

**Draft Report of
Impact Evaluation Study of
Mission Organic Value Chain Development
for North Eastern Region (MOVCDNER)**



Submitted to
Department of Agriculture Cooperation and Farmer's Welfare
Ministry of Agriculture and Farmer's Welfare



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Citation: Reddy A Amarender (2017) *Impact Study of Mission Organic Value Chain Development for North Eastern Region'* (MOVCDNER), National Institute of Agricultural Extension Management (MANAGE), Hyderabad-500030, Pp.210.

Foreword

Acknowledgement

The study on “Impact of Mission Organic Value Chain Development Scheme for North Eastern Region ” has been carried out at the National Institute of Agricultural Extension Management (MANAGE), Rajendranagar, Hyderabad, as suggested and sponsored by the Ministry of Agriculture and Farmers Welfare, Government of India.

We have benefited immensely from various scholars and officials from different government departments while carrying out this study. At the outset, we would like to thank Smt. V Usha Rani, IAS, Director General of our institute as well as Smt. Rani Kumudhini, IAS then Joint Secretary, INM, Ministry of Agriculture and Farmers Welfare, Government of India for their constant encouragement and support for undertaking this impact study. We are grateful to Smt. Neerja, IAS, Joint Secretary, INM, Ministry of Agriculture and Farmers Welfare, Government of India and Dr. Chaudhary, Additional Commissioner, INM, Department of Agriculture and Cooperation and Farmers Welfare for continuous support and guidance.

We are grateful to directors and joint directors and other officials from different state department of agriculture for their cooperation during the field survey and later interactions in focus group interactions for sharing their valuable suggestions. We thank Dr. Ratna Reddy, Dr. Padma Raju, ex Vice Chancellor, PJTSAU, Rajendranagar, Dr. CP Chandrashekar, former dean, PJTSAU for their guidance and active involvement.

We thank our colleagues in MANAGE for their support and encouragement while carrying out the study. Especially we thank Dr. V P Sharma, Dr. Renuka Rani for their continuous support. We are thankful to Dr. Ashwini S. Darekar, M. Preethi, Ch. Lavanya and Ch. Bala Swamy for their continuous hard work in finishing the report. We are thankful to Miss. Vaishnavi, Mr. Aditya, Mr. Vijay and Miss. Trupti from Gokhale Institute of Politics and Economics, Pune who worked on the project as interns.

We also thankful to the field supervisors and surveyors for carrying out the field surveys and focus group interactions in different sample states and districts across India. The study would not have reached to this stage without the active co-operation of the FPOs and FIGs, who provided all the required data for the study without any hesitation and expectation. We thank each one of them for their invaluable support.

Dr. A. Amarender Reddy

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Executive Summary

Indian agricultural sector is in distress with reducing profitability due to rising cost of inputs and stagnant output prices. These twin problems of agricultural sector can be effectively tackled by the wider adoption of organic agriculture (Seufert et al., 2012). Realizing the potential of organic farming in north east India, Government of India has launched a Centrally Sponsored Scheme entitled “Mission Organic Value Chain Development for North Eastern Region (MOVCDNER)” for implementation in the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura from 2015-16. The scheme aims at development of certified organic production in a value chain mode to link growers with consumers and to support the development of entire value chain starting from inputs, seeds, certification, to the creation of facilities for collection, aggregation, processing, marketing and brand building initiative. The scheme was approved with an outlay of Rs. 400 crores for three years.

Although Indian agricultural sector has grown slowly in the last one decade, it has tremendous potential for improved productivity, possible expansion of employment opportunities and consequently reducing mitigating the levels of rural poverty. Among others, Primary producer organizations or collectivities are one way of improving productivity and profitability of small holdings in agriculture and can protect small farmers from ill-effects of globalization or make them participate successfully in modern competitive markets (Trebbin and Hassler, 2012). Producers organizations not only help farmers buy or sell better due to scale benefits but also lower transaction costs for sellers and buyers, besides providing technical help in production and creating social capital

Objectives of the Study:

As the MOVCDNER scheme has completed more than 2 years of implementation, the ministry has initiated a nationwide impact assessment with the following objectives.

- To examine the **design** of MOVCDNER scheme in terms of planning, stakeholder capacity, implementation challenges, input procurement and distribution activities (clusters formed, trainings, labs established, inspection of clusters and certification, input supplied) and output (area under organic crops, organic production and market linkages)
- To assess the **modalities of delivery** of the scheme in terms of FPOs formation, farmers training, inspection of fields, certification, input supply, value chain development, producer

companies, market infrastructure and market support linkage like organic commodity boards.

- To assess the **level of utilization of outcomes** of MOVCDNER by the farmers across farm size classes, irrigated and rain fed situations especially in NE and hilly states.
- To assess the **impact of** MOVCDNER scheme on area expansion under organic agriculture, reduction in cost, use of bio fertilizers, farm productivity, value chain development, price premium due to labeling, profitability and sustainability.
- To **recommend** for improvement of overall design of the programme and state specific measures for improving the effectiveness of the scheme.

Methodology

This study used structured questionnaires to collect data from different stakeholders mainly FPO representatives and agricultural officers who are directly involved in implementation of MOVCDNER. So far data was available from Assam, Arunachal Pradesh and Mizoram.

Results

Analysis is based on the limited samples and the best FPCs identified in 3 states Arunachal Pradesh, Assam and Mizoram states. It is too short time for the scheme (2 years old) to showcase the complete impact assessment. (The Present Analysis provides the insights about how the scheme is being implemented, what are the bottlenecks in implementing the scheme and outputs and outcomes are in line with the objectives of the scheme) ?

- ✓ By the end of 2016-17, total 2,353 FIGs were formed as against the target of 2,500. The farmers mobilised under organic agriculture was 47,877 ha as against the target of 50,000. The area under organic agriculture was 44,146 as against the target of 50,000. It indicates the targets were more or less achieved under MOVCDNER.
- ✓ Maximum number of farmers are in Sikkim (12,820), Nagaland (6,340), Mizoram (5,726), and Meghalaya (5,385). The maximum area is in Sikkim (14,000 ha), followed by Meghalaya (7,180 ha) and Nagaland (6000 ha). Interestingly, area under third party certified area under organic was highest in Arunachal Pradesh (4000 ha), while under MOVCDNER the area was not significant.
- ✓ Total target of 100 FPCs promotion under MOVCD- NER, Sikkim has achieved highest number of FPCs formation, i.e. 28 number followed by Assam with 6 FPOs formation and total of 48 FPOs formed across 8 states.

- ✓ The average area under each cluster was 82 ha with average number of farmers 39 per FIG. The share of registered farmers were about 95%, whereas the share of small and marginal farmers were 61% with slight variations across states.
- ✓ Though the Mission Organic Value Chain development have been implemented all over North Eastern Region in 8 states. Primary survey was conducted by selecting a representative sample of clusters from Arunachal Pradesh, Assam, Manipur, Mizoram and Sikkim. Total of 19 districts, 112 villages and 204 clusters across 5 states were analysed for the stated objectives of MOVCD-NER.
- ✓ An average of 73 ha was covered under each cluster and Assam state shows maximum area 88 ha under MOVCD scheme. About 92 farmers were registered under FIGs and Sikkim has cent per cent registered farmers. All the registered farmers under the scheme are small farmers in Sikkim. Whereas average of all states shows coverage of 67 per cent of farmers across states. In Mizoram, the department has come up with an exclusive cell named Mission Organic Mizoram (MOM) to implement MOVCD-NER scheme.
- ✓ The majority of FIG groups were formed, farmers with an average of 47 members in new clusters and average of 38 in old clusters. However old clusters shows 94 per cent of registered farmers in FIGs and where as in new clusters it is 91 per cent. Across FIGs there were maximum FIGs about 88 are with less share of small farmers and only 64 are with more share of small farmers. Further clusters under PKVY scheme has covered an average of 50 ha per cluster and with 51 average number of farmers.
- ✓ A majority of the old clusters i.e. 97 per cent have prepared clear annual action and 85 FIGs from new clusters have annual action plans. With regard to PGS certification 93 per cent of old cluster FIGs have registration under PGS. Whereas only 50 per cent of FIGs are under PGS certification. Similar majority of clusters have i.e. 95 per cent packing and labelling facilities and 93 per cent marketing facilities.
- ✓ A very few FIGs were interested about 4 per cent in producing bio inputs in old clusters. Whereas only 2.7 per cent of FIGs has shown interest in Bio fertilizer, bio pesticide, panchamruth and panchagavya. None of the FIGs were involved in production of fertilizers and pesticides indicating that farmers are in transition of shifting from chemical farming to organic farming.
- ✓ The mission organic scheme which is promoting various practices that really help in converting the chemical farming to a healthy organic farming. Maximum farmers are using organic seed, compost and green manure only. Very low adoption of Drip irrigation and pesticides has been observed and this may be because of technical knowledge and small holdings.
- ✓ Majority of FIGs are interested in organic input production unit followed by biological nitrogen harvest planting (Gliricidia, sesbania). 65% of the farmers are using botanical

extract units in old clusters. Custom hiring centres, horticulture crops and Subsidy under Gokul Scheme are not being taken into consideration. Similar trend was observed in new clusters with less number of FIGs using various practices.

- ✓ The majority FIGs about 95 per cent got benefited from few technologies like Biological nitrogen harvest and organic input production 64 per cent FIGs in old clusters expressed that they got even benefited from Botanical extract production unit. However only half of the FIGs from new clusters have expressed that they got benefited from organic input production.
- ✓ On an average 38 farmers per FIG were mobilized in old clusters and 47 in new clusters. But on average only 12 – 14 farmers were mobilised for the meetings in both clusters.
- ✓ The average number of meetings held during the past 2 years was only 5 to 6. But the attendances in the meetings are good enough with an average attending about 30 in old clusters and 43 in new clusters. Farmers expressed that the meetings and the trainings were useful and gave ranking of good in both clusters.
- ✓ As a part of capacity building, exposure visits are being conducted but the average number of exposure visits is only 4 in case of new clusters and old clusters did around 8 exposure visits.
- ✓ The average number of trainings conducted is about 7 rounds in old and new clusters. And average numbers of farmers attended were 38 in old clusters and 47 in new clusters. Usefulness of the trainings is ranked well.
- ✓ The average of Peer Inspection usefulness is at 2.5 which is average and requires more awareness to the farmers on the importance of certification through participatory guarantee system and the benefits of peer inspection. Majority of new clusters are in conversion certification process. Only 4 clusters were certified as fully organic certified clusters
- ✓ A positive increase in net returns of maize, wheat and gram .Production was observed under organic farming in both old and new clusters.



Recommendations:

1. **Timely action plan** preparation, Release of fund and implementation needs to be streamlined.
2. **Synergy of activities:** There is a need for collaboration of activities being undertaken under various schemes of North east region (MOVCD- NER, NERLP, and NERAMAC) addressing production and supply chain gaps across different commodity value chains.
3. **Focused approach:** Major focus should be given to collective procurement and value addition of high value crops along with promotion of food crops. So that biodiversity can be maintained in addition to economic viability.
4. **Location Specific Technology:** To improve the cultivation practices, technological interventions, supply chain and marketing, it is essential to map out the best practices in the region and disseminate the same in identified clusters.
5. **Stakeholder Capacity:** Clusters should be aggregated to form commodity organisations at district level under MOVCDNER. It has been found that working with farmer federations through FFS (Farmer Field Schools, with participation of both women and men farmers) for capacity building, knowledge enhancement, horizontal sharing and learning etc., works out well. Kisan Business Schools (KBS) is an approach to build farmers capacities to understand and deal with markets.
6. **Farmer producer organizations:** The Government would encourage formation of farmer producer organizations (FPOs) - including Co-operatives and Producer companies - exclusively for promotion of organic farming in all the districts and states and these FPOs will be empowered to handle all activities related to organic farming viz., production of organic inputs, processing, Certification, marketing etc. The group should be preferably homogeneous, compact, and manageable and based on area approach/crop approach.
7. **Infrastructure Development:** The warehouse, processing unit, agriculture implements bank, bulk coolers, quality testing lab, weather stations, marketing platform, spot exchange facility, etc. to be provided to the FPOs through various government schemes like RKVY, IWRM, MGNREGA, NRLM, NHM, NFSM, etc. Specific mention of such provisions to be made in the guidelines of those schemes and a certain percentage of the fund meant for infrastructure should be allocated for the FPOs. Identification and linking of existing infrastructure with FPO's.
8. **Capacity building:** Building the capacity at FIG level is critical. Grass-root democracy could be built through attendance of at least 80-85% members, transparency in accounts, accountable behaviour, regular internal auditing etc. Members and the farmers elected for Board of Director should be trained adequately.

9. **Establish national level insurance agency** for Group insurance schemes pertaining to members of FPO viz. crop insurance, crop loan linked with life of the member, etc., including the postharvest phase. There is also a need to include tenant farmers into insurance coverage.
10. **Resolve operational issues** of the Warehouse Receipts Scheme (WHR) by banks so that FPOs can take benefits of the scheme.
11. **Popularizing PGS certification** among the wholesalers, retailers and consumers for creating demand for produce of PKVY/MOVCDNER clusters. The details on the labels of PGS certified product should be on par with private labelling to increase authenticity and transparency. Increased assistance should be provided during conversion period and lowering certification charges supports organic farmers in initial period of transition.
12. **Specialized Regional centers** for Market Promotion: Specialized separate regional centers should be established for marketing in each zone in community-PPP mode.
13. **Promoting Value Addition:** Promoting processing and value addition of organics at cluster level or federation level before entering to wholesale supply chain to get maximum share of consumer rupee by cluster farmers.
14. **Market and Brand development:** To access better prices register brand at state level and awareness campaigns to consumers. Convergence with marketing and cooperative department and explore a new supply chain on Farmer to Consumer models which helps increasing farmers share. Similarly consumers must also be made aware about the high price of organic produce as it is necessary to sustain organic farmers in the initial years.
15. **Encouraging Eco Agro-Tourism** in fully organic clusters as supplementary income to organic farmers.
16. **Financial Assistance:** Govt. schemes should extend financial assistance for farming processing activities taken up by individual farmers or groups of farmers in the value addition of their produce. Suitable financial help will also be extended for infrastructure facilities, storage facilities of organically grown produce.
17. The in-charge-agricultural officers of MOVCDNER are engaged in multiple activities, which hindering the progress of implementation. Hence there is a need for appointing special officers at least at district level.
18. Farmers are the best educators of other farmers and so farmer to farmer extension will be given importance that can greatly help in information exchange and dissemination. Most common are farmer exchange visits, in which farmers are brought to the site of successful innovation or useful practice, where they discuss and observe benefits and costs with adopting farmers.

19. The Government should support for on farm production or for local production of inputs) required for organic farming. Viz., support for establishing compost units, supply of pulverisers for NSKE preparation on subsidy, and imparting required technical trainings. Also extend necessary support for production of bio formulations, botanical formulations at farm level as well as small scale units for production by SHGs/Farmer groups etc. Govt should also supply traps and lures on subsidy.
20. Establishing Organic Poultry, Dairy, Piggery unit and others using local/indigenous breeds suitable to agro-ecological regions in order to meet the demand for organic dairy, poultry and other animal based products.
21. Revolving fund to farmers federations/FPOs/ farmers associations, etc. to tie up their working capital needs to facilitate purchase of organic produce to avoid distress sale
22. Market survey and demand estimation and product development may be done in collaboration with specialized Regional Councils (marketing) in partnership with private firms who are already involved in marketing of organic produce.
23. Each state headquarters should have organic market places established where farmers can directly sell to consumers/retailers.
24. Farmers adopting organic farming are grouped into common interest groups and cooperatives. All these farmer groups would be trained and regular farm appraisals will be facilitated.
25. Formation of a high level committee for looking into the issues related to organic cultivation, markets and linkages with farmers representation.
26. Research studies needed for comprehensive studies on organic niches of India to help bring organic farmers into the export market, with comparative advantage. The survey on potential niche crops for organic farming under different agro-ecological zones and farming cultures across states.

Chapter I

Introduction

Broader Policy issues relating to North East Agriculture:

North-East India is endowed with colossal natural resources. It has rich soils, abundant water resources and favourable climate. But, agriculture remains a subsistence activity and its potential for commercialization has remained unexploited. Although 70% of population depends on agriculture, its share in regions GDP was just 24%. Only 22% of the total land is used for agriculture, whereas national average is 54%. Average operational holdings in NE states were just 0.93 ha compared to national average of 1.15 ha. Only 11% of cultivated land is irrigated compared to national average of 35%. Agricultural sector is growing at 4%, whereas growth in GDP at 6.83% per annum in last decade. Structural constraints like difficult terrains, inaccessible habitations, diverse socio-cultural and agricultural typologies, small, scattered and fragmented land holdings, lack of location-specific production technologies, poor infrastructure (transport, markets and processing), underdeveloped institutions (credit, extension, information, insurance) are hindering to use its immense natural resource base.

Low Public Investment

Within agricultural GDP, share of crop sector was high (58%) followed by forestry (18%), livestock (15%) and fisheries (9%). In total public expenditure in agriculture, crop sector share was 38%, followed by livestock (12%) and soil and water conservation (8%). There was little investment in forests, even though its contribution in production and nutrition was significant.

Investments in public infrastructure, network of roads, connectivity and development of institutions are prerequisites for using the potential and to employ educated youth of this region.

Misdirected cropping pattern and Low yields

60% of the cropped area was occupied by paddy followed by vegetables 14%, plantations 10%, and spices 9%. Average yield of paddy was lower than national average of 2461 kg/ha, except Manipur and Tripura, although horticultural crops like pineapple area (72% of India's area of pineapple is in NE states) was high, yields were less than one-fourth of all-India average. Comparatively paddy gives relatively low returns Rs. 39,000/ha than horticultural crops (about Rs.50, 000/ha). Hence there is a need for crop diversification towards horticultural crops. Animal husbandry and fisheries sector also have high potential to increase farmers' incomes in this region.

Less access to infrastructure

NSSO situation assessment survey figures indicates that the average per capita income of households is Rs.17, 680 and ranging between Rs.14, 179 for marginal farmers and 62,720 for large farmers. The Farmers get 57% of their income from crops, 27% from wages, 10% from livestock, only 3% from off-farm income. Only 58% of household's access to pakka roads, 28% had access to electricity, 10% access to post offices but more than 80% have mobile phones. This shows precarious position in infrastructure at the same time wider possession of mobile phones.

Boosting investment

To increase farmers' incomes, the price increase is not sustainable source of growth in the long run. Yield increase, diversification to high-value crops, animal husbandry, market development, contract-farming, rural industries, roads/electricity should be focused. Increasing yield of paddy crop will not only increase incomes, but also food will be self-sufficiency. Huge investment in agricultural R&D, physical infrastructure is essential to reduce logistic costs in transportation and increasing connectivity with SEA countries and Bangladesh.

The region having some unique strength such as hot spot for bio-diversity, plenty of water availability, natural organic farming and well organised collectives, which needs to be harnessed for increasing farmers' incomes.

Agricultural productivity and value creation

Given its potential and opportunities, government should focus on productivity enhancement and cost reduction technologies like zero tillage methods in various crops, expansion of irrigation through water harvesting, integrated farming systems. In the region, there are large tracts of waste lands available, which can be used for agro-forestry and agro-tourism development. Development of post-harvest structure (like cold-storages) in public-private partnership mode to build value chain to connect NE region with mainland and also potential international markets like Bangladesh, China in line with look east policy.

Employment creation

NE region is endowed with educated youth, but mostly underemployed. There was a need to enhance off-farm income and off-season employment opportunities for rural educated youth through market driven diversification by innovative agri-business models, encouraging handicraft, eco-tourism and agri-tourism.

Organic agriculture

Given that farmers in this region practice organic agriculture by default, identification of markets, potential crops and efficient mode of organic certification and branding in both domestic and international markets should be focused to increase farmers' incomes

Quality seeds (piglets/fingerlings)

Quality seed in agriculture, piglets and breeds for animal husbandry sector and fingerlings for fisheries are important inputs, which have the potential to increase yields by 50%. There is a need for development of institutional innovations like seed banks in public-private partnership mode to cater to the needs of farmers.

Mobile advisory services and community organisations

Region is mostly hilly and undulating territory and transport is difficult, but most of the farmers do have mobile phones which can be used for effective dissemination of agricultural knowledge, delivering credit, payment of bills etc. As the region also have good community organisations developed over several generations, these organisations may be strengthened to establish community resource centres, custom hiring centres to impart training and to provide farm services.

Overall, to fully utilize the potential of agricultural sector in north east India require a paradigm shift in approach and huge investments in public-private-community participation for promoting organic agriculture through value-chain approach.

FPOs can play a pivotal role in strengthening the Agriculture which is the mainstay for livelihood of the people living in North Eastern Region. The size of agricultural land owned by more than 76 per cent families is very small, less than 2 acres. This small size of agricultural land is further fragmented into small terraced fields scattered in various directions and distances from the homestead thus making agriculture operations difficult, labour intensive and uneconomical. Agriculture in hilly areas of North East is predominantly rainfed. Traditionally the application of chemical fertilizer and pesticides is either absent or very limited in farming. About 93 per cent of the farms entirely depend on rainfall for agriculture production with only 7 per cent of the area is irrigated largely confined to valley areas. This provides a natural ground for promoting organic farming with least efforts.

Horticulture crops account for a substantial share 40% in the cropped area of the region. Major horticultural crops grown in the NE region include citrus, pineapple, kiwi, mango, guava, litchi, banana among fruits, potato, onion, tomato, cauliflower, cabbage, brinjal, beans among vegetables, chrysanthemum, rose, orchids etc. in flowers, ginger, turmeric large cardamom, coriander, cumin among spices and cashew nut, arecanut and tea among plantation crops.

Realizing the increasing demand for organic produce and the potential for organic farming in the North-Eastern Region of the country, Ministry of Agriculture and Farmers Welfare has launched a Central Sector Scheme entitled “Mission Organic Value Chain Development for North Eastern Region” for implementation in the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, during 2015-16 to 2017-18.

The scheme aims at development of certified organic production in a value chain mode to link growers with consumers and to support the development of entire value chain starting from

inputs, seeds, certification, to the creation of facilities for collection, aggregation, processing, marketing and brand building initiative. The scheme was approved with an outlay of Rs. 400 crores for three years.

Ministry of Agriculture & Farmers Welfare entrusted the MANAGE to evaluate study since beginning of the program with the following objectives:

The objectives of the study are as follows:

- i. The basic objective of the impact study is to assess different components of MOVCDNER and their impact on the Value Chain Development of certified organic production and marketing and effectiveness of implementation of the mission in improvement of the Organic Value Chain in North Eastern Region.
- ii. To examine the design of MOVCDNER scheme in terms of planning, stakeholder capacity, implementation challenges, input procurement and distribution activities (FIGs formed, trainings, labs established, inspection of clusters and certification, input supplied) and output (area under organic expanded, organic production and market linkages)
- iii. To assess the modalities of delivery of the scheme in terms of FPCs and FIGs formation, clusters selection, farmers training, cluster formation, inspection of field, certification, input supply, value chain development, producer companies, market infrastructure and market support linkage like organic commodity boards.
- iv. To assess the impact of MOVCDNER scheme on area expansion under organic agriculture, reduction in cost, use of bio fertilisers, farm productivity, value chain development, price premium due to labelling, profitability and sustainability.
- v. To suggest recommendations for improvement of overall design of the programme and state specific measures for improving the effectiveness of the scheme.

1.1 Current agriculture scenario north east Region – Potentials and Limitations

The natural environment of the North-East Region is rich in biodiversity, both in forest and in agriculture. The microclimatic conditions influenced by altitude, degree of slope, soil condition, rainfall pattern etc. are mainly responsible for the rich biodiversity of the area. The variety of cereals, millets, spices and pulses, beans and vegetables, fruits, medicinal plants and herbs, dye and aromatic plants as well as nuts and flower species place the North-East Region in a special category. But this rich biodiversity potential has till now not been adequately or judiciously harnessed for enhancing and sustaining livelihood opportunities for the local communities.

The north-eastern region of India provides considerable scope and opportunity for organic farming due to least utilization of chemical inputs. It is estimated that 18 million hectare of such land is available in the North-East, which can be exploited for organic production. With the sizable acreage under naturally organic cultivation, India has tremendous potential to grow crops organically and emerge as a major supplier of organic products in the World's organic market. Need is for putting up a clear strategy on organic farming and linking with the markets (Ramesh et al., 2005).

1.2. Potential for promoting Organic value chain for North east Region (Relevance of the programme)

- i. The NE region have an inherent advantage due to minimal use of chemical fertilizers & pesticides because of hilly areas (default organic area)
- ii. Significant potential for value added products.
- iii. Availability of unique commodities such as large Cardamom, Naga Chilly, Tea, Pine apple, Ginger, Bird eye chilly, Joha rice etc.
- iv. Availability of Conducive climate for organic farming.
- v. Participation in markets for the certified products is an opportunity to enhance incomes.
- vi. Rainfed farming.
- vii. Traditionally low external input driven.
- viii. Soil rich in organic matter (>1 per cent).
- ix. High farm-level agricultural diversity.

Mission Organic Value Chain Development for North East Region (MOVCD-NER):

It is a Central Scheme, a sub-mission under National Mission for Sustainable Agriculture (NMSA), launched by the Ministry of Agriculture and Farmers Welfare for implementation in the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, during the 12th plan period. The scheme aims at development of certified organic production in a value chain mode to link growers with consumers and to support the development of entire value chain starting from inputs, seeds, certification, to the creation of facilities for collection, aggregation, processing, marketing and brand building initiative.

1.3 Mission Objectives of MOVCDNER

To develop crop commodity specific organic value chain and address gaps in organic crop production, wild crop harvesting, organic livestock management and processing handling and marketing of organic agricultural products through:

- i. Developing crop specific organic production clusters with necessary infrastructural, technical and financial support.
- ii. By facilitating partnerships between farmers and organic businesses: Local enterprises and / or Farmer Producer Companies based on back-to-back long-term trade relations with clients in domestic and export markets.
- iii. By providing enabling environment for project initiatives and development programs with necessary support for organic value chain development and create market access.
- iv. To empower producers with program ownership by organizing them into FIGs with the final aim to federate into farmer producer organizations/ companies
- v. To replace conventional farming/subsistence farming system into local resource based, self-sustainable, high value commercial organic enterprise
- vi. Developing commodity specific commercial organic value chain under integrated and concentrated approach with end-to-end facilities for production, processing, storage and marketing
- vii. Development of organic parks/zones with facilities for collection, aggregation, value addition, processing, storage and market-linkages for specific commodities requiring capital intensive technology
- viii. Develop NER products as brands/labels through brand building and facilitating stronger marketing access under the ownership of growers' organizations/companies.
- ix. Creating state specific lead agency (Organic Commodity Board or Organic Mission) for coordinating, monitoring, supporting and financing the development and operationalization of entire value chain.

Project Strategies:

- i. To mobilize commodity clusters and facilitate capacity building, handholding and infrastructure creation for on-farm input production, training on package of practices and facilitating certification services to farmers.
- ii. To facilitate creation and linking of enterprises (local enterprises/ farmer producer companies) that can create and operate collection, aggregation and post-harvest processes, trade organic products and provide necessary services to farmers and to work towards increasing their market.

- iii. To set up lead agencies at central and state to partner with value chain supporting agencies, service providers and institute business development consultancies.
- iv. To provide access to information, know-how to finance and enabling the enterprises to offer efficient services, support them in building required management capacities, and stimulating market growth.

Mission Goals

- i. To install dedicated institutional systems at centre and under each of the state for development and promotion of organic farming
- ii. To create at least one to two replicable end-to-end organic value chain models in each of the states with the integration of growers, hand holders, processors and market facilitation agencies.
- iii. To empower 30-50 thousand farmers of north-eastern region through the creation of about 100 farmer producer companies and equip such companies with full value chain under its ownership.
- iv. To convert subsistence farming to commercial organic farming with end-to-end facilities
- v. To make North-eastern states as major suppliers of organic commodities for national and international markets.
- vi. To improve production system to ensure higher productivity with better profitability.
- vii.** To enable states to evolve their own brand.

Mission Implementation Structure:

The scheme “Organic Value Chain Development for North Eastern Region” will be implemented in a Mission mode. The Mission structure at GOI level will comprise of National Advisory Committee (NAC), Executive Committee (EC), Mission Monitoring Committee (MMC) and Mission Head Quarter at DAC&FW.

At the state level the mission will be implemented by the State Level Executive Committee (SLEC) and executed through a designated state Lead Agency in the form of state “Organic Commodity Board” or “Organic Mission”. The State Lead Agency shall function under the overall supervision of the Department of Agriculture and State Lead Agency shall be manned by professional experts on contract.

Fig 1: Mission Implementation Structure at National Level

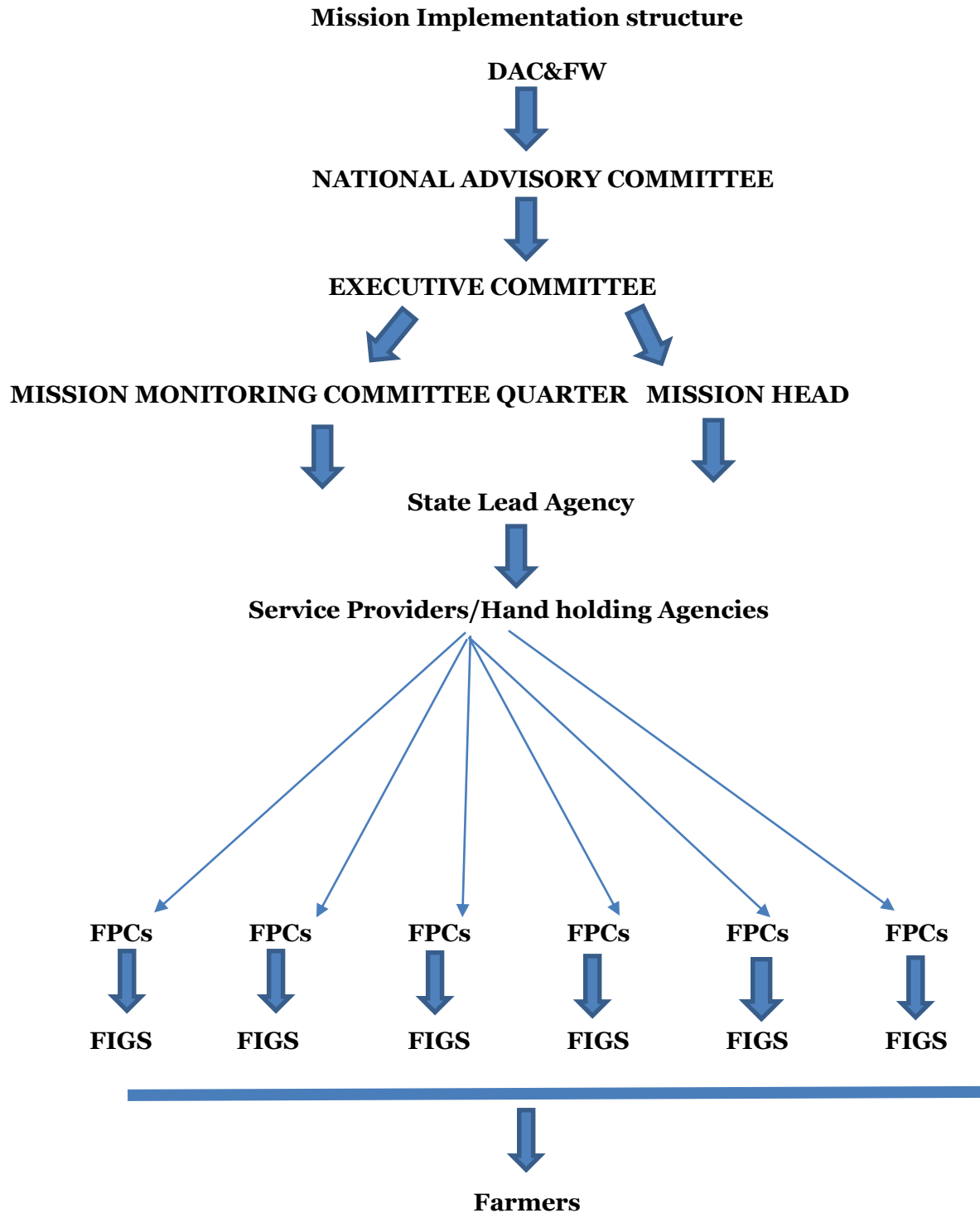


Table 1: Progress under organic agriculture in North east region (2016 - 17)

States	under MOVCDNER@		Area covered (ha)	under APEDA accredited*		
	FIGs Formed	Farmers Mobilized		Total Groups	Total Group Members (Farmers)	Total Area(ha)
Sikkim	641	12820	14000			
Meghalaya	359	5385	7180			
Nagaland	300	6340	6000	34	1247	1265
Assam	261	5136	5000	119	3044	2526
Manipur	230	5000	5000	57	358	282
Mizoram	182	5726	3966			
Tripura	132	2510	2000	61	2267	1000
Arunachal Pradesh	248	4960	1000	1	6	4000
	2,353	47,877	44,146	272	6,922	9,073

Source: *APEDA- data provided by the Accredited Certification Bodies under NPOP on TraceNet Government of India

The area under commercial organic farming and default organic farming is gradually increasing over the years and north east states are characterized for its unique quality organic products like ginger, turmeric, cardamom, pine apples, litchi, betalnut.

Despite of these distinct advantages, NER is constrained by low productivity, high cost of cultivation and increasing proportion of small and marginal farmers trapped in the traditional low output agriculture practices which lead to economically unviable production systems. Shifting cultivation (Jhum) is widely prevalent in the region. Though the cycle has now been shortened to 2-3 years because of increased population pressure on land and decrease in productivity, leading to utilisation of more area under Jhum cultivation. This system has caused large-scale deforestation, soil degradation/erosion (it removes nutrient-rich top soil) and depletion of resource base. Further, Low productivity of soils due to rise in temperature (increased decomposition), decreased precipitation and short term increased frequency of high intensity precipitation. Loss of soil organic matter leads to decline in soil health and crop productivity in the region.

SWOT analysis of agribusiness scenario in NER from study made in SFAC value chain analysis

Strengths	Opportunities
<ul style="list-style-type: none"> • Agro climatic diversity ranging from tropical to alpine making it possible to grow a wide variety of crops • Rich biodiversity • Rich surface water resources through perennial rivers and its tributaries 	<ul style="list-style-type: none"> • Organic farming • Infrastructural facilities can be created with the participation of private sector • The number of government policies available for the NER can serve as a

<ul style="list-style-type: none"> • Proximity to export destinations such as Bangladesh and Myanmar • Soil is rich in organic matter • Potential to commercialize products such as kiwi and passion fruit 	<ul style="list-style-type: none"> • boosting factor for agricultural development • International markets can be targeted due to geographical location and availability of produce • Huge scope for value addition of surplus produce
Weaknesses	Threats
<ul style="list-style-type: none"> • Lack of infrastructural facilities along the food value chain • Lack of market access - domestic & international – Limited flow of men and material due to hilly terrain • Jhum cultivation and subsistence farming is leading to deterioration of available resources • Non-availability of skilled manpower – Lack of business acumen 	<ul style="list-style-type: none"> • Slow growth of infrastructure links – Uncertainty in external trade scenario

Source: SFAC Value chain analysis report

Besides these there were constraints in supply chain front due to poor logistics and connectivity. Poor infrastructure in terms of roads and railways are the main constraints in the development of NE Region. Because of poor connectivity the lack of trained and dedicated human resources and coordination among departments are lacking when compared to other states of India. Due to inadequacy at the extension staff support there is a huge gap at the latest technologies at grass root level. Though North-East horticulture has gained its importance, productivity levels has not grown at par with the rest of the country, and the region's horticulture potential has not been tapped, mainly due to lack of market led production practices, poor commercial understanding of farmers, insufficient infrastructure at the farm level, lack of post-harvest infrastructure like dedicated markets, pack houses, cold storages, sorting grading lines, processing industries etc. Due to the lack of adequate post-harvest infrastructure in the region, not only are post-harvest losses high, the uneconomic quantity increases the transaction cost and marketing cost at individual farmer level. Lack of stable market for conventional crops and less markets open up for high value low volume crops. Further, lack of mechanization due to fragmented holdings and lack of infrastructure facilities which lead to postharvest losses. Ironically, this causes the majority of the farmers to just sell their produce in their raw state at far lesser prices.

The economic impacts of organic agriculture are generally positive, but they depend on the institutional support available and what other instruments are in place. Organic agriculture needs strong support for organic certification, and where this can be complemented by fair-trade labelling for enhanced benefits. Though the factors like low commercialization, poor supports for

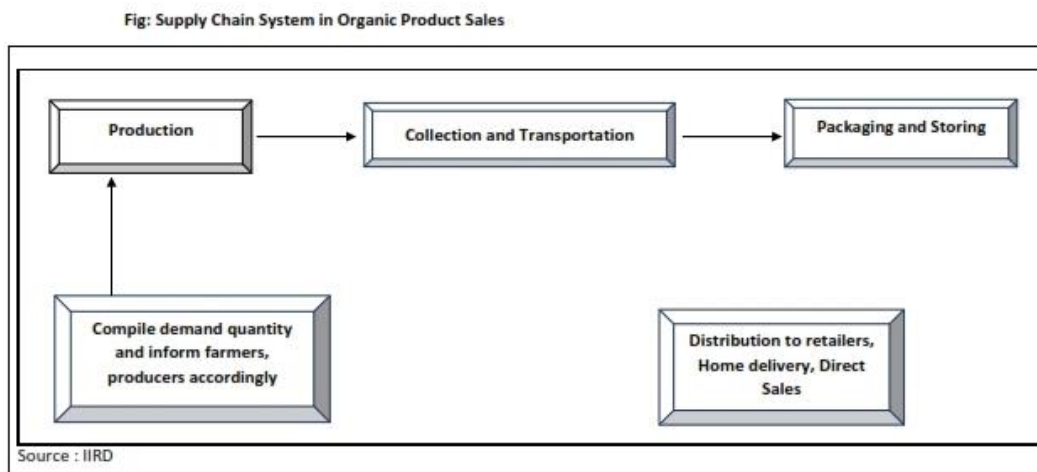
promotion of organic farming, etc., constrains growth and expansion, lack of proper supply chain limits by economic viability of production at the individual level.

Transportation of agriculture produce at North east regions is a major bottleneck due to hilly and remote locations. Many times, transport by road to major metro cities for marketing, escalates the transportation cost. Apart from transportation, storage and post-harvest handling facilities with storehouse, packaging, cleaning and grading plays an important role in international markets. Most of these facilities are of difficult to access for individual farmers.

Due to lack of organised and alternative marketing structure in the region, farmers are getting low return compared to the other parts of India. Most of the farmers sell their produce to the available channels in the village (farm gate) at comparatively lower prices than the urban markets in order to avoid the problems of transport. Secondly, in case of urban markets, trading cost of transportation is high and the farmer is more dependent on the wholesaler. Wholesalers adopt unfair trade practices in the procurement and raise issues on quality to pay less to the farmers. Thirdly, in few cases, the wholesalers/traders purchase produce against the money advanced to the farmer for operations. Under such circumstances, the farmer is at a disadvantage as he has to compromise for the lower pre-harvest price and adjust more volume of the produce towards the interest of the debt availed.

Though the trade in organic products is growing rapidly, it possess several challenges like supply chain management, marketing, product and sector development. Among all, supply chain management is one of the key issues to the success of developing an organic market.

Fig 2: Supply chain system in organic product sales



The above flow chart of organic supply chain shows complex processes involving multiple stakeholders. Quality is the key issue in organic products. Logistics has to be streamlined to reduce the supply chain costs.

To deal with the issues of agricultural development in the NER, the central and state governments have undertaken several initiatives to enhance regional economy and promote agriculture growth.

1. **North East Regional Agriculture Marketing Corporation Ltd (NERMAC):** NERAMAC was set up to support farmers/producers of north east getting remunerative prices for their produce and thereby bridge the gap between the farmers & the market and also to enhance the production, procurement, processing and marketing infrastructure of the Northeastern Region of India. Presently it is under the administrative control of the Ministry of Development of North Eastern Region (MDoNER), Government of India, New Delhi. The authorized capital of the Corporation is Rupees 1000 Lakh and the paid-up Capital is Rupees 762 Lakh.
 - a. Main objectives of NERAMAC is offering helping hand in sourcing and procuring cash crops of the producers by intervening in the market and provide them remunerative prices. It also helps processing units by providing raw materials and arranging packaging materials. NERAMAC has a few retail outlets within the North Eastern region, which directly sells various processed and value added products produced locally in the region.
 - b. NERAMAC has been providing adequate support to fruit processing units. It has set up its own food processing plants which is helping farmers in getting right prices for their produce.
 - c. Through NERAMAC, fruit juice concentration plant (FJCP), Nalkata and Tripura:- Cashew Processing Unit (CPU), Agartala, Tripura, Integrated Ginger Processing Plant (GPP), Byrnihat, were set up during the project period to assist in value addition of raw products.
2. **North East Rural livelihood project (NERLP):** It is to improve rural livelihood, especially that of women, unemployed youth and the most disadvantaged, in four North Eastern States of Mizoram, Nagaland, Sikkim and Tripura. The project has three pronged sustainable development goals like social empowerment, Economic empowerment and partnership and linkages. The project's institutional arrangement is designed to plan, implement and monitor the project right from the community level to the Regional level and includes Ministry of DONER at the Govt. of India level. The project organization has basically four levels namely, the Ministry of DONER, Regional level covering four project states, District level covering the individual project districts and Block level covering individual blocks. Additionally, there will be a State level project support unit for

convergence with the corresponding government development programmes. The project is under the overall governance of Ministry of DONER.

- 3. North Eastern Region Community Resource Management Project (NERCORMP):** The Project focus areas are Social mobilization, organization and capacity building to tap and realize the great latent potential of the communities by employing time tested their traditional value systems and culture and Intervene with the economic and social activities and infrastructure with predominant thrust on income generating activities to achieve economic transformation.

Chapter II

Study Objectives and Methodology

Mission Organic Value Chain Development for North Eastern Region (MOVCDNER) has been implemented by Government of India with the emphasis on minimal use of chemicals and fertilizers for crop production and also to capture the available potential for production and export of organic products from North Eastern Region.

The MOVCDNER scheme was launched in the year 2015 and has now completed more than 2 years of implementation across states.

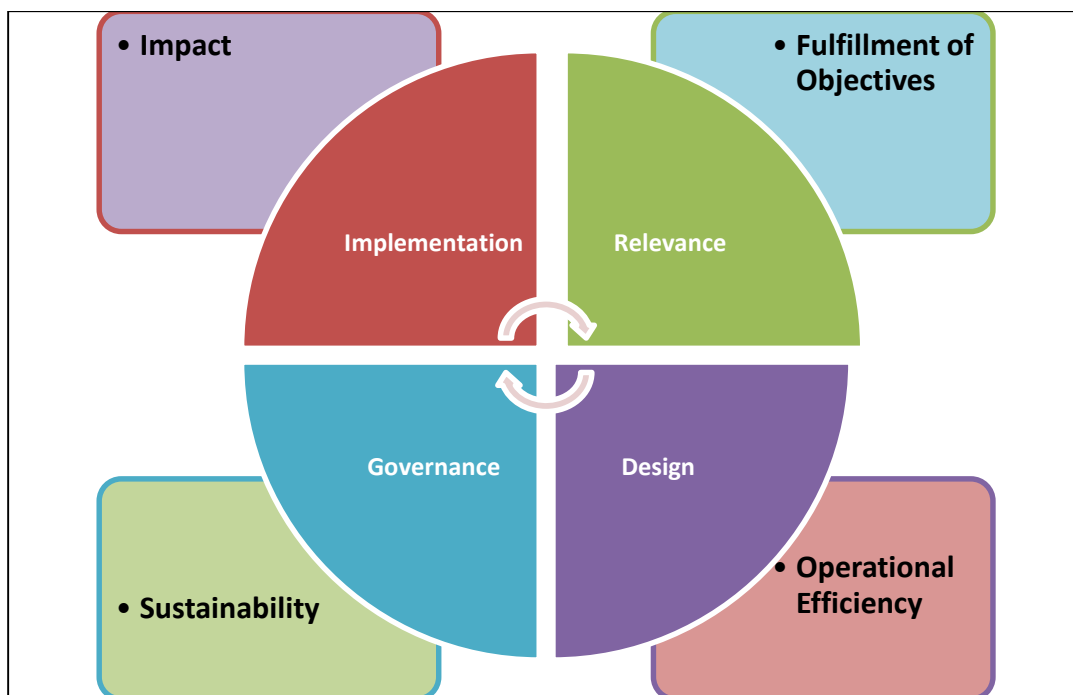
The objectives of the study are as follows:

- I. The basic objective of the impact study is to assess different components of MOVCDNER and their impact on the Value Chain Development of certified organic production and marketing and effectiveness of implementation of the mission in improvement of the Organic Value Chain in North Eastern Region.
- II. To examine the design of MOVCDNER scheme in terms of planning, stakeholder capacity, implementation challenges, input procurement and distribution activities (FIGs formed, trainings, labs established, inspection of clusters and certification, input supplied) and output (area under organic expanded, organic production and market linkages)
- III. To assess the modalities of delivery of the scheme in terms of FPCs and FIGs formation, clusters selection, farmers training, cluster formation, inspection of field, certification, input supply, value chain development, producer companies, market infrastructure and market support linkage like organic commodity boards.
- IV. To assess the impact of MOVCDNER scheme on area expansion under organic agriculture, reduction in cost, use of bio fertilisers, farm productivity, value chain development, price premium due to labelling, profitability and sustainability.
- V. To suggest recommendations for improvement of overall design of the programme and state specific measures for improving the effectiveness of the scheme.

2.1 Evaluation Study and Results Framework

The aim of the Study is to assess the MOVCDNER Programme in terms of 1. Relevance 2. Scheme Design 3. Governance, 4. Delivery of services and to evaluate the performance in terms of i) Fulfilment of Objectives ii) Operational Efficiency iii) Impact and Sustainability.

Fig 3: Evaluation Study and Results Framework



The study assessed different components of MOVCDNER and their impact on the FIGs mobilization, spread of organic agriculture and effectiveness of Organic Farming Certification System in increasing area and farmer's income under organic agriculture by organic clusters and can suggest policy recommendations.

The study was based on collection of both secondary and primary level data. The secondary data on fund allocation, release and expenditure and other information was taken from website and other reports of Ministry of Agriculture, Govt of India. MOVCDNER is being implemented in north eastern states.

Under this, formation of farmer producer organizations, farmer interest groups (FIGs), identified the best clusters and documented best practices under MOVCDNER based on the research and the sample data collected.

All the indicators collected from field survey were classified as inputs (financial and physical inputs under the scheme), activities (different activities organized under the scheme), outputs (actual outputs of the scheme), outcomes (whether generated outputs were utilized by the farmer interest groups) and impacts (what are the ultimate benefits of organic farming to the farmers).

2.2 Data and Methodology

The study is based on both quantitative and qualitative approaches to achieve the objectives of the study. Qualitative information in the form of stakeholder consultation across the states under the study, expert opinion gathering information from Regional Council and agricultural officers were carried out.

Sampling frame work

Details of Sampling				
State	Districts	Blocks	Villages	No. FIGs
Arunachal Pradesh	3	6	14	54
Assam	7	6	22	53
Manipur	2	3	18	36
Mizoram	5	11	19	23
Sikkim	2	16	38	38
Grand Total	19	42	112	204

To evaluate the impact study in north eastern region, prepared two questionnaire on Farmer Producing companies/Farmer producing organizations and Cluster questionnaire and organized Focus Group interactions/meetings, to the stakeholders. The details are mentioned in the below tables.

Stakeholders Meetings conducted during the study

Sl no.	Training Programme	Dates	Participants	States Participation
1.	Training Programme on "Implementation of Soil Health Card Scheme"	27th - 29th June, 2017	27	Assam, Andhra Pradesh, Chattisgarh, Karnataka Maharashtra, Meghalaya, Punjab, Telangana
2.	First Brainstorming Workshop on National Soil Management Policy	20-21 July, 2017	25	Andhra Pradesh, Delhi, Maharashtra, Madhya Pradesh, Telangana, Uttarakhand
3.	Brainstorming Session on "Status of Implementation of Soil Health Card Scheme & Paramparagat Krishi Vikas Yojana"	13th June, 2017	38	Andhra Pradesh, Kerala, Telangana
4.	One-Day Brainstorming Workshop on Impact Evaluation Design for Climate Resilient Zero Budget Natural Farming (CRZBNF) Programme of Rythu Sadhikara Samastha (RySS)	31st August, 2017	40	Andhra Pradesh, Bihar, Delhi, Karnataka Maharashtra Telangana

Cost Concepts used in calculating the net returns and returns over variable costs

1. Costs are generated following certain cost concepts. These cost concepts and the items of costs included under each concept are given below:

Cost A1 (all paid out costs incurred by owner-cultivator):

- i. Value of hired human labour.
- ii. Value of hired bullock labour.
- iii. Value of owned bullock labour.
- iv. Value of hired machinery labour.
- v. Hired machinery charges.
- vi. Value of seed (both farm produced and purchased).
- vii. Value of insecticides and pesticides.
- viii. Value of manure (owned and purchased).
- ix. Value of fertilizer.
- x. Depreciation on implements and farm buildings.
- xi. Irrigation Charges.
- xii. Land revenue, cesses and other taxes.
- xiii. Interest on working Capital.
- xiv. Miscellaneous expenses (Artisans etc.)

Cost A2: Cost A1+rent paid for leased in land

Cost B1: Cost A1+interest on value of owned fixed capital assets (excluding land).

Cost B2: Cost B1+ rental value of owned land (net of land revenue) and rent paid for leased-in land.

Cost C1: Cost B1+imputed value of family labour.

Cost C2: Cost B2+imputed value of family labour.

Cost C2*: Cost C2 adjusted to take into account valuation of human labour at market rate or statutory minimum wage rate whichever is higher.

Cost C3: Cost C2*+value of management input at 10 percent of total cost (C2*).

In this study only cost A1 and cost C2 were used to calculate returns over variable costs and net returns respectively by deducting costs from gross returns.

2. Imputation Methods

Some of the inputs used in the production process are provided by family sources. The criteria adopted for deriving imputed values of these inputs is given below:

Sl. No.	Items	Criteria
(1)	(2)	(3)
i.	Family Labour	On the basis of statutory wage rate or the actual market rate, whichever is higher
ii.	Owned Animal Labour	On the basis of cost of maintenance, which includes cost of green and dry fodder and concentrates, depreciation on animal and cattle shed, upkeep labour charges and other expenses.
iii.	Owned Machinery Charges	On the basis of cost of maintenance of farm machinery, which includes diesel, electricity, lubricants, depreciation, repairs and other maintenance expenses.
iv.	Implements	Depreciation and charges on account of minor repairs.
v.	Farm Produced Manure	Evaluated at rates prevailing in the village.
vi.	Rent of owned land	Estimated on the basis of prevailing rents in the village for identical type of land or as reported by the sample farmers subject to the ceiling of fair rents given in the land legislation of the concerned state.
vii.	Interest on onward fixed capital	Interest on present value of fixed assets charged at the rate of 10% per annum.

3. Allocation/Apportion of Joint Costs:

The expenditure incurred on, or imputed for, some of the cost items relate to the farm as a whole. Such joint costs are allocated to individual enterprises, among different categories of livestock and so on. Depreciation on farm buildings and implements, land rents, land revenue, cesses and taxes, interest on owned fixed capital are such costs, which are allocated to each category of crops in proportion to their areas. The cost on livestock is allocated to each category of animals in proportion of its numbers to the total number of animals owned by the farmer.

The apportionment of total costs incurred jointly on different crops grown in mixture crops is done in proportion to the total value of output contributed by individual crops in the crop mixtures. The apportionment of total costs of cultivation between the main product and the by product(s) is done in proportion to their contribution to the total value of output.

Chapter III

Design of the program and Financial & Physical Deliverables and Achievements

3.1 Relevance of the programme

Realizing the potential of organic farming in the North Eastern Region of the country, Ministry of Agriculture and Farmers Welfare has launched a Central Sector Scheme entitled “Mission Organic Value Chain Development for North Eastern Region” for implementation in the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, during 2015-16 to 2017-18.

The scheme aims at development of certified organic production in a value chain mode. To link growers with consumers and to support the development of entire value chain starting from inputs, seeds, certification, to the creation of facilities for collection, aggregation, processing, marketing and brand building initiative. The scheme was approved with an outlay of Rs. 400 crore for three years. So far as 2321 farmer cluster and 8 farmer producer organizations has been formed.

The assistance is provided for cluster development, on/off farm input production, supply of seeds/ planting materials, setting up of functional infrastructure, establishment of integrated processing unit, refrigerated transportation, pre-cooling /cold stores chamber, branding labelling and packaging, Department of Agriculture, Cooperation & Farmers Welfare 57 Annual Report 2016-17 hiring of space, hand holdings, organic certification through third party, mobilization of farmers/processors etc.

Under this scheme, areas of 0.50 lakh ha have been targeted to be covered under organic farming in North Eastern Region of the country during 2015- 16 to 2017-18. Status of Scheme: 7.35 An amount of Rs. 158.87 crore was allocated to the North Eastern states during 2015-16 and during 2016-17 the allocation was made as Rs. 100.00 crore. During 2015- 16 an amount of Rs. 112.11 crore has been released to the states. During current year 2016-17, total expenditure incurred is Rs. 31.22 crore out of which Rs. 31.02 crore have been released to the states.

Table 2: Different components and budget allocation under MOVCDNER

S. No.	COMPONENTS	Rate (Rs.)
A.1.1.	Clusters development and formation of Farmer producer Companies, as per SFAC norms. For 100 FPCs each comprising of 500 farmers @ Rs. 20.375 lakh/FPC	4075/- per farmer.
A.1.2	Assistance for on-farm input production infrastructure (@ Rs 3750/ha) and off-farm inputs (@ Rs 3750/ha)	7500/ ha x2 =15000/ha
A.1.3	Assistance for quality seed and planting material (50% of maximum Rs. 35000/ha limited to the actual cost as per crop)	17500 per ha
A.2 Support for extension services, input facilitation, training handholding and certification		
A.2.1	Assistance for setting up of input delivery, distribution and argil-machinery custom hiring centre through state lead agencies	10 lakh/ FPO
A.2.2	Support and extension services for training, handholding and certification at production stage	
A.2.2.1	Training, hand holding, documentation and certification of crop production through service providers (As per MIDH)	10,000/- per ha
B. Value Chain processing (For FPC and private entrepreneur through Bank credit linked)		
B1. Value Chain Post harvest - Setting up of collection, aggregation, grading facilities		
B.1.1	Setting up of functional infrastructure for collection, aggregation and grading units @ Rs. 15 lakh (75% subsidy)	11.25lakh (175 No. total)
B2. Setting up of value addition and processing units including packaging, storage and transportation		
B.2.1	Financial assistance for setting up of integrated processing units With TFO of Rs. 800 lakh or more limited to 75% to FPCs and 50% to private as credit linked back ended subsidy	600.00 lakh/unit (10 No. total)
B.3 Value chain packaging, storage and transportation		
B.3.1	Integrated pack house 75% subsidy to FPCs on TFO of Rs. 50 lakh or more and 50% to private limited to Rs. 37.50 lakh	37.50 lakh/unit (20 No. total)
B.3.2	Transportation/ 4 wheeler up to TFO of Rs. 12lakh (50%)	6.00 lakh/ FPC. (25 No. total)
B.3.3.1	Refrigerated transport vehicle up to TFO of Rs. 25 lakh (75% subsidy to FPC and 50% to private)	18.75 lakh/unit (16 No. total)

B.3.3.2	Pre-cooling/ cold stores/ ripening chambers. FPOs	18.75 lakh/unit (16 No. total)
C. Value chain Marketing – Branding, labelling, certification, quality control, retail outlets, awareness and publicity through lead agencies		
C.1	Branding, labelling, packaging, publicity and certification of processing units etc.	Rs. 1100 lakh L.S. total
C.2	Seminars/ conferences, workshops, Buyer-seller meets, Auction meetings, festivals.	Rs. 400 lakh L. S. total
C.3	Consumer awareness Information dissemination through publicity, printed literature films and local advertisements	Rs. 400 lakh L.S. total
C.4	Hiring of space in prime markets	Rs. 600 lakh L.S. total
D.	Value Chain Support Agencies	
D1.	Setting up of Lead agency/Organic Commodity Board/ Organic Mission for scheme implementation and market facilitation. To be set up at state level	
D.1.1	Staff, Manpower, Travel and contingencies, Institutional strengthening and hire/ purchase of machinery and equipment's	5% of total scheme budget
D.1.2	Setting up of organic certification bodies. One time assistance will be provided for hiring consultants for preparation of operating manuals, training and exposure of manpower and facilitating institutional set up. Cost of manpower to be borne by the state.	Rs. 500 lakh L.S. total

The component under the scheme includes cluster development and formation of FPOs for ease in training, handholding, certification and collection and aggregation. FPCs will be assisted for creation of on farm input production infrastructure such as liquid manure tanks, NADEP compost tanks, botanical extracts etc. The assistance will be available up to maximum of 2 ha per beneficiary. One time assistance of Rs. 3750 per ha area will be provided to the farmers registered under the program in the first year for procurement of bio fertilizers, bio pesticides and neem cake etc. Assistance for seed and planting material is also provided. Budget provision of Rs.10000 is given for support to adopt to ICS management to get into organic certification. Adequate budget provisions were made for processing and handholding support to FPOs at all stages of value chain.

3.2 Design of PKVY & MOVCDNER and Suggestions for improvement

COMPONENTS	PKVY	MOVCDNER	Suggestions
Planning	<ul style="list-style-type: none"> • Adoption of PGS certification through cluster approach • Adoption of organic villages for manure management and biological nitrogen harvesting through cluster approach 	<ul style="list-style-type: none"> • To develop crop commodity specific organic value chain and address gaps in organic crop production, wild crop harvesting, organic livestock management and processing handling and marketing. • To empower producers with program ownership by organizing them into FIGs with the final aim to federate into farmer producer organization/companies • To replace conventional farming system into local resource based, self-sustainable, high value commercial organic enterprise. • Developing commodity specific commercial organic value chain under integrated and concentrated approach. • Development of organic parks/zones. • Creating state specific lead agency (organic commodity board or organic mission) • Develop NER products as brand/labels 	
Stakeholder capacity	<ul style="list-style-type: none"> • Fifty or more farmers will form a cluster having 50 acre land to take up the organic farming under the scheme. In this way during three years 10,000 clusters will be formed. 	<ul style="list-style-type: none"> • Empower 30-50 thousand farmers of north-eastern region through the creation of about 100 farmer producer companies 	Clusters should aggregated to form commodity groups at block level/district level under PKVY
Area of Operation	All over country at farmer's field under PKVY scheme guidelines for model organic clusters/farm.	Implementation in the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura	

Implementing Agency (IA)	<p>Implemented under active supervision of: Regional centres</p> <ul style="list-style-type: none"> • experts/scientist/subject matter specialist (SMS) of ICAR • State Agricultural Universities (SAUs), • Central Agricultural Universities (CAUs), • Krishi Vigyan Kendra (KVKs) • NSC • SFAC • Other public sector organisation of DAC & FW 	<p>Implemented in a Mission Mode. The structure at GOI level will comprise:</p> <ul style="list-style-type: none"> • National Advisory Committee (NAC) • Executive Committee (EC) • Mission Monitoring Committee (MMC) • Mission Head Quarter at DAC & FW. <p>At state level:</p> <ul style="list-style-type: none"> • State Level Executive Committee (SLEC) • Lead Agency in the form of state “Organic Commodity Board” or “Organic Mission” 	Specialised separate regional centres should be established marketing in each district with the help of PPP model.
Implementation challenges	<ul style="list-style-type: none"> • Cumbersome and expensive certification processes. • Lack of availability of seeds suitable for organic growing condition • Strict regulation of chemical input missing. 	<ul style="list-style-type: none"> • Large gaps in last mile extension. 	
Mission component	<ul style="list-style-type: none"> ▪ Adoption of PGS certification through cluster approach. The state government will: <ul style="list-style-type: none"> ✓ Provide assistance for 3 years term. ✓ Conduct meeting of farmers of the targeted area. ✓ For awareness, exposure visit will be arranged for members ✓ Identify one lead resourceful person from the cluster, becomes TOT. ✓ Will organise 3 training with experts within 6 months on seed production, manure 	<ul style="list-style-type: none"> ▪ Developing crop specific organic production clusters. <ul style="list-style-type: none"> ✓ Clusters development and formation of Farmer Producer Organisations/ Companies. ✓ Assistance for on-farm input production unit and off-farm inputs such as bio-fertilisers, bio-pesticides and neem cake etc. ✓ Assistance for quality seed and planting material. ▪ Support for extension services, input facilitation, training handholding and certification at product stage. <ul style="list-style-type: none"> ✓ Assistance for setting up of input delivery, distribution centres and agri. machinery custom hiring centre. ✓ Training, handholding, ICS management, documentation 	

	<p>and composting and bio-fertilisers and bio-pesticides.</p> <ul style="list-style-type: none"> ▪ PGS certification and quality control. <ul style="list-style-type: none"> ✓ Training will be organised for 20 LRPs for 2 days on management and administration. ✓ State government with experts organise training for 3 days for LRPs on quality control, marketing and infrastructure. ✓ Registration of farmer in PGS certification system with details by consultant or operator appointed. ✓ Based on the result of soil tested by laboratories, suitable package and practice will be recommended. ✓ Details of packages and practices will be maintained by operator/consultant ✓ LRPs will be responsible for inspection for effective implementation, guide farmers about practices and maintain farmer diary. ✓ Assistance will be given to maintain offices of cluster to meet the expenses. ▪ Adoption of organic village for manure management and 	<p>and certification of crop production through service providers.</p> <ul style="list-style-type: none"> ▪ Value Chain Post-Harvest. <ul style="list-style-type: none"> ✓ Financial assistance for setting up of functional infrastructure for collection and grading units. ▪ Value Chain Processing. <ul style="list-style-type: none"> ✓ Financial assistance for setting up of integrated processing units. ▪ Value Chain Packaging, Storage and Transportation. <ul style="list-style-type: none"> ✓ Setting up of integrated pack house. ✓ Assistance for transportation facilities/ equipment. ✓ Cold chain component-assistance for refrigerated transport vehicle and pre-cooling/ cold stores/ ripening chambers etc. ▪ Value Chain Marketing. <ul style="list-style-type: none"> ✓ State lead agencies can assist farmers and FPCs in developing common packaging and labelling, common literature and common brand promotion material. ✓ Certification of processing unit for organic, HACCP etc. can also be covered under this component. ✓ State lead agencies shall organise seminar/conferences, workshops, buyer seller meets and time to time auction meets to create awareness. ✓ Consumer awareness information dissemination through publicity, printed literature, films and local advertisements. 	
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	<p>biological nitrogen harvesting through cluster approach.</p> <ul style="list-style-type: none"> ✓ Provide grant-in-aid for adoption of village. ✓ Support for conversion of conventional land to organic land. ✓ Annual action plan will be prepared. Introduction of cropping system, organic seed procurement. ✓ Farmers will be assisted for procurement of material required. <p>▪ Integrated Manure Management. Each farmer will assisted for procuring and application of:</p> <ul style="list-style-type: none"> ✓ Liquid bio-fertiliser ✓ Liquid bio-pesticides for suppressing disease. ✓ Need Cake/ Neem Oil. ✓ Phosphate rich organic Manure/Zyme granules/ Zinc ✓ Vermin compost <p>▪ Custom Hiring Centre (CHC) charges.</p> <ul style="list-style-type: none"> ✓ Financial assistance given for hiring centre for utilising the agricultural implements. ✓ State government may give additional support under MIDH and Gokul Scheme. 	<ul style="list-style-type: none"> ✓ Through periodic market campaigns, state lead agency shall facilitate effective marketing launch of their value added organic product. <p>▪ Setting up of Lead Agency</p> <ul style="list-style-type: none"> ✓ Assistance for Staff, Manpower, travel and contingencies, Institutional strengthening and hire/purchase of machinery and equipment. ✓ One time grant will be provided for setting up of certification bodies. <p>▪ Mission management at DAC&FW</p> <ul style="list-style-type: none"> ✓ Assistance for Mission headquarters having a) Mission Management Cell and b) Information and Knowledge Ecosystem management cell. ✓ Undertake Baseline surveys, market research and mapping and consultancy service focusing on north-eastern state in particular and other states in general. ✓ Information and Knowledge Ecosystem including traceability platform shall be functioning, comprise hardware, software and BPO professionals. ✓ Adequate provision for innovative component which are not covered under the scheme. <p>▪ State Lead Agency to ensure implementation keeping end goals in sight.</p> <ul style="list-style-type: none"> ✓ SLA will be responsible for implementation of mission objective, utilisation of funds and for submission of periodical reports and utilisation certificate. 	
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	<ul style="list-style-type: none"> ▪ Packing, Labelling and branding or organic product of cluster. Financial assistance will be given for: <ul style="list-style-type: none"> ✓ Packaging with PGS logo and branding. ✓ Collection and transportation. ✓ Organising organic fair to meet the expenses. 		
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Similar to PKVY scheme MOVCDNER has been designed to address the supply chain management constraints faced by at North east region states. To develop crop commodity specific organic value chain and address gaps in organic crop production, wild crop harvesting, organic livestock management and processing, handling and marketing of organic agricultural products with necessary infrastructural, technical and financial support.

MOVCD- NER enables farmers to replace conventional farming/subsistence farming system into high value commercial organic enterprise in specific crops with end-to-end facilities for production, processing, storage and marketing. Further, it facilitates partnerships between farmers and organic businesses [Local enterprises and/or Farmer Producer Companies (FPC)] in domestic and export markets. Also develops certified organic production in a value chain mode to link growers with consumers and to support the development of entire value chain starting from inputs, seeds, certification, and creation of facilities, for collection, aggregation, processing, marketing and brand building initiation

Total of 100 FPCs promotion should be done across 8 states covering an area of 500 ha per FPC. Sikkim has targeted for highest number of FPCs 28% of total tasks followed by Mizoram. Accordingly, budget provisions were made to different states. Total of Rs.22350 lakh were allocated for 2016-17 years for eight states. However, releases were not very poor during 2016-17.

Table 3: State-wise Budget allocation, Release and Utilization received during 2015-16, 2016-17 and 2017-18(Rs. lakh)

state			2015-16		2016-17		2017-18		Three years	
	Target FPOs	Target area(ha)	Alloca tion	% releas e	Alloca tion	% releas e	Alloca tion	% releas e	Alloca tion	% releas e
Sikkim	28	14000	5013	84	2077	0	688	0	7778	54
Nagaland	12	6000	1427	44	1245	100	1928	50	4599	62
Assam	10	5000	2439	90	526	44	1423	0	4389	56
Manipur	10	5000	1174	68	1103	67	1788	50	4066	60
Meghalaya	12	6000	2070	62	926	50	941	0	3937	45
Mizoram	14	7000	1882	49	1300	75	583	0	3766	50
Arunachal Pradesh	10	5000	1302	60	1053	50	1181	0	3537	37
Tripura	4	2000	579	64	594	100	492	50	1665	73
Total	100	50000	15887	71	8825	54	9025	23	33737	54
Office Expenses					1175	9	975	1	2150	6
Grand Total			15887	71	10000	49	10000	21	35887	51

Total amount of Rs.18197 lakh were released together for 3 years of project period across eight states and an amount of Rs.10074.27 lakh (60%) were spent across components. Further data shows Sikkim and Nagaland had under-utilized the allocated budgets not even 50% of released amount

Table 3a: Components wise budget allotted in three years (2015-18)

Components	2015-16	2016-17	2017-18	Total	2015-16 (%)	2016-17 (%)	2017-18 (%)	Total (%)
Value Chain production	10983	11144	1764	23891	77	63	41	66
Value Chain Processing	2027	4467	1197	7690	14	25	28	21
Value Chain Marketing	813	1044	638	2495	6	6	15	7
Value chain support Agencies	490	1020	667	2177	3	6	16	6
Total	14313	17675	4266	36253	100	100	100	100

Note: Total 50000 hectare was allotted (refer annexure-3)

When compared to component wise more budget was allotted to value chain production in the year 2016-17 and the percentage also shows high in three years in table 3b.

Table 3b: State wise- components wise budget allocation

States	Area (ha)	Components	(Rs. In lakhs)				Percentage			
			2015-16	2016-17	2017-18	Total	2015-16	2016-17	2017-18	Total
Assam	5000	Value Chain production	1803	416	210	2429	74	40	55	63
		Value Chain Processing	499	390	75	965	20	37	20	25
		Value Chain Marketing	81	112	58	250	3	11	15	6
		V C support Agencies	56	135	41	232	2	13	11	6
		Total	2439	1052	384	3876	100	100	100	100
Arunachal Pradesh	5000	Value Chain production	997	1227	205	2429	77	58	44	63
		Value Chain Processing	169	640	156	965	13	30	33	25
		Value Chain Marketing	81	114	55	250	6	5	12	6
		V C support Agencies	56	125	51	232	4	6	11	6
		Total	1302	2107	467	3876	100	100	100	100
Manipur	5000	Value Chain production	997	1227	205	2429	85	56	41	63
		Value Chain Processing	41	762	162	965	3	35	33	25
		Value Chain Marketing	81	112	58	250	7	5	12	6
		V C support Agencies	56	105	71	232	5	5	14	6
		Total	1174	2206	496	3876	100	100	100	100
Tripura	2000	Value Chain production	431	458	83	972	74	39	47	50
		Value Chain Processing	96	633	31	760	17	53	17	39
		Value Chain Marketing	28	47	25	100	5	4	14	5
		V C support Agencies	24	50	38	112	4	4	21	6
		Total	579	1188	176	1943	100	100	100	100
Mizoram	7000	Value Chain production	1405	1713	282	3400	75	66	45	67
		Value Chain Processing	285	597	162	1044	15	23	26	20
		Value Chain Marketing	114	156	80	350	6	6	13	7
		V C support Agencies	79	135	96	310	4	5	15	6
		Total	1882	2601	620	5104	100	100	100	100
Sikkim	14000	Value Chain production	3112	3169	299	6581	74	76	28	70
		Value Chain Processing	792	519	348	1659	19	12	33	18
		Value Chain Marketing	228	240	227	695	5	6	21	7
		V C support Agencies	84	250	188	522	2	6	18	6
		Total	4216	4179	1061	9456	100	100	100	100
Meghalaya	6000	Value Chain production	1031	1467	240	2738	80	79	45	75
		Value Chain Processing	95	144	129	367	7	8	24	10
		Value Chain Marketing	100	132	68	300	8	7	13	8
		V C support Agencies	68	110	91	269	5	6	17	7
		Total	1293	1852	528	3673	100	100	100	100
Nagaland	6000	Value Chain production	1208	1467	240	2915	85	59	45	65
		Value Chain Processing	51	781	135	967	4	31	25	22
		Value Chain Marketing	100	132	68	300	7	5	13	7
		V C support Agencies	68	110	91	269	5	4	17	6
		Total	1426.74	2489.7	533.81	4450.25	100	100	100	100

When we look into the state wise, more area was allotted to Sikkim and the budget was released more in three years compared to other states. In Assam the budget was allotted was less in 2016-17 when compared other states budget in three years. Further the above table shows Sikkim and Nagaland had underutilized the allocated budgets not even 50% of released amount.

Table 4: Physical Progress report of MOVCDNER Scheme

States	Area (ha)		FIGs		FPCs		Farmers Mobilized	
	Target Area	Area covered	Target FIGs	FIGs formed	Target	Achieved	Target Farmers	Farmers Mobilized
Sikkim	14000	14000	700	641	28	28	14000	12820
Meghalaya	6000	7180	300	359	12		6000	5385
Nagaland	6000	6000	300	300	12		6000	6340
Assam	5000	5000	250	261	10	7	5000	5136
Manipur	5000	5000	250	230	10	4	5000	5000
Mizoram	7000	3966	350	182	14	6	7000	5726
Tripura	2000	2000	100	132	4	3	2000	2510
Arunachal Pradesh	5000	1000	250	248	10		5000	4960
	50,000	44,146	2,500	2,353	100	48	50,000	47,877

With regard to physical targets Sikkim has achieved cent per cent with formation of 28 FPOs and followed by Tripura by formation of 3 FPOs out of target of 4. Other states are under process of reaching the target FPOs.

Chapter IV

Field Survey Results and Impacts

Though the Mission Organic Value Chain Development have been implemented all over north eastern Region i.e. in 8 states, survey has been conducted in Arunachal Pradesh, Assam and Mizoram, Manipur, Sikkim. According to table 5 among 5 states, the implementation of MOVCD-NER is high in Arunachal Pradesh and Assam with around 55 clusters (collected during the survey). In Mizoram, the department have come up with a separate cell Mission Organic Mizoram (MOM), which is working on this scheme.

Table 5: Details of Sampling

Details of Sampling				
State	Districts	Blocks	Villages	No. FIGs
Arunachal Pradesh	3	6	14	54
Assam	7	6	22	53
Manipur	2	3	18	36
Mizoram	5	11	19	23
Sikkim	2	16	38	38
Grand Total	19	42	112	204

The Mission Organic Value Chain Development has been implemented all over North Eastern region in 8 states. Primary survey was conducted by selecting a representative sample of clusters from Arunachal Pradesh, Assam, Manipur, Mizoram and Sikkim. Total of 19 districts, 112 villages and 204 clusters across 5 states were analysed for the stated objectives of MOVCD-NER.

Features of FIG's

Table 6: State wise basic information of Sample FIGs

State	Average Area under the FIGs	Average No. farmers	% registered members	% Small farmers
Arunachal Pradesh	77	36	95	55
Assam	88	43	95	62
Manipur	78	50	79	46
Mizoram	61	41	89	73
Sikkim	50	52	100	100
Grand Total	73	44	92	67

Table 6 provides the details of state wise average area covered per cluster and average number of farmers covered under Mission Organic Value Chain Development Scheme. An average of 73 ha was covered under each cluster and Assam state shows maximum area of 88 ha under MOVCD scheme. On average 92 percent of the farmers were registered per FIGs and Sikkim has cent per cent registration of farmers. All the registered farmers under the scheme are small farmers in Sikkim as against. 67 per cent of farmers across the five states.

Table 7: Basic features of sample FIG's

Criteria	Farmer interested group	Average Area under the group	Average Number of farmers	percentage of registered members	percentage of Small farmers
Year of Establishment	Old	74	38	94	58
	New	72	47	91	71
Share of small farmers	Less	88	33	96	18
	Medium	79	51	87	47
	More	64	41	96	96
Number of farmers	less	67	40	94	76
	More	90	55	88	48
Bio-fertilizer	Not used	68	43	95	61
	Used	76	45	91	71
PKVY		50	51	90	90
MOVCDER		82	39	93	61
All		73	44	92	67

Crop/ commodity specific production clusters were developed in a concentrated mode for ease in training, handholding, certification and collection and aggregation. Farmers were organized in to Farmer Interest Groups (FIGs) at village level and federated into organizations/ companies at District/ state level in accordance with SFAC guidelines. Data from Table 7 shows that majority of FIG groups were formed in new clusters. New clusters have an average membership of 47 members as against 38 in old clusters. However, old clusters show 94 per cent of registered farmers in FIGs where as in new clusters it is 91 per cent. With regard to percentage of small farmer's coverage, FIGs under new clusters cover more of small farmers i.e. 71 per cent as against 58 per cent in the case of old. Across FIGs there were maximum FIGs about 88 are with less share of small farmers and only 64 are with more share of small farmers. Further clusters under PKVY scheme has covered an average of 50 ha per cluster and with 51 average number of farmers.

Table 8: Procedures under FIG's (Yes %)

Criteria	Farmer interested group	annual action plan prepared	production under Farmer interested	PGS certified	Packaging and labelling facilities exist	Marketing facilities exist	Appointed consultant	Appointed data entry operator	Does the cluster has a certifi-	Do you think more farmers will move towards organic
Year of Establishment	Old	97	96	93	95	93	93	89	93	75
	New	85	89	50	50	49	48	56	62	96
Share of small farmers	Less	93	100	75	71	79	71	82	89	36
	Medium	94	96	94	96	94	87	92	52	95
	More	86	86	41	42	39	46	46	86	98
No. of farmers	Less	89	91	58	58	56	57	62	78	87
	More	91	93	87	91	91	87	85	61	93
Bio-fertilizer	Not used	80	85	72	73	70	77	84	88	93
	Used	96	96	62	63	62	57	58	64	85
PKVY		86	86	2	0	0	0	12	78	98
MOVCD-NER		91	92	85	86	86	88	86	93	83
All		90	92	66	67	65	65	68	74	88

Table 8 data depicts that majority of the old clusters i.e. 97 per cent have prepared clear annual action and 85 FIGs from new clusters have annual action plans. With regard to PGS certification 93 per cent of old cluster FIGs have registration under PGS. Whereas, only 50 per cent of FIGs were PGS certified. Similarly, majority of clusters (95 per cent) have packing and labelling facilities and 93 per cent marketing facilities. However only 50 per cent clusters in old FIGs have packing, labelling and marketing facilities. Interestingly more per cent of farmers are willing to take organic farming in new clusters (96) than in old clusters (76). In addition FIGs with higher number of farmers (about 90 %) shown that they are part of PGS certification, and used packing, labelling and marketing facilities. Also FIGs with share of medium farmers about 95 have more role in PGS certification, packing, labelling and marketing facilities.

Table 9: Percentage of FIG's producing bio-inputs and traditional inputs

Criteria	Farmer interested group	1	2	3	4	5	6	7	8	9	10	11	12
Year of Establishment	Old	4.0	4.0	4.0	2.7	0.0	2.7	0.0	2.7	2.7	2.7	0.0	2.7
	New	41.9	33.3	38.0	18.6	29.5	31.0	0.0	31.8	31.8	31.0	0.0	17.8
Share of small farmers	Less	25.0	7.1	25.0	7.1	0.0	3.6	0.0	7.1	7.1	3.6	0.0	3.6
	Medium	2.6	1.3	2.6	1.3	0.0	1.3	0.0	1.3	1.3	1.3	0.0	1.3
	More	48.5	43.4	43.4	23.2	38.4	40.4	0.0	40.4	40.4	40.4	0.0	23.2
Number of farmers	Less	35.3	28.0	32.0	15.3	25.3	26.7	0.0	26.7	26.7	26.7	0.0	15.3
	More	7.4	7.4	7.4	5.6	0.0	3.7	0.0	5.6	5.6	3.7	0.0	3.7
Bio-fertilizer	Not used	16.0	2.5	9.9	1.2	0.0	0.0	0.0	0.0		0.0	0.0	0.0
	Used	35.8	35.8	35.8	20.3	30.9	34.1	0.0	35.0	35.0	34.1	0.0	20.3
PKVY		90.2	78.4	90.2	41.2	74.5	74.5	0.0	74.5	74.5	74.5	0.0	41.2
MOVCD-NER		9.4	5.1	5.1	4.3	0.0	3.4	0.0	4.3	4.3	3.4	0.0	3.4
All		27.9	22.5	25.5	12.7	18.6	20.6	0.0	21.1	21.1	20.6	0.0	12.3

1= Organic seed, 2=Green manure, 3= Compost, 4= Bio fertilizer, 5= Fertilizers, 6= Bio pesticide, 7= Pesticides, 8= Panchamruth, 9= Panchagavya, 10= Beejamruth, 11= Drip Irrigation, 12= Neem oil or neem cake

It was observed from Table 9 that about 4 percent of FIGs were interested in producing bio inputs like Organic seed, Green manure and compost in old clusters. Whereas, only 2.7 per cent of FIGs has shown interest in Bio fertilizer, bio pesticide, panchamruth and panchagavya production. None of the FIGs were involved in production of fertilizers and pesticides indicating that farmers are in transition of shifting from chemical farming to organic farming. Similarly in new clusters around 40 per cent of farmer interest groups have shown interest in organic seed, green manure and compost. About 3 per cent are interested in Bio pesticides, panchagavya and beejamrutha. In both new and old clusters none of FIGs has shown interest towards drip irrigation. More awareness about micro irrigation systems is much needed for FIGs and individual farmers. Further data also reveals that FIGS with more number of small farmers are much interested in production of inputs like about 40 to 43 per cent in organic seed, Green manure, bio fertilizers, panchagavya and beejamrutha. FIG's with less number of farmer's shown interest in production of bio inputs than more number of farmers in FIG's. In addition, data also depicts that beneficiaries of PKVY scheme have shown higher interest about 70 to 90 per cent for various components under bio inputs production compared to MOVCD where the interest is with only average of 5 per cent FIG's.

Table 10: Percentage of FIG's using bio-inputs and traditional inputs

Criteria	Farmer interested group	1	2	3	4	5	6	7	8	9	10	11	12
Year of Establishment	Old	94.7	94.7	94.7	49.3	24.0	4.0	0.0	2.7	2.7	2.7	0.0	2.7
	New	97.7	89.1	95.3	66.7	59.7	36.4	0.8	15.5	31.0	31.0	17.8	31.0
Share of small farmers	Less	96.4	78.6	96.4	67.9	21.4	0.0	3.6	3.6	3.6	3.6	3.6	3.6
	Medium	97.4	97.4	98.7	53.2	50.6	2.6	0.0	1.3	1.3	1.3	0.0	1.3
	More	96.0	89.9	91.9	63.9	50.5	48.5	0.0	20.2	40.4	40.4	22.2	40.4
Number of farmers	less	96.0	89.3	94.0	64.0	50.0	32.0	0.0	13.3	26.7	26.7	14.7	26.7
	More	98.1	96.3	98.1	50.0	37.0	3.7	1.9	3.7	3.7	3.7	1.9	3.7
Bio-fertilizer	Not used	91.4	79.0	87.7	0.0	0.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0
	Used	100.0	99.2	100.0	100.0	77.2	35.8	0.8	17.9	34.1	34.1	17.7	34.1
PKVY		92.2	84.3	98.0	74.5	74.5	76.5	0.0	35.3	74.5	74.5	43.1	74.5
MOVCD-NER		97.4	91.5	92.3	41.9	17.9	9.4	0.9	3.4	3.4	3.4	0.9	3.4
All		96.6	91.2	95.1	60.3	46.6	24.5	0.5	10.8	20.6	20.6	11.3	20.6

1= Organic seed, 2=Green manure, 3= Compost, 4= Bio fertilizer, 5= Fertilizers, 6= Bio pesticide, 7= Pesticides, 8= Panchamruth, 9= Panchagavya, 10= Beejamruth, 11= Drip Irrigation, 12= Neem oil or neem cake.

Above table 10 clearly indicates about the mission organic scheme which is promoting various practices that really help in converting the chemical farming to a healthy organic farming. Maximum farmers are using organic seed, compost and green manure only. Very low adoption of Drip irrigation and pesticides has been observed and this may be because of technical knowledge and small holdings.

Table 11: Percentage of FIGs using the Organic Production and Technologies

Criteria	Farmer interested group	Organic input production unit	Biological nitrogen harvest planting(Gliricidia, sesbania)	Botanical extract production unit	Phosphate rich organic manure	Custom hiring centre services	Walk in tunnel for horticultural crops	Cattle shed	Subsidy under Gokul Scheme
Year of Establishment	Old	97.3	96.0	64.0	2.7	0.0	1.3	2.7	0.0
	New	86.0	79.8	48.8	0.0	0.0	0.0	7.0	0.0
Share of small farmers	Less	82.1	78.6	7.1	0.0	0.0	0.0	7.1	0.0
	Medium	96.1	94.8	93.5	2.6	0.0	0.0	1.3	0.0
	More	87.9	80.8	37.4	0.0	0.0	1.0	8.1	0.0
Number of farmers	Less	88.7	83.3	42.0	1.3	0.0	0.7	5.3	0.0
	More	94.4	92.6	88.9	0.0	0.0	0.0	5.6	0.0
Bio-fertilizer	Not used	79.0	72.8	63.0	0.0	0.0	1.2	7.4	0.0
	Used	97.6	94.3	48.8	1.6	0.0	0.0	4.1	0.0
PKVY		74.5	74.5	0.0	0.0	0.0	2.0	11.8	0.0
MOVCD		94.0	87.2	65.0	1.7	0.0	0.0	4.3	0.0
All		90.2	85.8	54.4	1.0	0.0	0.5	5.4	0.0

From the above table 11 majority of FIGs are interested in organic input production unit followed by biological nitrogen harvest planting (Gliricidia, sesbania). 65% of the farmers are using botanical extract units in old clusters. Custom hiring centres, horticulture crops and Subsidy under Gokul Scheme are not being taken into consideration. Similar trend was observed in new clusters with less number of FIGs using various practices. FIGs with medium number of small farmers are using organic input production unit, biological nitrogen harvest planting, botanical extract to maximum extent (95 per cent). Similarly FIGs with more number of farmers are using these practices to the maximum extent (90 per cent).

Table 12: Benefits from using the Organic Production and Technologies

Criteria	Farmer interested group	Organic input production unit	Biological nitrogen harvest planting(Gliricidia ,sesbania)	Botanical extract production unit	Phosphate rich organic manure	Custom hiring centre services	Walk in tunnel for horticultural crops	Cattle shed	Subsidy under Gokul Scheme
Year of Establishment	Old	96.0	94.7	64.0	0.0	0.0	0.0	0.0	0.0
	New	51.2	49.6	48.1	0.0	0.0	0.0	0.8	0.0
Share of small farmers	Less	78.6	75.0	3.6	0.0	0.0	0.0	1.0	0.0
	Medium	96.1	93.5	93.5	0.0	0.0	0.0	0.0	0.0
	More	42.4	42.4	37.4	0.0	0.0	0.0	0.0	0.0
Number of farmers	Less	58.7	58.0	42.0	0.0	0.0	0.0	0.7	0.0
	More	92.6	88.9	87.0	0.0	0.0	0.0	0.0	0.0
Bio-fertilizer	Not used	72.8	71.6	63.0	0.0	0.0	0.0	1.2	0.0
	Used	64.2	62.6	48.0	0.0	0.0	0.0	0.0	0.0
PKVY		41.4	40.2	40.2	0.0	0.0	0.0	1.1	0.0
MOVCD-NER		87.2	85.5	64.1	0.0	0.0	0.0	0.0	0.0
All		67.6	66.2	53.9	0.0	0.0	0.0	0.5	0.0

From survey data of MOVCD depicts that majority of FIGs (95 per cent) got benefited from few technologies like Biological nitrogen harvest and organic input production 64 per cent of the FIGs in old clusters expressed that they were benefited from Botanical extract production unit. However only half of the FIGs from new clusters have expressed that they were benefited from organic input production, Biological nitrogen harvest planting, Botanical extract production. FIGs with medium share of small farmers and with more number of farmer FIGs got benefited from these 3 technologies. But none of the FIGs from old and new clusters were pro or not experienced any benefits from Phosphate rich organic manure, custom hiring centres, walk in tunnel for horticulture crops, cattle shed and Gokul schemes. Among PKVY and MOVCD more beneficiaries (87 per cent) from later scheme expressed that they got benefited from these technologies.



Fig. 4: Demonstration on poly-tunnel turmeric dryer

Table 13: Mobilization of farmers

Criteria	Farmer interested group	Average farmers in the cluster	Average number of Farmers Mobilized	Average Number of days Mobilization Conducted	Average of Mobilization Usefulness (Rank: scaling 1 to5)
Year of Establishment	Old	38	13	4.0	4.5
	New	47	15	4.1	2.3
Share of small farmers	Less	33	23	4.2	4.7
	Medium	51	21	6.6	4.0
	More	41	6	2.1	1.7
Number of farmers	Less	40	12	3.4	2.7
	More	54	20	5.8	4.1
Bio-fertilizer	Not used	43	8	2.9	2.9
	Used	45	18	4.8	2.9
PKVY		51	5	0.5	0.8
MOVCD-NER		39	11	3.7	4.0
All		44.0	14.0	4.1	2.9

Data from Table 13 reveals that on an average 38 farmers per FIG's were mobilized in old clusters as against 47 in new clusters. But on average only 12 – 14 farmers were mobilised for the meetings in both clusters. The ranking given by the farmers on the usefulness (Good) of the mobilization activities shows that more efforts are required in terms of mobilization and awareness building about the usefulness of organic farming in reducing costs and increasing profits. Farmers mobilized among PKVY scheme are much more i.e. 51 farmers when compared to 39 in the case of MOVCDNER.

Table 14: Meetings Conducted

Criteria	Farmer interested group	Average number of Meetings Conducted	Average Number of members attended	Average of Meetings Conducted Usefulness (Rank: scaling 1 to5)
Year of Establishment	Old	5.6	30.2	4.4
	New	5.3	43.0	4.2
Share of small farmers	Less	4.9	33.6	4.7
	Medium	7.6	35.7	4.5
	More	3.9	41.7	4.0
Number of farmers	Less	4.9	39.5	4.3
	More	6.9	35.1	4.3
Bio-fertilizer	Not used	4.8	32.7	3.8
	Used	5.9	42.0	4.4
PKVY		1.5	51.4	4.2
MOVCD-NER		5.6	32.2	4.2
All		5.4	38.3	4.3

As per the guidelines meetings need to be conducted regularly to discuss various issues of product value chain. But the average number of meetings held during the past 2 years was only 5 to 6. But the total number of farmers attended the meetings were good enough with an average attending about 30 in old clusters and 43 in new clusters. Farmers expressed that the meetings and the trainings were useful and gave ranking of good in both clusters. Also data analysis (table 14) shows that the members' attendance was good in PKVY scheme though the numbers of meetings conducted were less compared to MOVCD-NER.



Fig. 5: Training of farmer under MOVCD-NER

Table 15: Exposure visits

Criteria	Farmer interested group	Average number of Exposure Visits	Average Number of days Exposure Visits Conducted	Average of Exposure Visits Usefulness(Rank: scaling 1 to5)
Year of Establishment	Old	8.1	4.1	4.4
	New	4.2	3.6	2.5
Share of small farmers	Less	9.3	3.9	4.7
	Medium	6.4	5.6	4.8
	More	4.0	2.1	1.4
Number of farmers	less	5.5	3.2	2.7
	More	6.1	5.2	4.7
Bio-fertilizer	Not used	4.4	3.4	2.8
	Used	6.4	4.0	3.1
PKVY		0.2	0.3	0.5
MOVCD-NER		7.1	3.9	3.9
All		5.7	3.8	3.1

As a part of capacity building, exposure visits are being conducted but the average number of exposure visits is only 4 in case of new clusters while old clusters did around 8 exposure visits. (Table 15). There were around 3 days for each exposure visit in both clusters. Whoever has attended for exposure visits they completely benefited from the programme and they gave “Good” ranking for usefulness. The data from PKVY scheme in north eastern region shows that the exposure visits conducted under PKVY are negligible in number that is not even an average of one visit across clusters.

Table 16: Trainings Conducted

Criteria	Farmer interested group	Average number of Trainings Conducted	Average Number of days Trainings Conducted	Average of Trainings Usefulness(Rank: scaling 1 to5)
Year of Establishment	Old	7	5.2	4.6
	New	7	5.4	4.1
Share of small farmers	Less	6.0	5.2	4.7
	Medium	9.8	7.8	4.0
	More	5.5	4.1	4.2
Number of farmers	less	6.1	4.9	4.3
	More	9.8	7.3	4.1
Bio-fertilizer	Not used	5.6	4.3	4.0
	Used	7.1	5.6	4.3
PKVY		4.0	4.0	4.3
MOVCD-NER		7.0	4.8	4.4
All		6.8	5.3	4.2

Table 16 shows that the average number of trainings conducted was about 7 rounds in old and new FIGs. Usefulness of the trainings is ranked well. Farmers were trained on different topics like organic practices, certification, best practices, Profitability etc. Farmers say that the trainings are being very useful for them. As per the guidelines this is an important component and the trainings are being conducted.

Table 17: Peer inspection

Criteria	Farmer interested group	Average of Peer Inspection Number	Number of groups full certification	Number of groups conversion certification	Number of rejections	Average of Peer Inspection Usefulness (Rank 1 to 5)
Year of Establishment	Old	3	2	2	0	2.5
	New	4.1	4.0	10.0	4.0	2.6
Share of small farmers	Less	5.0	2.0	2.0	0.0	3.0
	Medium	0.0	1.0	1.0	3.0	0.0
	More	4.0	3.0	9.0	1.0	2.5
Number of farmers	less	4.0	3.0	9.0	2.0	2.5
	More	5.0	3.0	3.0	2.0	3.0
Bio-fertilizer	Not used	13.5	1.0	7.0	1.0	2.4
	Used	1.0	5.0	5.0	3.0	2.6
PKVY		51.0	1.0	1.0	1.0	2.1
MOVCD-NER		21.9	11.0	11.0	6.0	2.8
All		4.1	6.0	12.0	4.0	2.6

The table 17 shows that the average of Peer Inspection usefulness is at 2.5 which is average and requires more awareness to the farmers on the importance of certification through participatory guarantee system and the benefits of peer inspection. Majority of new clusters are in conversion certification process. Only 4 clusters were certified as fully organic certified clusters. Where as in old clusters 2 of the groups are under conversion and 2 more have fully converted to organic. Among number of rejections are an average of 4 were identified in new clusters. Among PKVY and MOVCD schemes PKVY shows more number of peer inspections with average of 51 inspections.

Table 18: Impact of Crops-Maize

Criteria	Farmer interested group	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	Yield (q/ha)	Manure (Qtl)	Manure (Rs/ha)
Year of Establishment	Old	24788	50750	25962	35	30	1560
	New	25617	47850	22233	33	29	1508
Share of small farmers	Less	24073	47125	23052	33	24	1248
	Medium	26703	48575	21872	34	29	1508
	More	22990	49300	26310	34	28	1456
Number of farmers	less	25822	43500	17678	30	20	1040
	More	25101	47850	22749	33	28	1476
Bio-fertilizer	Not used	21908	40600	18692	28	15	780
	Used	26648	47850	21202	33	37	1924
All		24850	47044	22195	32	27	1389
Conventional		29532	50025	20493	35	20	1100
Change in organic compared to conventional		-19	-6	8	-6	25	21

The data from Table 18 shows that there is positive net returns increase of maize production under organic farming in both old and new clusters. Old cluster farmers got slightly higher net incomes than new clusters. Yield of maize was about 35Q/ha.

Table 19: Impact of Crops-Gram

Criteria	Farmer interested group	Cost of cultivation (Rs/ha)	Gross return (Rs/ha)	Net return (Rs/ha)	Yield (q/ha)	Manure (Qtl)	Manure (Rs/ha)
Year of Establishment	Old	20234	32000	11766	8	34	1870
	New	21703	30000	8297	8	32	1760
Share of small farmers	Less	21727	26000	4273	7	28	1540
	Medium	20156	32000	11844	8	29	1595
	More	20028	32000	11972	8	30	1650
Number of farmers	less	20839	30000	9161	8	31	1705
	More	20156	32800	12644	8	33	1815
Bio-fertilizer	Not used	16980	28000	11020	7	30	1672
	Used	21512	34000	12488	9	33	1788
All		21371	32756	11385	9	31	1711
Conventional		24536	35315	10779	9	23	1475
Change in organic compared to conventional		-15	-8	5	-5	26	14

Table 19 shows that the gram cultivation under organic conditions has shown positive results with 34q/ha yield and about Rs. 11766/ in old clusters and Rs. 8297 in new clusters. Similar to other crop cultivation results the table 3.15 shows that the wheat cultivation with organic practices has better results with 34 Q/ha yield and about Rs. 18861/- net returns in old clusters and Rs.14894 in new clusters.

Table 20: Impact of Crops-wheat

Criteria	Farmer interested group	Cost of cultivation (Rs/ha)	Gross return(Rs /ha)	Net return (Rs/ha)	Yield(q /ha)	Manure (Qtl)	Manure(Rs/ha)
Year of Establishment	Old	39898	58759	18861	34	7	432
	New	41964	56858	14894	32	5	309
Share of small farmers	Less	42406	54576	12171	31	7	432
	Medium	41238	60889	19651	36	4	247
	More	45480	71327	25848	44	5	309
Number of farmers	Less	43569	54576	11007	31	7	432
	More	43958	60826	16868	35	4	247
Bio-fertilizer	Not used	41033	55513	14480	30	8	494
	Used	44283	59654	15370	32	5	309
All		42897	56644	13747	33	7	370
Conventional		47238	59976	12738	35	4	248
Change in organic compared to conventional		-10	-6	7	-6	40	33

Value Chain Processing:

Functional Infrastructure

As it's a new Programme budget release is delayed for most of the states. Hence most FPCs/FPOs are not able to procure necessary infrastructure. There is a need to release the budget from MOVCD-NER, NABARD and banking agencies so that the FPOs/FPCs can establish the functional infrastructure.

According to the field investigators necessary skills should be there for establishing collection, aggregation and grading units. An intensive skill development is highly required in this regarding.

Processing Units:

As per the guidelines processing unit is also an important factor under value chain processing but integrated pack house, transportation, refrigerated transport vehicle and pre-cooling /cold stores are not yet established and even private companies or agencies are not willing to invest for any of the above infrastructure.

Focused group interactions revealed that there is very less awareness among the FPCs/FPOs and private agencies about the modalities followed in getting funds for MOVCD-NER, subsidy & benefits. Awareness creation is needed for landholding to FPCs/FPOs and private agencies.

Hence there is a need for the funds to be released without any delay. Again demand has to be created for organic produce to link to bigger chain like Patanjali, More, Reliance, Ratnadeep, Spencers, Q-Mart etc., and companies to participate in value chain.

Value Chain Marketing:

According to the survey very few FPCs/FPOs are building their own brands and there is no publicity for organic agricultural commodities.

Consumers are not aware of certification procedures other than PGS which is not valid. The third party certification is very complex and hence there is a need of the awareness for landholding. There is no specific market for the organic produce and there should be some special space in APMC markets under different modern value chains like Patanjali, More, Reliance, Ratnadeep, Spencers, Q-Mart and government may arrange some subsidy & grants.

Awareness campaigns need to be conducted in exploiting the large markets especially in eastern countries like Burma, Bangladesh, China, Malaysia, Singapore, Thailand etc., under the look east policy.

Chapter V

Recommendations

Indian agricultural sector is in distress with reducing profitability due to rising cost of inputs and stagnant output prices. These twin problems of agricultural can be effectively tackled by the wider adoption of organic agriculture (Seufert et al., 2012). Realizing the potential of organic farming in north east India, Government of India has launched a Centrally Sponsored Scheme entitled “Mission Organic Value Chain Development for North Eastern Region (MOVCDNER)” for implementation in the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura from 2015-16. The scheme aims at development of certified organic production in a value chain mode to link growers with consumers and to support the development of entire value chain starting from inputs, seeds, certification, to the creation of facilities for collection, aggregation, processing, marketing and brand building initiative. The scheme was approved with an outlay of Rs. 400 crores for three years.

Although Indian agricultural sector has grown slowly in the last one decade. It has tremendous potential for improved productivity and possible expansion of employment opportunities and consequently reducing mitigating the levels of rural poverty. Among others, Primary producer organizations or collectivities are one way of improving productivity and profitability of small holdings in agriculture and can protect small farmers from ill-effects of globalization or make them participate successfully in modern competitive markets (Trebbin and Hassler, 2012). Producers organizations not only help farmers buy or sell better due to scale benefits but also lower transaction costs for sellers and buyers, besides providing technical help in production and creating social capital.

Ministry of Agriculture & Farmers Welfare entrusted the MANAGE to evaluate study since beginning of the program with the following objectives:

The objectives of the study are as follows:

- i. The basic objective of the impact study is to assess different components of MOVCDNER and their impact on the Value Chain Development of certified organic production and marketing and effectiveness of implementation of the mission in improvement of the Organic Value Chain in North Eastern Region.
- ii. To examine the design of MOVCDNER scheme in terms of planning, stakeholder capacity, implementation challenges, input procurement and distribution activities

- (FIGs formed, trainings, labs established, inspection of clusters and certification, input supplied) and output (area under organic expanded, organic production and market linkages)
- iii. To assess the modalities of delivery of the scheme in terms of FPCs and FIGs formation, clusters selection, farmers training, cluster formation, inspection of field, certification, input supply, value chain development, producer companies, market infrastructure and market support linkage like organic commodity boards.
 - iv. To assess the impact of MOVCNDR scheme on area expansion under organic agriculture, reduction in cost, use of bio fertilisers, farm productivity, value chain development, price premium due to labelling, profitability and sustainability.
 - v. To suggest recommendations for improvement of overall design of the programme and state specific measures for improving the effectiveness of the scheme.

Sampling frame work

Details of Sampling				
State	Districts	Blocks	Villages	No. FIGs
Arunachal Pradesh	3	6	14	54
Assam	7	6	22	53
Manipur	2	3	18	36
Mizoram	5	11	19	23
Sikkim	2	16	38	38
Grand Total	19	42	112	204

To evaluate the impact study in north eastern region, prepared two questionnaire on Farmer Producing companies/Farmer producing organizations and Cluster questionnaire and organized Focus Group interactions/meetings, to the stakeholders. The details are mentioned in the below tables.

Stakeholders Meetings conducted during the study

Sl no.	Training Programme	Dates	Participants	States Participation
1.	Training Programme on "Implementation of Soil Health Card Scheme"	27th - 29th June, 2017	27	Assam, Andhra Pradesh, Chattisgarh, Karnataka Maharashtra, Meghalaya, Punjab, Telangana
2.	First Brainstorming Workshop on National Soil Management Policy	20-21 July, 2017	25	Andhra Pradesh, Delhi, Maharashtra, Madhya Pradesh, Telangana, Uttarakhand
3.	Brainstorming Session on "Status of Implementation of Soil Health Card Scheme & Paramparagat Krishi Vikas Yojana"	13th June, 2017	38	Andhra Pradesh, Kerala, Telangana
4.	One-Day Brainstorming Workshop on Impact Evaluation Design for Climate Resilient Zero Budget Natural Farming (CRZBNF) Programme of Rythu Sadhikara Samastha (RySS)	31st August, 2017	40	Andhra Pradesh, Bihar, Delhi, Karnataka Maharashtra Telangana

1. **Timely action plan:** Preparation, Release of fund and implementation needs to be streamlined.
2. **Synergy of activities:** There is a need for collaboration of activities being undertaken under various schemes of North east region (MOVCD- NER, NERLP, and NERAMAC) addressing production and supply chain gaps across different commodity value chains.
3. **Focused approach:** Major focus should be given to collective procurement and value addition of high value crops along with promotion of food crops. So that biodiversity can be maintained in addition to economic viability.
4. **Location Specific Technology:** To improve the cultivation practices, technological interventions, supply chain and marketing, it is essential to map out the best practices in the region and disseminate the same in identified clusters.
5. **Stakeholder Capacity:** Clusters should be aggregated to form commodity organisations at district level under MOVCDNER. It has been found that working with farmer federations through FFS (Farmer Field Schools, with participation of both women and men farmers) for capacity building, knowledge enhancement, horizontal sharing and learning etc., works out well. Kisan Business Schools (KBS) is an approach to build

farmers capacities to understand and deal with markets.

6. **Farmer producer organizations:** The Government would encourage formation of farmer producer organizations (FPOs) - including Co-operatives and Producer companies - exclusively for promotion of organic farming in all the districts and states and these FPOs will be empowered to handle all activities related to organic farming viz., production of organic inputs, processing, Certification, marketing etc. The group should be preferably homogeneous, compact, and manageable and based on area approach/crop approach.
7. **Infrastructure Development:** The warehouse, processing unit, agriculture implements bank, bulk coolers, quality testing lab, weather stations, marketing platform, spot exchange facility, etc. to be provided to the FPOs through various government schemes like RKVY, IWRM, MGNREGA, NRLM, NHM, NFSM, etc. Specific mention of such provisions to be made in the guidelines of those schemes and a certain percentage of the fund meant for infrastructure should be allocated for the FPOs. Identification and linking of existing infrastructure with FPO's.
8. **Capacity building:** Building the capacity at FIG level is critical. Grass-root democracy could be built through attendance of at least 80-85% members, transparency in accounts, accountable behaviour, regular internal auditing etc. Members and the farmers elected for Board of Director should be trained adequately.
9. **Establish national level insurance agency** for Group insurance schemes pertaining to members of FPO viz. crop insurance, crop loan linked with life of the member, etc., including the postharvest phase. There is also a need to include tenant farmers into insurance coverage.
10. **Resolve operational issues** of the Warehouse Receipts Scheme (WHR) by banks so that FPOs can take benefits of the scheme.
11. **Popularizing PGS certification** among the wholesalers, retailers and consumers for creating demand for produce of PKVY/MOVCDNER clusters. The details on the labels of PGS certified product should be on par with private labelling to increase authenticity and transparency. Increased assistance should be provided during conversion period and lowering certification charges supports organic farmers in initial period of transition.
12. **Specialized Regional centers** for Market Promotion: Specialized separate regional centers should be established for marketing in each zone in community-PPP mode.

13. **Promoting Value Addition:** Promoting processing and value addition of organics at cluster level or federation level before entering to wholesale supply chain to get maximum share of consumer rupee by cluster farmers.
14. **Market and Brand development:** To access better prices register brand at state level and awareness campaigns to consumers. Convergence with marketing and cooperative department and explore a new supply chain on Farmer to Consumer models which helps increasing farmers share. Similarly consumers must also be made aware about the high price of organic produce as it is necessary to sustain organic farmers in the initial years.
15. **Encouraging Eco Agro-Tourism** in fully organic clusters as supplementary income to organic farmers.
16. **Financial Assistance:** Govt. schemes should extend financial assistance for farming processing activities taken up by individual farmers or groups of farmers in the value addition of their produce. Suitable financial help will also be extended for infrastructure facilities, storage facilities of organically grown produce.
17. The in-charge-agricultural officers of MOVCDNER are engaged in multiple activities, which hindering the progress of implementation. Hence there is a need for appointing special officers at least at district level.
18. Farmers are the best educators of other farmers and so farmer to farmer extension will be given importance that can greatly help in information exchange and dissemination. Most common are farmer exchange visits, in which farmers are brought to the site of successful innovation or useful practice, where they discuss and observe benefits and costs with adopting farmers.
19. The Government should support for on farm production or for local production of inputs) required for organic farming. Viz., support for establishing compost units, supply of pulverisers for NSKE preparation on subsidy, and imparting required technical trainings. Also extend necessary support for production of bio formulations, botanical formulations at farm level as well as small scale units for production by SHGs/Farmer groups etc. Govt should also supply traps and lures on subsidy.
20. Establishing Organic Poultry, Dairy, Piggery unit and others using local/indigenous breeds suitable to agro-ecological regions in order to meet the demand for organic dairy, poultry and other animal based products.

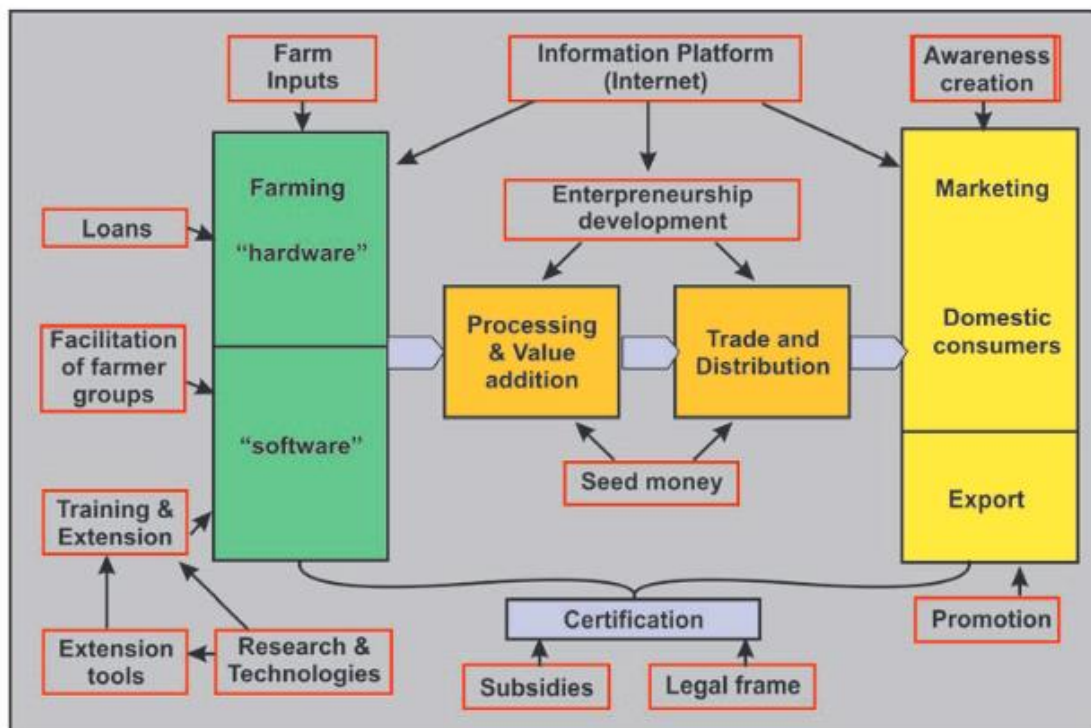
21. Revolving fund to farmers federations/FPOs/ farmers associations, etc. to tie up their working capital needs to facilitate purchase of organic produce to avoid distress sale
22. Market survey and demand estimation and product development may be done in collaboration with specialized Regional Councils (marketing) in partnership with private firms who are already involved in marketing of organic produce.
23. Each state headquarters should have organic market places established where farmers can directly sell to consumers/retailers.
24. Farmers adopting organic farming are grouped into common interest groups and cooperatives. All these farmer groups would be trained and regular farm appraisals will be facilitated.
25. Formation of a high level committee for looking into the issues related to organic cultivation, markets and linkages with farmers representation.
26. Research studies needed for comprehensive understanding studies on organic niches of India to help bring organic farmers into the export market, with comparative advantage. The survey on potential niche crops for organic farming under different agro-ecological zones and farming cultures across states.

Case study from Karbi Anglong Farmer group from Assam

There were proven experience from Assam showing a way to address the supply chain management issues with farmer federations. : Karbi Anglong is a remote district of Assam, which is a leading producer of high quality Ginger. Due to lack of access to market, infrastructure (storage facilities) and finance. There was high incidence of post-harvest losses of ginger. The small and marginal farmers did not have economies of scale to opt for proper grading, sorting, packaging and transportation and the producers had to often resort to distress sale. Farmers of Karbi formed to Ginger growers of the co-operative Marketing Federation limited (GINFED) Rashtriya Sama Vikash Yojana (RSVY) with 3500 small and marginal farmers to gain better advantage of the market and efforts were made linking farmers to the market by providing logistic and market support to strengthen supply chain. Karbi group produces 12000 metric tonnes of ginger per annum value about 10 crores. Supply Chain involves a number of players; the extent of integration of services depends on the degree of trust and information sharing amongst the players. It is often observed that the big players in their efforts to make vertical/horizontal integration of different activities end up gobbling up the weak ones. Similarly, in the last few years there has been an emergence of more coordinated supply chains for fruits and vegetables in India catering to the export market and to the high end domestic market. On the domestic front this trend has primarily been led by the growth of large hypermarkets, supermarkets and other organized retailers in metropolitan centres. For exports, the emergence of dedicated export chains has been prompted by stricter quality and safety standards in certain export markets.

Supply chains are principally concerned with the flow of products and information between supply chain member organizations. The real measure of supply chain success is how well activities coordinate across the supply chain to create value for consumers, while increasing the profitability of every link in the supply chain. In other words, supply chain management is the integrated process of producing value for the end user or ultimate consumer.

Fig. 6: Proposed Policy Interventions for Market development



Source: B.K. Sikka, Sapna A. Narula and M.S. Jairath

Questionnaire FPC/FPO

Mission Organic Value Chain Development for North Eastern Region (MOVCD-NER)

Section A: Cluster Information and Extension Services

1. State
2. District
3. Block
4. Village
5. Name of the Farmer Producing Organization:
6. Who is the in charge of farmer producing Organization: Mobile no.
7. In which year was FPO started?
8. What is the total area covered (Ha.)?
9. How many farmers are there in the FPO?
10. What is the total financial Assistance received by the FPO: Rs.
11. Do you have any Complaints, Appeals and Grievance redressal for the group members?

Yes / No

If Yes, Provide Details:

12. Assistance for on-farm input production infrastructure AND Off-farm inputs?

Yes / No

On-farm (Rs/ha)..... Off farm (Rs/ha).....

13. How many Farmers received the assistance?

On Farm:..... Off Farm:.....

14. Number of Farmers Setting up the On Farm Input Portion Infrastructure

Reasons for not setting up the Infrastructure assistance

15. Number of Farmers Receiving Quality Seed and Planting Material Assistance

16. Total Amount Received: Rs.

17. Impact of Quality Seed / Planting material Assistance

Crop	No. of Farmers	Area (ha.)	Benefits from Quality Seed/ Planting material	Certification (Y/N)

Details on Custom Hiring Centres

Custom Hiring Centre	Agency	Total cost (Rs.)	Amount Sanctioned (Rs.)	Purpose	Benefits
1					
2					
3					

18. No. of Production stage trainings conducted:
19. No. days:
20. Nature of Training (technical / non-technical) (Give Details:
21. No. of Farmers attended:

Section B: Value Chain Processing

Functional infrastructure	Y/N	Financial support (in Rs)	Benefit	No. of Farmers	Problems (if any)	Suggestions for improvement
Collection						
Aggregation						
Grading Units						

Processing Units	Number of units		Subsidy To FPC	Subsidy to Private Entrepreneur	Benefits	Problems (if any)	Suggestions for improvement
	FP C	Private					
Integrated pack House							
Transportation							
Refrigerated transport Vehicle							
Pre-cooling /cold stores							

Section C: Value Chain Marketing

1. Whether Branding and labelling exists? Y/N
2. Is there any publicity? Y/N
3. Are there any certification processing units? Y/N

If yes please mention

4. Did you hire any space in prime markets? Y/N
5. Consumer awareness information dissemination is through?
 - Publicity
 - Printed Literature Films
 - Local Advertisements

Purpose	Number	Number of days	Nature of Inputs*	Usefulness (1-5 scale: 5 is best)
Seminars Conducted				
Workshops Conducted				
Buyer-Seller meets Conducted				
Auction meetings Conducted				
Exhibitions at state Level				

Note: * 1. Awareness, 2. Market linkages and labelling branding, 3. Quality Control, 4. Certification 5. Best practices, 6. Retail Outlets 7. Publicity

Section D: Value Chain Support Agencies

1. Did you hire/purchase any machinery and equipment's? Y/N
2. Total number of staff?
3. Total Manpower?
4. Does the FPC has Lead agency or organic Commodity Board or organic mission for scheme implementation and market facilitation? Y/N
If Yes, Who?
5. Is there any organic certification Body? Y/N
If yes, Who?
6. Appointed Consultant? Y/N

Questionnaire FIG

Mission Organic Value Chain Development for North Eastern Region (MOVCD-
NER)

1. State
2. District:
3. Block:
4. Village:
5. Name of the Farmer interested Group :
6. Farmer interested Group In-charge:
7. Mobile no:
8. In which Year Farmer Interested Group started ?
9. Area under the Farmer Interested Group (ha)
10. How many farmers are there in the Farmer Interested Group?
11. How many of them are registered members?
12. Do you have any Complaints, Appeals and Grievance redressal for the group members?
13. How many are small farmers (< 2.5 acres)
14. Total subsidy received for FIG development (Rs.): Yearly:
15. How many Cattle or Buffalos are there?
16. Activities Carried out

Purpose	Number	Distance	Number of days	Nature of Inputs*	Usefulness (1-5 scale: 5 is best)
Mobilisation (farmers)					
Meetings conducted					
Exposure Visits					
Trainings Conducted					

Note: * 1. Information production technology dissemination, 2. Market linkages and labelling branding, 3. Certification procedure, 4. Benefits, 5 Best practices, 6. Input preparation, 7. Record maintenance, 8. Profitability

Peer Inspection

Number	
Topic	
Usefulness	
No. of full certification	
No. of Conversion certification	
No. of rejections	

Farmer interested Group is producing and using the following

Item	producing	Using
Organic seed		
Green manure		
Compost		
Bio-fertilizer		
Fertilizers		
Bio-pesticide		
Pesticides		
Panchamruth		
Panchagavya		
Beejamruth		
Drip irrigation		
Neem oil/neem cake		

17. Whether annual action plan prepared?
18. Whether production under Farmer interested Group started?
19. Whether PGS certified
20. Whether packaging and labelling facilities exists
21. Marketing facilities exists
22. Appointed consultant?
23. Appointed data entry operator
24. Does the Farmer interested Group has a certification process?
If Yes, Who is the service provider?
25. Do you think more farmers will move towards organic methods?
26. What are main constraints (give by importance)

FIG Level Technologies

Owning /using	Y/N	Financial support (public/ Own) (in Rs.)	Benefit	Problems (if any)	Suggestions for improvement
Organic input production unit					
Biological nitrogen harvest planting(Gliricidia, sesbania)					
Botanical extract production unit					
Phosphate rich organic manure					
Custom hiring center services					
Walk in tunnel for horticultural crops					
Cattle shed					
Subsidy under Gokul Scheme					

Organic Crops and Returns

Crop names	Season K/R/annual	Area (acre)	Irrigation (Y/N)	Yield (per care)	Cost (Rs/acre)	Price received Rs/Quintal	Labelled Y/N	Branded Y/N
Crop 1...								
Crop 2...								
Crop 3....								
Crop 4...								

Budgets released for all Eight States

Assam State (10 Farmers Producer Companies + 5000 ha area coverage)

Components	Allocation and released amount (Rs.in lakhs)		
	Released & Budget Concurred by IFD 2015-16	Allocated budget during 2016-17	Proposed budget during 2017-18
A. Value Chain production			
A.1.1. Clusters development Rs. 20.375/FPC	163	40.75	-
A.1.2. On farm input Rs. 3750/-ha for two years	375	-	-
A.1.2.1 Off- farm input Rs. 3750/-ha for two years	375	-	-
A.1.3 seeds/planting material Rs. 17500/ha	700	175	-
A.2.1 Delivery/distribution custom hiring centreRs. 10 lakh/FPO	30	30	40
A.2.2.1 Hand holding/ Documentation/Training Rs. 10,000/-ha	160	170	170
Total	1803	415.75	210
B. Value Chain Processing			
B.1.1 Setting up of functional Infrastructure Rs. 11.25 lakh for 175 No. total	46.25	75.31	75.31
B.2.1 Integrated processing unit Rs. 600 lakh for 10 No. total	297.13	302.87	-
B.3.1 Integrated Pack House Rs. 37.50 lakh for 20 No. total	75	-	-
B3.2 Transportation Rs. 6 lakh for 25 No. total	6	12	-
B3.3.1 Refrigerated Transport vehicle Rs. 18.75 lakh for 16 No. total	37.5	-	-
B3.3.2 Pre-cooling/cold stores Rs. 18.75 lakh for 16 No. total	37.5	-	-
Total	499.38	390.18	75.31

(c) Value Chain Marketing			
C.1 Branding /labeling Rs. 1100 lakh L.S. total	35	37.5	37.5
C.2 Seminar/ Conferences Rs. 400 lakh L.S. total	13	27	-
C.3 Consumer awareness Rs. 400 lakh L.S. total	13	27	-
C.4 Hiring of space Rs. 600 lakh L.S. total	20	20	20
Total	81	111.5	57.5
(D) Value chain support Agencies			
D.1.1 Staff/ manpower/travel 5% of total scheme budget	55.92	110	16.25
D.1.2 Organic certification bodies Rs. 500 lakh L.S. total	-	25	25
Total	55.92	135	41.25
Grand Total	2439.3	1052.43	384.06

Arunachal Pradesh (10 Farmers Producer Companies + 5000 ha area coverage)

Components	Allocation and Released amount (Rs.in lakhs)		
	Released & Budget Concluded by IFD 2015-16	Allocated budget during 2016-17	Proposed budget during 2017-18
A.Value Chain production			
A.1.1. Clusters development Rs. 20.375/FPC	81.5	122.25	-
A.1.2. On farm input Rs. 3750/-ha for two years	187.5	187.5	-
A.1.2.1 Off- farm input Rs. 3750/-ha for two years	187.5	187.5	-
A.1.3 seeds/planting material Rs. 17500/ha	350	525	-
A.2.1 Delivery/distribution custom hiring centre Rs. 10 lakh/FPO	30	35	35
A.2.2.1 Hand holding/ Documentation/Training Rs. 10,000/-ha	160	170	170
Total	996.5	1227.25	205

B. Value Chain Processing			
B.1.1 Setting up of functional Infrastructure Rs. 11.25 lakh for 175 No. total	35	81	80.87
B.2.1 Integrated processing unit Rs. 600 lakh for 10 No total	121.54	478.46	-
B.3.1 Integrated Pack House Rs. 37.50 lakh for 20 No. total	-	37.5	37.5
B3.2 Transportation Rs. 6 lakh for 25 No. total	12	6	-
B3.3.1 Refrigerated Transport vehicle Rs. 18.75 lakh for 16 No. total	-	18.75	18.75
B3.3.2 Pre-cooling/ cold stores Rs. 18.75 lakh for 16 No. total	-	18.75	18.75
Total	168.54	640.46	155.87
(c) Value Chain Marketing			
C.1 Branding /labeling Rs. 1100 lakh L.S. total	35	40	35
C.2 Seminar/ Conferences Rs. 400 lakh L.S. total	13	27	-
C.3 Consumer awareness Rs. 400 lakh L.S. total	13	27	-
C.4 Hiring of space Rs. 600 lakh L.S. total	20	20	20
Total	81	114	55
(D) Value chain support Agencies			
D.1.1 Staff/ manpower/travel 5% of total scheme budget	55.92	100	26.25
D.1.2 Organic certification bodies Rs. 500 lakh L.S. total	-	25	25
Total	55.92	125	51.25
Grand Total	1301.96	2106.71	467.12

Manipur (10 Farmers Producer Companies + 5000 ha area coverage)

Components	Allocation and Released amount (Rs. in lakhs)		
	Released & Budget Concurred by IFD 2015-16	Allocated budget during 2016-17	Proposed budget during 2017-18
A. Value Chain production			
A.1.1. Clusters development Rs. 20.375/FPC	81.5	122.25	-
A.1.2. On farm input Rs. 3750/-ha for two years	187.5	187.5	-
A.1.2.1 Off- farm input Rs. 3750/- ha for two years	187.5	187.5	-
A.1.3 seeds/planting material Rs. 17500/ha	350	525	-
A.2.1 Delivery/distribution custom hiring centre Rs. 10 lakh/FPO	30	35	35
A.2.2.1 Hand holding/ Documentation/Training Rs. 10,000/-ha	160	170	170
Total	996.5	1227.25	205
B. Value Chain Processing			
B.1.1 Setting up of functional Infrastructure Rs. 11.25 lakh for 175 No. total	35	81	80.87
B.2.1 Integrated processing unit Rs. 600 lakh for 10 No total	-	600	-
B.3.1 Integrated Pack House Rs. 37.50 lakh for 20 No. total	-	37.5	37.5
B3.2 Transportation Rs. 6 lakh for 25 No. total	6	6	6
B3.3.1 Refrigerated Transport vehicle Rs. 18.75 lakh for 16 No. total	-	18.75	18.75
B3.3.2 Pre-cooling/cold stores Rs. 18.75 lakh for 16 No. total	-	18.75	18.75
Total	41	762	161.87
c) Value Chain Marketing			
C.1 Branding /labeling Rs. 1100 lakh L.S. total	35	37.5	37.5
C.2 Seminar/ Conferences Rs. 400 lakh L.S. total	13	27	-

C.3 Consumer awareness Rs. 400 lakh L.S. total	13	27	-
C.4 Hiring of space Rs. 600 lakh L.S. total	20	20	20
Total	81	111.5	57.5
(D) Value chain support Agencies			
D.1.1 Staff/ manpower/travel 5% of total scheme budget	55.92	80	46.25
D.1.2 Organic certification bodies Rs. 500 lakh L.S. total	-	25	25
Total	55.92	105	71.25
Grand Total	1174.42	2205.75	495.62

Tripura (4 Farmers Producer Companies + 2000 ha area coverage)

Components	Allocation and Released amount (Rs. in lakhs)		
	Released & Budget Concurred by IFD 2015-16	Allocated budget during 2016-17	Proposed budget during 2017-18
A .Value Chain production			
A.1.1. Clusters development Rs. 20.375/FPC	32.6	48.9	-
A.1.2. On farm input Rs. 3750/-ha for two years	75	75	-
A.1.2.1 Off- farm input Rs. 3750/-ha for two years	75	75	-
A.1.3 seeds/planting material Rs. 17500/ha	175	175	-
A.2.1 Delivery/distribution custom hiring centre Rs. 10 lakh/FPO	13	14	13
A.2.2.1 Hand holding/ Documentation/Training Rs. 10,000/-ha	60	70	70
Total	430.6	457.9	83
B. Value Chain Processing			
B.1.1 Setting up of functional Infrastructure Rs. 11.25 lakh for 175 No. total	15	33	30.75
B.2.1 Integrated processing unit Rs. 600 lakh for 10 No total	-	600	-
B.3.1 Integrated Pack House Rs. 37.50 lakh for 20 No. total	37.5	-	-

B3.2 Transportation Rs. 6 lakh for 25 No. total	6	-	-
B3.3.1 Refrigerated Transport vehicle Rs. 18.75 lakh for 16 No. total	18.75	-	-
B3.3.2 Pre-cooling/cold stores Rs. 18.75 lakh for 16 No. total	18.75	-	-
Total	96	633	30.75
(c) Value Chain Marketing			
C.1 Branding /labeling Rs. 1100 lakh L.S. total	10	17	17
C.2 Seminar/ Conferences Rs. 400 lakh L.S. total	5	11	-
C.3 Consumer awareness Rs. 400 lakh L.S. total	5	11	-
C.4 Hiring of space Rs. 600 lakh L.S. total	8	8	8
Total	28	47	25
(D) Value chain support Agencies			
D.1.1 Staff/ manpower/travel 5% of total scheme budget	23.98	40	27.58
D.1.2 Organic certification bodies Rs. 500 lakh L.S. total	-	10	10
Total	23.98	50	37.58
Grand Total	578.58	1187.9	176.33

Mizoram (14 Farmers Producer Companies + 7000 ha area coverage)

Components	Allocation and Released amount (Rs. in lakhs)		
	Released & Budget Concurred by IFD 2015-16	Allocated budget during 2016-17	Proposed budget during 2017-18
A .Value Chain production			
A.1.1. Clusters development Rs. 20.375/FPC	114.1	171.15	-
A.1.2. On farm input Rs. 3750/-ha for two years	262.5	262.5	-
A.1.2.1 Off- farm input Rs. 3750/-ha for two years	262.5	262.5	-
A.1.3 seeds/planting material Rs. 17500/ha	490	735	-
A.2.1 Delivery/distribution custom hiring centreRs. 10 lakh/FPO	46	47	47
A.2.2.1 Hand holding/ Documentation/Training Rs. 10,000/-ha	230	235	235
Total	1405.1	1713.15	282
B. Value Chain Processing			
B.1.1 Setting up of functional Infrastructure Rs. 11.25 lakh for 175 No. total	50	120	105.62
B.2.1 Integrated processing unit Rs. 600 lakh for 10 No total	203.83	396.17	-
B.3.1 Integrated Pack House Rs. 37.50 lakh for 20 No. total	-	37.5	37.5
B3.2 Transportation Rs. 6 lakh for 25 No. total	12	6	-
B3.3.1 Refrigerated Transport vehicle Rs. 18.75 lakh for 16 No. total	18.75	18.75	-

B3.3.2 Pre-cooling/ cold stores Rs. 18.75 lakh for 16 No. total	-	18.75	18.75
Total	284.58	597.17	161.87
(c) Value Chain Marketing			
C.1 Branding /labeling Rs. 1100 lakh L.S. total	50	52	52
C.2 Seminar/ Conferences Rs. 400 lakh L.S. total	18	38	-
C.3 Consumer awareness Rs. 400 lakh L.S. total	18	38	-
C.4 Hiring of space Rs. 600 lakh L.S. total	28	28	28
Total	114	156	80
(D) Value chain support Agencies			
D.1.1 Staff/ manpower/travel 5% of total scheme budget	78.75	100	60.94
D.1.2 Organic certification bodies Rs. 500 lakh L.S. total	-	35	35
Total	78.75	135	95.94
Grand total	1882.43	2601.32	619.81

Sikkim (28 Farmers Producer Companies + 14000 ha area coverage)

Components	Allocation and Released amount (Rs. in lakhs)		
	Amount released 2015-16	Allocated budget during 2016-17	Proposed budget during 2017-18
A.			
A.1.1. Clusters development Rs. 20.375/FPC	228.2	342.3	-
A.1.2. On farm input Rs. 3750/-ha for two years	415	525	-
A.1.2.1 Off- farm input Rs. 3750/-ha for two years	415	525	-
A.1.3 seeds/planting material Rs. 17500/ha	980	1470	-
A.2.1 Delivery/ distribution custom hiring centre Rs. 10 lakh/FPO	93	97	90
A.2.2.1 Hand holding/ Documentation/Training Rs. 10,000/-ha	981.23	210	208.77
Total	3112.43	3169.3	298.77
B. Value Chain Processing			
B.1.1 Setting up of functional Infrastructure Rs. 11.25 lakh for 175 No. total	105	223.25	223
B.2.1 Integrated processing unit Rs. 600 lakh for 10 No total	600	128	-
B.3.1 Integrated Pack House Rs. 37.50 lakh for 20 No. total	37.5	75	75
B3.2 Transportation Rs. 6 lakh for 25 No. total	12	18	12
B3.3.1 Refrigerated Transport vehicle Rs. 18.75 lakh for 16 No. total	37.5	37.5	-
B3.3.2 Pre-cooling/cold stores Rs. 18.75 lakh for 16 No. total	-	37.5	37.5
Total	792	519.25	347.5
(c) Value Chain Marketing			
C.1 Branding /labeling Rs. 1100 lakh L.S. total	100	104	104
C.2 Seminar/ Conferences Rs. 400 lakh L.S. total	37	40	35
C.3 Consumer awareness Rs. 400 lakh L.S. total	40	40	32

C.4 Hiring of space Rs. 600 lakh L.S. total	50.77	56	56
Total	227.77	240	227
D) Value chain support Agencies			
D.1.1 Staff/ manpower/travel 5% of total scheme budget	83.88	180	117.68
D.1.2 Organic certification bodies Rs. 500 lakh L.S. total	-	70	70
Total	83.88	250	187.68
Grand Total	4216.08*	4178.55	1060.95

*Rs. 797.23 lakhs will be released shortly after receiving revised AAP for 2015-16

Meghalaya (12 Farmers Producer Companies + 6000 ha area coverage)

Components	Allocation and Released amount (Rs. in lakhs)		
	Amount released 2015-16	Allocated budget during 2016-17	Proposed budget during 2017-18
A.			
A.1.1. Clusters development Rs.20.375/FPC	97.8	146.7	-
A.1.2. On farm input Rs. 3750/-ha for two years	166	225	-
A.1.2.1 Off- farm input Rs. 3750/-ha for two years	166	225	-
A.1.3 seeds/planting material Rs. 17500/ha	361	630	-
A.2.1 Delivery/ distribution custom hiring centre Rs. 10 lakh/FPO	40	40	40
A.2.2.1 Hand holding/ Documentation/Training Rs. 10,000/-ha	200	200	200
Total	1030.8	1466.7	240
B. Value Chain Processing			
B.1.1 Setting up of functional Infrastructure Rs. 11.25 lakh for 175 No. total	45	100	91.25

B.2.1 Integrated processing unit Rs. 600 lakh for 10 No total	-	-	-
B.3.1 Integrated Pack House Rs. 37.50 lakh for 20 No. total	-	37.5	37.5
B3.2 Transportation Rs. 6 lakh for 25 No. total	12	6	-
B3.3.1 Refrigerated Transport vehicle Rs. 18.75 lakh for 16 No. total	18.75	-	-
B3.3.2 Pre-cooling/cold stores Rs. 18.75 lakh for 16 No. total	18.75	-	-
Total	94.5	143.5	128.75
(c) Value Chain Marketing			
C.1 Branding /labeling Rs. 1100 lakh L.S. total	44	44	44
C.2 Seminar/ Conferences Rs. 400 lakh L.S. total	16	32	-
C.3 Consumer awareness Rs. 400 lakh L.S. total	16	32	-
C.4 Hiring of space Rs. 600 lakh L.S. total	24	24	24
Total	100	132	68
(D) Value chain support Agencies			
D.1.1 Staff/ manpower/travel 5% of total scheme budget	67.92	80	61.06
D.1.2 Organic certification bodies Rs. 500 lakh L.S. total	-	30	30
Total	67.92	110	91.06
Grand Total	1293.22*	1852.2	527.81

*Rs. 777.02 lakhs will be released shortly after receiving revised AAP for 2015-16

Nagaland (12 Farmers Producer Companies + 6000 ha area coverage)

Components	Allocation and Released amount (Rs. in lakhs)		
	Released & Budget Concluded by IFD 2015-16	Allocated budget during 2016-17	Proposed budget during 2017-18
A.			
A.1.1. Clusters development Rs. 20.375/FPC	97.8	146.7	-
A.1.2. On farm input Rs. 3750/- ha for two years	225	225	-
A.1.2.1 Off- farm input Rs. 3750/-ha for two years	225	225	-
A.1.3 seeds/planting material Rs. 17500/ha	420	630	-
A.2.1 Delivery/distribution custom hiring centre Rs. 10 lakh/FPO	40	40	40
A.2.2.1 Hand holding/ Documentation/Training Rs. 10,000/-ha	200	200	200
Total	1207.8	1466.7	240
B. Value Chain Processing			
B.1.1 Setting up of functional Infrastructure Rs. 11.25 lakh for 175 No. total	45	100	91.25
B.2.1 Integrated processing unit Rs. 600 lakh for 10 No total	-	600	-
B.3.1 Integrated Pack House Rs. 37.50 lakh for 20 No. total	-	37.5	37.5
B3.2 Transportation Rs. 6 lakh for 25 No. total	6	6	6
B3.3.1 Refrigerated Transport vehicle Rs. 18.75 lakh for 16 No. total	-	18.75	-
B3.3.2 Pre-cooling/cold stores Rs. 18.75 lakh for 16 No. total	-	18.75	-
Total	51	781	134.75

(c) Value Chain Marketing			
C.1 Branding /labeling Rs. 1100 lakh L.S. total	44	44	44
C.2 Seminar/ Conferences Rs. 400 lakh L.S. total	16	32	-
C.3 Consumer awareness Rs. 400 lakh L.S. total	16	32	-
C.4 Hiring of space Rs. 600 lakh L.S. total	24	24	24
Total	100	132	68
(D) Value chain support Agencies			
D.1.1 Staff/ manpower/travel 5% of total scheme budget	67.94	80	61.06
D.1.2 Organic certification bodies Rs. 500 lakh L.S. total	-	30	30
Total	67.94	110	91.06
Grand Total	1426.74	2489.7	533.81

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