

Evaluation of Price Support and Market Intervention Scheme: A Brief Report on Mizoram

1.1 Introduction

Mizoram is a small hilly state located in the north east corner of India. Geographically, it lies between the East longitudes 92°15' to 93°29' and the North Latitudes 21°58' to 24°35'. More than 60 % of the total work force of the state inhabit in more than 830 villages spread over the mountain landscape from low hills to high mountain areas. Mizoram, as a whole, receives an evenly-distributed average rainfall of about 3,000 mm with 2,380 mm in Aizawl town and 3,178 mm in Lunglei.

The dominant features of hill and mountain farming in Mizoram are small land holdings, sloping marginal farmlands and cultivation under rainfed farming. Agriculture occupies a very important place in the economy of Mizoram. The age- old practice of *Jhum* cultivation is being followed by a large number of people living in rural areas. As per economic classification of workers (2001 census), about 60 per cent of the total workers are engaged in Agricultural and allied sector. Paddy is the principal food crop grown in the state, which happens to be the staple food of the *Mizos*. As against the estimated requirement of around 2, 00,000 MT per year, the rice production in the State is still very meager (75,563 MT, 2011-12).

Agricultural production is closely linked up with adequate marketing support. The development of agricultural economy of the State therefore, cannot be thought of without an efficient agricultural marketing system. To protect the interest of the farmers, Market Intervention Scheme (MIS) for ginger and chilli was implemented long back. There was no record of implementing the Schemes like Minimum Support Price (MSP) and Price Support Scheme (PSS) in the State. The Mizoram Agricultural Marketing Corporation Ltd. (MAMCO) was established by the State Government in the Year 1993 under the Trade & Commerce Department with the objectives of uplifting the economic welfare of the poor farmers and traders for establishing proper market channel to ensure that the farmers get remunerative returns on their produces. In the event of market glut, the MAMCO, on behalf of the Government,

directly purchases surplus produces like ginger, chilies *etc.* at remunerative rates to benefit the farmers and by way of sanctioning price support subsidy.

1.2 Problems in marketing of agricultural produce in the state

Agricultural marketing is one of the weakest links in the agricultural economy of the state. 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 the terminal markets in major cities outside the region, principally Kolkata. Factors such as seasonality of production, perishability of produce, inadequate credit facilities, lack of market information, etc. compel the growers to sell their produce at un-remunerative 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. As per the provision of the Mizoram State Agricultural Produce Marketing (Development & Regulation) Act 2008, all the districts, excluding those under Autonomous District Councils have been declared as market areas. The Act is being implemented for the benefit of the agricultural communities. There are currently 157 markets across the states which are directly or indirectly managed by the Government. These markets are of great importance as they provide livelihood to thousands of families. As nodal agency, the Dept. of Trade & Commerce under the State Government contributes substantially to the state exchequer and the revenue generated by the Dept. during 2009-10 was recorded at Rs. 87.10 lakhs.

The MAMCO plays a vital role in the economy of the State. The Corporation as an implementing agency has constructed 10 nos. of Wholesale Markets and 87 nos. of Rural Primary Markets all over the State. There is proposal for constructing another 15 Rural Primary Markets which has already been approved by the Central Government and formal sanction is now awaited.

1.3 Need for Government intervention in marketing of specific product

The Government intervention in the form of MIS for ginger (targeted crop) is considered as one of the important means to combat against instability in prices of ginger during the time of price crash and to protect the farmers from the distress sale of produce, there by encourage them to continue with agricultural activities.

1.4 Different forms of Government interventions in marketing of different agricultural commodities

There has been no report of any Government intervention in marketing of different agricultural commodities in Mizoram except MIS for ginger and chili.

1.5 MIS and its comparison with similar other schemes like MSP in the state

For products not covered by the MSPs, but for which the price may decline significantly as a result of a bumper crop and a glut in the market, the Central Government undertakes "market intervention" on specific request from the States, at a mutually agreed price. Under the Market Intervention Scheme (MIS), when the price of a particular commodity falls below the cost of production, the procuring agencies buy at the fixed Market Intervention Price (MIP) during a fixed period or until the price of the commodity stabilizes and exceeds the MIP, whichever is earlier. The MIP or mutually agreed price is based on the cost of production, which in turn is finalized following detailed discussions between the officials of the concerned Governments. The losses incurred by such procurement are shared equally by State and Central Governments. Horticultural and other agricultural commodities that are perishable and are not covered under the Price Support Scheme (PSS) are procured under the MIS. Such market intervention, which is carried out by NAFED and other agencies as designated by the State Governments concerned, has, since 2002, involved procurement of products such as onions, potatoes, apples, eggs, oil palm, seeds, oranges, garlic, pineapple, ginger, chilli and grapes. The loss incurred is shared by the Central and State Governments on 50:50 basis (75:25 in case of North Eastern States).

The Minimum Support Price (MSP) scheme in the State has not been implemented for any crop in the State. As such, its comparison per se with the MIS does not arise. Basically, the MSP is a price fixed by the Government to protect the producer-farmers against excessive fall in price during bumper production year.

1.6 Commodity specific information on production and marketing with relevant sources that highlight importance of the commodity

Ginger is being cultivated in Mizoram for several decades. The pungency of two varieties namely *Thingpui dum* and *Thinglai dum* are more than the other varieties available in the State. Mizoram is the fourth largest producer of ginger in India after Kerala, Meghalaya and Arunachal Pradesh. The total area under ginger in Mizoram is 6,500 ha with a production of 31,950 tonnes, productivity being recorded at 4,915 kg./ha. As the target crop for the study is ginger, an attempt has been made to show the area and production of ginger in the sample districts and the State as a whole from 2004-05 to 2011-12 in Table-1.

Table-1

Trend of area, production and productivity of ginger in the sample districts and in Mizoram from 2004-05 to 2011-12

(Area in Ha. Prodn. in MT, Yield in Kg/ha.)

Crop Year	Aizawl District			Champhai District			Mizoram		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
2004-05	865	7,284	8,421	-	-	-	4,532	38,069	8,400
2005-06	1,261	12,399	9833	-	-	-	4,654	45,144	9,700
2006-07	650	10,517	16,180	600	9,708	16,180	3,426	55,433	16,180
2007-08	800	12,712	15,890	500	7,945	15,890	3,587	57,011	15,894
2008-09	1,471	4,854	3,300	1,351	4,458	3,300	10,391	34,290	3,300
2009-10	1,020	5,100	5,000	970	4,850	5,000	6,200	31,000	5,000
2010-11	1,057	5,218	4,937	1,008	4,969	4,930	6,500	31,950	4,915
2011-12	NA	NA	NA	NA	NA	NA	7010	34460	4,916
CGR	3.61	-11.91	-14.98	18.53	-16.75	-29.76	4.61	-2.75	-31.28

Source: Directorate of Horticulture, Government of Mizoram

The CGR of ginger in Aizawl district grew @ of 3.61, -11.91 and -14.98 per cent in area, production and productivity, respectively during 2004-05 to 2010-11 while the CGR of ginger in Champhai district grew @ of 18.53, -16.75 and -29.76 per cent in area, production and productivity,

respectively during the reference years. Similar observation was also seen in the State as whole. Thus, it may be concluded that the production of ginger decreased due to fall in yield rate over the years. The success of ginger growing is closely linked with the success of spice processing units, marketing and transport facilities. Few processing units exist in the State but are not functioning up to the desired capacity. The freshly harvested ginger is used for consumption as green ginger in Mizoram. Little amount of surplus is sold outside the region through middlemen at a very low prices. Many a time, the farmers are not able to sell their produce since there is no local market big enough to absorb and handle green ginger in large quantities. Non availability of markets has been the prime reason for the ginger cultivators in Mizoram. A good number of *Mizo* farmers stop cultivating ginger as the crop in raw form does not bring much profit. Therefore, it is essential to convert a part of produce into low volume high value ginger to make the crop remunerative. As it is abundantly available in the region, products like ginger oil, ginger oleoresin can be prepared for exports, which are in high demand in the neighbouring countries. There is ample scope of marketing of processed ginger outside the region.

1.7 Importance of the crop and need for the study

Ginger is one of the most important and widely grown perennial rhizomatous herbs with more than 90 species. Among all spices, ginger is the main cash crop supporting the livelihood and improving the economic level of many ginger growers of the north eastern region. Ginger plays an important role in *ayurvedic* medicines in India. It has been used for cleaning the body through perspiration and also to calm down nausea, and to stimulate the appetite. Ginger tea is used as carminative and in the symptomatic treatment of colds. The freshly harvested ginger is used for consumption as green ginger in whole north-eastern states. Dried ginger (called *saunth*) can also be prepared and it may be either sold as such or in the form of an off-white to very light brown powder. The dried ginger or ginger powder is generally used in manufacturing of ginger brandy, wine and beer in many western countries. Ginger oil is primarily used as a flavouring agent in confectionary and for soft drinks. Ginger is also used for several medicinal purposes.

The MIS is more flexible than that of MSP. NAFED, FCI, CCI, JCI and STC are the centrally designated nodal agency for market intervention operation. However, at the state level marketing boards, state warehousing corporation, state food and civil supplies department and state cooperative marketing federation are considered to be the related agencies for MIS operation. In case of Mizoram, the MAMCO is the implementing agency for MIS. Hence, there is a need to study the status and *modus*

operandi of the MIS scheme with a view to assess the price behaviour of the targeted commodity and to suggest appropriate policies for better performance of the scheme.

1.8 Objectives of the study

The Evaluation of Price Support and Market Intervention Scheme is a common study decided to be undertaken by the AER Centres in the meeting of the Officers-in-charge of the Agro-Economic Centres held on 18th January, 2012 in New Delhi. The AERC for North East India, Jorhat was entrusted to conduct the evaluation of Market Intervention Scheme (MIS) for ginger crop in the State of Mizoram. After receiving the research proposal on 23rd March, 2012, necessary correspondence was made with all possible agencies including the Directorates of Agriculture and Horticulture, Government of Mizoram, Aizawl and the NAFED Regional Office, Guwahati, being the centrally designated Agency for MIS. But no information could be accessed from them.

Finally, the officials at the Directorate of Trade and Commerce, Government of Mizoram were contacted and it was informed that the Mizoram Agricultural Marketing Corporation (MAMCO) under the Directorate, is the implementing agency for MIS in Mizoram. The Managing Director, MAMCO was requested to provide the basic information on MIS immediately after, to undertake the study in right earnest. It was learnt from the subsequent communications that MAMCO has been procuring ginger and chilli under the MIS for several years. It was further intimated that at no point of time, the PSS has come in operation in the State. Based on this, it was planned to initiate the study in Mizoram with the following objectives:

- I. To analyze the extent of coverage of MIS in Mizoram especially of farmers of
selected crops in the chosen districts
2. To study the effect of MIS on the market price of commodity in the targeted
region
3. To ascertain the socio-economic factors that influence coverage of villages and
farmers in MIS

4. To understand the problems of different stakeholders in operation of MIS
5. To assess efficiency of Central Agencies in the operation of MIS
6. To suggest policy measures to improve operations of MIS

1.9 Reference Year:

The reference year for the study is 2011-12 crop year.

1.10 Methodology

On receipt of the revised research proposal and questionnaires on 3rd July, 2012 which was finalized in Shimla meeting (4th June -5th June, 2012), the research team from AERC, Jorhat proceeded to Mizoram on 22nd July, 2012 to assess the status of the MIS and for that reason, to collect primary and secondary level data/information in connection with the evaluation study.

To carry out the study, the following methodological procedures were followed in consultation with the officials of the MAMCO.

1. 10.1 Selection of Districts

As per methodology, two districts of Mizoram viz. Champhai and Aizawl were selected on the basis of the larger area coverage under MIS for ginger.

1.10.2 Selection of Village Cluster

3 (three) village clusters were selected from each of the two districts following the same criteria and from each cluster of village, 10 (ten) farmers were selected for interview so as to make the total sample size at 60, *i.e.* 30 (thirty) in Champhai district and another 30 (thirty) in Aizawl district.

1.10.3 Collection of primary data through household questionnaire & results

To start with the job of primary data collection, the research team from the AERC first visited the MIS operated villages of Champhi district. The investigators, at the beginning, met with the village headmen of the selected villages, namely, Kelkang, Ngur and Mualkawi for primary information in connection with the status of MIS for the targeted crop, *i.e.* ginger. However, none of them could highlight any updated information on MIS in their locality. It was reported that 7 (seven) years back *i.e.* in the year, 2005 they first came to know about the scheme for ginger crop and the ginger farmers really

earned handsome price for their produce. In course of interaction, they requested the research team to impress upon the Government agencies for re-introduction of similar Schemes for the benefits of ginger growers of the district. From the detailed discussion with the village headmen, it was learnt that the MIS is no longer in operation in Mizoram, which once benefited the farmers to a great extent.

This observation was later ratified/confirmed by a number of sample growers (Ginger) of the designated villages. They could not provide the required information as per the structured schedule, may be because of the time lag of long seven years. They could only recollect the locations of the ginger collection centres where they used to sell their produce to the buyers registered with MAMCO way back in the year 2003-04 and 2004-05. It was further informed by the farmers that they have not been harvesting ginger for last two years as it turns out to be un-remunerative with price as low as Rs. 2.00 per kg.

The research team had similar experiences in Aizawl district as well while visiting the sample farmers of the selected villages, *i.e.*, Thingsul Tlangnuam, Thangvel and Khumtung. In course of personal interview with the respondents, they conveyed their ignorance about the operation of MIS for ginger for last few years. It was observed from the field experience that, like all other common farmers, the hill farmers from Mizoram also don't maintain any records against crop cultivation. They just provide the information from their recall memory. It was also reconfirmed from the records of the MAMCO that the MIS Scheme for ginger in Mizoram is not in operation since 2005. During the field visit, one of the enlightened farmers reported that he had heard about the farmers growing ginger in Kerala and elsewhere in the country, who are doing exceedingly well. Given the opportunities in terms of market supports, Mizoram can also do wonders.

Ginger is a prospective crop in Mizoram with one year duration and the yield is also quite satisfactory. On this count, the fate of the ginger growers in the State could have been much better contrary to the present scenario.

It may be noted that language problem is one of the prime barriers for collecting field level data from the hill regions of the North East India. Though Mizoram ranks third in term of literacy (91.58 per cent) amongst the Indian States (Census of India, Provisional, 2011), the people in the rural interior, can not speak or write Hindi or English. They are well with 'Mizo' only. Therefore, without the help of interpreter, it is not possible to carry out field work in Mizoram. This procedure is very tiresome and

time consuming and there is every possibility of committing errors while recording the required information and their interpretation.

As per records available with MAMCO, there were 17 (seventeen) collection centres for procurement of ginger when MIS was in operation. The MAMCO used to lift different quantities of ginger from these collecting centres through some buyers registered with them. The research team also met and interacted with the registered buyers over a discussion arranged by the MAMCO in Aizawl. The buyers also could not provide detailed information on the Scheme. They used to procure ginger from the collecting centres, when MIS was in operation some seven years back, @ Rs. 4.00 per kg. and sell at Bagha, near Assam border.

Table-2

Crop Procured under MIS from 1999-2000 to 2010-2011 in Mizoram

Name of Commodity	Year	Procurement Price (Rs/ctl)	Procurement (in MTs)	Value of qty. Procured (Rs. lakh)
Ginger	2003-04	400	15000	669.00
Ginger	2004-05 (15-4-2004 to 15-6-2004)	500	5900	346.36
Hatkora	2004-05	450	1410	79.24
Ginger	2004-05 (1-2-2005 to 15-03-2005)	500	6400	375.26
Hatkora	2005-06	450	1700	95.54
Chilli	2005-06	2800	1250	388.65
Ginger	2007-08	500	20194	1009.70
Chilli	2007-08	2800	4250	1261.82
Passion Fruit	2007-08	700	8000	692.00
Chilli	2008-09	2800	1810	633.50
Passion fruit	2008-09	700	9000	787.50
Chow Chow (Iskut)	2008-09	450	3180	143.10

Source: Co-ordinating Centre for the study, Institute of Economic Growth, New Delhi,

The IEG, the Co-ordinating Centre for the study on MIS, right at the beginning furnished a data sheet showing the crops handled under MIS in Mizoram for the period from 1999-2000 to 2010-2011 (Table 2). Accordingly, different crops covered under MIS during the period included ginger, hatkora, chilli, passion fruit and chow chow (*Iskut*).

But during the field trip, the MAMCO, the nodal agency for implementation of MIS in Mizoram provided a different set of information (Table 3).

On careful perusal, one can see that there are data gaps in both the tables so far as the implementation of the MIS in Mizoram is concerned. According to MAMCO source, ginger was procured under MIS till 2004-05 and chilli was covered under the Scheme during the years, 2005-06, 2007-08 and 2008-09.

Under the situation, the AERC research team was asked to see the feasibility of taking chilli as the target crop instead of ginger. But the officials from MAMCO declined to co-operate with the researchers to go for a field visit as the farmer beneficiaries (chilli) are yet to get back their share for the year, 2008. So they were not in a position to visit the field again, may be to avoid the wrath of the farmers. As reported by them, the Ministry is yet to release the required fund for the MIS implemented in Mizoram for the year, 2008 despite several reminders (A copy enclosed for reference). It was further reported that the MAMCO did not procure ginger in the year 2007-08 and hatkora, passion fruit and chow chow are yet to be brought under the ambit of MIS in Mizoram.

Table-3

Crop Procured under MIS by MAMCO in Mizoram

Name of Commodity	Year	Procurement Price (Rs/qtl)	Procurement (in MTs)	Value of qty. Procured (Rs. Lakh)
Ginger	2003-04 <i>(01.04.2003 to 30.06.2003)</i>	400	15000	669.00
Ginger	2004-05	500	5900	346.36

Ginger	(15.04.2004 to 15.06.2004) 2004-05 (01.02.2005 to 15.03.2005)	500	6400	375.26
Chilli	2005-06 (15.02.2006 to 15.03.2006)	2800	1250	388.65
Chilli	2007-08 (10.06.2007 to 10.07.2007)	2800	4250	1261.82
Chilli	2008-09 (21.04.2008 to 21.05.2008)	2800	1810	633.50

Source: MAMCO, Mizoram

1.11 Collection of Village and District level information & results

In order to capture the required information relating to the sample villages and sample districts, the research team visited a number of offices, namely, Village Headmen, Community Development Blocks, Census Office, Revenue Department, District Agriculture and Horticulture Offices of the sample districts, Directorate of Agriculture and Horticulture, Directorate of Economics and Statistics, Government of Mizoram. However, only district level information was made available to the research team. Mizoram being a hilly state, it is very difficult to get village/block level information, the concerned officials informed. The available information against two of the selected districts and a brief profile of the State are appended at Annexure I and II, respectively.

1.12 Conclusion

Non availability of markets has been the prime reason for the lackadaisical attitude of the cultivators towards ginger in Mizoram in recent years. Quite a good number of farmers have already started shifting to other crops. It was reported that even the cost of production of ginger was not covered for several years, not to speak of profit. Mizoram is the fourth largest producer of ginger in India after Kerala, Meghalaya and Arunachal Pradesh. The officials of the Mizoram Agricultural Marketing Corporation (MAMCO) are of the opinion that the Government is putting constant effort to create marketing facilities for the resource-poor farmers of the State. It is also looking for ginger market elsewhere in the country in addition to neighbouring Bangladesh. The sources say that the present price

of ginger in Bagha and Vairengte area (both in Mizoram) is Rs. 4 per kg and there are no sufficient buyers around.

On the basis of field visits and discussion with different Government officials, it can be concluded that the Market Intervention Scheme is no longer in operation in Mizoram for any crops after 2008-09. But the Government support, either in the form of MIS or other support price for the ginger/chilli is very much essential in the sense that in the crop year 2010-11 alone, ginger occupied 6,500 hectares of area in Mizoram and its production was 31,950 M.T. while chilli occupied 8,700 hectares with a production of 47,850 M.T. As per the study design, the reference year for the given study is 2011-12 crop year and as such, in the present context, it will not be possible to meet the objectives of the study in Mizoram. However, the available information, on the basis of the field study, are included in this brief report for consideration of the appropriate authorities.

District Profile

As per methodology of the study and in consultation with the state implementing agency for MIS in Mizoram (*i.e.* MAMCO), two districts were selected *i.e.* Aizawl and Champhai. Table-1 depicts the brief profile of the sample districts.

Table-1
Brief Profile of the Sample Districts

Particulars	Aizawl	Champhai
Total population	4,04,054	1,25,370
Rural Population (%)	22.58	61.54
Rural literacy (%)	21.72	59.56
Rural male literacy (%)	51.76	51.65
Rural female literacy (%)	48.24	58.35

Non-agriculture workers (%) to main worker	1.47	1.12
Agricultural labour (%) to main worker	2.5	6.37
Number of inhabited villages	94	83
Number of uninhabited villages	10	7
Number of Blocks	5	4
Co-operative Society	639	230
Bank Offices	50	10
No. of villages electrified(as on 01.04.2010)	98	76

Source: Statistical Abstract 2010-11, Directorate of Economics and Statistics,

Mizoram, Aizawl

Aizawl district is bounded on the north by Kolasib district, on the west by Mamit district, on the south by Serchhip district and on the east by Champhai district. The district occupies an area of 3576.31 sq. km. The headquarters of the district is Aizawl city, the capital of Mizoram. As on 2011, it is the most populous district of Mizoram out of a total of 8 districts. According to the Population Census, 2011, Aizawl district has a population of 404,054. This gives it a ranking of 557th in India (out of a total of 640). The district has a population density of 113 inhabitants per square kilometer. Its population growth rate over the decade 2001-2011 was 24.07 %. Aizawl has a sex ratio of 1009 females for every 1000 males and a literacy rate of 98.5 %.The district has 5 Rural Development Blocks, namely, Aibawk, Darlawn, Phullen, Thingsulthliah and Tlangnuam.

The district of Champhai is bounded on the north by Churachandpur district of Manipur state, on the west by Aizawl and Serchhip districts, and on the south and east by Myanmar. The district occupies an area of 3185.83 sq. km. Champhai town is the administrative headquarters of the district. According to the Population Census, 2011, Champhai district has a population of 125,370. This gives it a ranking of 610th in India out of a total of 640 districts. The district has a population density of 39 inhabitants per square kilometer. Its population growth rate over the decade 2001-2011 was 15.66 %. Champhai has a sex ratio of 981 females for every 1000 males, and a literacy rate of 93.51 %. The district comprises of 4 Rural Development Blocks, namely, Champhai, Khawbung, Khawzawl, and Ngopa

Table-2 reflects different categories of farm households of the sample districts in Mizoram. In Champhai district, the number of marginal (10,756 nos.) and large (174 nos) farm households were much higher than the Aizawl district (6,802 nos. and 3 nos, respectively)

Table-2

Different Categories of Farm Households in Sample Districts

Size of Farm	Aizawl	Champhai
0-1 hectare	6,802	10,756
1.1-2 hectares	7,482	4,028
2.1-5 hectares	2,912	1,919
5.1-10 hectares	3	1,74
More than 10 hectares	0	10

*Source: A Report on Agricultural Census 2005-06, Directorate of
Economics and Statistics, Mizoram, Aizawl*

Table-3 shows the land use classification of the sample districts in Mizoram. In Aizawl district, gross cropped area was 5.83 per cent and gross irrigated area was only 0.15 per cent of the total geographical area. The respective figures for Champhai district stood at 5.93 per cent and 0.34 per cent.

Table-3

Land Use Classification of Sample Districts

Particulars	Aizawl	Champhai
Geographical area (in thousand ha)	357.63	318.58
Land not available for cultivation (in thousand ha)	14.71	11.95
Net area sown (in thousand ha)	20.31	20.71
Area sown more than once (in thousand ha)	0.56	0.50
Gross cropped area (in thousand ha)	20.87	21.22
Gross irrigated area (in ha)	530.6	1305

Source: Statistical Abstract 2010-11, Directorate of Economics and Statistics,

Mizoram, Aizawl

Table-4 reflects information on area, production and productivity of important crops grown in the sample districts. The table shows that area under pulses, oilseeds, sugarcane, mandarin orange, banana, ginger and bird eye chilli in Aizawl district was higher as compared to Champhai district and in case of paddy, maize and potato, Champhai district was in a better position than Aizawl district. The estimated yield rate of maize, pulses and oilseeds were higher in Aizawl district while for other crops yield rate was higher in Champhai district as compared to Aizawl district

Table-4

Area, Production and Average Yield of important crops in the sample districts during 2010-11

Crops	Aizawl			Champhai		
	Area	Production (MT)	Yield (Kg/ha)	Area	Production (MT)	Yield (Kg/ha)
Paddy	5,225	7,273	1,391	8,100	17,970	2,218
Maize	1,294	1,847	1,427	1,660	2,345	1,412
Pulses	1,298	2,901	2,234	801	1,178	1,470
Oilseeds	539	1,376	2,552	380	312	821

Sugarcane	446	815	1,827	162	2,630	16,234
Potato	13	90	6,923	205	2,057	10,034
Mandarin orange	1160	3435	2961	800	2630	3288
Banana	2550	29475	11559	680	8021	11796
Ginger	1,057	5,218	2,982	1,008	4,969	4929
Bird eye chilli	1055	5802	5491	1250	6875	5550

Source: Statistical Abstract 2010-11, Directorate of Economics and Statistics,

Mizoram, Aizawl

Information on the targeted crop, *i.e.* ginger in the sample districts are furnished in Table-5. According to the table, area under targeted crop in Aizawl district was 1,057 hectares which was 5.06 per cent of the total cropped area in the year 2010-11 as against 1,008 hectares and 4.75 per cent of the total cropped area in case of Champhai district. The table also reflects that the productivity per hectare of ginger was much higher in Champhai district (4,929 kg/ha) as compared to Aizawl district (2,982 kg/ha).

Table-5

Information about targeted crop (ginger) in sample districts

Particulars	Aizawl	Champhai
Area under Targeted crop (ha)	1,057	1,008
Percentage of total cropped area in the district for the targeted crop	5.06	4.75
Total Production (in MT))	5218	4969
Productivity (kg/per ha)	2982	4929
Average price (Rs./qtl)	200.00	200.00

Source: Statistical Abstract 2010-11, Directorate of Economics

and Statistics, Mizoram, Aizawl

As per information received from MAMCO, state implementing agency for MIS, the scheme was initiated in Mizoram in 1997 and continued till 21.05.2008 for chilli. MIS for ginger (targeted crop) continued till 15.03.2005. The extent of loss sharing between the Central and the State Government at the time of operation of MIS was 75:25. Mode of payment at the time of purchase was by cheque only.

Annexure -II

A brief profile of Mizoram State

1.1 Introduction

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. More than 70 percent of the State's border is international border, with Myanmar in the East and the South and Bangladesh in the West.

Mizoram occupies an area of great strategic importance in the North Eastern corner of India. After becoming the 23rd State of the Republic of India, Mizoram has made remarkable progress in social sector development. Though it is the smallest state in North Eastern Region (NER) in terms of population, with 10.91 million people, Mizoram ranks third in terms of literacy (91.58) among the Indian States (Census of India, Provisional, 2011). One of the major challenges presently being faced by the State is to harness the benefits of the sectors where it has the comparative advantages.

Gross state domestic product (GSDP) of Mizoram at current prices (2004-05) is Rs.699,140 lakh in 2012-13(P). The per capita income of Mizoram for the year 2011-12 is estimated at Rs.54,689 as against an all-India's per capita income of Rs.61,564 estimated during the same year. Service sector is the largest sector in the economy with a share of 60 per cent of GSDP followed by industry and agriculture and allied sector, which constitute 21.4 percent and 18.78 percent, respectively. Table-1 depicts the brief profile of Mizoram State.

Table-1

Brief Profile of Mizoram

Geographical Area (Sq. Km)	21,087
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Altitude (Ft., from sea level, Aizawl)	4,000
International Borders (Kms)	722
With Myanmar (Kms)	404
With Bangladesh (Kms)	318
Inter State Borders (Kms)	284
With Assam (Kms)	123
With Tripura (Kms)	66
With Manipur (Kms)	95
No. of Districts	8
Rural Development Block	26
No. of villages	830
Population (Census, 2011)	10,91,014
Population Density (Per Sq.Km)	52
Literacy Rate (%)	91.58
Rural literacy Rate (%)	84.31
Urban literacy Rate (%)	98.10
% decadal growth rate of population (2001-11)	22.78

Source: Statistical Abstract of Mizoram: 2011, Directorate of Economics & Statistics,
Govt. of Mizoram & Census of India 2011, Provisional Population Totals,
Directorate of Census Operations, Mizoram

1.2 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 920 m, although the highest peak, the Blue Mountain (also called the *Phawngpui*), goes upto 2,165 m. There are 15 major rivers in this State, out of which 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.

1.3 Climate

Mizoram has a pleasant climate. The upper part of the hills is 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 lasts up to October.

1.4 Soils

The soils of Mizoram are dominated by sedimentary formation. These are generally young, immature, mostly developed from parent materials such as ferruginous sandstones and shale. The soils in the foot hills are colluvium 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 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. Clay contents do not increase with depth.

1.5 Land Tenures

Land within Mizoram, like some other States of the 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 with the issue of land settlement certificate (title) by the competent authority. However, lack of mortgagable title to the land turns out to be a constraint for 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 neighbouring of State of Assam and earn their livelihood.

1.6 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 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 2 below. The gross cropped area in 2011-12 was 133.96 thousand hectares, of which only 2.73 thousand hectares are sown more than once.

Table-2
Land Use Statistics of Mizoram

(Area in thousand hectares)

Sl. No.	Particulars	2010-11	2011-12
I	Geographical Area	2,108.70	2,108.70
II	Reporting Area for Land Utilization Statistics	2,108.70	2,108.70
	1.Forest	1,585.30	1,585.30
	2.Not Available for Cultivation (a+b)	103.21	103.25
	a) Land put to non-agricultural use	94.96	95.00
	b)Barren and Uncultivable land	8.25	8.25
	3.Other Uncultivated Land Excluding Fallow Land (a+b+c)	49.44	52.82
	a) Permanent Pastures and Other Gazing Land	5.25	5.25
	b) Land under Miscellaneous Tree-Crops and Groves	37.49	40.87
	not Included in Net Area Sown		
	c) Cultivable Waste	6.70	6.70
	4. Fallow Lands (a+b)	248.87	244.31
	a) Fallow Lands Other than Current Fallows	182.26	183.12
	b) Current Fallows	66.61	66.19
	5.Net sown area	130.12	131.23

	6.Gross Cropped Area	132.76	133.96
	7.Area Sown More than Once	2.64	2.73
III	Gross Irrigation Area	12.12	12.70

Source: Economic Survey 2012-13, Mizoram, Planning & Programme Implementation

Department, Government of Mizoram

1.7 Agriculture

Mizoram is a predominantly agricultural State. The main pattern of agriculture followed is *Jhum* or shifting cultivation. According to Census 2001, 63.2 percent of the workers, main and marginal put together, are dependent on agriculture and cultivation in Mizoram, as against 61.5 percent for all-India. Net sown area as a percentage of total land is only 6.17 percent in 2001-12. One of the primary limitations of *Jhum* is that, with growing population, the *Jhum* cycle tends to contract or existing forest cover is depleted in order to find adequate stretches of land for cultivation, and has become un-economic venture. Agriculture in Mizoram is mainly dependent on rainfall. Limited irrigation potential in the State has resulted in single crop cultivation on most lands. Further, agricultural production in the State mainly consists of *Kharif* crops and the contribution of *Rabi* crops is negligible, possibly owing to climatic conditions and rainfall cycle. *Rabi* crops account for only about 8 per cent of the total production and the area under cultivation of horticultural crops are still marginal. There is ample scope of large scale cultivation of horticultural crops in the State.

1.8 Area and Production

In spite of the fact that rice being the staple food and the most important crop occupying the largest share in terms of area and production, Mizoram is still not self-sufficient in rice production. The total paddy production till today could hardly meet the total consumption requirement of rice in a year.

1.8.1 Paddy

During 2011-12, the area under paddy was 38,976 ha. Out of this total area, the area under wet rice cultivation (WRC) is 9,446 ha constituting 17.3% and the area under High Yielding Variety (HYV) is 148 ha constituting 0.28 % of the total area under paddy. The production of paddy during 2011-12 was 75,566 MT. Among food grain crops, maize is the next important crop, out of which *Kharif* maize is predominant, while wheat production is negligible. The area under maize cultivation during 2011-12, was 6,905 ha. and production was 8,397 MT. Area, production and yield of other principal crops such as pulses, oilseeds and sugarcane have been presented in the Table-3.

Table-3

Area, Production and Yield of Principal Crops in Mizoram for the year 2011-2012

Sl.No	Name of Crops	Area (ha)	Production (MT)	Yield (Kg per ha)
1	Paddy	38,976	75,566	1,939
2	Maize	6,905	8,397	1,216
3	Pulses	3,836	5,331	1,389
4	Oil Seed	5,474	2,382	4,34
5	Sugarcane	1,418	7,900	5,571

Source: Economic Survey 2012-13, Mizoram, Planning & Programme

Implementation Department, Government of Mizoram

1.9 Horticulture

The agro-climatic condition in Mizoram is found to be very suitable for growing a wide range of horticultural crops. Of the total 21 lakhs hectares of land, 6.30 lakhs ha. is available for horticultural crops. The existing area under various horticultural crops accounts for about 60,000 ha. which is only about 9.52 percent of the estimated potential area of 6.30 lakhs ha. This indicates the vast scope for horticultural crops to flourish in Mizoram. The major horticultural crops are oranges, passion fruits, ginger, banana, pineapple, hatkora, lemon, squash, mustard, cabbage, french bean. Floriculture, tea,

mushroom cultivation and medicinal plants are also given priority for large scale production. Table-4 shows area and production of principal horticultural crops in Mizoram for the year 2011-2012

Table- 4

**Area and production of principal horticultural crops in Mizoram for
the year 2011-2012**

Sl.No	Name of Crops	Area(ha)	Production(MT)	Yield(MT /Ha)
1	Orange	8,360	22,230	2.65
2	Banana	10,090	1,19,060	11.79
3	Passion Fruits	4,50	900	2
4	Ginger	7,010	34,460	4.92
5	Bird eye chilly	8,900	9,790	1.1
6	Turmeric	5,580	29240	5.24
7	Lime lemon	4,823	24,150	5.01
8	Grape	1,575	19,609	12.45
9	Squash (Chow Chow)	4,000	66,500	16.62
10	Potato	4,31	3,699	8.58
11	Tomato	7,00	6,420	9.17

Source: Economic Survey 2012-13, Mizoram, Planning & Programme Implementation Department, Government of Mizoram

The strategy for agriculture which envisions a shift from subsistence farming to cash crop farming, will lead to the expansion of what is now a nascent horticulture sector. With the funds available from the Central Government under various programmes (Horticulture Mission *etc.*), States like Mizoram can carve a niche in the area of fruit and vegetable production in the years to come.
