carrier @ 50 %	12,000/No	-	-	-	-	-		

7	Infrastructure Development	Establishment of bio control laboratory		-	-	-	-	-
		Assistance for setting up cold storages at District Headquarters,Sub-Division HQs		-	-	-	-	-
		Support for establishment of Agri-clinics		-	-	1	20.00	20.00
		Construction of storage godown at District HQ.Sub-Division HQ		-	-	1	40.00	40.00
8	Technology Transfer	Training farmers groups on crop production technology (Village Level)	15,000/No	9	1.35	9	1.35	2.70
		Training farmers groups on crop production technology (District Level)	30,000/No	3	0.90	3	0.90	1.8
		Training of VEWs and other extension functionaries on crop production technology at District level	25,000/No	1	0.25	1	0.25	0.5
		Exposure visit of farmers within the state for 40 farmers	1,00,000/No	2	2.00	2	2.00	4.00
		Exposure visit of farmers outside the state for 20 Farmers	2,00,000/No	1	2.00	1	2.00	4.00
		Conducting field trials on Rabi/ Kharif	100000/No	2	2.00	2	2.00	4.00
		Training of farmers (Village Level) for 50farmers	10,000/No	9	0.90	15	1.50	2.40
		Training of farmers(District/State Level) for 30 farmers	20,000/No	2	0.40	3	0.60	1.00
	New crop varieties / new practices	-	-	-	-	-	-	
9	Support to State Seed farm (Seed Production Farm)	Procurement of farm inputs	LS	LS	3.50	LS	6.00	9.50
		Machinery and equipment	LS	LS	5.00	LS	5.00	10.00
		Development of Farm Infrastructure	LS	LS	2.00	LS	2.00	4.00
10	Innovative Programme	Model Organic Farming	LS	-	-	-	-	-
		District Level Exhibition Show(Rabi/Kharif)	5,00,000/No	2	10.00	2	10.00	20.00
		Assistance for boring of tube well	24,000/No	10	2.40	15	3.60	6.00
11	Creation of Infrastructure	Potential Area Connectivity	5.00 /km	20	100.00	20	100.00	200.00
		Community Water tank	3.00/No	50	150.00	50	150.00	300.00
		Tube well	1.00/no	60	60.00	60	60.00	120.00
12	Production system	Rainfed Area Development for sustainable Agriculture (which includes terracing, irrigation systems and production)	1.50/Ha	200	300.00	250	375.00	675.00
		Solar fencing	5.00/ha	15	75.00	15	75.00	150.00
		Total			1773.425		1933.035	3706.46

6.1.8 Proposed Strategies, physical and financial targets for Agriculture SERCHHIP DISTRICT (Table 44)

Sl. No	Proposed Strategy	Activities	Unit	Unit cost in Rs	2010-11		2011-12		TOTAL
					P	F	P	F	
1	Enhancing seed replacement rate	Production incentive for HYV paddy seeds							
		Distribution of certified seeds of paddy	Qntl.	1500	200	3.0	200	3.0	6.0
		Distribution of certified pulse seeds	Qntl.	4500	150	6.75	150	6.70	13.45
		Production incentives for certified pulse	Qntl.						
		Distribution of certified oilseeds	Qntl.	3000	150	4.50	150	4.5	9.00
2	Transfer of technology through crop demonstration	Mixed cropping demonstration with Maize	Acre	5000	300	1.50	300	1.5	3.00
		Intercropping demonstration of Arhar base	Acre	5000	100	5.0	100	5.0	10.0
		Intercropping demonstration of MaizeBased crop	Acre	5000	120	6.0	120	6.0	12.0
		Demonstration of oilseeds	Acre	5000	150	5.0	150	5.0	10.0
		Demonstration on pulse	Acre	4000	100	4.0	100	4.0	8.0
		SRI method of paddy demonstration	Acre	7500	50	8.50	50	8.50	17.0
		Hybrid rice demonstration	Acre	3000	100	3.0	100	3.0	6.0
		Farmers Field School (rice, sugarcane, Pulses,oilseeds)	No.	17000	20	3.4	20	3.4	6.8
		Varietals demonstration on pulse	Acre	5000	50	2.5	50	2.5	5.0
		Varietals demonstration on Oil seeds	Acre	5000	50	2.5	50	2.5	5.0
		Varietals demonstration on Maize	Acre	5000	50	2.5	50	2.5	5.0
		Promotion of SRI Village	No	250000	2	5.0	2	5.0	10.0
3	Integrated Nutrient Management (FFS)	INM demonstration in rice	Ha	17000	50	8.5	50	8.5	17.0
		INM demonstration on sugarcane	Ha	17000	50	8.5	50	8.5	17.0
		INM demonstration on Oilseed	No	17000	50	8.5	50	8.5	17.0
		Supply of micronutrients	L.S	1000	LS	3.0	LS	3.0	6.0
		Liming of acid soils	Qntl	1000	500	5.0	500	5.0	10.0
4	Integrated Pest management (FFS)	IPM demonstrations on rice	Ha	17000	50	8.5	50	8.5	17.0
		IPM demonstrations on Rabi Oilseeds	Ha	17000	20	3.4	20	3.4	6.8
		IPM demonstrations on Rabi Pulse	Ha	17000	50	8.5	50	8.5	17.0
		IPM demonstrations on Kharif Pulse	Ha	17000	20	3.4	20	3.4	6.8
		IPM demonstrations on Khafir Oilseeds	Ha	17000	30	5.1	30	5.1	10.2
		IPM demonstrations on Sugarcane	Ha	17000	50	8.5	50	8.5	17.0
		IPM demonstrations on Maize	Ha	17000	60	10.2	60	10.2	20.4
		Supply of biopesticides for rice, pulse and packed Oilseeds		1000	100	1.0	100	1.0	2.0

5	Promotion of Organic Farming	Establishment of Vermi-hatchery at Block Level	No	15000	30	4.5	30	4.5	9.0
		Demonstration on compost pit	No	15000	50	7.5	50	7.5	15.0
		Establishment of Vermi-compost units	No	15000	60	9.0	60	9.0	18.0
6	Farm Mechanisation	Subsidized sale of power tillers	No	56250	50	28.12	50	28.12	56.24
		Subsidy on rotavator @ 50%	No	25000	30	7.5	30	7.5	15.0
		Subsidised sale of power thresher @ 50%	No	24000	25	6.0	25	6.0	12.0
		Subsidised sale of post hole digger @ 50%	No	25000					
		Subsidised sale of bullock drawn/manual operated implements @ 50%	No	5000	30	1.5	30	1.5	3.0
		Subsidised sale of diesel pump sets @ 50%	No	15000	30	4.5	30	4.5	9.0
		Subsidised sale of sprayers @ 50%	No	1600	100	1.6	100	1.6	3.2
		Harrow sale of sprayers @ 50%	No	20000	10	2.0	10	2.0	4.0
		Power thresher sale of sprayers @ 50 %	No	24000	25	6.0	25	6.0	12.0
		Reaper sale of sprayers @ 50%	No	80000					
		Cono Weeder sale of sprayers @ 50%	No	3000					
		Zero till seed cum Fert.Drill sale of sprayers @ 50%	No	25000					
		Potato Planter sale of sprayers @ 50%	No	30000					
		Raised Bed Planter sale of sprayers @ 50%	No	25000					
Animal Driven Tool Carrier sale of sprayers @ 50 %	No	12000	10	1.2	10	1.2	2.4		
7	Infrastructure Development	Establishment of bio control laboratory	No	5000000	1	5.0			5.0
		Assistance for setting up cold storages at District Headquarters,Sub-Divivsion HQs	No						
		Support for establishment of agri-clinics	No	500000	2	1.0			1.0
		Construction of storage godown at Disrict Hq.,Sub-Division HQ	No	500000	2	1.0	2	1.0	2.0
8	Technology Transfer	Training farmers groups on crop production technology	No	10000	40	4.0	40	4.0	8.0
		Training of VEWs and other extension functionaries on crop production technology at District level	No	20000	4	8.0	4	8.0	16.0
		Exposure visit of farmers within the state	No	100000	4	4.0	4	4.0	8.0

		Exposure visit of farmers outside the state	No	200000	2	4.0	2	4.0	8.0
		Conducting field trials on SRI	Ha	25000	5	1.0	5	1.0	2.0
		new crop varieties / new practices	Ha	25000	5	1.0	5	1.0	2.0
9	Support to State Seed farm (Seed Production Farm)	Procurement of farm inputs	No	100000	LS	1.0	LS	1.0	2.0
		Machinery and equipment	No	520000	LS	5.2	-	-	5.2
		Development of Farm Infrastructure	No	500000	Ls	5.0	-	-	5.0
10	Innovative Programme	Model Organic Farming 1 (Composit Farm)	No	500000	1	5.0	1	5.0	10.0
		District Level Exhibition Show	No	1000000	1	1.0			1.0
11	Creation of Infrastructure	Potential Area Connectivity		5.00 /km	20	100.00	20	100.00	200.00
		Community Water tank		3.00/No	50	150.00	50	150.00	300.00
		Tube well		1.00/no	60	60.00	60	60.00	120.00
		Innovative- Oil Palm Mill		250./ No	1	250.00	-	-	250.00
12	Production system	Rainfed Area Development for sustainable Agriculture (which includes terracing, irrigation systems and production)		1.50/Ha	200	300.00	250	375.00	675.00
		Solar fencing		5.00/ha	15	75.00	15	75.00	150.00
		Total				2162.425		1907.175	4069.6

**(Table 45) 6.1.9 TOTAL PHYSICAL AND FINANCIAL TARGETS FOR
AGRICULTURE FOR THE STATE**

SL . NO	DISTRICTS	2010-11	2011-2012	AMOUNT IN LAKHS
1	AIZAWL	824.05	983.66	1807.71
2	LUNGLEI	1691.95	1494.95	3186.9
3	SAIHA	824.05	983.66	1807.71
4	CHAMPHAI	965.345	1255.173	2220.518
5	KOLASIB	1249.16	1552.93	2802.09
6	SERCHHIP	1324.675	1069.425	2394.1
7	LAWNGTLAI	1441.95	1494.95	2936.9
8	MAMIT	824.05	983.66	1807.71
TOTAL		9145.23	9818.4075	18963.64

6.2 DISTRICTWISE PROPOSED ACTIVITIES FOR HORTICULTURE

(Table 46) 6.2.1 Proposed Strategy for Horticultural Development AIZAWL DISTRICT

Proposed Strategy	Activities	Unit Cost in Rs. In Lakh	2010-11		2011-12		Total
			Phy	Fin	Phy	Fin	
Fruit Development	M. Orange	0.225 /Ha	60	13.50	65	14.625	28.125
	Banana	0.151 / Ha	40	6.00	45	6.75	12.75
	Papaya	0.151 / Ha	40	6.00	45	6.75	12.75
	Pineapple	0.15 / Ha	45	6.75	45	6.75	13.50
	Citrus Rejuvenation	0.15 / Ha	80	12.00	85	12.75	24.75
	Overhead charge			3.19		3.47	6.66
	Grape	0.15 / Ha	40	6.00	45	6.75	12.75
	Avocado	0.15 / Ha	40	6.00	45	6.75	12.75
	Mango	0.15 / Ha	50	7.50	55	8.25	15.75
Vegetable Development	Chayote (Squash)	0.13 / Ha	40	5.20	40	5.20	10.40
	Cabbage	0.13 / Ha	50	6.50	55	7.15	13.65
	Tomato	0.13 / Ha	45	5.85	45	5.85	11.7
	Broccoli	0.13 / Ha	40	5.20	50	6.50	11.7
	Bhindi	0.13 / Ha	50	6.50	55	7.15	13.65
	Bitter gourd	0.13 / Ha	50	6.50	55	7.15	13.65
	Brinjal	0.13 / Ha	60	7.80	65	8.45	16.25
	Carrot	0.13 / Ha	50	6.50	55	7.15	13.65
Plantation Crop Development	Coconut	0.20/Ha	50	10.00	60	12.00	22.00
	Areca nut	0.15/Ha	60	9.00	70	10.50	19.50
Spices Development	a) Bird's Eye Chillies	0.13/Ha	60	7.80	65	8.45	16.25
	b) Turmeric	0.13/Ha	70	9.10	75	9.75	18.85
	c) Ginger	0.13/Ha	80	10.40	90	11.70	22.10
Promotion of Nursery	Model Nursery in Public Sector	20.00/no	4	80.00	4	18.00	98.00
	Model Nursery in Private Sector	10.00 /no	15	150.00	10	100.00	250.00
	Small Nursery in Private Sector (No)	5.00 / no	20	100.0	20	100.0	200.00
Establishment of New Garden	Banana (ha) Sucker						
	1 st Year Maintained of Banana						

Floriculture	Rose – (Small & Marginal farmer (Ha)	2.00 / unit	30	10.00	35	10.10	130.10
	Incentives to Floriculture Garden (No)	0.50 / unit	30	15.00	35	17.50	32.50
Seed Infrastructure	Vegetable seed Production	10.00/unit	2	20.00	2	20.00	40.00
Integrated Nutrient Management / Integrated Pest Management	A. Fruits IPM on Banana cultivation	0.0.25	200	5.00	300	7.50	12.50
	INM on Pineapple	0.05	250	12.50	250	12.50	25.00
	INM on Yongchak	0.10	150	15.00	150	15.00	30.00
	INM on Passion Fruits	0.10	300	30.00	350	35.00	65.00
	IPM on Lime / Lemon	0.025	250	6.25	300	75.00	81.25
	B. Vegetables Kharif						
	IPM on French Bean	0.025	200	5.00	250	6.25	11.25
	INM on Bhindi	0.05	200	10.00	250	12.50	22.50
	INM on Brinjal	0.05	150	7.50	200	10.00	17.50
	IPM on Cucurbit	0.025	300	7.50	350	8.75	16.25
	INM on Ginger / Turmeric	0.10	450	45.60	500	50.00	95.60
	INM on Chillies	0.05	500	25.00	600	30.00	55.00
	C. Vegetables Rabi						
	IPM on Pea	0.05	200	10.00	250	12.50	22.50
	IPM on Cabbage	0.05	300	15.00	350	17.50	32.50
	INM on Cauliflower	0.05	100	5.00	120	6.00	11.00
	INM on Potato	0.10	150	15.00	150	15.00	30.00
	INM on Radish	0.05	150	7.50	200	10.00	17.50
	INM on Knolkhol	0.05	200	10.00	250	12.50	22.50
INM on Tomato	0.05	150	7.50	150	7.50	15.00	
Protected Cultivation	Green House (SF & MF)	0.25/no	40	10.00	50	12.50	22.50
	Green House (Other farmer)(Hi Tech)	10.00/no	10	100.00	15	150.00	250.00
	Shade net Sq m	0.00020	70	14.00	80	16.00	30.00
	Mulching (Ha)	0.08/Ha	70	5.60	80	6.40	12.00

Promotion and Popularization of Organic farming	Construction of compost pit	0.10/no	250	25.00	300	30.00	55.00
	Establishment of Vermi- Composts units-Big (No)	2.50/unit	30	75.00	35	87.50	162.50
	Establishment of Vermi- Compost units-Big (no)						
	Demonstration of Organic Farming	0.25/no	20	5.00	25	6.25	11.25
Popularization on of organic Fertilizers	Demonstration on use of Rich Reuter "AA"	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (13:40:13)	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (19:19:19)	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (13:0:0)	0.20/unit	30	6.00	35	7.00	13.00
Watershed	Watershed Development						
Human Resource Development							
	Training of VEWs and other extension functionaries on crop production technology at District Level.	0.25/no	6	1.50	8	2.00	3.50
	Exposure visit outside the State on IPM / INM, Plantation, Plant Health Management	1.50/no	5	7.50	5	7.50	15.00
	Exposure visit inside the state	1.00/no	6	6.00	6	6.00	12.00
	Training of Entrepreneurs	0.25/no	7	1.75	8	2.00	3.75
	Exposure Visits of Farmers inside the State	1.00/no	5	5.00	5	5.00	10.00
Creation of Water Resources	Construction of community Tanks						
Farm Mechanization	Subsidized sale of power tillers						
	Subsidized sale of pump sets @ 50%						
	Subsidized sale of sprayers @ 50 %						
Post harvest Infrastructure Development	Assistance for setting up cold storages at Block Level	20.00/unit	4	80.00			80.00
	Construction of storage of godown at Block Headquarters	5.00/no	5	25.00	5	25.00	50.00
Establishment of Marketing Infrastructure	Functional Infrastructure for Collection & grading (no)	5.00/no	5	25.00	5	25.00	50.00

Technology transfer	Training of farmer groups on crop production technology	0.25/no	5	1.25	5	1.25	2.50
	Training of farmers on the use of Organic Fertilizers	0.25/no	5	1.25	5	1.25	2.50
	Training of farmers on INM	0.25/no	6	1.50	6	1.50	3.00
	Training of Farmers on IPM	0.25/no	5	1.25	5	1.25	2.50
	Training of Farmers on Post Harvest Technology on important horticultural crops	0.25/no	5	1.25	5	1.25	2.50
	Exposure visit of farmers within the state	0.50/no	3	1.50	3	1.50	3.00
	Exposure visit of farmers outside the state	1.50/no	3	4.50	3	4.50	9.00
	Conducting field trials in new crop varieties / new practices	0.25/no	5	1.25	5	1.25	2.50
Innovative Programme	Low Cost Potato Storage Structure	10.00/no	5	5.00	5	5.00	10.00
	District Level Show	2.00/no	2	4.00	2	4.00	8.00
Project Area Connectivity	Horticulture Link Road	3.00/Km	15	45.00	15	45.00	90.00
Capacity Building	(a) Training of Trainers at(Research institution)	1.00/no	4	4.00	4	4.00	8.00
	(b)Awareness Campaign/Seminar/Workshop etc.			5.00		5.00	10.00
Infrastructure	Technical Support			45.0		45.0	90.00
Mushroom Development Unit	Spawn Production	20.00/unit	1	20.00			20.00
Model Horticulture Centre	Research & Development in Horticulture Crops	50.00/no	1	50.00	1	50.00	100.00
Total				1339.24		1329.59	2587.83

6.2.2 Proposed Strategy for Horticultural Development CHAMPAI DISTRICT (Table 47)

Sl.No	Proposed Strategy	Activities	Unit Cost in Rs. In Lakh	2010-11		2011-12		TOTAL
				Phy	Fin	Phy	Fin	
				1	Promotion of Nursery	Model Nursery in Public Sector	25.00	
		Model Nursery in Private Sector	10.00	1	10.00	2	20.00	30.00
		Small Nursery in Private Sector (No)	3.00	4	12.00	4	12.00	24.00
2	Establishment of New Garden	Banana (ha) Sucker						
		1 st Year Maintaince of Banana	0.075	200	15.00	200	15.00	30.00
3	Floriculture	Rose – (Small & Marginal farmer (Ha))	0.525	5	2.63	5	2.63	5.26
		Incentives to Floriculture Garden (No)	0.525	10	5.25	5	2.63	7.88
4	Seed Infrastructure	Vegetable seed Production	0.20	20	4.00	20	4.00	8.00
5	Integrated Nutrient Management / Integrated Pest Management	A. Fruits						
		IPM on Banana cultivation	0.01	200	2.00	200	2.00	4.00
		INM on Pineapple	0.01	300	3.00	300	3.00	6.00
		INM on Yongchak	0.01	50	0.50	50	0.50	1.00
		INM on Passion Fruits	0.01	50	0.50	50	0.50	1.00
		IPM on Lime / Lemon	0.01	300	3.00	300	3.00	6.00
		B. Vegetables Kharif						
		IPM on French Bean	0.01	100	1.00	100	1.00	2.00
		INM on Bhindi	0.01	100	1.00	100	1.00	2.00
		INM on Brinjal	0.01	50	0.50	50	0.50	1.00
		IPM on Cucurbit	0.01	100	1.00	100	1.00	2.00
		INM on Ginger / Turmeric	0.01	400	4.00	400	4.00	8.00
		INM on Chillies	0.01	100	1.00	100	1.00	2.00
		C. Vegetables Rabi						
		IPM on Pea	0.01	50	0.50	50	0.50	1.00
		IPM on Cabbage	0.01	100	1.00	100	1.00	2.00
		INM on Cauliflower	0.01	50	0.50	50	0.50	1.00
		INM on Potato	0.01	100	1.00	100	1.00	2.00
		INM on Radish	0.01	50	0.50	50	0.50	1.00
		INM on Knolkhol	0.01	50	0.50	50	0.50	1.00
		INM on Tomato	0.01	100	1.00	100	1.00	2.00

6	Protected Cultivation	Green House (SF & MF)	0.00125	10000	12.50	10000	12.50	25.00
		Green House (Other farmer)	0.00325	5000	16.30	5000	16.30	32.60
		Shade net	0.00014	100000	14.00	100000	14.00	28.00
		Mulching	0.00014	50000	7.00	50000	7.00	14.00
7	Promotion and Popularisation of Organic farming		0.025	500	12.50	500	12.50	25.00
		Construction of compost pit	0.60	10	6.00	10	6.00	12.00
		Establishment of Vermi- Composts units-Big (No)	0.30	20	6.00	20	6.00	12.00
		Establishment of Vermi- Compost units-Big (no)	0.20	20	4.00	20	4.00	8.00
		Demonstration of Organic Farming	0.20	10	2.00	10	2.00	4.00
8	Popularization on of organic Fertilizers	Demonstation on use of Rich Reuter “AA”	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (13:40:13)	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (19:19:19)	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (13:0:0)	25.00	1	25.00	1	25.00	50.00
9	Watershed	Water shade Development	0.00125	10000	12.50	10000	12.50	25.00
10	Human Resource Development		0.015	50	0.80	50	0.80	1.60
		Training of VEWs and other extension functionaries on crop production technology at District Level.	0.025	50	1.25	50	1.25	2.50
		Exposure visit outside the State on IPM / INM, Plantation, Plant Health Management	0.015	100	1.60	100	1.60	3.20
		Exposure visit inside the state	17.25	5	86.30	5	86.30	172.60
		Training of Entrepreneurs	0.75	10	7.50	10	7.50	15.00
		Exposure Visits of Farmers inside the State	0.01	200	2.00	200	2.00	4.00
11	Creation of Water Resources	Construction of community Tanks	20.00	2	40.00	2	40.00	80.00
12	Farm Mechanization	Subsidized sale of power tillers	50.00			1	50.00	50.00
		Subsidized sale of pump sets @ 50%	0.025	100	2.50	100	2.50	5.00
		Subsidized sale of sprayers @ 50 %	0.015	100	1.50	100	1.50	3.00

13	Post harvest Infrastructure Development	Assistance for setting up cold storages at Block Level	0.015	100	1.50	100	1.50	3.00
		Construction of storage of godown at Block Headquarters	0.015	100	1.50	100	1.50	3.00
14	Establishment of Marketing Infrastructure	Functional Infrastructure for Collection & grading (no)	0.015	100	1.50	100	1.50	3.00
15	Technology transfer	Training of farmer groups on crop production technology	0.025	100	2.50	100	2.50	5.00
		Training of farmers on the use of Organic Fertilizers	0.050	50	2.50	50	2.50	5.00
		Training of farmers on INM	0.050	50	2.50	50	2.50	5.00
		Training of Farmers on IPM	1.50	2	3.00	2	3.00	6.00
		Training of Farmers on Post Harvest Technology on important horticultural crops	1.50	1	1.00	1	1.00	2.00
			1.50	1	1.50	1	1.50	3.00
		Exposure visit of farmers within the state	0.015	50	0.80	50	0.80	1.60
		Exposure visit of farmers outside the state	0.025	50	1.25	50	1.25	2.50
		Conducting field trials in new crop varieties / new practices	0.015	100	1.60	100	1.60	3.20
16	Innovative	Low Cost Potato Storage	17.25	5	86.30	5	86.30	172.60
17	Programme	Structure	0.75	10	7.50	10	7.50	15.00
		District Level Show	0.01	200	2.00	200	2.00	4.00
Total					455.58		537.96	993.54

6.2.3. Proposed Strategy for Horticultural Development KOLASIB DISTRICT (Table 48)

Proposed Strategy	Activities	Unit Cost in Rs. In Lakh	2010-11		2011-12		Total
			Phy	Fin	Phy	Fin	
Fruit Development	M. Orange	0.225 /Ha	60	13.50	65	14.625	28.125
	Banana	0.151 / Ha	40	6.00	45	6.75	12.75
	Papaya	0.151 / Ha	40	6.00	45	6.75	12.75
	Pineapple	0.15 / Ha	45	6.75	45	6.75	13.50
	Citrus Rejuvenation	0.15 / Ha	80	12.00	85	12.75	24.75
	Overhead charge			3.19		3.47	6.66
	Grape	0.15 / Ha	40	6.00	45	6.75	12.75
	Avocado	0.15 / Ha	40	6.00	45	6.75	12.75
	Mango	0.15 / Ha	50	7.50	55	8.25	15.75
Vegetable Development	Chayote (Squash)	0.13 / Ha	40	5.20	40	5.20	10.40
	Cabbage	0.13 / Ha	50	6.50	55	7.15	13.65
	Tomato	0.13 / Ha	45	5.85	45	5.85	11.7
	Broccoli	0.13 / Ha	40	5.20	50	6.50	11.7
	Bhindi	0.13 / Ha	50	6.50	55	7.15	13.65
	Bitter gourd	0.13 / Ha	50	6.50	55	7.15	13.65
	Brinjal	0.13 / Ha	60	7.80	65	8.45	16.25
	Carrot	0.13 / Ha	50	6.50	55	7.15	13.65
Plantation Crop Development	Coconut	0.20/Ha	50	10.00	60	12.00	22.00
	Areca nut	0.15/Ha	60	9.00	70	10.50	19.50
Spices Development	a) Bird's Eye Chillies	0.13/Ha	60	7.80	65	8.45	16.25
	b) Turmeric	0.13/Ha	70	9.10	75	9.75	18.85
	c) Ginger	0.13/Ha	80	10.40	90	11.70	22.10

Promotion of Nursery	Model Nursery in Public Sector	20.00/no	4	80.00	4	18.00	98.00
	Model Nursery in Private Sector	10.00 /no	15	150.00	10	100.00	250.00
	Small Nursery in Private Sector (No)	5.00 / no	20	100.0	20	100.0	200.00
Establishment of New Garden	Banana (ha) Sucker						
	1 st Year Maintained of Banana						
Floriculture	Rose – (Small & Marginal farmer (Ha)	2.00 / unit	30	60.00	35	70.10	130.10
	Incentives to Floriculture Garden (No)	0.50 / unit	30	15.00	35	17.50	32.50
Seed Infrastructure	Vegetable seed Production	10.00/unit	2	20.00	2	20.00	40.00
Integrated Nutrient Management / Integrated Pest Management	A. Fruits						
	IPM on Banana cultivation	0.0.25	200	5.00	300	7.50	12.50
	INM on Pineapple	0.05	250	12.50	250	12.50	25.00
	INM onYongchak	0.10	150	15.00	150	15.00	30.00
	INM on Passion Fruits	0.10	300	30.00	350	35.00	65.00
	IPM on Lime / Lemon	0.025	250	6.25	300	75.00	81.25
	B. Vegetables Kharif						
	IPM on French Bean	0.025	200	5.00	250	6.25	11.25
	INM on Bhindi	0.05	200	10.00	250	12.50	22.50
	INM on Brinjal	0.05	150	7.50	200	10.00	17.50
	IPM on Cucurbit	0.025	300	7.50	350	8.75	16.25
	INM on Ginger / Turmeric	0.10	450	45.60	500	50.00	95.60
	INM on Chillies	0.05	500	25.00	600	30.00	55.00

	C. Vegetables Rabi						
	IPM on Pea	0.05	200	10.00	250	12.50	22.50
	IPM on Cabbage	0.05	300	15.00	350	17.50	32.50
	INM on Cauliflower	0.05	100	5.00	120	6.00	11.00
	INM on Potato	0.10	150	15.00	150	15.00	30.00
	INM on Radish	0.05	150	7.50	200	10.00	17.50
	INM on Knolkhol	0.05	200	10.00	250	12.50	22.50
	INM on Tomato	0.05	150	7.50	150	7.50	15.00
Protected Cultivation	Green House (SF & MF)	0.25/no	40	10.00	50	12.50	22.50
	Green House (Other farmer)(Hi Tech)	10.00/no	10	100.00	15	150.00	250.00
	Shade net Sq m	0.00020	70	14.00	80	16.00	32.00
	Mulching (Ha)	0.08/Ha	70	5.60	80	6.40	12.00
Promotion and Popularization of Organic farming	Construction of compost pit	0.10/no	250	25.00	300	30.00	55.00
	Establishment of Vermi-Composts units-Big (No)	2.50/unit	30	75.00	35	87.50	162.50
	Establishment of Vermi-Compost units-Big (no)						
	Demonstration of Organic Farming	0.25/no	20	5.00	25	6.25	11.25
Popularization on of organic Fertilizers	Demonstration on use of Rich Reuter "AA"	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (13:40:13)	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (19:19:19)	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (13:0:0)	0.20/unit	30	6.00	35	7.00	13.00

Watershed	Watershed Development	50.00/no	5	250.00	6	300.00	550.00
Human Resource Development							
	Training of VEWs and other extension functionaries on crop production technology at District Level.	0.25/no	6	1.50	8	2.00	3.50
	Exposure visit outside the State on IPM / INM, Plantation, Plant Health Management	1.50/no	5	7.50	5	7.50	15.00
	Exposure visit inside the state	1.00/no	6	6.00	6	6.00	12.00
	Training of Entrepreneurs	0.25/no	7	1.75	8	2.00	3.75
	Exposure Visits of Farmers inside the State	1.00/no	5	5.00	5	5.00	10.00
Creation of Water Resources	Construction of community Tanks	2.00/no	70	140.0	80	160.0	300.00
Farm Mechanization	Subsidized sale of power tillers	1.00/no	15	15.00	20	20.00	35.00
	Subsidized sale of pump sets @ 50%	0.25/no	20	5.00	30	7.50	12.50
	Subsidized sale of sprayers @ 50 %	0.075/no	200	15.00	250	18.75	33.75
Post harvest Infrastructure Development	Assistance for setting up cold storages at Block Level	20.00/unit	4	80.00			80.00
	Construction of storage of godown at Block Headquarters	5.00/no	5	25.00	5	25.00	50.00

Establishment of Marketing Infrastructure	Functional Infrastructure for Collection & grading (no)	5.00/no	5	25.00	5	25.00	50.00
Technology transfer	Training of farmer groups on crop production technology	0.25/no	5	1.25	5	1.25	2.50
	Training of farmers on the use of Organic Fertilizers	0.25/no	5	1.25	5	1.25	2.50
	Training of farmers on INM	0.25/no	6	1.50	6	1.50	3.00
	Training of Farmers on IPM	0.25/no	5	1.25	5	1.25	2.50
	Training of Farmers on Post Harvest Technology on important horticultural crops	0.25/no	5	1.25	5	1.25	2.50
	Exposure visit of farmers within the state	0.50/no	3	1.50	3	1.50	3.00
	Exposure visit of farmers outside the state	1.50/no	3	4.50	3	4.50	9.00
	Conducting field trials in new crop varieties / new practices	0.25/no	5	1.25	5	1.25	2.50
Innovative Programme	Low Cost Potato Storage	10.00/no	5	50.00	5	50.00	100.00
	District Level Show	2.00/no	2	4.00	2	4.00	8.00
Project Area Connectivity	Horticulture Link Road	3.00/Km	15	45.00	15	45.00	90.00

Capacity Building	(a) Training of Trainers at(Research institution)	1.00/no	4	4.00	4	4.00	8.00
	(b) Awareness Campaign/Seminar/Workshop etc.			5.00		5.00	10.00
Infrastructure	Technical Support			4.50		4.50	5.00
Mushroom Development Unit	Spawn Production	20.00/unit	1	20.00			20.00
Model Horticulture Centre Lunglei	Research & Development in Horticulture Crops	50.00/no	1	50.00	1	50.00	100.00
Total				1859.24		1940.59	3799.83

4. LAWNGTLAI DISTRICT (Table 49)

6.2.4

Proposed Strategy for Horticultural Development

Proposed Strategy	Activities	Unit Cost in Rs. In Lakh	2010-11		2011-12		Total
			Phy	Fin	Phy	Fin	
Fruit Development	M. Orange	0.225 /Ha	60	13.50	65	14.625	28.125
	Banana	0.151 / Ha	40	6.00	45	6.75	12.75
	Papaya	0.151 / Ha	40	6.00	45	6.75	12.75
	Pineapple	0.15 / Ha	45	6.75	45	6.75	13.50
	Citrus Rejuvenation	0.15 / Ha	80	12.00	85	12.75	24.75
	Overhead charge			3.19		3.47	6.66
	Grape	0.15 / Ha	40	6.00	45	6.75	12.75
	Avocado	0.15 / Ha	40	6.00	45	6.75	12.75
	Mango	0.15 / Ha	50	7.50	55	8.25	15.75
Vegetable Development	Chayote (Squash)	0.13 / Ha	40	5.20	40	5.20	10.40
	Cabbage	0.13 / Ha	50	6.50	55	7.15	13.65
	Tomato	0.13 / Ha	45	5.85	45	5.85	11.7
	Broccoli	0.13 / Ha	40	5.20	50	6.50	11.7
	Bhindi	0.13 / Ha	50	6.50	55	7.15	13.65
	Bitter gourd	0.13 / Ha	50	6.50	55	7.15	13.65
	Brinjal	0.13 / Ha	60	7.80	65	8.45	16.25
	Carrot	0.13 / Ha	50	6.50	55	7.15	13.65
Plantation Crop Development	Coconut	0.20/Ha	50	10.00	60	12.00	22.00
	Areca nut	0.15/Ha	60	9.00	70	10.50	19.50

Spices Development	a) Bird's Eye Chillies	0.13/Ha	60	7.80	65	8.45	16.25
	b) Turmeric	0.13/Ha	70	9.10	75	9.75	18.85
	c) Ginger	0.13/Ha	80	10.40	90	11.70	22.10
Promotion of Nursery	Model Nursery in Public Sector	20.00/no	4	80.00	4	18.00	98.00
	Model Nursery in Private Sector	10.00 /no	15	150.00	10	100.00	250.00
	Small Nursery in Private Sector (No)	5.00 / no	20	100.0	20	100.0	200.00
Establishment of New Garden	Banana (ha) Sucker						
	1 st Year Maintained of Banana						
Floriculture	Rose – (Small & Marginal farmer (Ha)	2.00 / unit	30	60.00	35	70.10	130.10
	Incentives to Floriculture Garden (No)	0.50 / unit	30	15.00	35	17.50	32.50
Seed Infrastructure	Vegetable seed Production	10.00/unit	2	20.00	2	20.00	40.00
Integrated Nutrient Management / Integrated Pest Management	A. Fruits						
	IPM on Banana cultivation	0.0.25	200	5.00	300	7.50	12.50
	INM on Pineapple	0.05	250	12.50	250	12.50	25.00
	INM on	0.10	150	15.00	150	15.00	30.00

	INM on Passion Fruits	0.10	300	30.00	350	35.00	65.00
	IPM on Lime / Lemon	0.025	250	6.25	300	75.00	81.25
	B. Vegetables Kharif						
	IPM on French Bean	0.025	200	5.00	250	6.25	11.25
	INM on Bhindi	0.05	200	10.00	250	12.50	22.50
	INM on Brinjal	0.05	150	7.50	200	10.00	17.50
	IPM on Cucurbit	0.025	300	7.50	350	8.75	16.25
	INM on Ginger / Turmeric	0.10	450	45.60	500	50.00	95.60
	INM on Chillies	0.05	500	25.00	600	30.00	55.00
	C. Vegetables Rabi						
	IPM on Pea	0.05	200	10.00	250	12.50	22.50
	IPM on Cabbage	0.05	300	15.00	350	17.50	32.50
	INM on Cauliflower	0.05	100	5.00	120	6.00	11.00
	INM on Potato	0.10	150	15.00	150	15.00	30.00
	INM on Radish	0.05	150	7.50	200	10.00	17.50
	INM on Knolkhol	0.05	200	10.00	250	12.50	22.50
	INM on Tomato	0.05	150	7.50	150	7.50	15.00
Protected Cultivation	Green House (SF & MF)	0.25/no	40	10.00	50	12.50	22.50
	Green House (Other farmer)(Hi Tech)	10.00/no	10	100.00	15	150.00	250.00
	Shade net Sq m	0.00020	70	14.00	80	16.00	32.00
	Mulching (Ha)	0.08/Ha	70	5.60	80	6.40	12.00

Promotion and Popularization of Organic farming	Construction of compost pit	0.10/no	250	25.00	300	30.00	55.00
	Establishment of Vermi- Composts units-Big (No)	2.50/unit	30	75.00	35	87.50	162.50
	Establishment of Vermi- Compost units-Big (no)						
	Demonstration of Organic Farming	0.25/no	20	5.00	25	6.25	11.25
Popularization on of organic Fertilizers	Demonstration on use of Rich Reuter “AA”	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (13:40:13)	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (19:19:19)	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (13:0:0)	0.20/unit	30	6.00	35	7.00	13.00
Watershed	Watershed Development	50.00/no	5	250.00	6	300.00	550.00
Human Resource Development							
	Training of VEWs and other extension functionaries on crop production technology at District Level.	0.25/no	6	1.50	8	2.00	3.50
	Exposure visit outside the State on IPM / INM, Plantation, Plant Health Management	1.50/no	5	7.50	5	7.50	15.00
	Exposure visit inside the state	1.00/no	6	6.00	6	6.00	12.00
	Training of Entrepreneurs	0.25/no	7	1.75	8	2.00	3.75

	Exposure Visits of Farmers inside the State	1.00/no	5	5.00	5	5.00	10.00
Creation of Water Resources	Construction of community Tanks	2.00/no	70	140.0	80	160.0	300.00
Farm Mechanization	Subsidized sale of power tillers	1.00/no	15	15.00	20	20.00	35.00
	Subsidized sale of pump sets @ 50%	0.25/no	20	5.00	30	7.50	12.50
	Subsidized sale of sprayers @ 50 %	0.075/no	200	15.00	250	18.75	33.75
Post harvest Infrastructure Development	Assistance for setting up cold storages at Block Level	20.00/unit	4	80.00			80.00
	Construction of storage of godown at Block Headquarters	5.00/no	5	25.00	5	25.00	50.00
Establishment of Marketing Infrastructure	Functional Infrastructure for Collection & grading (no)	5.00/no	5	25.00	5	25.00	50.00
Technology transfer	Training of farmer groups on crop production technology	0.25/no	5	1.25	5	1.25	2.50
	Training of farmers on the use of Organic Fertilizers	0.25/no	5	1.25	5	1.25	2.50
	Training of farmers on INM	0.25/no	6	1.50	6	1.50	3.00
	Training of Farmers on IPM	0.25/no	5	1.25	5	1.25	2.50
	Training of Farmers on Post Harvest Technology on important horticultural crops	0.25/no	5	1.25	5	1.25	2.50
	Exposure visit of farmers within	0.50/no	3	1.50	3	1.50	3.00

	the state								
	Exposure visit of farmers outside the state	1.50/no	3	4.50	3	4.50	9.00		
	Conducting field trials in new crop varieties / new practices	0.25/no	5	1.25	5	1.25	2.50		
Innovative	Low Cost Potato Storage	10.00/no	5	50.00	5	50.00	100.00		
Programme	Structure								
	District Level Show	2.00/no	2	4.00	2	4.00	8.00		
Project Area Connectivity	Horticulture Link Road	3.00/Km		45.00	15	45.00	90.00		
Capacity Building	(a) Training of Trainers at(Research institution)	1.00/no	4	4.00	4	4.00	8.00		
	(b) Awareness Campaign/Seminar/Workshop etc.			5.00		5.00	10.00		
Infrastructure	Technical Support			4.50		4.50	5.00		
Mushroom Development Unit	Spawn Production	20.00/unit	1	20.00			20.00		
Model Horticulture Centre Lunglei	Research & Development in Horticulture Crops	50.00/no	1	50.00	1	50.00	100.00		
Total						1859.24		1940.59	3799.83

7. LUNGLEI DISTRICT

(Table 50)

6.2.5

Proposed Strategy for Horticultural Development

Proposed Strategy	Activities	Unit Cost in Rs. In Lakh					
			2010-11		2011-12		Total
			Phy	Fin	Phy	Fin	
Fruit Development	M. Orange	0.225 /Ha	60	13.50	65	14.625	28.125
	Banana	0.151 / Ha	40	6.00	45	6.75	12.75
	Papaya	0.151 / Ha	40	6.00	45	6.75	12.75
	Pineapple	0.15 / Ha	45	6.75	45	6.75	13.50
	Citrus Rejuvenation	0.15 / Ha	80	12.00	85	12.75	24.75
	Overhead charge			3.19		3.47	6.66
	Grape	0.15 / Ha	40	6.00	45	6.75	12.75
	Avocado	0.15 / Ha	40	6.00	45	6.75	12.75
	Mango	0.15 / Ha	50	7.50	55	8.25	15.75
Vegetable Development	Chayote (Squash)	0.13 / Ha	40	5.20	40	5.20	10.40
	Cabbage	0.13 / Ha	50	6.50	55	7.15	13.65
	Tomato	0.13 / Ha	45	5.85	45	5.85	11.70
	Broccoli	0.13 / Ha	40	5.20	50	6.50	11.70
	Bhindi	0.13 / Ha	50	6.50	55	7.15	13.65
	Bitter gourd	0.13 / Ha	50	6.50	55	7.15	13.65
	Brinjal	0.13 / Ha	60	7.80	65	8.45	16.25
	Carrot	0.13 / Ha	50	6.50	55	7.15	13.65
Plantation Crop Development	Coconut	0.20/Ha	50	10.00	60	12.00	22.00
	Areca nut	0.15/Ha	60	9.00	70	10.50	19.50
Spices Development	a) Bird's Eye Chillies	0.13/Ha	60	7.80	65	8.45	16.25
	b) Turmeric	0.13/Ha	70	9.10	75	9.75	18.85
	c) Ginger	0.13/Ha	80	10.40	90	11.70	22.10
Promotion of Nursery	Model Nursery in Public Sector	20.00/no	4	80.00	4	18.00	98.00
	Model Nursery in Private Sector	10.00 /no	15	150.00	10	100.00	250.00
	Small Nursery in Private Sector (No)	5.00 / no	20	100.0	20	100.0	200.00
Establishment of New Garden	Banana (ha) Sucker						
	1 st Year Maintained of Banana						

Floriculture	Rose – (Small & Marginal farmer (Ha))	2.00 / unit	30	60.00	35	70.10	130.10
	Incentives to Floriculture Garden (No)	0.50 / unit	30	15.00	35	17.50	32.50
Seed Infrastructure	Vegetable seed Production	10.00/unit	2	20.00	2	20.00	40.00
Integrated Nutrient Management / Integrated Pest Management	A. Fruits						12.50
	IPM on Banana cultivation	0.0.25	200	5.00	300	7.50	
	INM on Pineapple	0.05	250	12.50	250	12.50	25.00
	INM on Yongchak	0.10	150	15.00	150	15.00	30.00
	INM on Passion Fruits	0.10	300	30.00	350	35.00	65.00
	IPM on Lime / Lemon	0.025	250	6.25	300	75.00	81.25
	B. Vegetables Kharif						
	IPM on French Bean	0.025	200	5.00	250	6.25	11.25
	INM on Bhindi	0.05	200	10.00	250	12.50	22.50
	INM on Brinjal	0.05	150	7.50	200	10.00	17.50
	IPM on Cucurbit	0.025	300	7.50	350	8.75	16.25
	INM on Ginger / Turmeric	0.10	450	45.60	500	50.00	95.60
	INM on Chillies	0.05	500	25.00	600	30.00	55.00
	C. Vegetables Rabi						
	IPM on Pea	0.05	200	10.00	250	12.50	22.50
	IPM on Cabbage	0.05	300	15.00	350	17.50	32.50
	INM on Cauliflower	0.05	100	5.00	120	6.00	11.00
	INM on Potato	0.10	150	15.00	150	15.00	30.00
	INM on Radish	0.05	150	7.50	200	10.00	17.50
	INM on Knolkhol	0.05	200	10.00	250	12.50	22.50
INM on Tomato	0.05	150	7.50	150	7.50	15.00	
Protected Cultivation	Green House (SF & MF)	0.25/no	40	10.00	50	12.50	22.50
	Green House (Other farmer)(Hi Tech)	10.00/no	10	100.00	15	150.00	250.00
	Shade net Sq m	0.00020	70000	14.00	80000	16.00	30.00
	Mulching (Ha)	0.08/Ha	70	5.60	80	6.40	12.00

Promotion and Popularization of Organic farming	Construction of compost pit	0.10/no	250	25.00	300	30.00	55.00
	Establishment of Vermi-Composts units-Big (No)	2.50/unit	30	75.00	35	87.50	162.50
	Establishment of Vermi-Compost units-Big (no)						
	Demonstration of Organic Farming	0.25/no	20	5.00	25	6.25	11.25
Popularization on of organic Fertilizers	Demonstration on use of Rich Reuter "AA"	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (13:40:13)	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (19:19:19)	0.20/unit	30	6.00	35	7.00	13.00
	Rich Field Fertilizer (13:0:0)	0.20/unit	30	6.00	35	7.00	13.00
Watershed	Watershed Development	50.00/no	5	250.00	6	300.00	550.00
Human Resource Development							
	Training of VEWs and other extension functionaries on crop production technology at District Level.	0.25/no	6	1.50	8	2.00	3.50
	Exposure visit outside the State on IPM / INM, Plantation, Plant Health Management	1.50/no	5	7.50	5	7.50	15.00
	Exposure visit inside the state	1.00/no	6	6.00	6	6.00	12.00
	Training of Entrepreneurs	0.25/no	7	1.75	8	2.00	3.75
	Exposure Visits of Farmers inside the State	1.00/no	5	5.00	5	5.00	10.00
Creation of Water Resources	Construction of community Tanks	2.00/no	70	140.0	80	160.0	300.00
Farm Mechanization	Subsidized sale of power tillers	1.00/no	15	15.00	20	20.00	35.00
	Subsidized sale of pump sets @ 50%	0.25/no	20	5.00	30	7.50	12.50
	Subsidized sale of sprayers @ 50 %	0.075/no	200	15.00	250	18.75	33.75
Post harvest Infrastructure Development	Assistance for setting up cold storages at Block Level	20.00/unit	4	80.00			80.00
	Construction of storage of godown at Block Headquarters	5.00/no	5	25.00	5	25.00	50.00

Establishment of Marketing Infrastructure	Functional Infrastructure for Collection & grading (no)	5.00/no	5	25.00	5	25.00	50.00	
Technology transfer	Training of farmer groups on crop production technology	0.25/no	5	1.25	5	1.25	2.50	
	Training of farmers on the use of Organic Fertilizers	0.25/no	5	1.25	5	1.25	2.50	
	Training of farmers on INM	0.25/no	6	1.50	6	1.50	3.00	
	Training of Farmers on IPM	0.25/no	5	1.25	5	1.25	2.50	
	Training of Farmers on Post Harvest Technology on important horticultural crops	0.25/no	5	1.25	5	1.25	2.50	
	Exposure visit of farmers within the state	0.50/no	3	1.50	3	1.50	3.00	
	Exposure visit of farmers outside the state	1.50/no	3	4.50	3	4.50	9.00	
	Conducting field trials in new crop varieties / new practices	0.25/no	5	1.25	5	1.25	2.50	
	Innovative Programme	Low Cost Potato Storage Structure	10.00/no	5	50.00	5	50.00	100.00
	District Level Show	2.00/no	2	4.00	2	4.00	8.00	
Project Area Connectivity	Horticulture Link Road	3.00/Km	15	45.00	15	45.00	90.00	
Capacity Building	(a) Training of Trainers at(Research institution)	1.00/no	4	4.00	4	4.00	8.00	
	(b) Awareness Campaign/Seminar/Workshop etc.			5.00		5.00	10.00	
Infrastructure	Technical Support			4.50		4.50	9.00	
Mushroom Development Unit	Spawn Production	20.00/unit	1	20.00			20.00	
Model Horticulture Centre Lunglei	Research & Development in Horticulture Crops	50.00/no	1	50.00	1	50.00	100.00	
Total						1859.24	1940.59	3799.83

8. MAMIT DISTRICT

(Table 51) 6.2.6

PROPOSED STRATEGY FOR HORTICULTURE DEVELOPMENT

Sl. No.	Proposed strategy	Activities	Unit cost in Rs. In lakh	Phy:- No. of units/quantity in quintal Fin :- Rs. In lakh				Total
				2010-11		2011-12		
				Phy.	Fin.	Phy.	Fin.	
1	Promotion of Nursery	Model Nursery in Public Sector	25.00	1	25.00	1	25.00	50.00
		Model Nursery in Private Sector	10.00	2	20.00	2	20.00	40.00
		Small Nursery in Private Sector (No.)	3.00	4	12.00	4	12.00	24.00
2	Establishment of New Garden	Banana (Ha.) Sucker						
		1st Year Maintenance of Banana	0.075	100	7.50	100	7.50	15.00
3	Floriculture	Rose (Small & Marginal farmer (Ha.))	0.525	10	5.25	10	5.25	10.50
		Incentives of Floriculture Garden (No)	0.20	20	4.00	20	4.00	8.00
4	Seed Infrastructure	Vegetable seed production	5.00	2	10.00	2	10.00	20.00
5	Integrated Nutrient Management/ Integrated Pest Management	A. Fruits						
		IPM on Banana cultivation	0.01	100	1.00	100	1.00	2.00
		INM on Pineapple	0.01	200	2.00	200	2.00	4.00
		INM on Yongchak	0.01	50	0.50	50	0.50	1.00
		INM on Passion Fruits	0.01	50	0.50	50	0.50	1.00
		IPM on Lime / Lemon	0.01	200	2.00	200	2.00	4.00

		B. Vegetables Kharif						
		IPM on French Bean	0.01	50	0.50	50	0.50	1.00
		INM on Bhindi	0.01	100	1.00	100	1.00	2.00
		INM on Brinjal	0.01	50	0.50	50	0.50	1.00
		IPM on Cucurbit	0.01	50	0.50	50	0.50	1.00
		INM on Ginger / Turmeric	0.01	400	4.00	400	4.00	8.00
		INM on Chillies	0.01	200	2.00	200	2.00	4.00
		C. Vegetables Rabi						
		IPM on Pea	0.01	50	0.50	50	0.50	1.00
		IPM on Cabbage	0.01	50	0.50	50	0.50	1.00
		INM on Cauliflower	0.01	50	0.50	50	0.50	1.00
		INM on Potato	0.01	50	0.50	50	0.50	1.00
		INM on Radish	0.01	50	0.50	50	0.50	1.00
		INM on Knolkhol	0.01	50	0.50	50	0.50	1.00
		INM on Tomato	0.01	100	1.00	100	1.00	2.00
6	Protected Cultivation	Green House (SF & MF). Sq.m	0.00125	10000	12.50	10000	12.50	25.00
		Green House (Other farmer)/ Sq.m	0.00325	5000	16.30	5000	16.30	32.60
		Shade net / Sq.m	0.00014	100000	14.00	100000	14.00	28.00
		Mulching/ Sq.m	0.00014	50000	7.00	50000	7.00	14.00

7	Promotion and Popularisation of Organic farming	Construction of compost pit	0.025	500	12.50	500	12.50	25.00
		Establishment of Vermi- Composts units-Big (No)	0.60	10	6.00	10	6.00	12.00
		Establishment of Vermi- Compost units-small (no)	0.30	20	6.00	20	6.00	12.00
		Demonstration of Organic Farming	0.20	20	4.00	20	4.00	8.00
8	Popularization on of organic Fertilizers	Demonstation on use of Rich Reuter“AA”	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (13:40:13)	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (19:19:19)	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (13:0:0)	0.20	10	2.00	10	2.00	4.00
9	Watershed	Water shade Development	25.00	1	25.00	1	25.00	50.00
10	Human Resource Development							
		Training of VEWs and other extension functionaries on crop production technology at District Level.@1500/No.	0.015	50	0.80	50	0.80	1.60
		Exposure visit outside the State on IPM / INM, Plantation, Plant Health Management @2500/No.	0.025	50	1.25	50	1.25	2.50
		Exposure visit inside the state @1500/no.	0.015	50	0.80	50	0.80	1.60
		Training of Entrepreneurs @ 2500/no.	0.025	50	1.25	50	1.25	2.50
		Exposure Visits of Farmers inside the State @1500/no.	0.015	100	1.60	100	1.60	1.60
11	Creation of Water Resources	Construction of community Tanks @10Ha./unit	17.25	5	86.30	5	86.30	172.60
12	Farm Mechanization	Subsidized sale of power tillers	0.75	10	7.50	10	7.50	15.00
		Subsidized sale of pump sets @ 50%	0.09	20	1.80	20	1.80	3.60
		Subsidized sale of sprayers @ 50 %	0.01	200	2.00	200	2.00	4.00

13	Post harvest Infrastructure Development	Assistance for setting up cold storages at Block Level	175.00	1	175.00			175.00
		Construction of storage of godown at Block Headquarters	20.00	1	20.00	1	20.00	40.00
14	Establishment of Marketing Infrastructure	Functional Infrastructure for Collection & grading (no)	50.00	1	50.00			50.00
15	Technology transfer	Training of farmer groups on crop production technology @2500/no	0.025	100	2.50	100	2.50	5.00
		Training of farmers on the use of Organic Fertilizers @1500/no	0.015	100	1.50	100	1.50	3.00
		Training of farmers on INM @150/no	0.015	100	1.50	100	1.50	3.00
		Training of Farmers on IPM @1500/no	0.015	100	1.50	100	1.50	3.00
		Training of Farmers on Post Harvest Technology on important horticultural crops @ 1500/no	0.015	100	1.50	100	1.50	3.00
		Exposure visit of farmers within the state @2500/no.	0.025	100	2.50	100	2.50	5.00
		Exposure visit of farmers outside the state @5000/no.	0.050	50	2.50	50	2.50	5.00
		Conducting field trials in new crop varieties / new practices	0.050	50	2.50	50	2.50	5.00
16	Innovative	Low Cost Potato Storage	1.50	2	3.00	2	3.00	6.00
17	Programme	Structure	1.50	1	1.00	1	1.00	2.00
		District Level Show/Unit	1.50	1	1.50	1	1.50	3.00
Total					583.35		358.35	941.70

9. SAIHA DISTRICT

(Table 52) 6.2.7

PROPOSED STRATEGY FOR HORTICULTURE DEVELOPMENT

Sl.No.	Proposed Strategy	Activities	Units Cost in Rs. In lakhs	Phy :No. of units / quantity in quintal Fin. Rs. In lakhs				Total
				2010-11		2011-12		
				Phy.	Fin.	Phy.	Fin.	
1	Promotion of Nursery	Model Nursery in Public Sector	25.00	1	25.00	1	25.00	50.00
		Model Nursery in Private Sector	10.00	2	20.00	2	20.00	40.00
		Small Nursery in Private Sector (No.)	3.00	4	12.00	4	12.00	24.00
2	Establishment of New Garden	Banana (Ha.) Sucker						
		1st Year Maintenance of Banana	0.075	100	7.50	100	7.50	15.00
3	Floriculture	Rose (Small & Marginal farmer (Ha.))	0.525	10	5.25	10	5.25	10.50
		Incentives of Floriculture Garden (No)	0.20	20	4.00	20	4.00	8.00
4	Seed Infrastructure	Vegetable seed production	5.00	2	10.00	2	10.00	20.00
5	Integrated Nutrient Management/ Integrated Pest Management	A. Fruits						
		IPM on Banana cultivation	0.01	100	1.00	100	1.00	2.00
		INM on Pineapple	0.01	200	2.00	200	2.00	4.00
		INM on Yongchak	0.01	50	0.50	50	0.50	1.00
		INM on Passion Fruits	0.01	50	0.50	50	0.50	1.00
		IPM on Lime / Lemon	0.01	200	2.00	200	2.00	4.00

		B. Vegetables Kharif						
		IPM on French Bean	0.01	50	0.50	50	0.50	1.00
		INM on Bhindi	0.01	100	1.00	100	1.00	2.00
		INM on Brinjal	0.01	50	0.50	50	0.50	1.00
		IPM on Cucurbit	0.01	50	0.50	50	0.50	1.00
		INM on Ginger / Turmeric	0.01	400	4.00	400	4.00	8.00
		INM on Chillies	0.01	200	2.00	200	2.00	4.00
		C. Vegetables Rabi						
		IPM on Pea	0.01	50	0.50	50	0.50	1.00
		IPM on Cabbage	0.01	50	0.50	50	0.50	1.00
		INM on Cauliflower	0.01	50	0.50	50	0.50	1.00
		INM on Potato	0.01	50	0.50	50	0.50	1.00
		INM on Radish	0.01	50	0.50	50	0.50	1.00
		INM on Knolkhol	0.01	50	0.50	50	0.50	1.00
		INM on Tomato	0.01	100	1.00	100	1.00	2.00
6	Protected Cultivation	Green House (SF & MF). Sq.m	0.00125	10000	12.50	10000	12.50	25.00
		Green House (Other farmer)/ Sq.m	0.00325	5000	16.30	5000	16.30	32.60
		Shade net / Sq.m	0.00014	100000	14.00	100000	14.00	28.00
		Mulching/ Sq.m	0.00014	50000	7.00	50000	7.00	14.00
7	Promotion and Popularisation of Organic farming	Construction of compost pit	0.025	500	12.50	500	12.50	25.00
		Establishment of Vermi- Composts units- Big (No)	0.60	10	6.00	10	6.00	12.00
		Establishment of Vermi- Compost units-small (no)	0.30	20	6.00	20	6.00	12.00
		Demonstration of Organic Farming	0.20	20	4.00	20	4.00	8.00

8	Popularization on of organic Fertilizers	Demonstation on use of Rich Reuter “AA”	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (13:40:13)	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (19:19:19)	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (13:0:0)	0.20	10	2.00	10	2.00	4.00
9	Watershed	Water shade Development	25.00	1	25.00	1	25.00	50.00
10	Human Resource Development							
		Training of VEWs and other extension functionaries on crop production technology at District Level.@1500/No.	0.015	50	0.80	50	0.80	1.60
		Exposure visit outside the State on IPM / INM, Plantation, Plant Health Management @2500/No.	0.025	50	1.25	50	1.25	2.50
		Exposure visit inside the state @1500/no.	0.015	50	0.80	50	0.80	1.60
		Training of Entrepreneurs @ 2500/no.	0.025	50	1.25	50	1.25	2.50
		Exposure Visits of Farmers inside the State @1500/no.	0.015	100	1.60	100	1.60	3.20
11	Creation of Water Resources	Construction of community Tanks @10Ha./unit	17.25	5	86.30	5	86.30	172.60
12	Farm Mechanization	Subsidized sale of power tillers	0.75	10	7.50	10	7.50	15.00
		Subsidized sale of pump sets @ 50%	0.09	20	1.80	20	1.80	3.60
		Subsidized sale of sprayers @ 50 %	0.01	200	2.00	200	2.00	4.00
13	Post harvest Infrastructure Development	Assistance for setting up cold storages at Block Level	175.00	1	175.00			175.00
		Construction of storage of godown at Block Headquarters	20.00	1	20.00	1	20.00	40.00
14	Establishment of Marketing Infrastructure	Functional Infrastructure for Collection & grading (no)	50.00	1	50.00			50.00

15	Technology transfer	Training of farmer groups on crop production technology @2500/no	0.025	100	2.50	100	2.50	5.00
		Training of farmers on the use of Organic Fertilizers @1500/no	0.015	100	1.50	100	1.50	3.00
		Training of farmers on INM @150/no	0.015	100	1.50	100	1.50	3.00
		Training of Farmers on IPM @1500/no	0.015	100	1.50	100	1.50	3.00
		Training of Farmers on Post Harvest Technology on important horticultural crops @ 1500/no	0.015	100	1.50	100	1.50	3.00
		Exposure visit of farmers within the state @2500/no.	0.025	100	2.50	100	2.50	5.00
		Exposure visit of farmers outside the state @5000/no.	0.050	50	2.50	50	2.50	5.00
		Conducting field trials in new crop varieties / new practices	0.050	50	2.50	50	2.50	5.00
16	Innovative	Low Cost Potato Storage	1.50	2	3.00	2	3.00	6.00
17	Programme	Structure	1.50	1	1.00	1	1.00	2.00
		District Level Show/Unit	1.50	1	1.50	1	1.50	3.00
		Total			583.35		358.35	941.70

10. SERCHHIP DISTRICT
(Table 53) 6.2.8

Proposed Strategy for Horticultural Development

Sl.No	Proposed Strategy	Activities	Unit Cost in Rs. In Lakh	2010-11		2011-12		TOTAL
				Phy	Fin	Phy	Fin	
				1	Promotion of Nursery	Model Nursery in Public Sector	25.00	
		Model Nursery in Private Sector	10.00	1	10.00	2	20.00	30.00
		Small Nursery in Private Sector (No)	3.00	4	12.00	4	12.00	24.00
2	Establishment of New Garden	Banana (ha) Sucker						
		1 st Year Maintaince of Banana	0.075	200	15.00	200	15.00	30.00
3	Floriculture	Rose – (Small & Marginal farmer (Ha))	0.525	5	2.63	5	2.63	5.26
		Incentives to Floriculture Garden (No)	0.525	10	5.25	5	2.63	7.88
4	Seed Infrastructure	Vegetable seed Production	0.20	20	4.00	20	4.00	8.00
5	Integrated Nutrient Management / Integrated Pest Management	A. Fruits						
		IPM on Banana cultivation	0.01	200	2.00	200	2.00	4.00
		INM on Pineapple	0.01	300	3.00	300	3.00	6.00
		INM on Yongchak	0.01	50	0.50	50	0.50	1.00
		INM on Passion Fruits	0.01	50	0.50	50	0.50	1.00
		IPM on Lime / Lemon	0.01	300	3.00	300	3.00	6.00
		B. Vegetables Kharif						
		IPM on French Bean	0.01	100	1.00	100	1.00	2.00
		INM on Bhindi	0.01	100	1.00	100	1.00	2.00
		INM on Brinjal	0.01	50	0.50	50	0.50	1.00
		IPM on Cucurbit	0.01	100	1.00	100	1.00	2.00
		INM on Ginger / Turmeric	0.01	400	4.00	400	4.00	8.00
		INM on Chillies	0.01	100	1.00	100	1.00	2.00
		C. Vegetables Rabi						
		IPM on Pea	0.01	50	0.50	50	0.50	1.00

		IPM on Cabbage	0.01	100	1.00	100	1.00	2.00
		INM on Cauliflower	0.01	50	0.50	50	0.50	1.00
		INM on Potato	0.01	100	1.00	100	1.00	2.00
		INM on Radish	0.01	50	0.50	50	0.50	1.00
		INM on Knolkhol	0.01	50	0.50	50	0.50	1.00
		INM on Tomato	0.01	100	1.00	100	1.00	2.00
6	Protected Cultivation	Green House (SF & MF)	0.00125	10000	12.50	10000	12.50	25.00
		Green House (Other farmer)	0.00325	5000	16.30	5000	16.30	32.60
		Shade net	0.00014	100000	14.00	100000	14.00	28.00
		Mulching	0.00014	50000	7.00	50000	7.00	14.00
7	Promotion and Popularisation of Organic farming		0.025	500	12.50	500	12.50	25.00
		Construction of compost pit	0.60	10	6.00	10	6.00	12.00
		Establishment of Vermi- Composts units- Big (No)	0.30	20	6.00	20	6.00	12.00
		Establishment of Vermi- Compost units- Big (no)	0.20	20	4.00	20	4.00	8.00
		Demonstration of Organic Farming	0.20	10	2.00	10	2.00	4.00
8	Popularization on of organic Fertilizers	Demonstation on use of Rich Reuter “AA”	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (13:40:13)	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (19:19:19)	0.20	10	2.00	10	2.00	4.00
		Rich Field Fertilizer (13:0:0)	25.00	1	25.00	1	25.00	50.00
9	Watershed	Water shade Development	0.00125	10000	12.50	10000	12.50	25.00
10	Human Resource Development		0.015	50	0.80	50	0.80	1.60
		Training of VEWs and other extension functionaries on crop production technology at District Level.	0.025	50	1.25	50	1.25	2.50
		Exposure visit outside the State on IPM / INM, Plantation, Plant Health Management	0.015	100	1.60	100	1.60	3.20
		Exposure visit inside the state	17.25	5	86.30	5	86.30	172.60

		Training of Entrepreneurs	0.75	10	7.50	10	7.50	15.00
		Exposure Visits of Farmers inside the State	0.01	200	2.00	200	2.00	4.00
11	Creation of Water Resources	Construction of community Tanks	20.00	2	40.00	2	40.00	80.00
12	Farm Mechanization	Subsidized sale of power tillers	50.00			1	50.00	50.00
		Subsidized sale of pump sets @ 50%	0.025	100	2.50	100	2.50	5.00
		Subsidized sale of sprayers @ 50 %	0.015	100	1.50	100	1.50	3.00
13	Post harvest Infrastructure Development	Assistance for setting up cold storages at Block Level	0.015	100	1.50	100	1.50	3.00
		Construction of storage of godown at Block Headquarters	0.015	100	1.50	100	1.50	3.00
14	Establishment of Marketing Infrastructure	Functional Infrastructure for Collection & grading (no)	0.015	100	1.50	100	1.50	3.00
15	Technology transfer	Training of farmer groups on crop production technology	0.025	100	2.50	100	2.50	5.00
		Training of farmers on the use of Organic Fertilizers	0.050	50	2.50	50	2.50	5.00
		Training of farmers on INM	0.050	50	2.50	50	2.50	5.00
		Training of Farmers on IPM	1.50	2	3.00	2	3.00	6.00
		Training of Farmers on Post Harvest Technology on important horticultural crops	1.50	1	1.00	1	1.00	2.00
			1.50	1	1.50	1	1.50	3.00
		Exposure visit of farmers within the state	0.015	50	0.80	50	0.80	1.60
		Exposure visit of farmers outside the state	0.025	50	1.25	50	1.25	2.50
		Conducting field trials in new crop varieties / new practices	0.015	100	1.60	100	1.60	3.20
16	Innovative	Low Cost Potato Storage	17.25	5	86.30	5	86.30	172.60
17	Programme	Structure	0.75	10	7.50	10	7.50	15.00
		District Level Show	0.01	200	2.00	200	2.00	4.00
Total					455.58		537.96	993.54

(Table 54) HORTICULTURE TOTAL

SL . NO	DISTRICTS	2010-11	2011-2012	AMOUNT IN LAKHS
1	AIZAWL	1859.24	1940.59	3799.83
2	CHAMPAI	455.58	537.96	993.54
3	KOLASIB	1859.24	1940.59	3799.83
4	LAWNTLAI	1859.24	1940.59	3799.83
5	LUNGLEI	1859.24	1940.59	3799.83
6	MAMIT	583.35	358.35	941.70
7	SAIHA	583.35	358.35	941.70
8	SERCHHIP	455.58	537.96	993.54
	TOTAL	9514.82	9554.98	19069.80

6.3 PROPOSED STRATEGIES, PHYSICAL AND FINANCIAL TARGETS FOR ANIMAL HUSBANDRY
6.3.1 AIZAWL DISTRICT (Table 55)

Sl. No	Interventions	Unit cost Rs.	2010-11		2011-12		Total
			Phy	Fin	Phy	Fin	
1	Animal Health		Phy	Fin	Phy	Fin	Total
	i) Distribution of Vety. Aid Kids	50000/ training	4 nos	2.00	4	2.00	4.00
	ii) Cosnt. Of vety. Disp.	20 lakhs/dispensary	1	20.00	1	20.00	40.00
	Cattle and Buffalo Dev.						
	Milk cow induction cow/heifer expected give 10 lit. of milk per day	Rs 40,000/ cow	10 Cows	4.00	10 Cows	4.00	8.00
2	Piggery development						
	Distribution of 5 piglets (4female +1 male) of age group 3-4 month.	Rs 3000/Piglet	20 piglet	0.60	20 piglet	0.60	1.20
3	Poultry Development						
	Backyard Poultry scheme Distribution of 40 grown up low input technology birds	Rs.350/Bird ie Rs 1400/unit	30 Unit	4.20	30	4.20	8.40
	Construction of Chick rearing unit with procurement of poultry appliance in the district Head Office	Rs 25 lakhs / unit			1	25.00	25.00
	Distribution of 50 Khaki Campbel day old ducklings a long with feed and other appliance	Rs 50/duckling Rs 2500/Unit			4Unit	0.10	0.10

4	Other Livestock Development						
	i) Incentives to Mithun Breeders/Farmers	Rs 30,000/ Unit	50 Unit	15.00	40	12.00	27.00
	ii) Incentive to the farmers under Goatry Dev. Progr. (4 doest and 1 buck)	Rs 10,000/Unit	10 Unit	1.00	10 Unit	1.00	2.00
	Feed and fodder Dev.						
	ii) Incentive for growing fodder @ Rs, 5000/-beneficiary in terms of seed/fertilizer/fending/ ploughing charges	Rs 10,000/Unit	20	2.00	20	2.00	4.00
5	Extension, Education & Training						
	i) Organisation of farmers training programme @ Rs, 1000/-each.	Rs 20,000/Unit	5	1.00	5	1.00	2.00
	Assistant to Animal Husbandry Co-operation/Local bodies	Rs 30,000/Unit	10	3.00	10	3.00	6.00
	Construction of meat marketing shed at the District Head Qtr. Block Head quarters.	Rs 6 Lakh/Shed	3	18.00	2	12.00	30.00
Total			163	70.8	157	86.9	157.7

6.3.2. PROPOSED STRATEGIES, PHYSICAL AND FINANCIAL TARGETS FOR ANIMAL HUSBANDRY OF CHAMPAI DISTRICT

(Table 56)

Sl. No	Interventions	Unit cost Rs.					
			2010-11		2011-12		Total
			Phy	Fin Rs in Lakh	Phy	Fin Rs in Lakh	
1	Animal Health						
	i) Distribution of Vety. Aid Kids	Rs50000 training	4	2	4	2	4
	ii) Cosnt. Of vety. Disp.	Rs20 Lakh/Dispensary	3	60	4	120	180
	Cattle and Buffalo Dev.						
	(a)Milk cow induction cow/heifer expected give 10 lit. of milk per day	Rs 40000/cow	60	24	20	8	31
2	<u>FOR DAIRY PLANT AT CHAMPHAI</u>		1	10			10
	(b) Purchase of 75 Kva Generator,		12.33mt	18.50			18.50
	(c) Purchase of Polyfilm,	1 no					
	(d) Preparation of Effluent treatment Plant.	150/kg	1	10			10
	(e) Feed Subsidy to Dairy Farmers	Rs 3 /kg	12	36	12		36.00
	Piggery development						
3	Distribution of 5 piglets (4female +1 male) of age group 3-4 month.	Rs 3000/piglet	30	4.5	30	4.5	9.00

	Poultry Development						
	Backyard Poultry scheme Distribution of 40 grown up low input technology birds	Rs 350/bird	50	7	40	5.6	12.6
	Construction of Chick rearing unit with procurement of poultry appliance in the district Head Office		1	40			40.00
4	Distribution of 50 Khaki Campbel day old ducklings a long with feed and other appliance						
	Other Livestock Development						
	(i)Incentives toPony/Breeders/Farmers	10000/beneficiary	20	2	25	2.5	4.5
	(ii)Incentives toMithun Breeders	30000/beneficiary	50	1.5	50	1.5	3.00
	ii) Incentive to the farmers under Goatry Dev. Progr. (4 doest and 1 buck)	5000/beneficiary	10	0.5	10	0.5	1.00
	Feed and fodder Dev.						
	i) New Construction of District feed mixing plant at Champhai		-	-	1	600	600
5	ii) Incentive for growing fodder @ Rs, 5000/- beneficiary in terms of seed/fertilizer/fending/ploughing charges		100	5	100	5	10.00
	Extension, Education & Training						
	i) Organisation of farmers training programme @ Rs, 30000/-each.		10	3	10	3	6.00
	Assistant to Animal Husbandry Co-operation/Local bodies (20 Primary Socoieties)	100000/ Primary Farming Societies	10	10	5	5	15.00
Total				234		757.60	991.60

6.3.3. PROPOSED STRATEGIES, PHYSICAL AND FINANCIAL TARGETS FOR ANIMAL HUSBANDRY OF KOLASIB DISTRICT (Table 57)

<i>Interventions</i>	<i>Unit cost Rs. (In lakhs)</i>	<i>2010-11</i>		<i>2011-12</i>		Total
		Phy	Fin	Phy	Fin	
Animal Health						
i) Distribution of Vety. Aid Kits	0.01	1000	10	1100	11	22
ii) Cosnt. Of vety. Disp.	10	2	20	1	10	30
Cattle and Buffalo Dev.						
Milk cow induction cow/heifer expected give 10 lit. of milk per day	.7	100	70	120	84	154
Piggery development						
Distribution of 5 piglets (4female +1 male) of age group 3-4 month.	.5	150	75	200	100	175
Poultry Development						
Backyard Poultry scheme Distribution of 40 grown up low input technology birds	.4	100	40	120	48	88
Construction of Chick rearing unit with procurement of poultry appliance in the district Head Office	5	1	5	1	5	10
Distribution of 50 Khaki Campbel day old ducklings a long with feed and other appliance	.5	20	10	10	5	15
Other Livestock Development						
i) Incentives to Pony/Breeders/Farmers	1	5	5	3	3	8
ii) Incentive to the farmers under Goatry Dev. Progr. (4 does and 1 buck)	.5	20	10	10	5	15

Feed and fodder Dev.						
i) Construction/ Strengthening of state feed mixing plant	150	1	150			150
ii) Incentive for growing fodder @ Rs, 5000/-beneficiary in terms of seed/fertilizer/fending/ ploughing charges	0.1	10	1	15	1.5	2.5
Extension, Education & Training						
i) Organisation of farmers training programme @ Rs, 1000/- each.	.1	20	2	20	2	4
Assistant to Animal Husbandry Co-operation/Local bodies	.1	25	2.5	25	2.5	5
Construction of meat marketing shed at the District Head Qtr. Block Head quarters.	5	1	5	1	5	10
Capacity Building	10	-	10	-	10	20
Total			415.50		292	708.50

6.3.4. PROPOSED STRATEGIES, PHYSICAL AND FINANCIAL TARGETS FOR ANIMAL HUSBANDRY OF LAWNGTLAI DISTRICT

(Table 58)

INTERVENTIONS	UNIT COST (In lakhs)	2010-2011	2011-2012	Total		
		Phy	Fin	Phy	Fin	
Pig breeding farm at saiha						
farm house (30 sows unit)	35					
manager house (1)	25					
labour house (3)	21					
water tanky (1)	7					
feed godown	7					
store room	5					
TOTAL	100	1	100			100
Maintenance of farm						
feed cost	10					
manager salary	2.4					
labour salary	1.44					
misc	0.5					
	14.34	1	14.34	1	14.34	28.68

Dairy farming						
2 cows + 1 bull per family	0.9					
housing	0.5					
feed	1.5					
veterinary aid	0.05					
water tanky	0.15					
TOTAL	3.1	5	15.5	10	31	46.5
Mithun and Hill Cattle						
5 female, 1 male	1					
Fencing of grazing land	1					
mineral and salt licks	0.01					
veterinary aids	0.05					
TOTAL	2.06	10	20.6	10	20.6	41.2
Piggery						
3 sow , 1 boar	0.12					
housing	0.25					
feed	0.5					
veterinary aid	0.05					
water tank	0.15					
TOTAL	1.07	10	10.7	20	21.4	32.1

Goatery						
4 does, 1 buck	0.12					
vetrinary aids	0.05					
TOTAL	0.17	5	0.85	10	1.7	2.55
Poultry						
150 dual purpose birds (e.g. vanaraja)/ family	0.05					
housing	0.1					
feed	0.5					
veterinary aids	0.05					
water tanky	0.08					
incentives to successful farmers	0.1 per farmer	10	1	10	1	2
development of fodder/ grazing land	0.05 per farmer	10	0.5	10	0.5	1.00
extension education and training						
organisation of farmers training	0.5 per training	4	2	4	2	4
assistance to A.H co-operation/local bodies	0.1 per body	1	0.1	1	0.1	0.2
Construction of Slaughter house	100					
Construction of MEAT marketing shed	1	1	1			1
Hatchery	100	1	100			100
TOTAL		74	277.54	106	114.54	392.08

6.3.5. Physical and financial Requirement for the Suggested Interventions for Animal Husbandry Sectoral Development

(Table 59) LUNGLEI DISTRICT

<i>Interventions</i>	<i>Unit cost Rs. (In lakhs)</i>	<i>2010-11</i>		<i>2011-12</i>		<i>Total</i>	
		<i>P</i>	<i>F</i>	<i>P</i>	<i>F</i>		
Animal Health							
i) Distribution of Vety. Aid Kits	.01	1000	10	11	11	14	25
ii) Cosnt. Of vety. Disp.	10	2	20	1	10	10	11
Cattle and Buffalo Dev.							
Milk cow induction cow/heifer expected give 10 lit. of milk per day	.7	100	70	120	84	119	239
Piggery development							
Distribution of 5 piglets (4female +1 male) of age group 3-4 month.	.5	150	75	200	100	175	375
Poultry Development							
Backyard Poultry scheme Distribution of 40 grown up low input technology birds	.4	100	40	120	48	100	220
Construction of Chick rearing unit with procurement of poultry appliance in the district Head Office	5	1	5	1	5	10	11
Distribution of 50 Khaki Campbel day old ducklings a long with feed and other appliance	.5	20	10	10	5	8	18
Other Livestock Development							
i) Incentives to Pony/Breeders/Farmers	1	5	5	3	3	7	10
ii) Incentive to the farmers under Goatry Dev. Progr. (4 does and 1 buck)	.5	20	10	10	5	10	20

Feed and fodder Dev.							
i) Construction/ Strengthening of state feed mixing plant at Lunglei District	150	1	150	1	150	150	300
ii) Incentive for growing fodder @ Rs, 5000/-beneficiary in terms of seed/fertilizer/fending/ ploughing charges	0.1	10	1	15	1.5	2.3	17.30
Extension, Education & Training							
i) Organisation of farmers training programme @ Rs, 1000/-each.	.1	20	2	20	2	20	40
Assistant to Animal Husbandry Co-operation/Local bodies	.1	25	2.5	25	2.5	2.8	27.8
Construction of meat marketing shed at the District Head Qtr. Block Head quarters.	5	1	5	1	5	5	6
Capacity Building	10	-	10	-	10	12	12
Total				538		645.10	1183.10

6.3.6. Physical and financial Requirement for the Suggested Interventions for Animal Husbandry Sectoral Development

(Table 60) MAMIT DISTRICT

Sl. No	Interventions	Unit cost Rs.	2010-11		2011-12		Total
			Phy	Fin	Phy	Fin	
1	Animal Health						
	i) Distribution of Vety. Aid Kids	Rs 50,000/unit	4 nos	2.0	4 nos	2.0	4.0
	ii) Cosnt. Of vety. Disp.	Rs 20 lakhs/Dispensary	2 nos	40.0	3 nos	60.0	100.0
	Cattle and Buffalo Dev.						
	Milk cow induction cow/heifer expected give 10 lit. of milk per day	Rs 45000/cow	15 nos	7.65	10 nos	4.5	12.15
2	Piggery development						
	Distribution of 5 piglets (4female +1 male) of age group 3-4 month.	Rs 3000 / Piglet	40 mos	1.2	30 nos	0.9	2.1
3	Poultry Development						
	Backyard Poultry scheme Distribution of 40 grown up low input technology birds	Rs 14000	10 nos	1.4	20 nos	2.8	4.2
	Construction of Chick rearing unit with procurement of poultry appliance in the district Head Office	Rs 25 lakhs					
	Distribution of 50 Khaki Campbel day old ducklings a long with feed and other appliance	Rs 2500 /Duckling	3 nos	0.075	4 nos	0.1	1.075
4	Other Livestock Development						
	i) Incentives to Mithun Breeders/Farmers	Rs 30000/unit	15 nos	4.5	10 nos	3.0	7.5
	ii) Incentive to the farmers under Goatry Dev. Progr. (4 doest and 1 buck)	Rs 40000/unit	3 nos	1.2	2 nos	0.8	2.00

	Feed and fodder Dev.						
	i) Construction/ Strengthening of state feed mixing plant at Khumbong	Rs 30 lakh / unit					
	ii) Incentive for growing fodder @ Rs, 5000/-beneficiary in terms of seed/fertilizer/fending/ ploughing charges	Rs 10000 / beneficiary	10 nos	1.0	30 nos	3.0	4.0
5	Extension, Education & Training						
	i) Organisation of farmers training programme @ Rs, 1000/-each.	Rs 10000	60nos	0.6	80nos	0.8	1.8
	Assistant to Animal Husbandry Co-operation/Local bodies	Rs 30000/unit	2nos	0.6	3nos	0.9	1.5
	Construction of meat marketing shed at the District Head Qtr. Block Head quarters.	Rs 15 lakhs					
Total				60.22		78.80	139.02

6.3.7 Physical and financial Requirement for the Suggested Interventions for Animal Husbandry Sectoral Development

SAIHA DISTRICT (Table 61)

Sl. No	Interventions	Unit cost Rs.	2010-11		2011-12		Total
			Phy	Fin	Phy	Fin	
1	Animal Health						
	i) Distribution of Vety. Aid Kids	50000/ training	4 nos	2.00	4	2.00	4.00
	ii) Cosnt. Of vety. Disp.	20 lakhs/dispensary	1	20.00	1	20.00	40.00
	Cattle and Buffalo Dev.						
	Milk cow induction cow/heifer expected give 10 lit. of milk per day	Rs 40,000/ cow	10 Cows	4.00	10 Cows	4.00	8.00
2	Piggery development						
	Distribution of 5 piglets (4female +1 male) of age group 3-4 month.	Rs 3000/Piglet	20 piglet	0.60	20 piglet	0.60	1.2
3	Poultry Development						
	Backyard Poultry scheme Distribution of 40 grown up low input technology birds	Rs.350/Bird ie Rs 1400/unit	30 Unit	4.20	30	4.20	8.40
	Construction of Chick rearing unit with procurement of poultry appliance in the district Head Office	Rs 25 lakhs / unit			1	25.00	25.00
	Distribution of 50 Khaki Campbel day old ducklings a long with feed and other appliance	Rs 50/duckling Rs 2500/Unit			4Unit	0.10	0.10
4	Other Livestock Development						
	i) Incentives to Mithun Breeders/Farmers	Rs 30,000/ Unit	50 Unit	15.00	40	12.00	27.00
	ii) Incentive to the farmers under Goatry Dev. Progr. (4 doest and 1 buck)	Rs 10,000/Unit	10 Unit	1.00	10 Unit	1.00	2.00

	Feed and fodder Dev.						
	i) Construction/ Strengthening of state feed mixing plant at Khumbong						
	ii) Incentive for growing fodder @ Rs, 5000/-beneficiary in terms of seed/fertilizer/fending/ ploughing charges	Rs 10,000/Unit	20	2.00	20	2.00	4.00
5	Extension, Education & Training						
	i) Organisation of farmers training programme @ Rs, 1000/-each.	Rs 20,000/Unit	5	1.00	5	1.00	2.00
	Assistant to Animal Husbandry Co-operation/Local bodies	Rs 30,000/Unit	10	3.00	10	3.00	6.00
	Construction of meat marketing shed at the District Head Qtr. Block Head quarters.	Rs 6 Lakh/Shed	3	18.00	2	12.00	30.00
Total				70.8		86.9	157.70

6.3.8 Physical and financial Requirement for the Suggested Interventions for Animal Husbandry Sectoral Development SERCHHIP DISTRICT (Table 62)

Sl. No	Interventions	Unit cost Rs.	2010-11		2011-12		Total
			Phy	Fin	Phy	Fin	
1	Animal Health						
	i) Distribution of Vety. Aid Kids	Rs 50,000/unit	4 nos	2.0	4 nos	2.0	4.0
	ii) Cosnt. Of vety. Disp.	Rs 20 lakhs/Dispensary	2 nos	40.0	3 nos	60.0	100.0
	Cattle and Buffalo Dev.						
	Milk cow induction cow/heifer expected give 10 lit. of milk per day	Rs 45000/cow	15 nos	7.65	10 nos	4.5	12.15
2	Piggery development						
	Distribution of 5 piglets (4female +1 male) of age group 3-4 month.	Rs 3000 / Piglet	40 mos	1.2	30 nos	0.9	2.1
3	Poultry Development						
	Backyard Poultry scheme Distribution of 40 grown up low input technology birds	Rs 14000	10 nos	1.4	20 nos	2.8	4.2
	Construction of Chick rearing unit with procurement of poultry appliance in the district Head Office	Rs 25 lakhs					
	Distribution of 50 Khaki Campbel day old ducklings a long with feed and other appliance	Rs 2500 /Duckling	3 nos	0.075	4 nos	0.1	0.175
4	Other Livestock Development						
	i) Incentives to Mithun Breeders/Farmers	Rs 30000/unit	15 nos	4.5	10 nos	3.0	7.5
	ii) Incentive to the farmers under Goatry Dev. Progr. (4 doest and 1 buck)	Rs 40000/unit	3 nos	1.2	2 nos	0.8	2.0

	Feed and fodder Dev.						
	i) Construction/ Strengthening of state feed mixing plant at Khumbong	Rs 30 lakh / unit					
	ii) Incentive for growing fodder @ Rs, 5000/-beneficiary in terms of seed/fertilizer/fending/ ploughing charges	Rs 10000 / beneficiary	10 nos	1.0	30 nos	3.0	4.0
5	Extension, Education & Training						
	i) Organisation of farmers training programme @ Rs, 1000/-each.	Rs 10000	60nos	0.6	80nos	0.8	1.4
	Assistant to Animal Husbandry Co-operation/Local bodies	Rs 30000/unit	2nos	0.6	3nos	0.9	1.5
	Construction of meat marketing shed at the District Head Qtr. Block Head quarters.	Rs 15 lakhs					
Total				60.22		78.8	139.02

6.3.9 TOTAL PHYSICAL AND FINANCIAL TARGETS FOR ANIMAL HUSBANDRY FOR THE STATE (Table 63)

SL . NO	DISTRICTS	2010-11	2011-2012	AMOUNT IN LAKHS
1	AIZAWL	70.8	86.9	157.7
2	CHAMPAI	234	757.60	991.6
3	KOLASIB	415.50	292	707.50
4	LAWNTLAI	277.54	114.54	392.08
5	LUNGLEI	538	645.10	1183.10
6	MAMIT	60.22	78.80	139.02
7	SAIHA	70.8	86.9	157.70
8	SERCHHIP	60.22	78.8	139.02
	TOTAL	1727.08	2140.64	3867.72

1.3 DISTRICTWISE PROPOSED ACTIVITIES AND PHYSICAL AND FINANCIAL TARGETS FOR FISHERY SECTOR

6.4.1 Strategies, physical and financial targets proposed for the development of fishery in the district AIZAWL DISTRICT (Table 64)

<i>Interventions</i>	<i>Unit cost in (Rs.in lakh)</i>	<i>2010-11</i>		<i>2011-12</i>		<i>Total</i>
		<i>Phy</i>	<i>Fin</i>	<i>Phy</i>	<i>Fin</i>	
		Development of fish breeding farm, Lamphel (Deepening of ponds for an area of 2.5 ha.)	70 / farm			
Development of F.F.D.A farm (Pond deepening for 2.5 ha.)	50/farm					
Development of fresh water aquaculture (FFDA Scheme)	Avg Rs 3 lakh/ha	30ha	90.00	30ha	90	180.00
Development of integrated Fish Farming at two units	Rs 0.20 lakh/ha			10Ha	2	2
Training of Fish Farmers for FFDA Scheme	Rs 0.03 lakh / terrace	100	3	100	3	6
Mobile Hypophysation Programme						
Demonstration on Fish Culture						
Development of Cage/Pen Culture						
Total		130	93	140	95	188.00

6.4.2 Strategies, physical and financial targets proposed for the development of fishery in the district CHAMPAI DISTRICT (Table 65)

Sl. No	Interventions	Unit cost in (Rs.in lakh)	2010-2011		2011-2012		Total
			P	F	P	F	
			1.	Hatchery with production capacity of 7-8 million fry/annually	16.00 lakhs	NIL	
2.	FFDA/NFDB new pond of 1ha.WSA	4.00 lakhs per ha	20 ha	20.00	20 ha	20.00	40.00
3.	Renovation of existing pond 1ha.WSA	0.75/ha	25 ha	4.70	25 ha	4.70	9.40
4.	Development of integrated Fish Farming 1ha.WA	0.80/ha	25 ha	5.00	25 ha	5.00	10.00
5.	Training of Fish Farmers for FFDA Scheme	0.015 per farmer	240 nos	3.60	240 nos	3.60	7.20
Total				33.3		33.3	66.6

6.4.3 Strategies, physical and financial targets proposed for the development of fishery in the district KOLASIB DISTRICT (Table 66)

(Rs. In Lakh)

Sl. No	Name of the Scheme	Rate	2010-2011		2011-2012		Total
			Phy	Fin	Phy	Fin	
1	Development of fresh water aquaculture / fishery						
	a) increase in water spread area by constructing new ponds	1.00/ha	75	75.00	100	100.00	175.00
	b) provision of inputs including fingerlings	0.13/ha	75	9.75	100	13.00	22.75
	c) Renovation of ponds	0.15/ha	100	15.00	100	15.00	30.00
	d) Construction of seed farm including hatchery in Kolasib district	10.00/no.	1	10.00	-	-	
	e) construction of fresh water prawn seed farm including hatchery	18.00/no.	1 (pt)	10.00	1 (pt)	8.00	8.00
	Total for fishery		250 ha/ 2nos	119.75	300	136.00	255.75

6.4.4 Strategies, physical and financial targets proposed for the development of fishery in the district LAWNGTLAI DISTRICT (Table 67)

(Rs. In Lakh)

Sl. No	Name of the Scheme	Rate	2010-2011		2011-2012		Total
			Phy	Fin	Phy	Fin	
1	Development of fresh water aquaculture / fishery						
	a) increase in water spread area by constructing new ponds	1.00/ha	75	75.00	100	100.00	175.00
	b) provision of inputs including fingerlings	0.13/ha	75	9.75	100	13.00	22.75
	c) Renovation of ponds	0.15/ha	100	15.00	100	15.00	30.00
	d) Construction of seed farm including hatchery in Kolasib district	10.00/no.	1	10.00	-	-	10.00
	e) construction of fresh water prawn seed farm including hatchery	18.00/no.	1 (pt)	10.00	1 (pt)	8.00	18.00
	Total for fishery		250 ha/ 2nos	119.75	300	136.00	255.75

6.4.5 Strategies, physical and financial targets proposed for the development of fishery in the district LUNGLEI DISTRICT (Table 68)

Sl. No	Interventions	Unit cost in (Rs.in lakh)	2010-2011		2011-2012		Total
			P	F	P	F	
			1.	Hatchery with production capacity of 7-8 million fry/annually	16.00 lakhs	NIL	
2.	FFDA/NFDB new pond of 1ha.WSA	4.00 lakhs per ha	20 ha	20.00	20 ha	20.00	40.00
3.	Renovation of existing pond 1ha.WSA	0.75/ha	25 ha	4.70	25 ha	4.70	9.40
4.	Development of integrated Fish Farming 1ha.WA	0.80/ha	25 ha	5.00	25 ha	5.00	10.00
5.	Training of Fish Farmers for FFDA Scheme	0.015 per farmer	240 nos	3.60	240 nos	3.60	7.2
Total				33.3		33.3	66.6

6.4.6 Strategies, physical and financial targets proposed for the development of fishery in the district MAMIT DISTRICT (Table 69)

<i>Interventions</i>	<i>Unit cost in (Rs.in lakh)</i>	<i>2010-11</i>		<i>2011-12</i>		<i>Fin</i>
		<i>Phy</i>	<i>Fin</i>	<i>Phy</i>	<i>Fin</i>	
		Development of fish breeding farm, Lamphel (Deepening of ponds for an area of 2.5 ha.)	70 / farm	2	140	
Development of F.F.D.A farm (Pond deepening for 2.5 ha.)	50/farm	1	50	2	100	150
Development of fresh water aquaculture (FFDA Scheme)	Avg Rs 3 lakh/ha	30h	90.0	30ha	90	180
Development of integrated Fish Farming at two units	Rs 0.20 lakh/ha			10Ha	2	2
Training of Fish Farmers for FFDA Scheme	Rs 0.03 lakh / terrace	100	3	100	3	6
Mobile Hypophysation Programme						
Demonstration on Fish Culture						
Development of Cage/Pen Culture						
Total			283		335	618

6.4.7 Strategies, physical and financial targets proposed for the development of fishery in the district SAIHA DISTRICT (Table 70)

	Activities Suggested	Units	2010-2011		2011-2012		Total
			P	F	P	F	
1.	Hatchery with production capacity of 7-8 million fry/annually	16.00 lakhs	1	16.00	NIL	NIL	16.00
2.	FFDA/NFDB new pond of 1ha.WSA	4.00 lakhs per ha	Incorporated with neighboring District		20 ha	20.00	20.00
3.	Renovation of existing pond 1ha.WSA	0.75/ha			25 ha	4.70	4.70
4.	Development of integrated Fish Farming 1ha.WA	0.80/ha	NIL	NIL	25 ha	5.00	5.00
5.	Training of Fish Farmers for FFDA Scheme	0.015 per farmer	NIL	NIL	240 nos	3.60	3.60
Total				16.00		33.3	49.3

6.4.8 Strategies, physical and financial targets proposed for the development of fishery in the district SERCHHIP DISTRICT (Table 71)

Sl. No	Interventions	Unit cost in (Rs.in lakh)	2010-2011		2011-2012		TOTAL
			P	F	P	F	
1.	Hatchery with production capacity of 7-8 million fry/annually	16.00 lakhs	NIL	NIL	NIL	NIL	
2.	FFDA/NFDB new pond of 1ha.WSA	4.00 lakhs per ha	20 ha	20.00	20 ha	20.00	40.00
3.	Renovation of existing pond 1ha.WSA	0.75/ha	25 ha	4.70	25 ha	4.70	9.40
4.	Development of integrated Fish Farming 1ha.WA	0.80/ha	25 ha	5.00	25 ha	5.00	10.00
5.	Training of Fish Farmers for FFDA Scheme	0.015 per farmer	240 nos	3.60	240 nos	3.60	4.20
6.	Mobile Hypophysation Programme	NIL	NIL	NIL	NIL	NIL	NIL
7.	Demonstration on Fish Culture	Rs.1.00 lakh per demonstration site	NIL	NIL	1no	1.00	1no
TOTAL				33.30		33.30	66.6

NOTE:- The financial implication shown above are the permissible subsidy component as per guideline of financing agency i.e., CSS/NFDB.

6.4.9 TOTAL PHYSICAL AND FINANCIAL TARGETS FOR FISHERY FOR THE STATE (Table 72)

SL . NO	DISTRICTS	2010-11	2011-2012	AMOUNT IN LAKHS
1	AIZAWL	93	95	188.00
2	CHAMPHAI	33.3	33.3	66.6
3	KOLASIB	119.75	136.00	255.75
4	LAWNTLAI	119.75	136.00	255.75
5	LUNGLEI	33.3	33.3	66.6
6	MAMIT	283	335.00	618.00
7	SAIHA	16.00	33.3	49.3
8	SERCHHIP	33.3	33.3	66.6
	TOTAL	731.4	835.2	1566.6

1.4 DISTRICTWISE AND YEARWISE PHYSICAL AND FINANCIAL TARGETS SERICULTURE SECTOR

6.5.1 Strategies, physical and financial targets proposed for the development of Sericulture in the district AIZAWL DISTRICT (Table 73)

(in lakhs)

Sl. No	Name of Activity	Unit Cost (in lakhs)	2010-11		2011-12		Total
			Phy	Fin	Phy	Fin	
1	Rearing appliances	0.15	100	15.00	100	15.00	115.00
2	Assistance for Irrigation and other water conservation	0.07	100	7.00	100	7.00	14.00
3	Crop Protection and disinfecting materials	0.07	100	7.00	100	7.00	14.00
4	Capacity building	0.95	2	1.9	2	1.9	3.8
5	Administrative cost			2.00		2.00	4.00
1	Mulberry Plantation with start up tools	0.15	100	15.00	150	22.5	37.50
2	Cost of Rearing House	0.4	100	40.00	150	60.00	100.00
3	Assistant for strengthening of Mulberry Farm cum Grainage	10			1	10.00	10.00
4	Establishment of Cocoon godown	5			1	5.00	5.00
5	Rearing appliances	0.15	100	15.00	150	22.5	37.50
6	Assistance for Irrigation and other water conservation	0.07	100	7.00	150	10.5	17.05
7	Crop Protection and disinfecting materials	0.07	100	7.00	150	10.5	17.05
8	Construction of Chawki Rearing Centre	3.5	1	3.5	1	3.5	7.00
9	Capacity Building	0.95	2	1.9	2	2.85	4.75
10	Administrative cost	20.29		3.00		3.00	6.00
Sub Total		92.4		92.4		150.35	242.75

6.5.2 Strategies, physical and financial targets proposed for the development of Sericulture in the district CHAMPHAI DISTRICT (Table 74)

Sl. No	Name of Activity	Unit cost (in lakh)	2010 - 11		2011 - 12		Total
			Phy	Fin	Phy	Fin	
1	2	3	4	5	6	7	8
1	Castor Plantation with start up tools	0.15	100	15.00	100	15.00	30.00
2	Cost of Rearing House	0.40	100	40.00	100	40.00	80.00
3	Assistance for strengthening of Eri Farm cum Grainage	800	-	-	1	8.00	8.00
4	Establishment of Cocoon godown	4.00	1	4.00	-	-	4.00
5	Rearing appliances	0.15	100	15.00	100	15.00	30.00
6	Assistance for irrigation and other water conservation	0.07	100	7.00	100	7.00	14.00
7	Crop Protection and disinfectant materials	0.07	100	7.00	100	7.00	14.00
8	Capacity building	0.95	2	1.9	2	1.9	3.8
9	Administrative cost	34.16	-	4.88	-	4.88	9.76

Mulberry Sector							
1	Mulberry Plantation with start up tools	0.15	100	15.00	150	22.5	37.50
2	Cost of Rearing House	0.4	100	40.00	150	60.00	100.00
3	Assistance for strengthening of Mulberry Farm cum Grainage	10.00	-	-	1	10.00	10.00
4	Establishment of Cocoon godown	5.00	-	-	1	5.00	5.00
5	Rearing appliances	0.15	100	15.00	150	22.5	37.50
6	Assistance for irrigation and other water conservation	0.07	100	7.00	150	10.5	17.05
7	Crop Protection and disinfectant materials	0.07	100	7.00	150	10.5	17.05
8	Construction of Chawki Rearing Centre	3.5	1	3.5	1	3.5	7.00
9	Capacity building	0.95	2	1.9	2	2.85	4.75
10	Administrative cost	20.29	-	3.00	-	3.00	6.00
	Sub Total			92.4		249.13	341.53

6.5.2 Strategies, physical and financial targets proposed for the development of Sericulture in the district Kolasib DISTRICT (Table 75)

(Rs. In Lakh)

Sl. No	Name of Activity	Unit cost (in Rs)	2010-2011		2011-2012		Total
			Phy	Fin	Phy	Fin	
1	Mulberry plantation (expansion of area)	0.40/ hec	50	20.00	75	30.00	50
2	Support for silk worm rearing to farmers	0.13/unit	50	6.50	75	9.75	16.25
3	Irrigation support (rain water harvest of small size)	0.15/no.	50	7.50	75	11.25	18.75
	Total			34.00		51.00	85

6.5.4 Strategies, physical and financial targets proposed for the development of Sericulture LAWNGTLAI DISTRICT (Table 76)

	Agriculture	Activities	2010-11		2011-12		Total
			Physical	Financial	Physical	Financial	
Agriculture	i) Trial and Demonstration on Cereals	a) S.R.I. Paddy	2 ha	1.2	2 ha	1.2	2.4
		b) Hybrid Maize	2 ha	1.0	2 ha	1.0	2.0
		c) Sugarcane	1 ha	0.50	1 ha	0.50	1.00
	ii) Varietal Performance	a) Oilseed	2 ha	1.0	3 ha	1.5	2.5
		b) Pulses	1 ha	0.50	1 ha	0.50	1.00
	iii) Creation of Rain Water Harvesting Structures	a) Community Rain Water Harvesting Tank	15 nos.	30.0	15 nos.	30.0	60.0
		b) Individual Rain Water Harvesting Tank	30 nos.	15	30 nos.	15	30.0
	iv) Technology on Development of Post Harvest Unit	Construction of on Farm Handling unit	3 nos.	1.5	3 nos.	1.5	3.00
	v) Capacity Building and Awareness on Organic Farming	Training	10 nos.	1.0	10 nos.	1.0	2.0
		Vermi-Compost Unit	10 nos.	0.30	10 nos.	0.30	0.6
	vi) Empowerment of Women Farmers	Women SHG	5 nos.	5.0	5 nos.	5.0	10.0
	vii) Transfer of Technology	a) Kisan Mela/ Goshti	2 nos.	1.5	2 nos.	1.5	3.0
		b) Farmers Fair-cum-Exhibition	5 nos.	0.50	5 nos.	0.50	1.0
		c) Training	20 nos.	2.0	20 nos.	2.0	4.0
		d) Farmers' Scientist Interaction	10 nos.	0.50	10 nos.	0.50	1.0
	viii) Trial on Indigenous Crops	Paddy, Maize, Pulses, Vegetables	-	1.5	-	1.5	3.0
	ix) Laminar Flow, Compound Microscope, Stereo Microscope	-	1 no. each	3.0	1 no. each	3.0	6.0
	x) Computer and Accessories	-	1 no.	1.5	1 no.	1.5	3.0
	Total			65.50		67.0	132.50

6.5.5 Strategies, physical and financial targets proposed for the development of Sericulture in the district LUNGLEI DISTRICT (Table 77)

(in lakhs)

Sl.	Name of Activity	Unit Cost	2010-11	2011-12	Total
------------	-------------------------	------------------	----------------	----------------	--------------

No		(in lakhs)	Phy	Fin	Phy	Fin	
1	Castor Plantation with start up tools	0.15	100	15.00	100	15.00	30.00
2	Cost of Rearing House	0.40	100	40.00	100	40.00	80.00
3	Assistant for strengthening of Eri Farm cum Grainage	8.00	-	-	1	8.00	8.00
4	Establishment of Cocoon godown	4.00	1	4.00			4.00
5	Rearing appliances	0.15	100	15.00	100	15.00	30.00
6	Assistance for Irrigation and other water conservation	0.07	100	7.00	100	7.00	14.00
7	Crop Protection and disinfecting materials	0.07	100	7.00	100	7.00	14.00
8	Capacity building	0.95	2	1.9	2	1.9	3.8
9	Administrative cost			2.00		2.00	4.00
1	Mulberry Plantation with start up tools	0.15	100	15.00	150	22.5	37.50
2	Cost of Rearing House	0.4	100	40.00	150	60.00	100.00
3	Assistant for strengthening of Mulberry Farm cum Grainage	10			1	10.00	10.00
4	Establishment of Cocoon godown	5			1	5.00	5.00
5	Rearing appliances	0.15	100	15.00	150	22.5	37.50
6	Assistance for Irrigation and other water conservation	0.07	100	7.00	150	10.5	17.05
7	Crop Protection and disinfecting materials	0.07	100	7.00	150	10.5	17.05
8	Construction of Chawki Rearing Centre	3.5	1	3.5	1	3.5	7.00
9	Capacity Building	0.95	2	1.9	2	2.85	4.75
10	Administrative cost	20.29		3.00		3.00	6.00
	Sub Total			92.4		246.25	338.65

6.5.6 Strategies, physical and financial targets proposed for the development of Sericulture in the district MAMIT DISTRICT (Table 78)

(in lakhs)

Sl No	Name of Activity	Unit Cost (in lakhs)	2010-11		2011-12		Total
			Phy	Fin	Phy	Fin	
1	Castor Plantation with start up tools	0.15	100	15.00	100	15.00	30.00
2	Cost of Rearing House	0.40	100	40.00	100	40.00	80.00
3	Assistance for strengthening of Eri Farm cum Grainage	8.00	-	-	1	8.00	8.00
4	Establishment of Cocoon godown	4.00	1	4.00	-	-	4.00
5	Establishment of Raw Material Bank (Eri)	25.00	1	25.00	-	-	25.00
6	Rearing appliances	0.15	100	15.00	100	15.00	30.00
7	Assistance for Irrigation and other water conservation	0.07	100	7.00	100	7.00	14.00
8	Crop protection and disinfecting materials	0.07	100	7.00	100	7.00	14.00
9	Capacity building	0.95	2	1.9	2	1.9	3.8
10	Administrative cost (5%)	34.16	-	4.88	-	4.88	9.76
1	Mulberry Plantation with start up tools	0.15	100	15.00	150	22.5	37.50
2	Cost of Rearing House	0.4	100	40.00	150	60.00	100.00
3	Assistance for strengthening of Mulberry Farm cum Grainage	10.00	-	-	1	10.00	10.00
4	Establishment of Cocoon godown	5.00	-	-	1	5.00	5.00
5	Revolving fund for marketing Mulberry cocoon	50.00	1	50.00	-	-	50.00
6	Rearing appliances	0.15	100	15.00	150	22.5	37.50
7	Assistance for Irrigation and other water conservation	0.07	100	7.00	150	10.5	17.05
8	Crop protection and disinfecting materials	0.07	100	7.00	150	10.5	17.05
9	Construction of Chawki Rearing Centre	3.5	1	3.5	1	3.5	7.00
10	Capacity Building	0.95	2	1.9	2	2.85	4.75
11	Administrative cost(5%)	54.46	-	7.78	-	7.78	15.56
Sub-total		124.75	-	172.18	-	253.9	426.08

6.5.7 Strategies, physical and financial targets proposed for the development of Sericulture in the district SAIHA DISTRICT (Table 79)

(Rupees in lakh)

Sl No	Name of Activity	Unit Cost (Rs)	2010-2011		2011-2012		Total
			Phy	Fin	Phy	Fin	
1.	Mulberry Plantation with start up tools(for 1 hac of land)	0.12	20	2.4	30	3.60	6.00
2.	Cost of House/Rearing house	0.50	20	10.00	30	15.00	25.00
3.	Assistant for strengthening of Mulberry Farm cum Grainage	5.00	-	-	1	5.00	5.00
4.	Asst.for construction of cocoon storage house	3.00	-	-	1	3.00	3.00
5.	Supply of Rearing appliances	0.15	20	3.00	30	4.50	7.50
6.	Support for rain water harvesting or irrigation	0.20	20	4.00	30	6.00	10.00
7.	Crop protection & Disinfecting chemicals	0.05	20	1.00	30	1.50	2.50
8.	Maintenance of Mulberry Food plants	0.05	20	1.00	30	1.50	2.50
9.	Establishment of Chowki rearing centres	2.00	1	2.00	-	-	-
10.	Capacity buildings etc.	1.00	1	1.00	1	1.00	2.00
11.	Administrative cost	-	-	2.00	-	1.00	3.00
Total				26.40		42.10	68.50

6.5.8 Strategies, physical and financial targets proposed for the development of Sericulture in the district SERCHHIP DISTRICT (Table 80)

(in lakhs)

SI No	Name of Activity	Unit Cost (in lakhs)	2010-11		2011-12		Total
			Phy	Fin	Phy	Fin	
1	ERI SECTOR Castor Plantation with start up tools	0.15	100	15.00	100	15.00	30.00
2	Cost of Rearing House	0.40	100	40.00	100	40.00	80.00
3	Assistance for strengthening of Eri Farm cum Grainage	8.00	-	-	1	8.00	8.00
4	Establishment of Cocoon godown	4.00	1	4.00	-	-	4.00
5	Establishment of Raw Material Bank (Eri)	25.00	1	25.00	-	-	25.00
6	Rearing appliances	0.15	100	15.00	100	15.00	30.00
7	Assistance for Irrigation and other water conservation	0.07	100	7.00	100	7.00	14.00
8	Crop protection and disinfecting materials	0.07	100	7.00	100	7.00	14.00
9	Capacity building	0.95	2	1.9	2	1.9	3.8
10	Administrative cost (5%)	34.16	-	4.88	-	4.88	9.76
1	MULBERRY SECTOR Mulberry Plantation with start up tools	0.15	100	15.00	150	22.5	37.5
2	Cost of Rearing House	0.4	100	40.00	150	60.00	100.00
3	Assistance for strengthening of Mulberry Farm cum Grainage	10.00	-	-	1	10.00	10.00
4	Establishment of Cocoon godown	5.00	-	-	1	5.00	5.00
5	Revolving fund for marketing Mulberry cocoon	50.00	1	50.00	-	-	50.00
6	Rearing appliances	0.15	100	15.00	150	22.5	37.5
7	Assistance for Irrigation and other water conservation	0.07	100	7.00	150	10.5	17.05
8	Crop protection and disinfecting materials	0.07	100	7.00	150	10.5	17.05
9	Construction of Chawki Rearing Centre	3.5	1	3.5	1	3.5	7.00
10	Capacity Building	0.95	2	1.9	2	2.85	4.75
11	Administrative cost(5%)	54.46	-	7.78	-	7.78	15.56
Sub-total		124.75	-	172.18	-	253.91	426.09

6.5.9 TOTAL PHYSICAL AND FINANCIAL TARGETS FOR SERICULTURE FOR THE STATE (Table 81)

SL . NO	DISTRICTS	2010-11	2011-2012	AMOUNT IN LAKHS
1	AISAWL	92.4	150.35	242.75
2	CHAMPAI	92.4	249.13	341.53
3	KOLASIB	34.00	51.00	85
4	LAWNTLAI	65.50	67.00	132.50
5	LUNGLEA	92.4	246.25	338.65
6	MAMIT	172.18	253.9	426.08
7	SAIHA	26.40	42.10	68.50
8	SERCHHIP	172.18	253.91	426.09
	TOTAL	747.46	1313.64	2061.1

6.6 DISTRICTWISE AND YEARWISE PHYSICAL AND FINANCIAL TARGETS OF SOIL AND WATER CONSERVATION UNDER AGRICULTURE

6.6.1 (A) SOIL TREATMENT IN AIZAWL DISTRICT (Rs. In Lakhs)

Type of Soil	Area in Ha.	Area Affected	Area in Ha. Treatment required	Strategy			Total
					2010-11	2011-12	
Acidity Soil	10,000	10,000	10,000	Liming	22.50	22.50	45.00
Loamy Soil	9,000	9,000	7,000	Afforestation	50.00	50.00	100.00
Total	19,000	19,000	17,000	-	72.50	72.50	145.00

(B). Soil & moisture Conservation Activities

Sl. No.	Type of Activities	Area in Ha.	Unit Cost	No. of Units	Financial Requirement Amount (in lakhs)
1.	Terrace Farming	840	0.24	-	201.60
2.	Contour Bunding	500	0.24	-	120.00
3.	Channelling	-	-	-	-
4.	Social Forestry	8,00	0.065	-	52.00
5.	Check Wall Construction	-	0.20	1,50	30.00
6.	Ground Water Charging	65	0.60	-	39.00
TOTAL :					442.60

(C). Water Conservation (Table 80)

Sl. No.	Type of Activity	Nos. of Units	Unit Cost	Financial Requirement Amount (in lakhs)
1.	Farm Ponds	30	1.00	30.00
2.	Check Dam	50	1.00	50.00
3.	Feeder Channel	-	-	-
4.	Canal	25,000 R/M	0.0015 R/M	37.50
5.	Water Storage	1,00	1.00	100.00
TOTAL				217.50

(Table 82) District Total

Sl. No	Activity	Amount in Lakhs
(A)	SOIL TREATMENT	145.00
(B).	Soil & moisture Conservation Activities	442.60
(C).	Water Conservation	217.50
TOTAL		805.1

6.6.2 SOIL TREATMENT CHAMPAI DISTRICT (Table 83)

Type of Soil	Area in Ha.	Area Affected	Area in Ha. Treatment required	Strategy			
					2010-11	2011-12	Total
Acidity Soil	10,000	10,000	10,000	Liming	22.50	22.50	45.00
Loamy Soil	9,000	9,000	7,000	Afforestation	50.00	50.00	100.0
Total	19,000	19,000	17,000	-	72.50	72.50	145.00

6.6.3 PHYSICAL TARGETS AND FINANCIAL PROJECTION DURING XITH PLAN FOR SOIL AND WATER CONSERVATION KOLASIB DISTRICT (Table 84)

(Rs. In Lakh)

Sl. No	Activities	Unit cost	2010-2011		2011-2012		Fin
			Phy	Fin	Phy	Fin	
			6	7	8	9	
1	Soil conservation plantation	0.13/ha	75	9.75	100	13.00	22.75
2	Gully plugging	0.10/nos.	75	7.50	100	10.00	17.50
3	Contour trenching	0.30/ha	75	22.50	100	30.00	52.50
Total			225	39.75	300	53.00	92.75

**6.6.4 (a) PROPOSAL FOR IMPLEMENTATION OF SOIL & MOISTURE CONSERVATION
LAWNGTLAI DISTRICT**

(Rupees in lakh)

Sl. No.	Type of Activities	Unit Cost per Ha./Nos.	2010-2011		2011-2012		Total
			Phy. (Ha.)	Fin.	Phy. (Ha.)	Fin.	
			4	5	6	7	
1.	Terrace Farming	0.24	120	28.80	120	28.80	57.60
2.	Contour Bunding	0.24	75	18.00	75	18.00	36.00
3.	Channelizing	-	-	-	-	-	-
4.	Social Forestry	0.065	1154	75.00	1154	75.00	150.00
5.	Check Wall Construction.	0.20	215	43.00	215	43.00	86.00
6.	Ground Water Charging	0.60	93	56.00	93	56.00	112.00
TOTAL:				220.8	220.8		441.6

**(b) PROPOSAL FOR IMPLEMENTATION OF WATER CONSERVATION ACTIVITIES IN
LAWNGTLAI DISTRICT**

(Rupees in lakh)

Sl. No.	Type of Activities	Unit Cost per Ha./Nos.	2010-2011		2011-2012		Total
			Phy. (Ha.)	Fin.	Phy. (Ha.)	Fin.	
			4	5	6	7	
1.	Farm Ponds	1.00	100.0	100.00	200	200.00	200.0
2.	Check Dam	1.00	22	22.00	22	22.00	44.00
3.	Feeder Channel	-	-	-	-	-	-
4.	Canal	0.0015 R/M	-	-	417 R/M	6.25	6.25
5.	Water Storage.	1.00	130	130.00	130	130.00	260.0
TOTAL:							510.25

(Table 85) District Total

Sl. No	Activity	Amount in Lakhs
(A)	SOIL & MOISTURE CONSERVATION	441.6
(B).	Water Conservation	510.25
TOTAL		951.85

**6.6.5 (a) PROPOSAL FOR IMPLEMENTATION OF SOIL & MOISTURE CONSERVATION
LUNGLEI DISTRICT**

(Rupees in lakh)

Sl. No.	Type of Activities	Unit Cost per Ha./Nos.	2010-2011		2011-2012		Total
			Phy. (Ha.)	Fin.	Phy. (Ha.)	Fin.	
			4	5	6	7	
1.	Terrace Farming	0.24	120	28.80	120	28.80	57.60
2.	Contour Bunding	0.24	75	18.00	75	18.00	36.00
3.	Channelizing	-	-	-	-	-	-
4.	Social Forestry	0.065	1154	75.00	1154	75.00	150.00
5.	Check Wall Construction.	0.20	215	43.00	215	43.00	86.00
6	Ground Water Charging	0.60	93	56.00	93	56.00	112.00
	TOTAL:			374.30		374.30	441.60

(b) PROPOSAL FOR IMPLEMENTATION OF WATER CONSERVATION ACTIVITIES IN LUNGLEI DISTRICT

(Rupees in lakh)

Sl. No.	Type of Activities	Unit Cost per Ha./Nos.	2010-2011		2011-2012		Total
			Phy. (Ha.)	Fin.	Phy. (Ha.)	Fin.	
			4	5	6	7	
1.	Farm Ponds	1.00	130	130.00	130	130.00	260.0
2.	Check Dam	1.00	22	22.00	22	22.00	44.00
3.	Feeder Channel	-	-	-	-	-	-
4.	Canal	0.0015 R/M	-	-	417 R/M	6.25	6.25
5.	Water Storage.	1.00	150	150.00	150	150.00	360.0
	TOTAL:						1105.85

(Table 86) District Total

Sl. No	Activity	Amount in Lakhs
(A)	SOIL & MOISTURE CONSERVATION	441.60
(B).	Water Conservation	1105.85
	TOTAL	1547.45

6.6.6 (A) SOIL TREATMENT IN MAMIT DISTRICT

Sl. No	Type of Soil/ Nature of Soil	Area in Ha	Area Affected	Area in Ha. Treatment Required	Strategy	Financial Requirements		
						2010-11	2011-12	Total
1	Acidic Soil	302575	302575	98000	Liming	70.00	70.00	140.00
2	Waste Land/ Degraded Land	7300	7300	11000	Plantation/tr enching,etc.	5.7	5.7	11.4
3	Land slide prone area	1800	1800	900	Plantation/E ngineering measures.	3.2	3.2	6.4
Total						78.9	78.9	157.8

(B) Soil & Moisture Conservation Activities IN MAMIT DISTRICT

Sl. No	Types of Activities	Area in Ha	Unit Cost	No of Units	Financial Requirement Amount (in Lakhs)
1	Terrace farming (25-35% Slope)	77618	1.25	250	312.50
2	Contour Bunding (less than 20% slope)	20883	0.50	108	54.00
3	Channelizing	20883	0.50	500	250.00
4	Social Forestry (15%)	45000	0.05	500	25.00
	Total				641.50

(C)Water Conservation

Sl. No	Type of Activity	Nos of Units	Unit Cost (in lakh)	Financial Requirement Amount (in Lakhs)
1	Farm Ponds (1unit for 5ha.)	110	1.5	165.00
2	Check Dam	79	0.25	19.00
3	Feeder Channnel	205	0.15	30.00
4	Canal	41	1.50	61.00
5	Water Storage (1unit for 2ha.)	380	0.50	190.00
	Total			465.00

(Table 87) District Total

Sl. No	Activity	Amount in Lakhs
(A)	SOIL TREATMENT	157.8
(B).	Soil & moisture Conservation Activities	641.5
(C).	Water Conservation	465.00
TOTAL		1264.3

6.6.7 (A) Soil Treatment under Saiha District

Sl. No	Type of Soil/Nature of Soil	Area in Ha	Area Affected	Area in Ha. Treatment Required	Strategy			
						2010-11	2011-12	Total
1	Acidic Soil	318583	318583	69000	Liming	290.00	290.00	580.00
2	Waste Land/ Degraded Land	8000	8000	4000	Plantation/trenching, etc.	57.00	57.00	114.00
3	Land slide prone area	2000	2000	1000	Plantation/Engineering measures.	36.00	36.00	72.00
Total						583.00	583.00	766

(B) Soil & Moisture Conservation Activities

Sl. No	Types of Activities	Area in Ha	Unit Cost	No of Units	Financial Requirement Amount (in Lakhs)
1	Terrace farming (25-35% Slope)	56943	1.25	127	158.75
2	Contour Bunding (less than 20% slope)	12513	0.5	250	125.50
3	Channellizing	12513	0.5	75	37.50
4	Social Forestry (15%)	46500	0.05	465	23.25
5	Check wall Construction	1000	1.50	150	225.00
Total					570.25

(C) Water Conservation

Sl.No	Type of Activity	Nos of Units	Unit Cost (in lakh)	Financial Requirement Amount (in Lakhs)
1	Farm Ponds (1unit for 5ha.)	150	1.50	225.00
2	Check Dam (10%)	90	0.25	22.5
3	Feeder Channnel	125	1.5	187.5
4	Canal	25	1.5	37.50
5	Water Storage (1unit for 2ha.)	180	0.50	90.00
Total				562.5

(Table 88) District Total

Sl. No	Activity	Amount in Lakhs
(A)	SOIL TREATMENT	766.0
(B).	Soil & moisture Conservation Activities	570.25
(C).	Water Conservation	562.5
TOTAL		1898.75

6.6.8 (A) Soil Treatment under, Soil & Water Conservation SERCHHIP DISTRICT

Sl. No	Type of Soil/ Nature of Soil	Area in Ha	Area Affected	Area in Ha. Treatment Required	Strategy	Financial Requirement Amount (in Lakhs)		
						2010-11	2011-12	TOTAL
1	Acidic Soil	142160	142160	3300	Liming	135.00	135.00	270.00
2	Waste Land/ Degraded Land	4000	4000	2000	Plantation/trenching,etc.	28.00	28.00	56.00
3	Land slide prone area	1500	750	750	Plantation/Engineering measures.	27.00	27.00	54.00
Total						290.00	290.00	380.00

(B) Soil & Moisture Conservation Activities

Sl. No	Types of Activities	Area in Ha	Unit Cost	No of Units	Financial Requirement Amount (in Lakhs)
1	Terrace farming (25-35% Slope)	56943	1.25	227	283.75
2	Contour Bunding (less than 20% slope)	12513	0.5	250	125.50
3	Channellizing	12513	0.5	75	37.50
4	Social Forestry (15%)	46500	0.05	465	23.25
5	Check wall Construction	1000	1.50	150	225.00
Total					695

(C) Water Conservation

Sl.No	Type of Activity	Nos of Units	Unit Cost (in lakh)	Financial Requirement Amount (in Lakhs)
1	Farm Ponds (1unit for 5ha.)	150	1.50	225.00
2	Check Dam (10%)	690	0.25	172.5
3	Feeder Channnel	50	1.5	75.0
4	Canal	25	1.5	37.50
5	Water Storage (1unit for 2ha.)	180	0.50	90.00
Total				600.0

(Table 89) Serchhip District Total

Sl. No	Activity	Amount in Lakhs
(A)	SOIL TREATMENT	380.00
(B).	Soil & moisture Conservation Activities	695.0
(C).	Water Conservation	600.0
TOTAL		1675.00

Table 90 SOIL TREATMENT AND WATER CONSERVATION TOTAL

SL . NO	DISTRICTS	AMOUNT IN LAKHS
1	AISAWL	805.10
2	CHAMPAI	145.00
3	KOLASIB	92.75
4	LAWNTLAI	951.85
5	LUNGLEA	1547.45
6	MAMIT	1264.30
7	SAIHA	1898.75
8	SERCHHIP	1675.5
TOTAL		8380.7

2010-11 4190 Lakhs

2011- 12 4190 Lakhs

50 % budget for the first year and remaining 50 % for the second yeat

.Activities Proposed for Soil and Water Conservation Sector for Aizawl District

Sl.No	Proposed Activities	Unit Cost	Physical Targets	Financial Targets		Total
				2010-11	2011-12	
1	Control of Stream Bank Erosion	2.00	20	20.00	20.00	40.00
2	Broom Cultivation	1.00/H	50	25.00	25.00	50.00
3	Rubber Plantation	1.00	72	42.00	32	72.00
4	Coffee Plantation	1.00	124	44.00	80	124.00
5	Contour Bunding (less than 20% slope)	0.5/Ha	150	5.00	5.00	10.00
6	Social Forestry	0.05	200	100	100	1.00
7	Check wall construction	1.0/unit	500	250	250	500
	Total			486	512	998

Activities Proposed for Soil and Water Conservation Sector for Champhai District

Sl.No	Proposed Activities	Unit Cost	Physical Targets	Financial Targets		Total
				2010-11	2011-12	
1	Control of Stream Bank Erosion	2.00	15	10.00	20.00	30.00
2	Broom Cultivation	1.00/H	75	40.00	35.00	75.00
3	Rubber Plantation	1.00	100	50.00	50.00	100.00
4	Coffee Plantation	1.00	150	50.00	100.00	150.00
5	Contour Bunding (less than 20% slope)	0.5/Ha	250	50.00	75.00	125.00
6	Social Forestry	0.05	175	2.5	6.25	8.75
7	Check wall construction	1.0/unit	300	100	200.00	300.00
	Total			476	512	788.75

Activities Proposed for Soil and Water Conservation Sector for Kolasib District

Sl.No	Proposed Activities	Unit Cost	Physical Targets	Financial Targets		Total
				2010-11	2011-12	
1	Control of Stream Bank Erosion	-	-	-	-	-
2	Broom Cultivation	1.00/H	50	25.00	25.00	50.00
3	Rubber Plantation	1.00	72	42.00	32	72.00
4	Coffee Plantation	1.00	124	44.00	80	124.00
5	Contour Bunding (less than 20% slope)	0.5/Ha	150	5.00	5.00	10.00
6	Social Forestry	0.05	200	0.5	0.5	1.00
7	Check wall construction	1.0/unit	500	250	250	500
	Total			366.5	392.5	759.00

Activities Proposed for Soil and Water Conservation Sector for Lawngtlai District

Sl.No	Proposed Activities	Unit Cost	Physical Targets	Financial Targets		Total
				2010-11	2011-12	
1	Control of Stream Bank Erosion	2.00	10	10.00	10.00	20.00
2	Broom Cultivation	1.00/H	50	25.00	25.00	50.00
3	Rubber Plantation	1.00	72	42.00	32	72.00
4	Coffee Plantation	1.00	124	44.00	80	124.00
5	Contour Bunding (less than 20% slope)	0.5/Ha	150	5.00	5.00	10.00
6	Social Forestry	0.05	200	0.5	0.5	1.00
7	Check wall construction	1.0/unit	500	250	250	500
	Total			476	502	978

Activities Proposed for Soil and Water Conservation Sector for Lunglei District

Sl.No	Proposed Activities	Unit Cost	Physical Targets	Financial Targets		Total
				2010-11	2011-12	
1	Control of Stream Bank Erosion	2.00	20	20.00	20.00	40.00
2	Broom Cultivation	1.00/H	150	75.00	75.00	150.00
3	Rubber Plantation	1.00	80	40.00	40	80.00
4	Coffee Plantation	1.00	50	20.00	30	50.00
5	Contour Bunding (less than 20% slope)	0.5/Ha	150	5.00	5.00	10.00
6	Social Forestry	0.05	200	0.5	0.5	1.00
7	Check wall construction	1.0/unit	200	100	100	200
	Total			190.5	270.5	461.00

Activities Proposed for Soil and Water Conservation Sector for Mamit District

Sl.No	Proposed Activities	Unit Cost	Physical Targets	Financial Targets		Total
				2010-11	2011-12	
1	Control of Stream Bank Erosion	2.00	20	20.00	20.00	40.00
2	Broom Cultivation	1.00/H	50	15.00	35.00	50.00
3	Rubber Plantation	1.00	120	40.00	120	120.00
4	Coffee Plantation	1.00	50	20.00	30	50.00
5	Contour Bunding (less than 20% slope)	0.5/Ha	150	5.00	5.00	10.00
6	Social Forestry	0.05	200	0.5	0.5	1.00
7	Check wall construction	1.0/unit	200	100	100	200
	Total			200.5	310.5	511.00

Activities Proposed for Soil and Water Conservation Sector for Saiha District

Sl.No	Proposed Activities	Unit Cost	Physical Targets	Financial Targets		Total
				2010-11	2011-12	
1	Control of Stream Bank Erosion	2.00	55	50	60.00	110.00
2	Broom Cultivation	1.00/H	50	25.00	25.00	50.00
3	Rubber Plantation	1.00	72	42.00	32	72.00
4	Coffee Plantation	1.00	124	44.00	80	124.00
5	Contour Bunding (less than 20% slope)	0.5/Ha	150	5.00	5.00	10.00
6	Social Forestry	0.05	200	0.5	0.5	1.00
7	Check wall construction	1.0/unit	500	250	250	500
	Total			416.5	452.5	869.00

Activities Proposed for Soil and Water Conservation Sector for Serchhip District

Sl.No	Proposed Activities	Unit Cost	Physical Targets	Financial Targets		Total
				2010-11	2011-12	
1	Control of Stream Bank Erosion	-	-	-	-	-
2	Broom Cultivation	1.00/H	50	25.00	25.00	50.00
3	Rubber Plantation	1.00	72	42.00	32	72.00
4	Coffee Plantation	1.00	124	44.00	80	124.00
5	Contour Bunding (less than 20% slope)	0.5/Ha	150	5.00	5.00	10.00
6	Social Forestry	0.05	200	0.5	0.5	1.00
7	Check wall construction	1.0/unit	500	250	250	500
	Total			366.5	392.5	759.00

Table No 91. TOTAL PHYSICAL AND FINANCIAL TARGETS FOR SOIL AND WATER CONSERVATION SECTOR FOR THE STATE

SL . NO	DISTRICTS	2010-11	2011-2012	AMOUNT IN LAKHS
1	AIZAWL	486.00	512.00	998.00
2	CHAMPHAI	476.00	512.00	788.50
3	KOLASIB	366.50	392.50	759.00
4	LAWNTLAI	476.00	502.00	978.00
5	LUNGLEI	190.50	270.50	461.00
6	MAMIT	200.50	310.50	511.00
7	SAIHA	416.50	452.50	869.00
8	SERCHHIP	366.50	392.50	759.00
TOTAL		2978.50	3344.5	6324.00

6.1 Training and capacity building programmes through KVK

Krishi Vigyan Kendra in the Districts

Krishi Vigyan Kendras (Farm Science Centre), an innovative science based institutions, were thus established mainly to impart vocational training to the farmers and field level extension workers. The concept of vocational training in agriculture through KVK grew substantially due to greater demand for improved agricultural technology by the farmers. They not only required knowledge and understanding of the intricacy of technologies, but also progressively more and more skills in various complex agricultural operations for adoption on their farms. The effectiveness of the KVK was further enhanced by adding the activities related to on-farm testing and Front-Line Demonstration on major agricultural technologies in order to make the training of farmers location specific, need based and resource-oriented.

The training programmes were designed to impart the latest knowledge to the farmers through work experience by applying the principles of 'Teaching by Doing' and 'Learning by Doing'. The prime goal of KVK is to impart training as per needs and requirements in agriculture and allied enterprises to all farmers, farm women and farm youths including school drop-outs in the rural area. No formal certificate or diploma is awarded, irrespective of duration of the courses to avoid the rush for jobs instead of self employment. While designing the courses, the concept of farming system as well as farming situation are taken into account to ensure that the enterprises in which they are trained are commercially and ecologically viable, sustainable and profitable. Such vocational trainings help them to sustain themselves through self-employment and to make them self-reliant economically and thus discourages them to migrate to the urban areas.

KVKs provide training not only in agriculture and allied vocations but also in other income-generating activities that may supplement the income of farm families. The methods employed in training could be formal and non-formal or a combination of both, depending upon the needs but emphasis remains to be on work-experience, as suggested by Mohan Singh Mehta Committee Report that

“the programme should be operated as a plan of continuing education both in the technical and general sense.”

The KVKs, thus are the down-to-earth institutions committed to vocational training, transfer of latest technologies, on farm research and thus, serving as the light house for overall rural development in the district. The activities of the KVK include technology assessment, refinement and transfer, aiming to bridge the gap between the technology developed at the research institutions and its adoption at the field level by the farmers through demonstration of technology/ products etc. and training of farmers, rural youths and extension personnel. The following training programmes are suggested to each district.

Table 91

Agriculture	Activities	2010-11		2011-12		Total	
		Physical	Financial	Physical	Financial		
Agri culture	i) Trial and Demonstration on Cereals	a) S.R.I. Paddy	2 ha	1.2	2 ha	1.2	2.4
		b) Hybrid Maize	2 ha	1.0	2 ha	1.0	2.0
		c) Sugarcane	1 ha	0.50	1 ha	0.50	1.00
	ii) Varietal Performance	a) Oilseed	2 ha	1.0	3 ha	1.5	2.5
		b) Pulses	1 ha	0.50	1 ha	0.50	1.00
	iii) Creation of Rain Water Harvesting Structures	a) Community Rain Water Harvesting Tank	15 nos.	30.0	15 nos.	30.0	60.0
		b) Individual Rain Water Harvesting Tank	30 nos.	15	30 nos.	15	30.0
	iv) Technology on Development of Post Harvest	Construction of on Farm Handling unit	3 nos.	1.5	3 nos.	1.5	3.00
	v) Capacity Building and Awareness on Organic Farming	Training	10 nos.	1.0	10 nos.	1.0	2.0
		Vermi-Compost Unit	10 nos.	0.30	10 nos.	0.30	0.6
	vi) Empowerment of Women Farmers	Women SHG	5 nos.	5.0	5 nos.	5.0	10.0
	vii) Transfer of Technology	a) Kisan Mela/	2 nos.	1.5	2 nos.	1.5	3.0
		b) Farmers Fair-cum-	5 nos.	0.50	5 nos.	0.50	1.0
		c) Training	20 nos.	2.0	20 nos.	2.0	4.0
		d) Farmers' Scientist	10 nos.	0.50	10 nos.	0.50	1.0
	viii) Trial on Indigenous Crops	Paddy, Maize, Pulses, Vegetables	-	1.5	-	1.5	3.0
	ix) Laminar Flow, Compound Microscope, Stereo Microscope	-	1 no. each	3.0	1 no. each	3.0	6.0
	x) Computer and Accessories	-	1 no.	1.5	1 no.	1.5	3.0
Total			65.50		67.0	132.50	

Table 92 TRAINING AND EXTENSION TOTAL

SL . NO	DISTRICTS	2010-11	2011-2012	AMOUNT IN LAKHS
1	AISAWL	65.50	67.0	132.50
2	CHAMPAI	65.50	67.0	132.50
3	KOLASIB	65.50	67.0	132.50
4	LAWNTLAI	65.50	67.0	132.50
5	LUNGLEA	65.50	67.0	132.50
6	MAMIT	65.50	67.0	132.50
7	SAIHA	65.50	67.0	132.50
8	SERCHHIP	65.50	67.0	132.50
	TOTAL	524	536	1060.00

**Table 93 Total Financial Requirement for the State for interventions during
the XI Five Year Plan**

(&)

SL · NO	Sectors	2010 – 11	2011-12	TOTAL Financial Requirement	Percentage
1	(A) Agriculture	2253.36	2379.39	4632.75	32.0
	(B) Land development and conservation of resources	4190.00	4190.00	8380.7	
	Total	11845.36	11971.54	13013.45	
2	Horticulture	9514.82	9554.98	19069.80	47.0
3	Animal Husbandry	1727.08	2140.64	3867.72	9.5
4	Fishery	731.40	835.2	1566.60	3.9
5	Sericulture	74.46	1313.64	2061.10	5.1
6	Training and Extension	524	536	1060.00	2.5
Total		23893.12	27549.35	40638.67	100