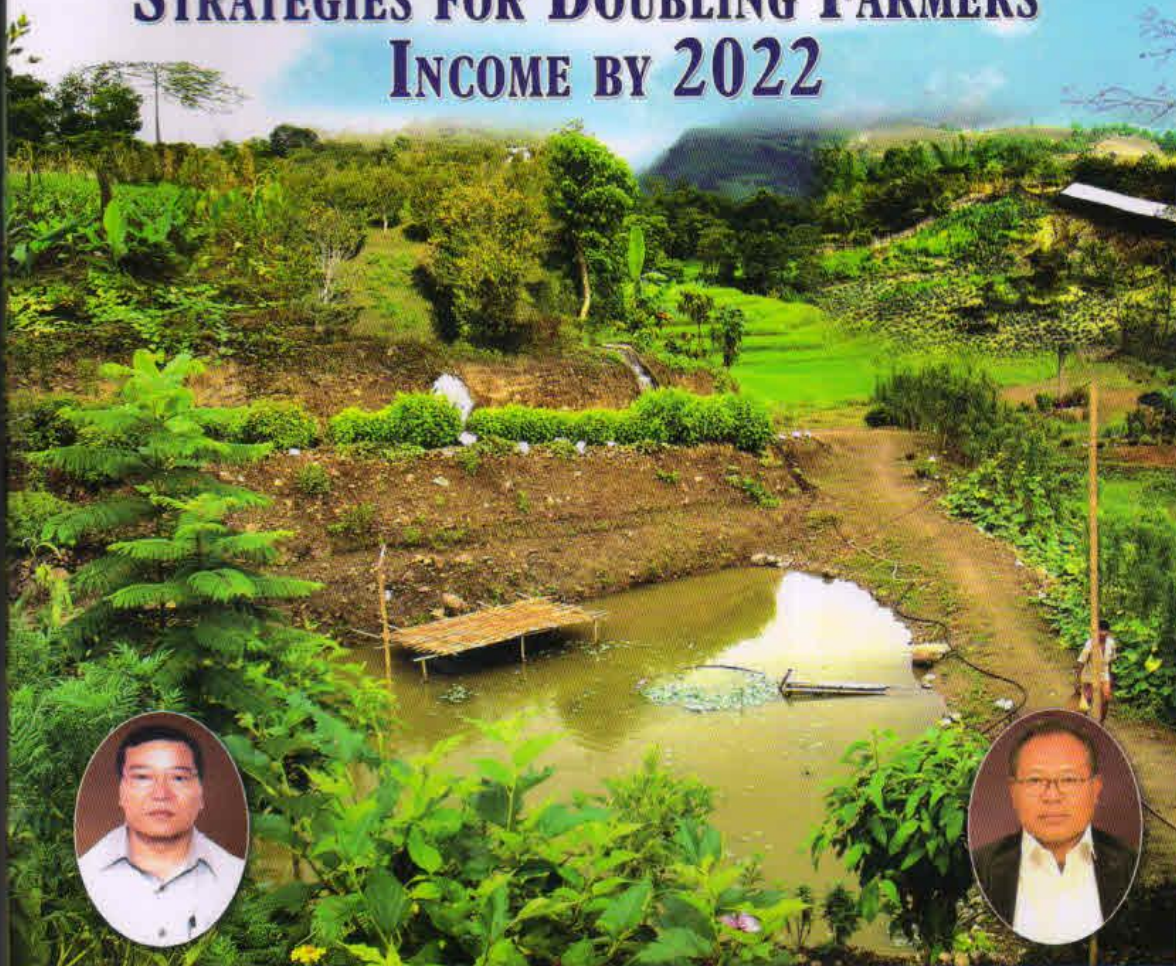




# STRATEGIES FOR DOUBLING FARMERS' INCOME BY 2022



GOVERNMENT OF MANIPUR  
DEPARTMENT OF AGRICULTURE MANIPUR

**STRATEGIES FOR DOUBLING FARMERS'  
INCOME BY 2022**



**GOVERNMENT OF MANIPUR  
DEPARTMENT OF AGRICULTURE, MANIPUR**



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## **Introduction:**

The Government of India, in the union budget 2016-17 had announced its resolution to double the income of farmers by 2022. Several steps have been taken towards attaining this objective including setting up of an inter-ministerial committee for preparation of a blue print for the same. This agenda has also been reiterated by the government in several form and has acquired primacy from the point of view of rural and agricultural development. Government of Manipur have also decided to double the income of farmers' by 2022 in the resolution of the Government of India. Accordingly, as per communication from Ministry of Agriculture and Farmers Welfare, Department of Agriculture, Cooperation and Farmers Welfare, New Delhi, Shri N. Sanatomba Singh, Deputy Secretary of Agriculture has been designated as Nodal Officer. A State Level Committee headed by Chief Secretary comprising of Administrative Secretaries and Heads of Department of various Departments of the Government of Manipur and Central Agencies in the state have been constituted for finalization and approval of the strategies. And further a Committee of Expert for drafting strategies had also been constituted under the Chairmanship of the Nodal Officer.

2. Government of Manipur have decided to include preparation of strategies for Doubling of Farmers' Income by 2022 among the works to be completed in 100 days of formation of the new Government which starts form 15th March, 2017. The drafting Committee has mandate of submitting its Draft strategies latest by 22nd June, 2017.



## Concept

The drafting Committee in its first meeting held on 20th March, 2017 have drawn the line of actions to be taken by the Committee for preparation of strategies and the same has been approved by the Chief Secretary and Chairman of the State Level Committee and Honourable Minister (Agriculture), Manipur. The Committee held a number of informal discussions with various Stakeholders, R&D Institutes, Financial Institution, line Departments, Farmers, General Public etc. and obtained opinions from stakeholders and farmers in particulars on how to increase income of farmers via electronic & print media to understand issues concerning the production, productivity, income, socio-economic environment etc contributing to the increase of income of the farmers in the context of Manipur. On the basis of the inputs and personal experiences of all the members and stakeholders who were invited by the Committee in its series of meeting and discussions, the line of action to be taken by the Committee for preparation of strategies was drawn.

## Analysis:

As per the decision taken by the Government of India, various organisations and establishments under the Government of India and State Governments have begun their works on developing Strategies to Double the Income of Farmers' by 2022. Some of the important strategies developed / announced that are worth mentioning are as under;

1. 7 Point Strategy of Prime Minister's Office /Ministry of Agriculture and Farmers Welfare, Government of India.
  - a) Big focus on irrigation with large budgets, with the aim of "per drop, more crop"
  - b) Provision of assured quality seeds (subsidized), planting and nutrients based on soil health of each field
  - c) Large investments in warehousing and cold chains to prevent post-harvest crop losses
  - d) Promotion of value addition through food processing
  - e) Creation of a national farm market, removing distortions and e-platform across 585 stations
  - f) Introduction of a new crop insurance scheme to mitigate risks at affordable cost
  - g) Promotion of ancillary activities like poultry, beekeeping and fisheries.
2. In the 1st Meeting of the Committee of Experts held on 20th March 2017, members of the Committee and those representatives invited by the Committee discussed at length the strategies developed by various Institutions/Organization as mentioned above in the context of farmers of Manipur as well as the agro climatic conditions of the state. The representatives of various line Departments in the Government of Manipur, Central Organizations including convenor of State Level Bankers Committee (SLBC) and various stakeholders explained in detail the activities being taken up by their respective Departments and the possible ways to increase the farmer's income. List of the Stakeholders participated in the meeting is at **Annexure-1**. However it was found that no authentic data on farmers' income and their expenditure on farming in the State of Manipur was available. It was therefore decided that data for all the farmers to be covered will necessarily be captured.
- 2.1. While explaining the reservations of the banks in the State of Manipur on providing loans to the farmers of Manipur by the Banks, Shri Kamal Khanal, Convenor, SLBC, Manipur, pointed out that due to non availability of collateral security and high NPA in the State of Manipur, Banks are reluctant to continue extension of Credit support to Farm sector. This also indicates requirement of awareness of the farmers on banking sectors. General Manager, NABARD has also highlighted various approaches being adopted by NABARD including credit support to farmer groups in Manipur where the issue of NPA is approximately nil. He also suggested the Convenor, SLBC to work on other options as being done by the NABARD so that the maximum fund can be channelized to the farmers to increase their income. During the presentation on the activities being carried out by various departments in the State of Manipur both State & Central Government held on 8th May, 2017 at the ICAR Conference Hall, Lamphelpat, Chairman of Manipur Rural Bank has also informed that the NPA rate for Manipur Rural Bank is about 3.9% only as compared to SLBCs record of about 51%. It was also understood that the



minimum amount earmarked for lending to the Agricultural sector is about 18% of the total lending capacity. As per the reports obtained by the Committee, the target Credit Plan during 2016-17 for the State of Manipur by various banking organisations in the Agriculture Sector was Rs.294.62 crores. The target which is sufficient enough for a small state like Manipur could not, however, contribute the desired impact in the Agriculture sector as the achievements of various banking organisations are far less than satisfactory for various reasons. As for collateral security, Chairman of the drafting Committee pointed out during the course of discussion that Government of India has a model land leasing act and Government of Manipur is in the process of adopting the same and would take care of security issues as pointed out by Convenor, SLBC.

- 2.2. One important aspect where the Niti Ayog, Government of India, has been giving special thrust is to bring Agricultural Reforms in the country. The reformation is to be achieved through (i) Marketing sectors of Agricultural Produce (ii) Legislation Land leasing Law to facilitate availing of loans by the farmers (iii) Exemption of all kinds of trees grown in private lands from "Felling and Transit Regulations of trees" and (iv) Legislation of Contract Farming Act to provide assured and optimum cluster based organised income to farmers.

The State Government has already finalised the draft "The Manipur Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Bill, 2017" as per the "Model Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Act, 2017" passed by the Government of India in April 2017 and the same has been referred to the Law Department for their concurrence, after which it shall be placed before the State Assembly. Necessary action for legislation of the Land Leasing Law. It has already been taken up by the Department of Revenue based on Model Land Leasing Law as passed by the Government of India. Exemption of felling of all trees grown in private lands has been made in the Felling of Trees and Transit Regulations by the Forest Department, Government of Manipur. Minor action for simplification of the procedure of exemption, shall be taken by them very soon. This will encourage plantation of trees in private lands and promotion of Agro forestry in the State which in turn shall contribute in increasing farmers' income. Government of India have not yet finalised framing of the Model Contract Farming Act. It has been decided to adopt the Act in the State of Manipur also subject to examination on the suitability and modification of the Act being passed in context of Manipur.

- 2.3. Various issues discussed by the Committee were a) the feasibilities of doubling of farmers income by 2022, increasing farmers income by adopting modern technologies, imparting training to farmers, adoption of integrated farming, cropping intensity, with ancillary activities like Fisheries, Animal Husbandry, Mushroom cultivations, Bee keeping etc, problems of inability of timely providing necessary inputs like availability of quality seeds, irrigation support, possibilities of GRID connections with solar operated system of water pumps, Development of Agricultural Infrastructures, Marketing Infrastructures, necessity for developing unique training modules to be adopted in the State, inculcation of work culture and providing communication skills and ego management to the farmers' etc.

3. Based on thorough discussions and deliberations, it was unanimously agreed that doubling of Farmers (of Manipur) income by 2022 will not be a difficult one considering that i) Most of the farmers of Manipur are yet to be exposed to new technologies ii) Many areas are still unexplored in the farm



sector in the state iii) The productivity of crops except rice are still very low as compared to that of National & International levels. iv) Income generating infrastructures like marketing, contract farming, organised sectors are yet to be established and credit facilities availed by farmers of Manipur are low. The major component where efforts are required to be made to increase the farmers' income are agreed to be on the following activities:

Sl. No	Particulars	% of contribution in Increase of average farmers' income
1	Irrigation support	50%
2	Quality seeds and planting materials	30%
3	Training	30%
4.	Integrated Farming & Ancillary activities (Bee keeping)	50%
5.	Marketing & other infrastructure related	50%
6.	Value addition & food chain	40%

4. The strategies are therefore designed to achieve the maximum target expected to be achieved to increase the farmers' income not below 100% (Double the Farmers' Income) by augmenting maximum possible combination of components considering, opportunity limitation and resources of the state. The Departments/Agencies that will be directly responsible for increasing farmers' income are Agriculture Department, Hort & Soil Conservation Department, Vety. & AH Deptt., Fishery and Sericulture Department, CADA, MI, and IFCD. Other Departments that are indirectly responsible are Planning (IWMP), RD&PR (NRM/MGNREGS), Environment & Forest, Commerce & Industries, Corporation etc. The trainings will be provided by Agriculture Department, ATAMA, KVK's, Hort.& Soil Conservation Department, Vety. & AH Dept, Fishery and Sericulture Department and as per the availability of manpower etc. the target farmers to be trained by each of the departments are planned below as detailed below:

Sl. No.	Name of Department / Agency	No. of Farmers to be trained	Remark
1	Agriculture Department (District Agriculture Officers)	18,096	Collection of farmers' data for the purpose of doubling of farmer's income is under progress. As per the trend of progress, estimated no. of farmers for the entire state i.e, 2639 villages as per 2011 census is assumed to be 126672 which may be slightly increased once non recorded villages are also covered. Details of farmers surveyed till date is as enclosed at Annexure-IV.
2	Agriculture Department (Project Director ATMA)	18,096	
3	Horticulture & Soil Conservation Department	18,096	
4	Vety. & AH Department	18,096	
5	Fisheries Department	18,096	
6	Sericulture Department	18,096	
7	All KVKs	18,096	
	<b>Total</b>	<b>1,26,672</b>	



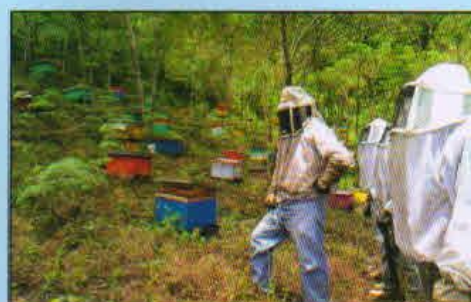
5. As surveyed by the Committee, the incomes of different farmers in different sectors have different levels of income. The average incomes of farmers of various sectors are detailed below:

Sl. No.	Sector	Average income in Rs.	Remark
1	Agriculture Sectors	45,000	The data is based on primary data collected from the field directly by the teams constituted for the purpose by the Committee and is subject to confirmation and correction if required. The average income of farmers taking into account of all the farmers in all the sectors is approximately is Rs. 75,600/-
2	Horticulture Sectors	60,000	
3	Dairy & Poultry Sector	63,000	
4	Fisheries Sectors	1,50,000	
5	Sericulture Sectors	60,000	

- 5.1. As such, the purpose of the strategy is to maximize the income during 2017-18 to 2021-22 with the condition that the minimum average income will be doubled by 2022 i.e, the average income of farmers by 31st March, 2022 is targeted to be a minimum of Rs. 1,51,200/-. As per the projected Target, the average income of farmers is planned to be Rs.1,95,237/- which may be increased if the strategies are strictly complied.



Before Training



After Training

### Strategies for Doubling of Farmers' (Manipur) Income by 2022

The purpose of the strategies will be to create an enabling environment to the farmers for increasing the income of the farmers. Preparation of strategies for doubling of farmers' income in the state of Manipur will be slightly different from that of the strategies developed by central agencies particularly when their strategies will be focussed on providing guiding principles to implementing agencies. The State's strategies would be for implementation and need to be spelt out actionable practical steps to be taken up in the field and it will be based on specific socio-agro climatic regions. The state will have three pronged strategies.

- a) Short Term Plan to earn immediate result,
  - b) Medium Term Plan to augment medium as well as long term benefits and
  - c) Long Term Plan to address long lasting issues.
2. **a) Short Term Plan** includes all those activities which are expected to give result within the current and following seasons onwards. The main works will be imparting awareness, Trainings, Demonstration etc. to all the stakeholders.
- i. Training Modules to be followed in the state of Manipur by all organisations both Centre & State and Private Sectors to achieve the target have been formulated based on the different Modules from different Agro-Climatic Regions. Modules are at Annexure-IV A/B/C. The basic Training will be imparted during 2017-18 to all the farmers in the State whose data have been maintained by the Agriculture Department Government of Manipur as per the training modules developed by the Expert Committee for Doubling the Farmers' Income. The works of providing trainings will be assigned to all the departments/agencies proportionately and to avoid duplicity of farmers, all the departments will invariably refer to the data base so maintained by the Department and update accordingly. Until, the first phase of basic training is completed, no further specialised training will be given to any of the farmers. Imparting of Specialised Training will start during 2019-20 and from this onwards, farmers will begin enjoying the benefits of commercial farming including from integrated farming etc.



Before Training



After Training



- ii. Specialised training will be provided to such number of farmers who are observed to be capable of venturing in to integrated farming and such other specialised high tech farming followed by demonstrations and field visits. These farmers will be introduced to such Agencies that are capable of providing assistance including credit facilities.
- iii. These trainings will be repeatedly provided to these farmers in the form of refresher courses from time to time. All the departments will therefore, give maximum outlay on training to fulfil the requirements of completing training and demonstrations to the farmers.

**b) Medium Term Plan** includes their activities which are expected to start giving result from (around 2019-2020) and would give lasting effect on long term basis. This include initiation of actions on Reforms on Agriculture sector, the main focus as laid down by the Government of India, Niti Ayog and agreed by all stakeholders in the country are reforms on the following points.

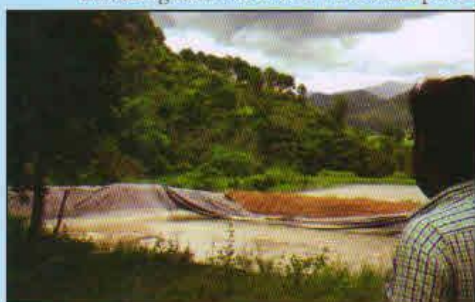


Before Training

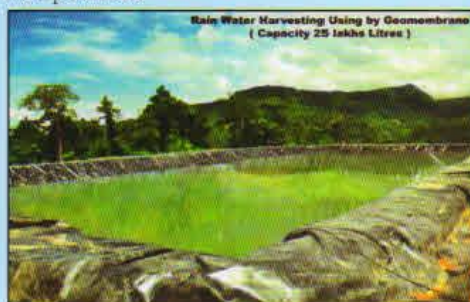


After Training

- i. Marketing sectors of Agricultural Produce. The State Government have already finalised the draft "The Manipur Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Bill, 2017" as per the "Model Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Act, 2017" passed by the Government of India in April 2017 and the same has been referred to the Law Department for their concurrence and for taking necessary action for placing before the State Assembly. Agriculture Department will ensure legislation of "The Manipur Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Bill, 2017" and functioning of all the bodies required under the Act by May 2019. This will enable the farmers to avail the proper marketing facilities and remunerative price of their produces. This will enable the farmers to avail the proper marketing facilities and remunerative price of their produces.



Before Training



After Training



- (ii) To Legislate Land leasing Law to facilitate availing of loans by the farmers. Necessary action for legislation of the same has already been taken up by the Department of Revenue.
- (iii) Exemption of all kinds of trees grown in private lands from "Felling and Transit Regulations of trees" has already been done by the Forest Department, Government of Manipur and simplification of the procedure of exemption shall be notified very soon. This will encourage plantation of more useful trees in private lands and promotion of Agro forestry in the state which in turn contribute in increasing farmers' income.



Before Training



After Training

- (iv) Legislation of Contract farming Act to provide assured and optimum cluster based organized income to farmers. Government of India have not yet finalised framing of the Model Contract Farming Act. It has been decided to adopt the Act in the State of Manipur subject to suitability and necessary modification in context of Manipur as and when it is enacted by Central Government.
- (v) All the financial Institutions in the State have to ensure providing credit to the farmers as per their annual targets in the Annual Credit Plans. In order to achieve their targets and reduce NPA, suitable models as adopted by Manipur Rural Banks and NABARD may be adopted. The issue will be taken up directly with the Reserve Bank of India as well as the Prime Minister's Office.

**c) Long Term Plan** includes creation of permanent assets that will contribute to the efficiency of the farming, Marketing and economic activities connected with Agriculture and allied sectors. These includes Establishment of an enabling environment for timely providing right Agricultural inputs, creation of Agricultural infrastructure for training, Quality seeds and Planting Materials/improved breeds, Irrigation infrastructure/Development of natural water bodies in to public fish farms, Setting up of Feed processing Plants, connectivity between farms and collection centres, collection centres to main Markets and State Main Markets to other National and International Markets.

The state does not have enough infrastructures to provide sufficient certified planting materials for Agricultural/Horticultural/Forestry/Sericulture to meet the growing demands of the farmers. The farmers are either depending on locally produced planting materials or imports by individuals or by the Government through various schemes for which we have to spend huge funds that can be utilised for other activities. Similarly, for animal husbandry as well as fisheries also, farmers are depending on local breeds or imports with aggressive training/Campaign to increase and double the income, it is expected to increase the demand for quality seeds and Planting Materials/ breeds. It is, therefore, felt necessary to establish adequate infrastructure to meet the increasing demands or inputs including that of feeds & nutrients. In regard to Irrigation Sector, the District Irrigation Plans are required to be implemented properly assured with adequate funding.



In regard to the development of connectivity infrastructure, the concerned Departments, viz Public Works Department, RD&PR etc need to prepare their Annual Plans foreseeing the needs of the farming sector.



Before Training



After Training

- i. Special preference will be given to the farmers in the case of providing assistances from Central Sector, NEC and State funded Schemes. The data for providing assistance will be updated in the website of the Department of Agriculture, Government of Manipur.
- ii. The Concerned Departments of Government of Manipur will ensure providing roads connecting farms, collection centres etc to ensure connectivity by 2021. The main departments are Public Works Departments and RD& PR.
- iii. The Department of Agriculture, Hort.& Soil Conservation, Sericulture and Forest will ensure availability of required Certified Seeds / Quality Planting Materials (QPM) to the Farmers of all the Districts. For that matter, concerned Agriculture Department will have to strengthen the existing Seed Certification Cell and the Department of Hort.& SC, Forest and Sericulture will also establish High Tech Nursery Farms in all the Districts by 2019-20. Similarly, Vety & AH and Fishery Department will also ensure availability of improved varieties of Breeds of Animals and Fishes to the Farmers of all the Districts of Manipur by 2019-20.



Before Training



After Training

### Action Plan for Doubling of Farmers' (Manipur) Income by 2022

On the lines of strategies, the Action Plan prepared for Doubling of Farmers Income by 2022 is detail below:

Increase in income due to	Training		Adoption of Integrated Farming & Ancillary activities		Increase in Credit Support		Irrigation support (Increase in cropping intensity)		Marketing & related		Value addition & Food Chain		Quality Planting Materials		Total Income
	% increase in income	Actual Income	% increase in income	Actual Income	% increase in income	Actual Income	% increase in income	Actual Income	% increase in income	Actual Income	% increase in income	Actual Income	% increase in income	Actual Income	
1st June 2017		75600													
1st July 2018	10	7560	0	0	10	7560	5	3780	0	0	0	0	0	0	18900
1st June 2019	20	15120	0	0	15	11340	7.5	5670	0	0			0	0	51030
1st June 2020	0	0	7.25	5481	15	11340	7.5	5670	5	3780			3	2268	79569
1st June 2021	0	0	10	7560	15	11340	7.5	5670	15	11340	4	3024	9	6804	125307
1st June 2022	0	0	10	7560	15	11340	7.5	5670	30	22680	12	9072	18	13608	195237

**Note:**

1. Providing training will contribute 30% income of farmers due to increase in production and low intake of inputs.
2. The Increase in income due to adoption of integrated and Ancillary activities contributes 50% income of farmers'.
3. The Increase in income due to providing irrigation contributes 50% income of farmers.
4. The Increase in income due to providing marketing and other infrastructure related facilities contribute 50% income of farmers.
5. Providing Quality Planting Material will contribute 30% income of farmers due to increase in production.
6. Providing training will contribute 30% income of farmers due to increase in production and low intake of inputs.

2. The Draft Strategies for Doubling of Farmers' Income in the State of Manipur by 2022 submitted by the Committee of Experts for Doubling of Farmers' Income have been approved by the state level Committee for the purpose.



## Annexure-I

## LIST OF STAKEHOLDERS PARTICIPATED DURING DISCUSSION (DoFI 2022)

Sl.No.	Name	Designation	Address
1.	Dr. Prasanna Kumar Bal	Chairman, Manipur Rural Bank	Keishampat
2.	P. Nareshkumar	Asst. Manager, Manipur Rural Bank	Keishampat
3.	Suresh Singh Ningombam	S.E.	C.A.D. Deptt.
4.	H. Brojendro Singh	E.E.	M.I. Deptt.
5.	L. Nabachandra Singh	Prof.	CAU, Imphal
6.	Dr. Th.Robindro Singh	DDR	CAU, Imphal
7.	Dr. H. Chaoba Singh	Director Horticulture	Vty. & AH.
8.	P.N. Praveen Kumar	GM/ OIC NABARD	Nabard
9.	Mrs. N. Guite	DGM NABARD	Nabard
10.	R.K. Yaiphaba	AGM NABARD	Nabard
11.	Niranjan Lal	Sr. Scientist & head	KVK, Ccpur
12.	Dr. Y.Ramakrisna	Sr. Scientist & head	KVK, Ukhrul
13.	Dr. P.K.Saraswat	Sr. Scientist & head	KVK, Tamenglong
14.	E. Sulochana Devi	Addl. Director	Fisheries Deptt.
15.	Dr. Deepak Singh	Sr. Scientist & head	KVK, Chandel
16.	Dr. Bashudha Devi	Sr. Scientist	ICAR, Manipur Centre
17.	KH. Ibohal Singh	DFO	Soil Cons. Divn.
18.	K. Kipgen	Director Hort. & SC	Hort. Deptt.
19.	Ph. Rajendra Singh	Director Agri.	Agri. Deptt.
20.	N. Prakash	Joint Director	ICAR, Manipur Centre
21.	Dr. Kh. Rishikanta Singh	Scientist	ICAR, Manipur Centre
22.	Dr. M.A. Ansari	Scientist	ICAR, Manipur Centre
23.	S.Kunjakishor	Dty. Director	Sericulture
24.	Ch.Narendra		Sericulture
25.	S.Birendro Singh	Asst. Director,	Sericulture
26.	Remmei Alimmei		I&FC Deptt.
27.	H.Ibohal	D.T.O.(F.T.C.)	Agri. Deptt.
28.	Dr. Pramananda Singh	Dy.Director(HQ)	Hort./F Sc.Deptt.
29.	David Shimray	Director Fisheries	Fisheries Deptt.
30.	Dr. Puni Mao	CCF	Forest Deptt.
31.	N. Arunkumar Singh	Scientist	ICAR, Manipur Centre
32.	C. Sonia	Scientist	ICAR, Manipur Centre
33.	Kh. Mohendra Singh	Jt. Director Agri.	Agri. Deptt.
34.	Dr. I. Meghachandra Singh	Principal Scientist	ICAR, Manipur Centre
35.	N.S. Singh	Nodal officer, DoFI 2022	New Sectt.

## Annexure-II

**COMMITTEE OF EXPERTS FOR DRAFTING STRATEGY FOR DOUBLING OF FARMERS' INCOME FOR THE STATE OF MANIPUR BY 2022**

- |   |   |                                 |
|---|---|---------------------------------|
| 1. Shri N. Sanatomba Singh,<br>Nodal Officer & Convenor (SLC), DoFI 2022                                  | - | Chairman                        |
| 2. Shri Ph. Rajendra Singh<br>Director Agriculture, Manipur   | - | Member                          |
| 3. Shri K. Kipgen,<br>Director Horti & SC, Manipur  | - | Member                          |
| 4. Shri Chaoba Singh<br>Director Vety, Manipur  | - | Member                          |
| 5. Shri David Shimray<br>Director Fisheries, Manipur  | - | Member                          |
| 6. Shri S. Kunjakeshore Singh<br>Director Sericulture, Manipur  | - | Member                          |
| 7. One representative each from Industries Dept,<br>Planning Dept, Forest Dept, CAU, ICAR, IFCD, MI, CADA | - | Member                          |
| 8. Shri Kh. Mohendra Singh,<br>Joint Director Agriculture   | - | Convenor<br>Drafting Committee. |

## Annexure-III

**THE STATE LEVEL COMMITTEE FOR APPROVING STRATEGIES/ ACTION PLAN FOR DOUBLING OF FARMERS' INCOME BY 2022 CONSIST OF THE FOLLOWING MEMBERS.**

- |  |           |
|--|-----------|
| 1. Chief Secretary, Govt, of Manipur                       | Chairman. |
| 2. Administrative Secretary (Planning) Govt, of Manipur    | Member    |
| 3. Administrative Secretary (Finance) Govt, of Manipur     | Member    |
| 4. Administrative Secretary (Agri) Govt, of Manipur        | Member    |
| 5. Administrative Secretary (Hort) Govt, of Manipur        | Member    |
| 6. Administrative Secretary (Vet. & AH) Govt, of Manipur   | Member    |
| 7. Administrative Secretary (Fisheries) Govt, of Manipur   | Member    |
| 8. Administrative Secretary (Sericulture) Govt, of Manipur | Member    |
| 9. Administrative Secretary (Forest) Govt, of Manipur      | Member    |
| 10. Administrative Secretary (Coopn.) Govt, of Manipur     | Member.   |
| 11. Administrative Secretary (Industry) Govt, of Manipur   | Member    |
| 12. Vice Chancellor, CAU Iroishemba Imphal                 | Member    |
| 13. Jt. Director ICAR Manipur Centre, Imphal               | Member    |
| 14. Chief Engineer IFCD                                    | Member    |
| 15. Chief Engineer MI                                      | Member    |
| 16. Addl. Chief Engineer CADA                              | Member    |
| 17. Nodal Officer, Doubling of Farmers' Income by 2022.    | Convenor  |



## Annexure-IV

## DISTRICTWISE / VILLAGE-WISE LIST OF FARMERS SURVEYED AS ON 23.06.2017

Sl. No	Name of the Department/ Office	No. of Village	No. of Farmers	Remarks
1	Horti & SC	28	337	Survey is continuing and in progress.
2	D.A.O Ukhul	08	304	
3	S. D.A.O Jiribam	8	284	
4	D.A.O Churachandpur	7	134	
5	PD ATAMA Tamenglong	8	367	
6	PD ATAMA TML	6	758	
7	D.A.O Chandel	11	561	
8	KVK Bishnupur	27	222	
9	ATAMA, TBL	12	2906	
11	Vety & AH, Senapati	59	1863	
12	Vety & AH, Thoubal	12	992	
13	Vety & AH, Bishnupur	06	193	
14	Vety & AH, Kangpokpi	11	243	
15	Vety & AH, Wangoi (IW)	21	646	
16	Vety & AH, Swambung (IE)	26	839	
17	Vety & AH, Chandel	30	1440	
18	ATAMA, IW	9	1410	
19	D.A.O, Thoubal	7	690	
21	ATAMA, Ukhul	8	415	
	<b>Total</b>	<b>304</b>	<b>14610</b>	

*Note: It is estimated that in 2639 villages total Farmers would be 1,26,672.*

## Annexure-V (A)

**DOUBLING OF FARMERS' INCOME BY 2022**

(Dr Ashok Dalwai, Chairman Inter ministerial Committee for Preparation of  
Blueprint for Doubling Farmers Income by 2022)

- Focus on doubling of farmers' income, not farm income (base 2015-16)
- Farmers' income to be doubled in real terms in 7 years (2016-17 to 2022-23)
- Agricultural household activities comprise of
  - Crop sector (field crops and horticulture)
  - Livestock sector (dairy, poultry, piggery, small ruminants) Farm linked activities (mushroom, beekeeping, sericulture) Post production activities (off-farm enterprises)
- Use technology to increase the productivity of food crops in a sustainable way
- Give due emphasis to non-wheat, non-paddy and less water intensive crops
- High priority to diversification towards high value activities (Horticulture, Dairying, Food Processing, etc.)
- Linking farmers and markets with integrated value chains

**Training Modules for Doubling of Farmers Income**

Target Groups A: Officials and Trainers (Through Workshops/Meetings, one day)

- I. Basics of Doubling of Farmers' Income: Why, What, Whose, When, Where?
- II. Prime Minister's 7- points Strategy
  1. Big focus on Irrigation with budgets, with the aim of per drop more crop
  2. Provision of Quality Seeds and nutrients based on soil health of each field
  3. Large investments in warehousing and cold chains to prevent post harvest losses
  4. Promotion of value addition through food processing
  5. Creation of national farm market, removing distortions and e-platform across 585 stations.
  6. Introduction of new crop insurance scheme to mitigate risk at affordable cost
  7. Promotion of ancillary activities like poultry, beekeeping and fisheries.
  8. Financial literacy for the trainers.
  9. Communication skills

Target Groups B: Extension Functionaries (lecture/ power point slide based- one day)

1. Water Harvest and Utilization in Lean Period
2. Scope of Shallow tube wells in foot hills
3. Rain water harvest in the up hills: Jalkund/vegetation lined -reservoirs/ponds
4. Long term Planning for Vegetation : Plantation of Fruit trees/Spices/ perennial Shrubs like Coffee, spices, medicinal plants.
5. Options for Contingent crops/varieties, when, what and how?
6. Concept of Integrated Farming Systems for different land holdings and agro-topography in context of Manipur.



7. Cold Chains Value addition : Micro and Macro levels
8. Need of ware housing, cold storage, packaging principles and applications
9. Farm Credit and Insurance for crops/livestocks
10. High value low volume crops/enterprises for small and marginal farmers
11. Secondary Agriculture: Processing techniques of different crops
12. Seed production in field crops
13. Seed production in vegetables and flowers
14. Nursery raising in fruits and trees
15. Nursery production in vegetables and flowers.
16. Organic medicinal plants production/ collection.
17. Extraction of crude products in remote difficult areas: commodity wise.
18. Organic spices production/collection.

C. Practicing farmers based on their suitability after first awareness programme : Off- and on-farm training followed by Cluster demonstrations (2days lecture /slides followed by demonstration)

<i>a) Medium low land valley conditions:</i>	
1. Integrated farming system for sustaining farm income.	<ol style="list-style-type: none"> <li>a. Concept and principles of IFS</li> <li>b. Identification and selection of the major components</li> <li>c. Maintaining balance amongst the different components of IFS</li> </ol>
2. Fresh water aquaculture technique.	<ol style="list-style-type: none"> <li>a. Maintenance of water quality of pond</li> <li>b. Stocking density and feeding management .</li> </ol>
3. Management of poultry birds for egg & meat	<ol style="list-style-type: none"> <li>a. Selection of suitable breeds of poultry birds in IFS</li> <li>b. Housing and feeding management of poultry birds in IFS</li> <li>c. Vaccination schedule and health management.</li> </ol>
4. Piggery management in IFS	<ol style="list-style-type: none"> <li>a. Housing and management of piggery in IFS</li> <li>b. Feeding and health care.</li> </ol>
5. Nursery plants (fruits & vegetables) for income generation	<ol style="list-style-type: none"> <li>a. Nursery raising of winter vegetables.</li> <li>b. Production of fruit nurseries</li> </ol>
6. Integrated nutrient management in vegetables.	<ol style="list-style-type: none"> <li>a. Need for adoption of INM in IFS</li> <li>b. Different composing techniques.</li> </ol>

7. Cultural practices of king chilly cultivation
a. Plant geometry and nutrient management in king chilly
b. Insect pest & disease management
c. Controlled conditions for king chili
8. Use of low cost & drudgery reducing small tools and implements .
9. Scientific rice production for higher income
10. Participatory Seed production
<i>b) For upland and foot hills</i>
1. Integrated farming system (Piggery/poultry + winter vegetables) for enhancing farm income.
a. Concept and principles of IFS
b. Identification and selection of the major components
c. Maintaining interrelation between the components of IFS
d. Organic based integrated farming system for hills
e. Piggery+fishery and vegetable based organic Farming systems
f. Rice based farming systems for valley
g. Fish cum rice cultivation in terraces/uplands
h. High value traditional crop plantations like black rice, water mimosa, thangjing
i. Water stress tolerant crops : colocasia, tapioca, sweet potato, etc.
2. Piggery/ Goatery management
a. Piggery based farming systems for foothills
b. Goatery as an animal component in hills
c. Feeding and management
3. Poultry/duckery management
a. Selecting suitable breeds of poultry/duckery in IFS
b. Feeding and management of poultry
4. Off season vegetables for higher income
a. Cultivation of Potential off season vegetables for foot hills & upland of Manipur
b. Package of practices of kharif & rabi vegetables
5. Low cost irrigation system for upland
a. Low cost drip irrigation for vegetable production
b. Jalkund for water conservation
6. Plastic in upland agriculture
a. Plastic mulch for water conservation
b. Poly houses for off season crop production
7. Fruit crops for income generation
a. Lemon, a potential fruit for hills and foot hills
b. Banana cultivation in hills.
8. Floriculture as an income earning enterprise.
a. Potential ornamental plants and its propagation
9. Seed production techniques in important crops



<i>c) For higher altitudes</i>	
10.	Integrated farming system (Piggery/poultry + winter vegetables) for enhancing farm income.
a.	Concept and principles of IFS
b.	Identification and selection of the major components
c.	Maintaining interrelation between the components of IFS
d.	Organic based integrated farming system for hills
e.	Piggery+ vegetable based organic Farming systems
f.	Medicinal plants and fruit bearing trees based farming systems
g.	Low chilling temperate fruits cultivation
h.	Water stress tolerant crops : colocasia, tapioca, sweet potato, etc.
11.	Piggery/ Goatery management
a.	Piggery based farming systems for foothills
b.	Goatery as an animal component in hills
c.	Health management/Vaccination
d.	Feeding and management
	Poultry/duckery management
a.	Selecting suitable breeds of poultry/duckery in IFS
b.	Feeding and management of poultry
	Off season vegetables for higher income
a.	Cultivation of Potential off season vegetables for high hills of Manipur
b.	Package of practices of kharif & rabi upland vegetables
	Low cost irrigation system for upland
a.	Low cost drip irrigation for vegetable production
b.	Jalkund for water conservation
	Plastic in agriculture
a.	Plastic mulch for water conservation
b.	Poly houses for off season vegetable production
<b>Seed production techniques in important crops</b>	
	Floriculture as an income earning enterprise.
a.	Ornamental plants and its propagation
b.	Raising of ornamental plants

**Specialized Training Programme**

1. Trainings on Value Addition of different crops
2. Grading, Packaging and labeling
3. Food chain for different crops

## Annexure-V (B)

### TRAINING MODULE FOR DOFI BY 2022 (VETERINARY & ANIMAL HUSBANDRY):

#### Introduction:

- ❖ There are ample scopes for doubling the income of farmers by employing scientific Veterinary and Animal Husbandry practices in the state because of the suitability of its climatic condition, topographically suitability and peoples inborn or acquired animal husbandry/poultry rearing adaptability and their indigenous skill etc.
- ❖ The credibility of livestock farming is very short as compared to other agricultural occupations and thus it will be suitable for the farmers for doubling of their income.
- ❖ The state is suitable for establishing livestock and poultry farming.
- ❖ Topographically many livestock and poultry diseases are still not recorded from this state.
- ❖ Due to the food habit and socio-cultural habitat of the people, meat and other animal products are in high demand in the state.
- ❖ The practice and popularity of Integrated livestock Farming is not a new for the people of this state.
- ❖ There are availability of suitable areas at different parts of the state livestock farming such as Dairy farming, Goat Farming, Piggery farming and Poultry farming can be established.
- ❖ The marketing of animals products in the state is not a problem as demand is high.

#### Training Modules:

The training module for the Veterinary & Animal Husbandry will comprised of the following modules;

##### MODULE 1.

Poultry Farming( in the form of small or Semi Commercial poultry unit or medium of in large commercial form of poultry farming) with following scientific knowledge of;

- (i) Poultry Housing and Housing systems, merit and demerits of different types of poultry housing systems.
- (ii) Various inputs in establishment of a Poultry Unit/Farm.
- (iii) Managemental care/feeding/watering/medication etc. of chicks, grower, adults and other parent stocks.
- (iv) Vaccination Schedule of Poultry/Duck.
- (v) Training on scientific knowledge of important Poultry Diseases, their treatment and control and preventive measures.
- (vi) Biosecurity in Poultry Farming.
- (vii) Proper disposal of waste materials.
- (viii) Outlines of Highly Pathogenic Avian Influenza(HPAI/Bird Flu).
- (ix) Production of table eggs/ hatching eggs.
- (x) Production of Chicks, care and disposal of Day old chicks.



## **MODULE 2.**

Dairy Farming for production of wholesome milk;

- (i) Selection of Farm site
- (ii) Construction of animal sheds in scientific way.
- (iii) System of Housing.
- (iv) Various inputs in establishment of a Dairy Farm/ Unit.
- (v) Dietary requirements of dairy animals, Feeding and Managerial practices.
- (vi) Vaccination Schedule to protect against important livestock diseases.
- (vii) Scientific knowledge of important Livestock Diseases, their treatment and control and preventive measures.
- (viii) Production of wholesome milk, storage and disposal of milk.
- (ix) Care and management of calves.
- (x) Care and management of pregnant animals and their dietary care.
- (xi) Biosecurity in Dairy Farming.
- (xii) Proper disposal of waste materials.
- (xiii) Scientific knowledge of Cross breeding/Artificial Insemination.
- (xiv) Detection of Heat and proper timing of AI.

## **MODULE 3**

Profitable Piggery Farming for income generation;

- (i) Selection of Farm site
- (ii) Construction of animal sheds in scientific way.
- (iii) System of Housing.
- (iv) Various inputs in establishment of a Piggery Farm/ Unit.
- (v) Selection, procurement of piglets, source of farm animals.
- (vi) Dietary requirements of dairy animals, Feeding and Managerial practices.
- (vii) Vaccination Schedule to protect against important porcine diseases.
- (viii) Scientific knowledge of important porcine Diseases, their treatment and control and preventive measures.
- (ix) Care and management of piglets.
- (x) Care and management of pregnant animals and their dietary care.
- (xi) Bio-security in Piggery Farming.
- (xii) Proper disposal of waste materials.
- (xiii) Scientific knowledge of Cross breeding/Artificial Insemination in pigs.
- (xiv) Detection of Heat and proper timing of AI.

## **MODULE 4.**

Goatery Unit /Goat and Sheep Farming;

- (i) Selection of Farm site
- (ii) Construction of animal sheds in scientific way.

- (iii) System of Housing.
- (iv) Various inputs in establishment of a Goat Farm/ Unit.
- (v) Selection, procurement of Goats, source of farm animals.
- (vi) Dietary requirements of dairy animals, Feeding and Managerial practices.
- (vii) Vaccination Schedule to protect against important sheep and goat diseases.
- (viii) Scientific knowledge of important Diseases, their treatment and control and preventive measures.
- (ix) Care and management of kids.
- (x) Care and management of pregnant animals and their dietary care.
- (xi) Bio-security in Farming.
- (xii) Proper disposal of waste materials.

**MODULE 5.**

Integrated farming for doubling of farmer's income;

- (i) Prospects and practicability of integrated farming in Manipur.
- (ii) Components and suitability in integrated farming.
- (iii) Inter-dependency of mixed farming and its usefulness.
- (iv) Circulation of inputs in integrated farming.
- (v) Planning in integrated farming.

**MODULE 6:**

Establishment of a Feed Mixing/Feed Production Plant;

- (i) Importance, Prospects and practicability of establishment of a Livestock Feed Plant/ Feed Mixing/Feed Production Unit in the state.
- (ii) Components and requirement of the Unit.
- (iii) Procurement of ingredients, storage and formulation of different types of feed.
- (iv) Planning for buffer stocking of feed ingredients.

**MODULE 7:**

Opening of farmers Wet markets(Chicken/Pork) for sale of wholesome meat;

- (i) Prospects and profits of opening self producing meat centres.
- (ii) Various required inputs for the Unit.
- (iii) Scientific knowledge of anti-mortem examination of animals before slaughter.
- (iv) Scientific knowledge of meat inspection.
- (v) Scientific knowledge of meat processing.
- (vi) Scientific knowledge of meat preservation and storage.
- (vii) Meat Technology.

The Training Modules for the farmers in regards with Veterinary & Animal Husbandry has been prepared based on the prospect and feasibility in the state and the experts in different Veterinary and Animal Husbandry sectors will impart scientific knowledge that will enable the farmers to double their income.



## Annexure-V (C)

## MODULES OF SKILL DEVELOPMENT TRAINING FOR DOUBLING OF FARMER'S INCOME UNDER SERICULTURE SECTOR

Sl. No.	Topic	Remark
1.	Development of CRC plot in Govt./ Private Centers . Package of practices for mulberry cultivation in chawki garden with practical demonstration - Nos. of CRC rearing and proportionate harvest per year/ per are and maintenance after harvesting (in the context of Manipur).	The training programme will be mainly focus on Audio Visuals, brainstorming sessions and case studies in order to bring about changes in knowledge, skill, attitude and social behavior of the farmers for doing the particular sericulture activity.
2.	Pre-requisites of silkworm rearing. Disinfection and use of different types of disinfectants in silkworm rearing with practical demonstration .Utility of hygienic rearing and requirement for sanitation. Demonstration of preparation of disinfectants and mode of application.	
3.	Factors affecting rearing for uniform and healthy silkworm growth in chawki and adult stages. Role of light, ventilation, temperature and humidity and its management in silkworm rearing with practical demonstration.	
4.	Transportations of silkworm eggs, surface sterilization of eggs, Incubation, black boxing , brushing and preparation of brushing spacing, moulting care , spinning , cocoon harvest and proper storage with practical demonstration etc.	
5.	Identification of suitable horticultural / agricultural crops for integrated farming in sericulture for earning additional income.	
6.	Product diversification through advance technology in silk textile and byproduct use.	
7.	Study of Rapport building, Intake assessment and interviewing skills, Interpersonal communication skills	
8.	Cropping schedule of Mulberry silkworm. Training and Pruning, schedule of pruning in mulberry host plant to coincide the cropping schedule in Manipur	
9.	Types of soil in Manipur. Soil health, manure and fertilizer, their application. Reclamation of Soil/liming of Soil, Organic farming and manuring and its importance, What are Macro and Micro nutrients? Topical spray of micro nutrients.	
10.	To study Human relations and communications, empathy, warmth, respect, genuineness, concreteness, immediacy, confrontation, perceiving, responding, initiating, self disclosure etc.	



