Flourishing Horticulture Initiatives Within The Integrated Development Mission In The Kolasib District

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Abstract

India's significant advancements in horticulture, a sector that has grown rapidly alongside increased foodgrain production due to technological development in agriculture. It emphasizes the increasing recognition of fruits and vegetables for their nutritional value in a largely vegetarian population and the cultural importance of flowers. The text further explains that India possesses substantial potential for horticultural growth given its diverse climate, abundant natural resources, and available technology, which can lead to poverty alleviation, improved nutritional security, and increased farmer income. Finally, it notes that horticulture contributes significantly to agricultural GDP and is crucial for achieving national agricultural growth targets while also sustaining numerous agro-based industries that generate employment.

Keywords: Agriculture, Horticulture, growth, Production, Climate, Security, Resources, Income, Industries, Employment

Introduction

Mizoram covers the geographical area of 21,081 Sq. km., out of which 11.56 lakh hectares (55%) is identified as potential area for horticulture crops. However, only 11.96 % of the total potential area is covered so far which proves that there is still a vast scope for further development of horticulture in the State[1]. It is, therefore, a very big challenge to utilise as many as the identified potential area for attaining self-sufficiency and achieving economic growth in Mizoram.

Horticulture (Latin hortus = garden; cultura = cultivation), is the science and art of growing fruits, vegetables, flowers, shrubs and trees[2]. It originally meant the practice of gardening and, by extension, now means the cultivation of plants once grown in gardens. It includes the growing of fruits (especially tree fruits), production of vegetable crops, production of flowers, and ornamental horticulture, known as landscaping gardening, which includes the maintenance and design of home grounds, public gardens and parks, private estates, botanical gardens, and recreational areas such as golf courses, football fields and baseball diamonds.

Horticulture development programmes currently implemented in the state may be discussed as follows:

[1] Department of Horticulture, *Important Achievements of Horticuture Department during 2019-2020.*(2020), pp.1.
[2] Singh, Bijender, (2009), *Horticulture at a glance*, New Delhi: Kalyani Publishers, pp.1.

Mission for Integrated Development of Horticulture (MIDH)

This paper outlines the **development of horticulture in Mizoram**, specifically focusing on the **Mission for Integrated Development of Horticulture (MIDH)**. It details how MIDH, a **centrally sponsored scheme**, superseded previous initiatives like the Horticulture Mission for Northeast & Himalayan States (HMNEH) to foster comprehensive growth in various horticulture sectors across India, with a particular emphasis on Mizoram. The text also examines the **implementation of MIDH in Mizoram**, highlighting financial allocations, covered areas, and specific activities undertaken, such as **production of planting materials, fruit and vegetable cultivation, water source creation, and post-harvest management**. Furthermore, the document presents **survey results from Kolasib district** regarding beneficiaries' experiences with land ownership, financial assistance, training participation, and access to extension services.The MIDH was formulated in 2014-2015 and became operational in the same year. It integrated various on-going horticulture schemes in different parts of the country. The schemes which were subsumed by the Mission to be its sub-missions are:

The provided text outlines several **key Indian government initiatives and organizations** dedicated to the **advancement of horticulture**. It details the establishment dates and scopes of programs like the **National Horticulture Mission (NHM)**, launched in 2005-2006 for most regions, and the **Horticulture Mission for Northeast & Himalayan States (HMNEH)**, created in 2010-2011 to address specific regional needs. The document also introduces the **National Bamboo Mission (NBM)** from 2006-2007, and significant boards such as the **National Horticulture Board (NHB)**, formed in 1984 for integrated development, and the **Coconut Development Board (CDB)**, established in 1981 to boost coconut productivity. Finally, it mentions the **Central Institute for Horticulture (CIH)**, a 2006 institution providing technical support for the Northeast region.

The provided text outlines the organizational framework for the Mission for Integrated Development of Horticulture (MIDH), detailing its multi-tiered implementation strategy. It describes the governance structure from the national level, featuring a General Council and Executive Committee, down to state-level committees and the involvement of Panchayati Raj Institutions in local operations like crop identification and feedback. The document also identifies various technical support groups and their respective roles, such as the National Horticulture Board supporting certain missions and the National Centre for Cold-chain Development assisting with post-harvest management. Additionally, it notes the possibility of engaging external service providers to offer specialized technical assistance, subject to approval by the Executive Committee.

MIDH in Mizoram

MIDH has been implemented in Mizoram since the inception of the programme in 2014. As a matter of fact, it is merely a continuation of the on-going scheme of Horticulture Mission for Northeast and Himalayan (HMNEH) which had commenced from 2010-2011 (formerly known as Technology Mission for Northeast (TMNE). It is regarded as the most important horticulture scheme being implemented in the state as it is formulated solely for the development of horticulture throughout the country. As Horticulture Department was assigned to be the agency for formulation of the Mission’s components and their implementation, it has worked out various areas of horticulture activity from the very start of the mission.

Fund Allocation and Areas of Implementation under MIDH in Mizoram for 2014-2021

Sl. No	Component	2014-2015			2016-2017			2017-2018			2018-2019			2019-2020			2020-2021		
		Physical Target (Ha)	Target Covered (Ha)	Financial Aloocation (in Lakhs)	Physical Target (Ha)	Target Covered (Ha)	Financial Aloocation (in Lakhs)	Physical Target (Ha)	Target Covered (Ha)	Financial Aloocation (in Lakhs	Physical Target (Ha)	Target Covered (Ha)	Financial Aloocation (in Lakhs)	Physical Target (Ha)	Target Covered (Ha)	Financial Aloocation (in Lakhs)	Physical Target (Ha)	Target Covered (Ha)	Financial Aloocation (in Lakhs)
I	Production of planting Materials			100			50	5	5	50			20						
II	Establishment of new Garden																		
	1. Fruits	1492	1492	690.70			523.3251100	1070	1070	1014	600	600	348	980	980	639.95	1550	1550	905.05
	2. Vegetables	140	140	35	400	400	20	560	560	140	500	500	125	708	708	177	700	700	175
	3. Flowers	52	52	26	50	50	25	20	20	10	80	80	40						
	4. Spices	480	480	72	340	340	51	61.66	61.66	9.25	300	300	45	550	550	82.50	500	500	75
	5. Aromatic Plants	10	10	4															
	6. 1st Year of Maintenance	825	825	87.56	270	270	45	380	380	62	730	730	202	500	500	110	500	500	140
	7. 2nd Year of Maintenance	1000	1000	87															
III	Rejuvenation/ Replacement of Senile Plantation, canopy Management	2000	2000	400	1600	1600	320	500	500	100							600	600	120
IV	Creation of Water Sources	596 No	596 No	681	162 no	162 no	266.3	690 no	690 no	862			450			415			550
V	Protected Cultivation	279995 sqm	279995 sqm	692.59			481.8						470.85			244.95			431.84
VI	Integrated Pest/ Nutrient Management (IPM/INM)	8740	8740	104.88	15000	15000	180	19867	19867	238.4	13000	13000	156				10000	10000	120
VII	Establishment of Centre of Excellence for Horticulture	1 No	1 No	500	4 no	4 no	100												
VIII	Pollination Support through beekeeping	2655 N0	2655 N0	21.24			723			186									
IX	Horticulture Machanization	650 No	650 No	97.50	888 no	888 no	186						140						112.5
X	Human Resource Development			175.17			30						174.52			93			77
XI	Intergrated Post Harvest Management			36.4						140			50			128.5			244.2
XII	Special Intervention			10									110						
XIII	Mission Management			278						798.46			268.4			262.405			258.99

The above table outlines the annual financial allocations and strategic shifts within a horticulture development scheme in Mizoram from 2014 to 2021. It details how funds were distributed across various activities, highlighting changes in component emphasis each year, such as the introduction of Research and Development or marketing infrastructure. The document also notes the successful utilization of allocated funds and the achievement of target land coverage for cultivation. Furthermore, it points out modifications in the scheme's components over time, including the addition and removal of specific activities, and the alteration in funding patterns for Northeastern states. Overall, the source provides a chronological overview of the scheme's implementation, financial management, and evolving priorities.

Implementation of the Scheme
This discusses **Mizoram's continued involvement** in the Horticulture Mission for Northeast and Himalayas (HMNEH), even after its integration into the Mission for Integrated Development of Horticulture (MIDH) in 2014. **HMNEH's success** in states like Mizoram actually influenced the creation of MIDH. Initially, Mizoram and other Northeastern states received **complete central government funding** for HMNEH. However, starting from the 2015-2016 fiscal year, the **funding structure changed** to a 90:10 ratio, with both the Central and State Governments contributing.

The provided text discusses the implementation of the HMNEH/MIDH scheme across all districts of Mizoram. It highlights how thousands of farmers have received assistance since the program's inception. The document emphasizes the crucial role of various horticultural offices and technical field staff, such as Demonstrators and Circle Officers, in the scheme's success. These personnel are credited with monitoring, inspecting, and guiding farmers, even in remote regions. Finally, the text indicates that HMNEH/MIDH has supported various important horticulture crops and activities.:

1. Production of Planting Material: This emphasizes the critical role of high-quality planting material in achieving superior crop yields and produce quality, extending beyond just fruits to all agricultural products. It highlights the increasing challenges in horticulture, such as global climate change, rising pest threats, and growing demand for produce, which necessitate the development of more resilient crops. To address these issues, the Horticulture Department has implemented various initiatives, including establishing High-Tech Nurseries, importing planting materials and seeds, and upgrading existing nursery infrastructure to meet accreditation standards. Since its inception in 2014-2015, this scheme has seen significant investment, with approximately 35 lakh rupees spent to cover around 38 hectares of land.
This describes the implementation and current status of High Tech Nurseries within Mizoram's Horticulture Centres of Excellence, noting that only the Lunglei facility currently operates as such. These nurseries utilize advanced technology for temperature control, vending, and irrigation. Additionally, the text highlights the importance of importing planting materials for certain crops, like Dragon Fruit and Anthurium, which were initially unfamiliar to the region but have since significantly contributed to the development of planting materials in Mizoram. This strategic blend of local innovation and imported resources aims to enhance agricultural productivity.

Development of nurseries owned and managed by the Department to be able to get accreditation has also been an important task under the scheme. The Department has established nurseries in every district, division and subdivision to meet the demands of the farmers. All the Department-owned nurseries could successfully get accreditation but subject to revision after every 5 years. This accreditation is given by Central Institute of Horticulture, Nagaland.

2. Fruits: This describes a scheme focused on fruit cultivation. It highlights the importance of fruit development since the mission's beginning, listing a variety of fruits like Dragon Fruit, Kiwi, and Mango included in the program. The scheme encompasses several subcomponents such as establishing new gardens, providing first and second-year maintenance, and managing existing plantations through rejuvenation or replacement. Financially, the initiative has allocated approximately 7116 lakhs and has impacted around 22130 hectares of land. This document clearly outlines the scope and progress of this fruit development effort.

3. Vegetable: This outlines a significant agricultural scheme focused on vegetable production within a specific state. This initiative has been active since its inception, demonstrating a substantial financial investment of approximately 1551 lakhs rupees to cultivate over 5881 hectares of land. The scheme encompasses the growth of a diverse range of vegetables, including various types of tomatoes, cabbages, broccoli, lady's finger, beans, and capsicum. To enhance output, the department has acquired hybrid seeds from other regions.

4. Flower: The cultivation of Anthurium and other flowers, which was a significant undertaking from the scheme's inception until 2018-2019. Over 272 hectares of land were utilized for this purpose, with an investment exceeding Rupees 454 lakh. Since its 2006 import from Holland, Anthurium has emerged as a highly sought-after flower within the state, even being exported nationally and internationally. The MIDH intervention played a crucial role in boosting its production, meeting high demand for diverse occasions like funerals, weddings, and government functions.

5. Spice: The cultivation of spices has been a continuous and significant component of the MIDH initiative since its beginning. This agricultural effort specifically focuses on turmeric, chili (categorized as a seed spice), and ginger. The

program has successfully encompassed approximately 2,812 hectares of land, incurring an expenditure of around Rs. 454 lakhs to date.

6. Mushroom: The government initiative to promote mushroom cultivation under the MIDH program. This program, active for three years from 2015 to 2018, specifically focused on Oyster Mushroom cultivation. To support farmers, the Department established several nurseries across different districts, including Aizawl, Lunglei, Mamit, Champhai, and Kolasib. These nurseries were crucial for providing subsidized planting material, known as spawn, directly to the farmers, thereby facilitating the adoption of mushroom farming.

7. Aromatic Plant: this discusses an initiative focused on cultivating aromatic plants for the purpose of extracting essential oils, recognizing their importance for human well-being. This specific program, which included Aloe Vera and Citronella cultivation, was implemented for a limited two-year period from 2014 to 2016. During its operation, approximately Rs. 20 lakhs were invested to cover 50 hectares of land, indicating a concentrated effort to integrate these plants into the scheme.

8. Creation of Water sources: The crucial role of water availability for successful crop cultivation, particularly in Mizoram, where monsoon rainfall is abundant but dry season farming presents challenges. To address this, the MIDH sub-component 'Creation of Water Sources' has been implemented annually to provide water for winter/Rabi crops. This initiative has resulted in the construction of 44 community water tanks and approximately 3093 individual water tanks, with initial individual tanks being Reinforced Cement Concrete (RCC) before transitioning to prefabricated and Geomembrane tanks with capacities of 15,000-20,000 liters.

9. Protected Cultivation: The growing popularity of protected cultivation, such as greenhouses and shade houses, for horticultural crops in Mizoram. This surge is largely attributed to government-sponsored schemes like MIDH/HMNEH and RKVY, which offer substantial financial support. These structures primarily serve to shield crops from harsh weather conditions and enable off-season cultivation. Furthermore, they are utilized for producing high-quality planting materials for various vegetables, fruits, and flowers, highlighting a significant investment in this agricultural method within the state.

10. Promotion of Integrated Pest Management (IPM): The critical need for special care in horticulture crops to maximize their yield, acknowledging that various enemies, particularly pests, threaten their productivity and survival. To combat this challenge, Pest Management has been a core component of crop cultivation efforts since its inception, with significant financial investment and land coverage. The approach extends beyond mere pesticide distribution, emphasizing comprehensive knowledge transfer through training, demonstrations, and ongoing oversight regarding the safe and effective handling of these chemicals.

11. Promotion of Integrated Nutrient Management (INM): This highlights a key initiative aimed at enhancing horticultural crop health and yield. Soil fertility naturally declines after a few years of cultivation, necessitating interventions to sustain productivity. To address this, the Mission for Integrated Development of Horticulture (MIDH) has consistently promoted Integrated Nutrient Management since its inception. This ongoing effort focuses on providing ample fertilizers and other essential nutrients to the soil. As a result of these measures, over 62,235 hectares of land have been successfully treated, with significant financial investment, demonstrating a commitment to agricultural sustainability.

12. Pollination Support through Beekeeping: This highlights the longstanding recognition of bees as crucial pollinators and their significant role in horticultural development. It specifically mentions the implementation of the Honeybee Colony and Bee Hives initiative under MIDH during the 2014-2016 period. Financial resources, exceeding Rs. 30 lakh, were allocated to this program, demonstrating a substantial investment. The funds were primarily used for the distribution of approximately 4,335 ready-made beehives to apiarists, underscoring an effort to support and expand beekeeping practices.

13. Horticulture Mechanization: This provided the benefits of agricultural mechanization, particularly in horticulture. It highlights how machines can improve land preparation, weeding, and harvesting efficiency. The document further explains that mechanization leads to faster work, higher quality products, and reduced labor needs. Specifically, it mentions the significant financial investment made by MIDH/HMNEH in Mizoram, spending over 838 lakh rupees to acquire more than 4800 pieces of equipment, which were subsequently distributed to farmers at subsidized rates. This initiative underscores the importance of machinery in modernizing agricultural practices.

14. Human Resource Development: Development of manpower has always been the most noticeable feature of government initiatives as their success or failure very much depends on the personnel who are in-charge. In the case of MIDH as well, various necessary steps have been taken to develop human resources both officials and farmers of the state. The fund utilized against each activity for Human Resource Development under the scheme are as below:

a)	Training of farmer (within the state)	Rs. 270 Lakhs
b)	Training of farmers (outside the state)	Rs.107 Lakhs
c)	Exposure visit of farmers (outside the country)	Rs. 56 Lakhs
d)	Training/Study tour of technical staff/field staff (within the state)	Rs 49.26 Lakhs
e)	Study tour of technical staff/field staff to progressive states.	Rs.177 Lakhs
f)	Training/Study tour of technical staff/field staff (Outside India)	Rs. 186 Lakhs
g)	HRD for Gardener/Skill Development	Rs. 81 Lakhs

15. Integrated Post Harvest Management: Post harvest management has been one of the most challenging tasks in both agriculture and horticulture. Once crops are harvested, some need further treatments before reaching the consumers. This is necessary for maintaining value, value addition, availability of supplies during the off season, etc., since most horticulture crops are highly perishable if left untreated. So far, more than Rs. 1678 lakhs have been spent to undertake the following activities under the component -Integrated Post Harvest Management.

a) Construction of 169 Pack Houses (9mx6m) at the expense of Rupees 338 lakhs.
b) Construction of 1741 Pusa Zero energy cool chambers (100kg) by spending Rupees 34 lakhs (approx).
c) Construction of 73 Evaporated/low energy cool chambers (8mt) with the expenditure of more than Rupees 180 lakhs.
d) Setting up of 10 Integrated Pack Houses with facilities for conveyer belt, sorting, grading units, washing, drying and weighing by spending Rupees 250 lakhs (approx).
e) Purchase of 13 Refrigerated Vans/Transport vehicles with an expenditure of Rupees 149 lakhs (approx).
f) Setting up of 25 Cold Rooms (Solar based storage facilities) with an expenditure of Rupees 187.5 lakhs (approx.).
g) Setting up of 36 Primary Processing Unit (Solar based drier) with an expenditure of Rupees 79 lakhs (approx).
h) 399 Ripening Chambers with an expenditure of Rupees 199 lakhs (approx).

16. Mission Management: Efficient management is essential for the successful implementation of any scheme whether it is of a Central or State government. Mismanagement may lead to the failure of the scheme even if a huge amount of fund is allocated. To ensure effective and efficient management of the scheme, the following activities have been undertaken under MIDH in Mizoram.

a) Administrative expenses for State & District Mission Offices and implementing agencies, project preparation, computerization of offices, contingency etc.
b) Institutional strengthening, hire and purchase of vehicle, purchase of computers.
c) Seminar, workshops, exhibitions, Kisan Mela, Horticulture Show, Honey festival at District, State and National level.
d) Information dissemination through publicity, literature in a printed form, advertisement etc.
e) Development of technology packages in electronic form to be shared through IT network.
f) Baseline survey and strengthening horticultural statistical data base.

17. Establishment of Market Infrastructure for Horticulture Crops: MIDH/HMNEH has been formulated and implemented not only to increase productivity and expansion of areas under cultivation alone but improving the economic status of horticulture farmers as well. Thus, establishment of market infrastructure, where farmers can sell off their products, has been an important component of the scheme since the first year of implementation. So far, Rs. 370 lakhs (approx.) has been spent to undertake the following activities-

a) Purchase of Mobile Vending Cart: 400 vending carts were purchased and distributed to the fruits and vegetables vendors free of cost.

b) Construction of Rural Market/Apni Mandies/Direct Market: 20 markets were constructed at roadsides, mostly along the national highways in different villages where rural farmers can sell their produces.

c) Retail Outlet: 4 (four) retail outlets were constructed under the scheme where horticulture crops such as fruits, vegetables are sold at retail price.

18. Research and Development: This component of work had been carried out in 2015-2016 only. Rs. 23 lakhs were spent for the purpose.

19. Organic Farming: Under the scheme, the component - Organic Farming was carried out in 2015-2016 only. For this purpose, Rs. 12 lakhs were spent to set up 25 Vermicomposting units.

20. Special Intervention: Under this component of the scheme, some portion of fund was reserved for emergent and unforeseen circumstances. However, this component of the scheme was carried out in 2014-2015 and 2018-2019 only with an expenditure of Rs. 120 lakhs.

21. Formation of Farmer Interest Groups (FIGs)/Farmer Producer Organisations (FPOs): As the need for formation of FIGs and FPOs in the guidelines of the scheme was highlighted, the Department took initiatives to set up societies/associations for the smooth implementation of the scheme and to ensure the welfare of the farmers. Mizoram Dragon Fruit Association, Mizoram Anthurium Growers Association at village, district and state level etc., are important

associations formed with the assistance received under the scheme. These associations have been playing many important roles for promoting the welfare of their members since their formation. The cooperation and collaboration with the Department has contributed to the promotion of horticulture within the state.

RESULTS AND DISCUSSION

The impact of horticultural development schemes in Mizoram, India. It highlights how various government initiatives, both central and state-sponsored, have positively influenced the socio-economic well-being of horticulture farmers. The text indicates that these schemes have led many residents, particularly in rural areas, to adopt horticulture as a primary or supplementary source of income, thereby boosting the state's economy. The document outlines a research methodology focusing on the Kolasib district to analyze the schemes' implementation, their effects, and the future plans of both beneficiaries and the implementing agency, using 57 farmer and 8 official respondents.

The Mission for Integrated Development of Horticulture (MIDH), a significant agricultural initiative in Mizoram, India. Formerly known as the Horticulture Mission for Northeast and Himalayas (HMNEH), this program has allocated substantial funds and covered over 80,000 hectares of land across all districts. However, the document highlights a potential overstatement of area coverage due to recurring funding for the same beneficiaries and land under certain scheme components. The paper will specifically examine factors influencing horticulture management in Kolasib District, focusing on aspects like land ownership, beneficiary assistance, group membership, training participation, and extension services.

Extension Services

Technical/extension guidance from the concerned department was received by 90.57 percent of the respondents in the course of their work whereas 9.43 percent did not receive any guidance.

Table showing Whether received technical/extension Guidance?

Sl.No	District	Crop/Trade	Yes	No
1	**Kolasib**	**Fruit**	9	6
		Vegetable	12	
		Flower	12	
		Infrastructure	15	3
4	**Total**		**48**	**9**
5	**Percentage**		**84.21**	**15.79**

Among the respondents in Kolasib district, 84.21 percent received guidance from the concerned department whereas 15.79 percent carried out their activities without any guidance.

Of the respondents with fruit, 60 percent were given guidance from the department more than once while 40 percent did not received any guidance or supervision. In respect of the number of respondents with vegetables as well as those with flowers, 100 percent received guidance from the department and there is not a single respondent who worked without any guidance. Regarding the respondents under infrastructure, 83.33 percent received guidance or supervision whereas 16.67 percent of them worked on their own.

Inspection and Monitoring by the Department

The above table enumerates the number of respondents who received inspection and monitoring from the department to make sure that assistances rendered were utilized as stipulated in the scheme. 84.21 percent of respondents were inspected and monitored by the department whereas 15.79 percent were not.

In Kolasib district, 84.21 percent of respondents were inspected and monitored to see utilization of the assistance received whereas 15.79 percent did not witness any inspection and monitoring activities.

Table showing Inspection and Monitoring

Sl.No	District	Crop/Trade	Yes	No
1	**Kolasib**	**Fruit**	9	6
		Vegetable	12	
		Flower	12	
		Infrastructure	15	3
4	**Total**		**48**	**9**
5	**Percentage**		**84.21**	**15.79**

Problems and Issues of Respondents

Below table depicts the number of respondents who have problems and who have no problems and issues during their activities under the scheme. 63.16 percent are facing some problems while 36.84 percent respondents carried out their activities without facing any big obstacle.

Table showing No of Respondents with and without problems and issues

Sl No	District	Crop/Trade	No of Respondents with Problems	No of Respondents without Problems
1	**Kolasib**	Fruits	3	12
		Vegetables	12	0
		Flower	9	3
		Infrastructure	12	6
4	**G. Total**		**36**	**21**
5	**Percentage**		**63.16**	**36.84**

Regarding the number of respondents with problems in their horticulture activities under the scheme, respondents with fruit constitute 20 percent, respondents with vegetable 100 percent, respondents with flower 75percent and respondents with infrastructure constituted 66.67 percent. Among the respondents who have not faced any problems, respondents with fruit contributed 80 percent followed by respondent with infrastructure constituting 33.33 percent, respondents with vegetable do not have a problem, 25 percent constituted by respondents with flower.

Table showing Nature of the Problems and Issues (District-wise)

Sl. No	Problem/Issues	No of respondents in Kolasib District
1	Scarcity of water	9
2	Poor quality of Soil	3
3	Plant Disease	3
4	Poor Quality of Planting Materials	6
5	Scarcity of fertilizers	3
6	Storms/Flood/ other calamities	6
7	Scarcity of farm materials	3
8	Insufficient Assistance	3
9	Pest	-
10	Theft	-
11	Extreme temperature of GH due to lack of control mechanism	
12	No device for water distribution (Pipes etc)	

The above table shows the nature of problems faced by the respondents with problems while carrying out their horticulture activities under the scheme with multiple responses.
In Kolasib district, respondents who have been dealing with the problem of scarcity of water are highest in number constituting 15.78 percent followed by both poor quality of planting materials and natural calamities with 10.52 percent each and poor quality of soil, plant diseases, scarcity of fertilizers, scarcity of farm materials and insufficient assistance who constituted 5.26 percent each.

Labour Utilisation
Table showing Utilisation of Labour

Sl.No.	District	Trade	Farmers with additional Labour (Regular)	Farmers with additional labour (Occasional)	Farmers without additional labour
1	**Kolasib**	**Fruits**	3	12	
		Vegs	6	9	
		Flower		12	
		Infra	3	9	3
4	**G. Total**		**12**	**42**	**3**
5	**Percentage**		**21.05**	**73.69**	**5.26**

As can be seen in the above table, farmers employing in Kolasib District, 21.05 percent of respondents hired additional labour regularly to carry out their horticulture works whereas 73.69 percent depends upon additional labour occasionally. In the meantime, 5.26 percent of respondents could carry out their activities on their own without any additional help.

In relation to the components, those under fruit employing additional regular labour constitute 20 percent of the respondents, while those employing additional labour occasionally accounts for 80 percent. Under vegetables, 40 percent employ additional regular labour, 60 percent with occasional additional labour. The number of respondents employing occational labour under the flower component stands at 100 percent of the total respondents in the trade. In infrastructure regular employment of additional labour is undertaken by 20 percent respondents, occasional additional labour by 60 percent while 20 percent functions without additional labour. In addition to the employment opportunities provided to the

horticulture farmers through the scheme, those employing additional labour contributes towards providing employment for others.

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