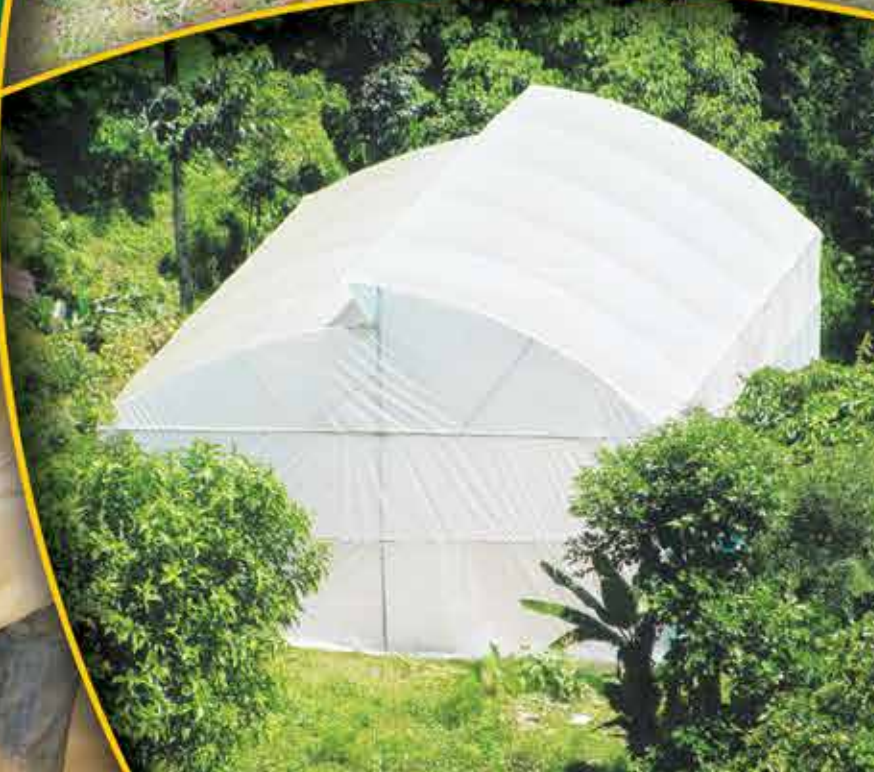
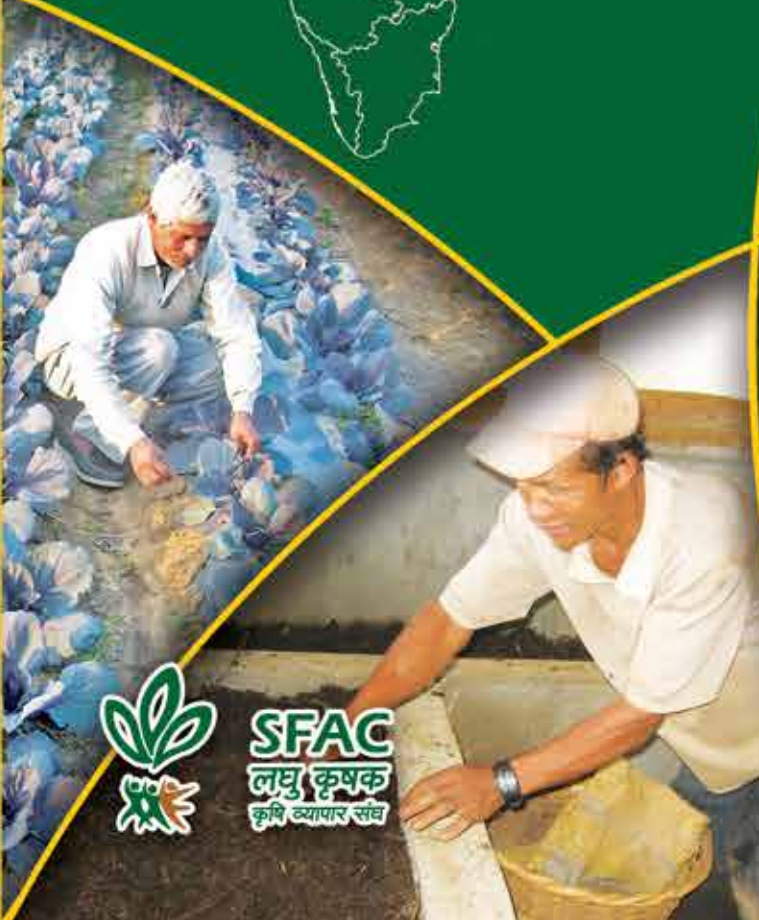
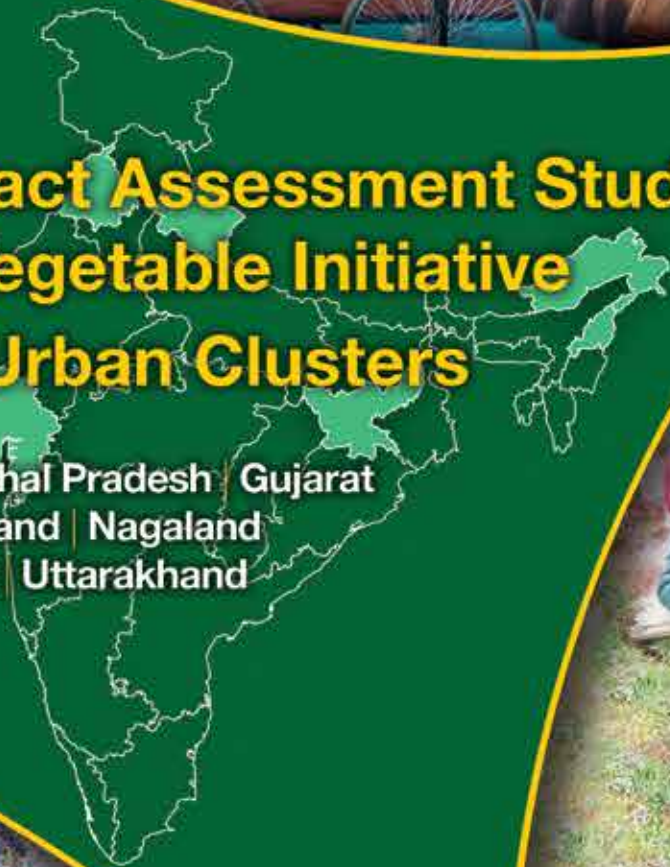


Impact Assessment Study of Vegetable Initiative for Urban Clusters

Arunachal Pradesh | Gujarat
Jharkhand | Nagaland
Punjab | Uttarakhand



SFAC
लघु कृषक
कृषि व्यापार संघ

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Preface

The initiative has successfully completed one year and since inception considerable progress has been made in all the aspects including mobilisation of farmers, formation of Farmers Interest Groups (FIGs)

The Vegetable Initiative for Urban Clusters (VIUC) scheme was launched in the year 2011-12 under *Rashtriya Kirshi Vikas Yojana* (RKVY) to enhance the production and productivity of vegetables and augment farmers' income along with assuring sustainable supply of vegetables in the identified consumption centers at affordable prices. Small Farmers' Agribusiness Consortium (SFAC) has been designated the nodal agency for providing necessary technical and managerial support to the State Governments in the implementation of the scheme and was assigned the tasks of facilitating the State Governments in conducting Baseline Survey to develop a holistic understanding of vegetable value chains for the identified consumption centers and also mobilize small and marginal farmers to formally take up entrepreneurial activity through collective bargaining. The Baseline Survey was meant to be the basis for a "before and after" assessment in respect of few critical parameters.

The implementation of this initiative was distinctly designed in such a way that membership based Farmer Producer Organizations (FPOs) have been made primary beneficiaries and epicenter of the whole initiative and the other components of the scheme have been linked to these FPOs. This initiative envisages mobilizing over 1.00 lakh farmers all over the country targeting formation of 98 FPOs (each with an average membership of 1000 farmers). SFAC is also working in close co-ordination with State level nodal agencies appointed by respective State Governments in the implementation of the scheme at State level. Resource Institutions (RIs) empanelled by SFAC are facilitating the mobilisation of farmers by providing them training and capacity building support, linking them to input suppliers, technology providers and market players.

The initiative has successfully completed one year and since inception considerable progress has been made in all the aspects including mobilisation of farmers, formation of Farmers Interest Groups (FIGs), initiation of collective agri-input purchase and vegetable marketing. The process of federating FIGs into FPOs has been initiated in some States.

With the objective of appraising the progress of the initiative in all the States upto December 2012, SFAC commissioned the present Impact Assessment Study

of VIUC through a Technical Support Agency (TSA) in the States of Arunachal Pradesh, Gujarat, Jharkhand, Punjab, Nagaland and Uttarakhand.

During the course of the study, personal interaction were made with all the concerned State and District officials and Resource Institutions responsible for mobilizing the farmers. Primary data of field survey of farmers and other beneficiaries and secondary data from State Horticulture/Agriculture Department was also collected, analyzed and report compiled.

A comprehensive report integrating individual State reports has been prepared highlighting the physical and financial achievements and the ground level challenges and issues of the stakeholders and recommending suitable corrective measures to enhance the performance of the scheme.

Executive Summary

It has been more than a year since the Vegetable Initiative for Urban Cluster was launched by the Government of India with an objective to assess the demand supply aspect of vegetables, production enhancement, and establishment of efficient supply chain, technology dissemination and augmentation of farmers' income along with ensuring supply of quality vegetables in the identified consumption centres at affordable prices.

The purpose of the Impact Assessment Study is to evaluate the impact of the scheme in terms of productivity and area expansion; innovative technical intervention along with impact on the farmers' income and effect on the supply chain of vegetables.

To achieve the desired goal of the study, a mixed approach of secondary research, primary survey and focus group discussion were used along of sample size of 50-55 across the stakeholders in the six States – Arunachal Pradesh, Gujarat, Jharkhand, Nagaland, Punjab and Uttarakhand. Out of the total sample size of 50- 55, 40 number of farmers were surveyed to understand the impact of the scheme at the ground level.

The following table provides a snapshot of the State wise figures of funds released, expenditure incurred, FIGs and FPOs. All these figures pertain to the progress made by the States at the time of undertaking this assignment, for the financial year 2011-12.

	Release (Rs in lakh)	Expenditure (Rs in lakh)	Farmers' Interested Group (FIG)	Farmers' Producers' Organizations (FPOs)
India	30000	19884	5826*	54*
Arunachal Pradesh	350	348.26	86	0
Gujarat	1200	911.8	157	0
Jharkhand	1200	868.01	641	0
Nagaland	350	330	139	0
Punjab	600	603.316	367	0
Uttarakhand	600	549.715	178	2

Note: * This figure excludes the figures of farmers' groups bening promoted without involvement of SFAC.

Arunachal Pradesh

Impact of the Scheme

- ◆ Area under vegetable cultivation decreased from 116.34 ha in 2010-11 to 66.88 ha in 2011-12, which shows a decrease of 42.5 percent.
- ◆ For vegetable production, seeds, fertilizers, vermicompost and organic manures have been distributed among farmers.
- ◆ The production costs have substantially reduced during project period for some vegetables, like for cauliflower, carrot and radish. Cost of production has reduced considerably from 26-41 percent.
- ◆ As per interaction with State and District officials, the scheme has been affecting the understanding of farmers positively regarding modern package of practices and protected cultivation methods.
- ◆ Collectivisation initiatives are going on actively and farmers have been working towards joint procurement, production and marketing activities in both the Districts.
- ◆ Around 700 people have been provided employment directly and indirectly from the scheme.

Recommendations

In Arunachal Pradesh, the VIUC is gaining momentum through the constant efforts of State and District officials and involved resource institutions.

- ◆ Establish linkage with providers for input services (like dealers/ etc.) to farmers'
- ◆ Empanelment of specialized companies for inputs especially fertilizers, etc. to farmers.
- ◆ Convergence with rain-water harvesting scheme + provision of irrigation facility.
- ◆ Tie-up with research institutes for demonstration farms and new techniques.
- ◆ Provision of motorized vending carts , Common sorting and grading facilities and Common packaging facilities
- ◆ Provision of vehicles for transportation of produce. Establish linkage with service providers for joint transportation of produce.
- ◆ Establish institutional linkage with retail outlets, academic institutions and hotels for bulk supply of produce.

- ◆ Synchronized release of funds. Distribution of subsidy and inputs should be phase wise in all the clusters and on time.
- ◆ Provision of budget for training component and exposure visits.
- ◆ Allocation of more manpower for proper monitoring of the scheme.

Gujarat

Impact of the Scheme

- ◆ According to the data collected from State Department of Horticulture, Gujarat; area, production and productivity of vegetables has shown positive changes from baseline year to a significant level. Area under vegetable cultivation in Ahmedabad is showing an increase of 38 percent. Production of vegetables is showing a remarkable increase of 57 percent.
- ◆ As State implementing agency has tied-up with various seed companies; availability of quality seed, in general, has improved.
- ◆ As the concept of collectivisation is not clear even amongst RI, specifically ITSL and since there is also lack of understanding of the concept at the Government level, it is difficult to see substantial collectivisation of demand and supply. DSC, in one cluster has recently started collective marketing, but given the time period, since the project was started, the result is minuscule.
- ◆ No formal linkages have been established at any end of the supply chain, neither for agri-input and services procurement nor for agri-output marketing.

Recommendations

- ◆ Orientation and training of field staff of RI as well as of Government officials for better clarity of objectives and approach of the scheme is pre-requisite.
- ◆ Resource Institutions should make firm plan of action for respective clusters, with detailed activity schedule and should communicate it very effectively to its staff for executing at the field level.
- ◆ Government officials should also be involved in planning process and should be engaged actively while implementing.
- ◆ RIs should proactively talk to different stakeholders/potential partners for establishing

business linkages. Most important amongst these potential partners are Aggregators/ Organised retailers, agri-input suppliers and financial institutions/banks, etc. Tie-up can also be organised with research institutes such as Agricultural Research Station (ARS), Agricultural Colleges in SAUs, Krishi Vigyan Kendra (KVK), etc.

- ◆ There is need to intensify the interaction with the farmers and enhance training and capacity building activities, mainly on concept of collectivisation, its benefits, how to organise FPO and administrative & financial management, etc.
- ◆ RI should also make detail business plan for each cluster based on vegetables being grown in respective cluster.
- ◆ Emphasis should be given on Post Harvest Management practices and accordingly for creating necessary infrastructure at the field level.
- ◆ State Implementing Agency should develop its customised Management Information System (MIS) and monitoring system, preferably IT based, for effective implementation.
- ◆ On technical aspects of handling vegetables such as need for infrastructure, technical specifications of infrastructure, vegetable movement and processes at Pack-House, etc., there is lack of understanding amongst RI staff. Therefore, they are not able to guide the FPO members properly. Specific training and support in terms of handholding on these technical aspects from SFAC is required.

Jharkhand

Impact of the Scheme

- ◆ As per the data provided by Nodal Agency (VEGFED), total production of vegetables under both open pollinated and hybrid cultivation increased by about 15% (from 22,175 MT to 25,500 MT). The increase in productivity can be attributed to adoption of modern package of practices, efficient input use, and INM and IPM techniques by the proper training and inputs provided.
- ◆ With continuous training session on use of the type of seeds, fertilizers, plant protection chemicals and other best package of practices, understanding of the technology for inputs use have improved.

- ◆ As per the baseline survey report, farmers in Ranchi are still practicing traditional methods of vegetable cultivation instead of commercial and improved scientific methods. But continuous efforts and timely training provided by the resource institutions have helped in percolation of scientific methods of cultivation to a remarkable level.
- ◆ As per interaction with District officials and resource institutions, the concept of group activities and group formation was very poor in the State. But now they are becoming part of the group and have started gaining interest in group activities.
- ◆ For backward linkage, some linkages have been established with banks, research institutes and input dealers:
 - FIG members are being identified and approximately 550 FIG members have been linked with KCC.
 - Formation of VGCS and their Self Help Group (SHG) has minimized the impact of local money lenders for financial assistance to a considerable extent.
 - Approximately 308 FIG members have been linked with KVK and other research institutes for technical training and capacity building.
- ◆ For forward linkage, Speed Mart in Ranchi and Bhangar Cooperative Society, leading organized retailer of fresh fruits & vegetables in Kolkata has been identified.
- ◆ State Government is working towards convergence of other schemes in VIUC for benefit of farmers. Scheme of National Mission on Micro Irrigation (NMMI), soil testing and seed inputs from agriculture department, scheme of System of Rice Intensification (SRI) cultivation have already been converged.
- ◆ Though one year is not sufficient to assess the impact on employment generation but the scheme has directly and indirectly generated employment for approximately 10,000 farmers of VGCS itself. After establishment of *Apni Mandi*, collection centre, aggregation centre and retail outlets, more employment will be generated.
- ◆ Approximately 5,000 people will be employed in both these units put together.

Recommendations

Input procurement + irrigation

- ◆ Establish linkage with providers for input services (like dealers, etc.) to farmers
- ◆ Empanelment of specialized companies for inputs like seeds, fertilizers, etc. (e.g. Tata Chemicals, Syngenta, etc.) to farmers
- ◆ Provision of borewell and pumpset + Linking the farmers with existing irrigation sources
- ◆ Linkage with micro financing institutions for provision of credit to producers
- ◆ Tie-up with Universities for extension and demonstration farms for new techniques.

Post Harvest storage and processing

- ◆ Provision of temperature control transit warehousing facility for farmers
- ◆ Provision of processing facility
- ◆ Provision of motorized vending carts
- ◆ Common packaging facilities for market ready produce
- ◆ Common sorting and grading facilities conforming to GMP and enabling market readiness of the produce

Marketing

- ◆ Provision of small vehicles for transportation of produce to markets
- ◆ Establish linkage with service providers for joint transportation of produce
- ◆ Institutional tie-ups and agreements with organized retail chains like Food Bazar, Reliance Fresh, etc. for regular sale of fresh farm produce
- ◆ Institutional tie-ups with large end user like Pepsico, Haldiram, etc.

Nagaland

Impact of the Scheme

- ◆ As per the data provided by Nodal Agency State Directorate of Horticulture, total production of vegetables under both open pollinated and hybrid cultivation increased by about 13.6 percent (from 60135 MT to 68356.3 MT).
- ◆ With continuous training session on use of the type of seeds, fertilizers, plant protection chemicals and other best package of practices,

understanding of the technology for inputs use has improved.

- ◆ As of now, the emphasis of RI is on formation of groups, collectivization in terms of demand aggregation and joint marketing has not yet started. Once the formal groups are formed, it is expected that the farmers will start doing collective activities.
- ◆ RI along with the State Nodal Agency needs to work hard for establishing linkages of FIGs with various stakeholders. As of now, a small success in terms of linking member farmers to banks has been observed, wherein individual farmers' bank accounts have been opened in commercialised banks.

Recommendations

- ◆ Convergence with other parallel schemes to reduce multiplicity and overlap between them to provide higher benefits to maximum number of farmers.
- ◆ IGS and the State department should devise more intensive training activities, engaging farmers not only on benefits of subsidy but also on concept of self-sustainability, which includes more technical training on production and Post Harvest, FPO activity coordination, business skills and marketing;
- ◆ There is need to give more emphasis on concept of collectivisation and RI staff should try to actively facilitate/coordinate the activities such as joint procurement of inputs, joint farming, marketing, etc. and demonstrate the benefits of collective actions; Exposure visits of farmers should be organised to other parts of the country, where the FPOs/FPCs are in advance form and are doing business;
- ◆ RI should accelerate the process of registration of FPO and thereafter should work on establishing formal linkages of FPOs with various stakeholders;
- ◆ State Nodal Agency should also focus on active participation and ownership from farmers for various components and ensure optimal utilisation of resources and infrastructure by the farmers;
- ◆ Direct marketing is one of the most important components in this Initiative which is still untouched. Given the fact that a lot of

small farmers are currently marketing their vegetables directly, but in very small quantities, RI should organise in groups, which will showcase the benefits of this to the farmers.

Punjab

Impact of the Scheme

- ◆ As per the primary survey data, there has been an increase of 22.4 percent in areas under vegetables. The production of vegetables has increased by 25.10 percent.
- ◆ Seeds, fertilizers, vermicompost and organic manures have been distributed among farmers for vegetable production. Awareness towards use of better quality inputs has led to increased vegetable production to a substantial level.
- ◆ As per interaction with State, District officials and personal interaction with farmers, it is found that farmers are progressive in nature and are ready to adopt modern practices, which are being practiced by some farmers.
- ◆ Collectivisation initiatives are active and farmers have been working towards joint procurement, production and marketing activities.
- ◆ Establishing linkages between various stakeholders, service providers, micro financing institutions, banks and research institutes is necessary for convenient flow of process.

Recommendations

- ◆ **Time frame for applications:** There should be a time limit on receiving applications from the farmers. It was observed that farmers submit their application throughout the year for availing subsidy on seeds and inputs, which leads to wastage of time and resources on the part of department officials. It is suggested that the department should fix a season wise time frame for receiving of applications.
- ◆ Convergence with other parallel schemes to reduce multiplicity and overlap between them to provide higher benefits to farmers.
- ◆ Training on commercial aspect of FPO for enhancement of their understating on business.

Pre-Harvest

- ◆ Production planning between farmers to avoid excess price fall of goods in market due to excess production.

- ◆ Effective and quality training on package of practices.
- ◆ Focus on establishment of poly-houses, green-houses and pack-houses is needed
- ◆ Training on vegetable seedling production and nursery preparation is required

Post Harvest storage and processing

- ◆ Provision of temperature control transit warehousing facility for farmers
- ◆ Provision of processing facility and training on processing is required
- ◆ Provision of motorized vending carts
- ◆ Common packaging facilities for market ready produce
- ◆ Common sorting and grading facilities conforming to GMP and enabling market readiness of the produce
- ◆ Provision of crates for packaging to avoid post harvest losses

Marketing

- ◆ Provision of small vehicles for transportation of produce to markets
- ◆ Establish linkage with service providers for joint transportation of produce
- ◆ Institutional tie-ups and agreements with organized retail chains like Food Bazar, Reliance Fresh etc. for regular sale of fresh organically produced vegetable and spices
- ◆ Expanding institutional tie-ups with large end users like Pepsico, Haldirams, etc.

Administration

- ◆ The release of funds should be synchronized with the work in progress.
- ◆ Strengthen functioning and relationship with RIs for effective implementation of initiative.
- ◆ AISL should increase the number of field staff and revise the salary of their staff for motivation and better implementation of the scheme.
- ◆ Constitution of empowered committee at State level to resolve all bottlenecks in implementation. The constituents of this committee would comprise representation from all stakeholders including farmer groups (FIGs/FPOs).

- ◆ There is a need for conducting regular trainings and capacity building workshops for officials of the Department of Horticulture and Resource Institution representatives for better co-ordination, understanding of the scheme objectives and roles and responsibilities of various stakeholders.

Uttarakhand

Impact of the Scheme

- ◆ As per the data provided by RIs, total production of vegetables under both open pollinated and hybrid cultivation increased by 63.28 percent (from 8317.51 MT to 13580.86 MT) and area has increased by 72.33 percent where VIUC is running.
- ◆ Input is provided by the department. Quality is good but quantity is not satisfactory. Farmers are not receiving inputs on time.
- ◆ As per the baseline survey report, farmers in Dehradun are still practicing traditional methods of vegetable cultivation instead of commercial and improved scientific methods.
- ◆ Both the Resource Institutions have mobilized approximately 6000 farmers (approximately 3000 farmers for each RI) and have formed total of 360 Farmers' Interest Groups (FIGs).
- ◆ As per interaction with District officials and resource institutions, farmers have started taking interest in the program and group activities. Predicting the benefits of collectivization, farmers are now becoming the part of the group for joint procurement of seeds, fertilizers and other inputs.
- ◆ State Government is working towards convergence of other schemes in VIUC for benefit of farmers. Scheme of SGRY District run scheme on Animal Husbandry and Dairy have already been converged.
- ◆ RIs are trying to initiate work on Soil Testing facilities with this scheme.
- ◆ For forward linkage, Local organic produce buyers such as dealer of Seed Corporation India and MDFVL (Mother Dairy Fruits and Vegetable Ltd) through Mother Dairy are linked.

Recommendations

- ◆ Convergence with other parallel schemes to reduce multiplicity and overlap between them to provide higher benefits to farmers.
- ◆ Collective marketing approach for making the volume sizable and marketable will be introduced.
- ◆ Construction of pack-house and poly-house should be at common point where all members can commute easily. Although it is not possible in hilly areas but to some extent it can be taken into consideration while establishment of infrastructure.

Pre-Harvest

- ◆ Timely and sufficient supply of inputs to farmers
- ◆ Quality Training so that they can meet the standards and quality parameters of large institutions
- ◆ Trainings on advance package of practices
- ◆ Training on understanding of infrastructure utilities like pack-house

Post Harvest storage and processing

- ◆ Provision of temperature controlled transit warehouse facility
- ◆ Provision of processing facility
- ◆ Common packaging facilities for market ready produce
- ◆ Common sorting and grading facilities conforming to GMP and enabling market readiness of the produce
- ◆ Provision of crates for packaging to avoid post harvest losses

Marketing

- ◆ Provision of organized transportation and logistics for supply of produce to markets
- ◆ Establish linkage with service providers for joint transportation of produce
- ◆ Institutional tie-ups and agreements with organized retail chains like Food Bazaar, Reliance Fresh etc. for regular sale of fresh organically produced vegetables and spices
- ◆ Institutional tie-ups with large end users like Pepsico, Haldirams', etc.

Chapter 1

Introduction

This chapter describes the genesis, objectives and components of the initiative alongwith the scope of work on this assignment.

Background

Vegetable Initiative for Urban Cluster (VIUC) was launched in the year 2011 with an approval of Rs. 300 cr for the year 2011-12. This was dovetailed under Rashtriya Kirshi Vikas Yojana (RKVY) to enhance production and productivity of vegetables and augmentation of farmers' income along with assured sustainable supply of vegetables to consumers at affordable prices. This initiative was proposed to cover one city in each State during the year 2011-12, which should either be the State Capital or any other city having a population of over one million. In case, no city in a State satisfied this criteria, then other urban cluster closer to one million population would be selected for the purpose.

Objectives of the VIUC

The objectives of the initiative are

- a. Addressing all concerns related to both the demand and supply side of the vegetable sector in selected cities.
- b. Enhancing vegetable production and productivity, improve nutritional security and income support to vegetable farmers.
- c. Encouraging establishment of an efficient supply chain thereby leading to employment opportunities and incomes for intermediate service providers, and safe, good quality, fresh as well as processed agri produce at competitive price for urban consumers.
- d. Promote, developing and disseminating technologies for enhancing production and productivity of vegetables in peri-urban areas of major cities.
- e. Assisting States in addressing the entire value chain, right from the stage of pre-production to the consumers table through appropriate interventions.
- f. Creating employment generation opportunities for skilled and unskilled persons, especially unemployed youth.

Components of VIUC

In order to achieve the desired objectives, VIUC included various components related to enhancing production and productivity, organic farming, post harvest infrastructure, transportation, storage and marketing support and linkages. The components also included various kinds of trainings & capacity building for farmers. The detail list of components included under VIUC has been provided in Annex – I alongwith this report.

Objectives of this Assignment

The initiative aims to establish and augment sustainable supply of vegetables to major urban consumption centres with emphasis on increase in production and productivity along with the income enhancement of the farmers. The scheme has completed more than one year, therefore, Ministry of Agriculture, Government of India has decided to assess the impact of the initiative against the set objectives of the scheme. Technical Support Agency (TSA - MSG) carried out the Impact Assessment Study with the following scope of work.

The scope of work of Impact Assessment Study is to assess the:

- ◆ Increase in vegetable yield of beneficiary farmers and increase in total production;
- ◆ Interventions of technologies for increasing yield and improved quality of vegetables;
- ◆ Impact on member farmers' income;
- ◆ Interventions made for improving efficiency of supply chains of vegetables;
- ◆ New jobs created in vegetable supply chain from field to retail end, Improved availability of quality vegetable at affordable price to consumer and
- ◆ Overall impact on vegetable pricing in targeted urban areas.

Chapter 2

Approach and Methodology

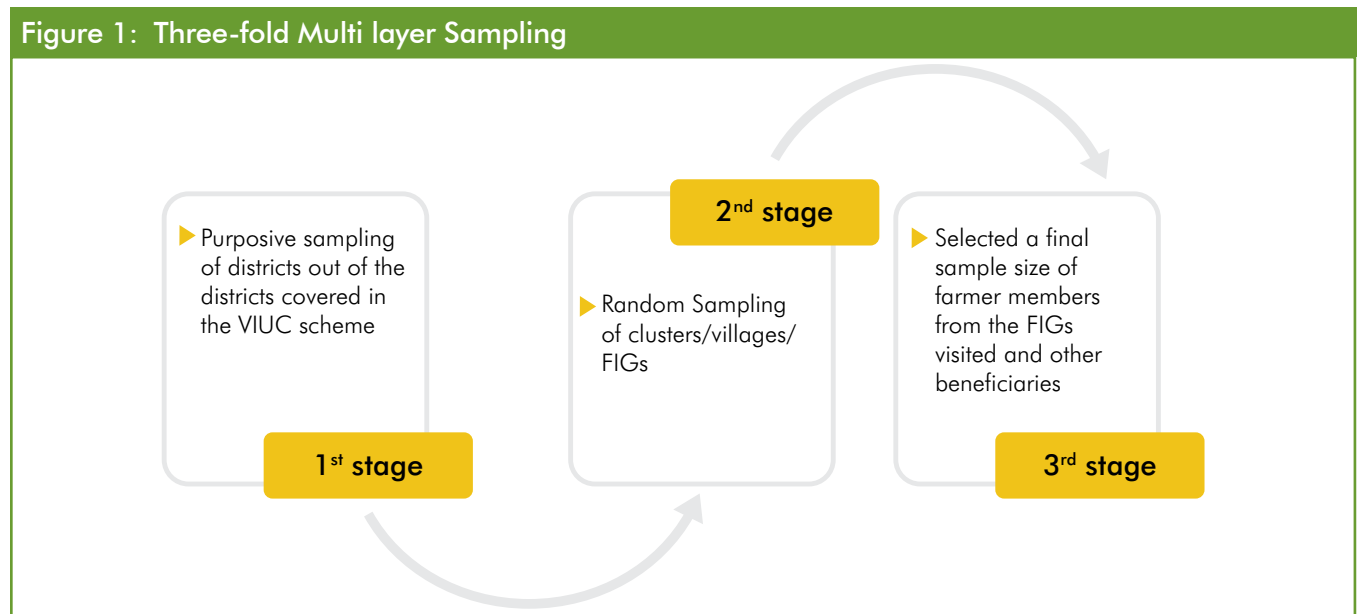
This chapter describes the approach and methodology adopted for assessing the overall impact of the initiative.

The approach used to conduct the Impact Assessment Study entails to review the extent to which the project has so far contributed to tangible and intangible goals through the evaluation of physical and financial progress. The study also targets to assess the enhanced understanding of the initiative amongst various stakeholders. A combined approach of quantitative and qualitative analysis using secondary and primary research techniques were used to assess the overall impact of the Initiative. The methodology included following steps:

- ◆ **Secondary Research:** Analysis of available documents in the form of Baseline reports, State Action Plans and progress reports available with SFAC;
- ◆ **Primary Survey:** Of various stakeholders with the help of structured questionnaires, Focus Group Discussions (FGDs) and case studies from the field;
- ◆ **Analysis:** Of data collected from secondary sources, primary survey and observations of FGDs and field visits;
- ◆ **Assimilation and Report Writing**

Sampling and Tools

For the purpose of survey work, a three-fold multilayered sampling was adopted:



A survey was initiated by conducting initial one-on-one meetings with officials of Nodal Agency

at State and District level. This was followed by separate meetings with RIs and beneficiaries.

Table 1: Number of Respondents in Various States

Respondents	Arunachal Pradesh	Gujarat	Jharkhand	Nagaland	Punjab	Uttarakhand
Implementing agency officials (State, District, Block)	5	2	2	1	2	2
Resource Institutions (State, District, LRPs)	2	2	2	1	2	2
Farmers' Members (Farmers Interest Groups-FIGs)	40	40	40	40	40	40
Scheme beneficiaries (other than farmers such as infrastructure owners, aggregators, consolidators, etc.)	4	2				2
Total	51	46	44	42	44	46

Representatives from TSA-MSG, SFAC visited the targeted Districts of the State and interacted with all the stakeholders - District and State Government officials, RIs, farmers and other beneficiaries of the scheme directly and indirectly to assess the impact of the Scheme. The following clusters were selected in different States for the Impact Assessment Study:

- 1. Arunachal Pradesh:** Both the clusters where VIUC scheme in the State is being implemented – Papumpare and Lower Subansiri were covered during the field visits for interaction with stakeholders', survey work, and focussed group discussions.
- 2. Gujarat:** For the purpose of Impact Assessment, the team visited Ahmedabad and the adjoining production clusters, where the scheme is being implemented.
- 3. Jharkhand:** For the purpose of Impact Assessment, the team visited Ranchi and the adjoining production clusters, where the scheme is being implemented.

4. Nagaland: VIUC scheme is being implemented in 2 districts of the State. For the purpose of Impact Assessment, both the Districts – Kohima and Dimapur were visited.

5. Punjab: Of the total five clusters where the VIUC scheme is being implemented in the State, two clusters - Ludhiana and Jalandhar were covered for field visits, stakeholders', survey work, and focussed group discussions.

6. Uttarakhand: Out of the four Districts under the VIUC scheme, two Districts were covered for field survey, stakeholders' interactions and focussed group discussions. These Districts are Dehradun and Pauri.

Before the start of field visit and survey, one-on-one interactive meetings were carried out with all the concerned Government Officials (State and District level). Similar meetings were conducted with RIs in the presence of State level, Nodal officer during which objectives of the Impact Assessment Study, Progress about the VIUC scheme, Field Plan and Data Requirement from various stakeholders were discussed.

Chapter 3

Arunachal Pradesh

Project Area and Stakeholders

This part describes the implementation structure and functioning of the project at different levels and the major stakeholders involved in the project.

VIUC Scheme in Arunachal Pradesh

VIUC in the State of Arunachal Pradesh is being implemented in the State Capital: Itanagar, having a population of 34,790 being implemented from the year 2011-12. The Department of Horticulture, Government of Arunachal Pradesh has been appointed as the Nodal Agency for implementing the project in the State and Deputy Director of Horticulture (Department of Horticulture) is the Nodal officer to look after the overall implementation of the scheme.

Baseline Survey

To identify major vegetable production districts and clusters, an independent agency, carried out the baseline survey in Arunachal Pradesh. The Baseline Survey highlighted the existing supply chain and other bottlenecks and also identified the vegetable growing districts and cluster within the district. During the interaction with the Nodal Agency and Resource Institutes, it was observed that areas/clusters, which were identified under the baseline survey, have been taken-up for the purpose of implementation of the scheme.

State/Districts/Clusters

The scheme is being implemented in two District of Arunachal Pradesh i.e; Papumpare and Lower Subansiri. Major vegetable clusters around Itanagar, ranging from 20 to 70 km, are supplying vegetables to target urban cluster i.e. Itanagar.

Implementing Partners of VIUC in Arunachal Pradesh

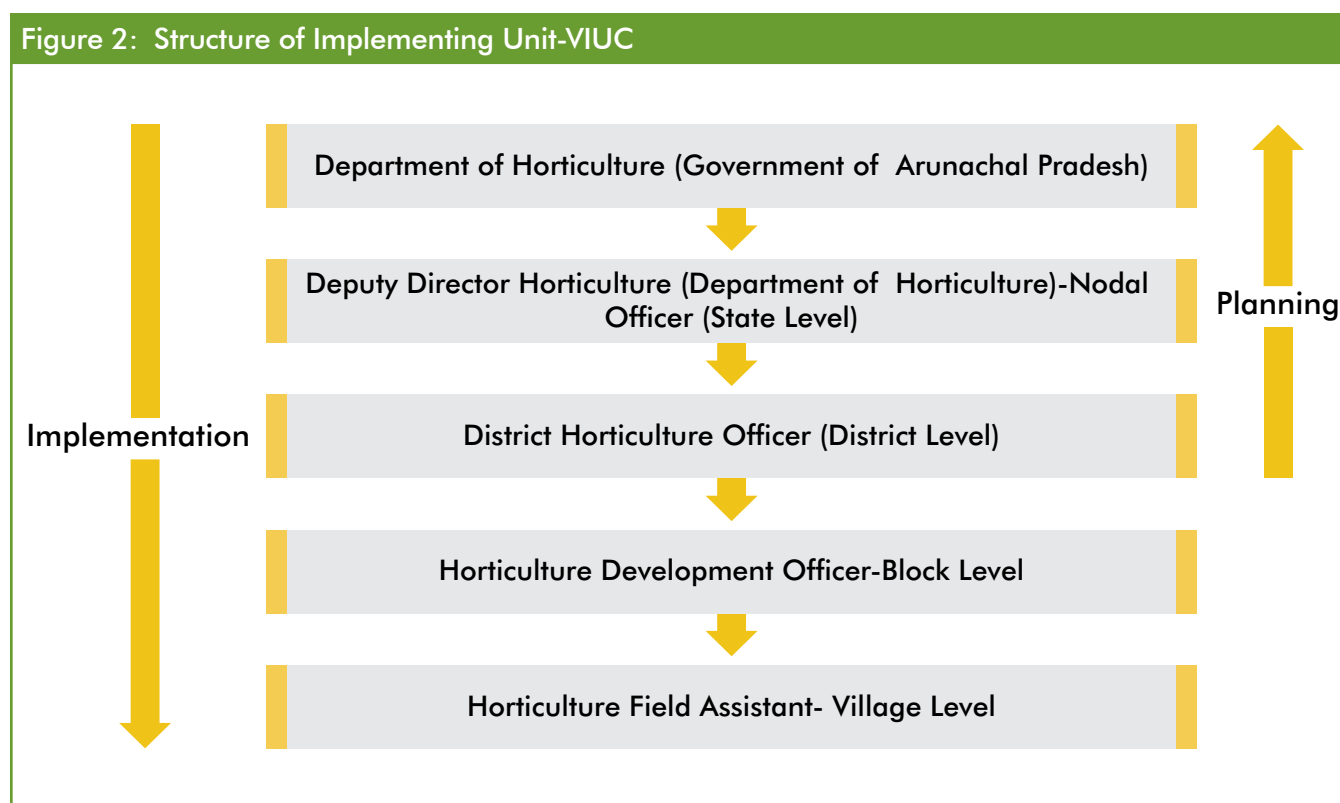
In Arunachal Pradesh, State Department of Horticulture has been assigned the task of overall implementation of VIUC. Deputy Director Horticulture (DDH) is the designated Nodal Officer for the implementation of the initiative at the State level. At the District level, the District Horticulture Officer (DHO) is the Nodal Officer. At the block level, the Horticulture Development Officer is responsible for implementation of the VIUC. For implementation of VIUC Scheme in the State, staffs of State Department, District and block level are involved.

In order to mobilize farmers, formation of groups, training and capacity building and establishing market linkages, etc., one Resource Institution (RI) have been appointed by SFAC in the State covering different vegetable production clusters in Itanagar. Apart from the RI other stakeholders, their role and area of coverage has been summarised in the following table.

Table 2: Stakeholders and their Coverage Areas

Role	Name of Organization	Districts covered under VIUC scheme
Baseline Survey	The Nielsen Company	Papumpare, Lower Subansiri
Nodal Agency	Deputy Director Horticulture, Department of Horticulture, Government of Arunachal Pradesh (DHO- Nodal Officer at District level)	Papumpare, Lower Subansiri
Resource Institution	IGS	Papumpare, Lower Subansiri

Detailed implementation structure, has been depicted in the following figure:



Planning and Implementation of Activities:

The planning of the project activities starts at the District level, where the District Horticulture Officer (DHO) prepares the District plan and submits it to the District Level Planning Committee (DPC) for approval. After approval from DPC, the plan is submitted to Deputy Director Horticulture (State Level) for consolidation and preparation of State plan. From Deputy Director Horticulture, State plan is submitted to State Level Sanction Committee (SLSC) which is the final authority for approval of plan for implementation. Approved

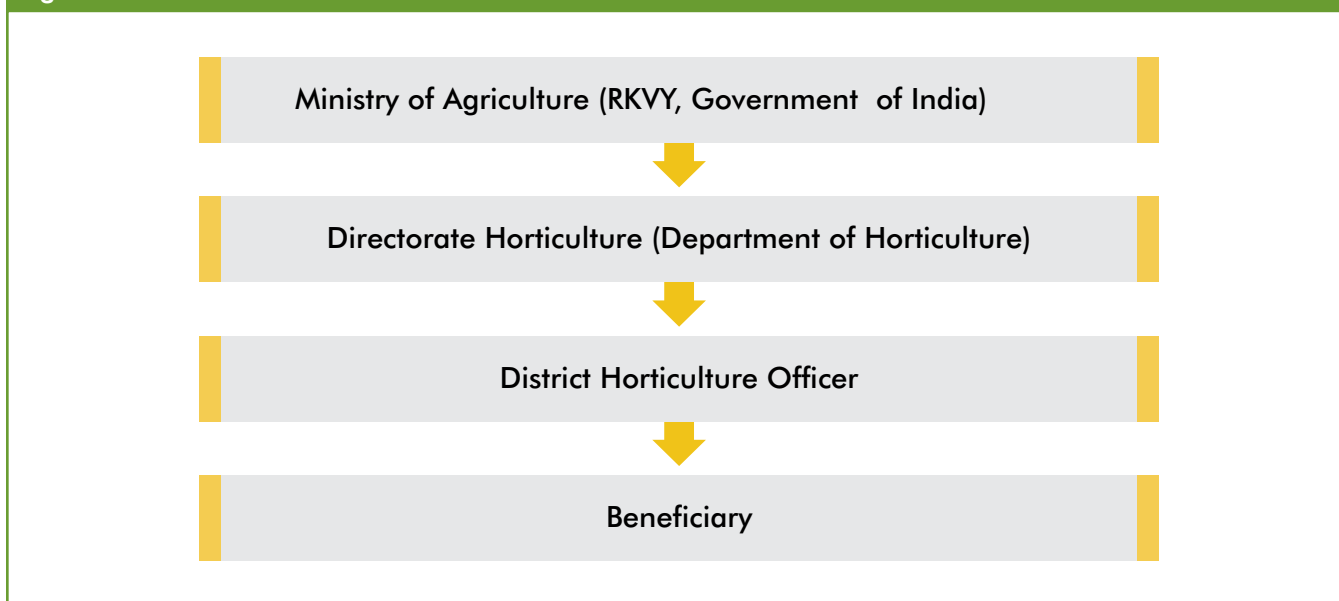
State Plan is finally submitted to Ministry of Agriculture (RKVY, Government of India) for approval and sanction of funds.

Flow of Funds

The flow of fund is depicted in the Figure 3.

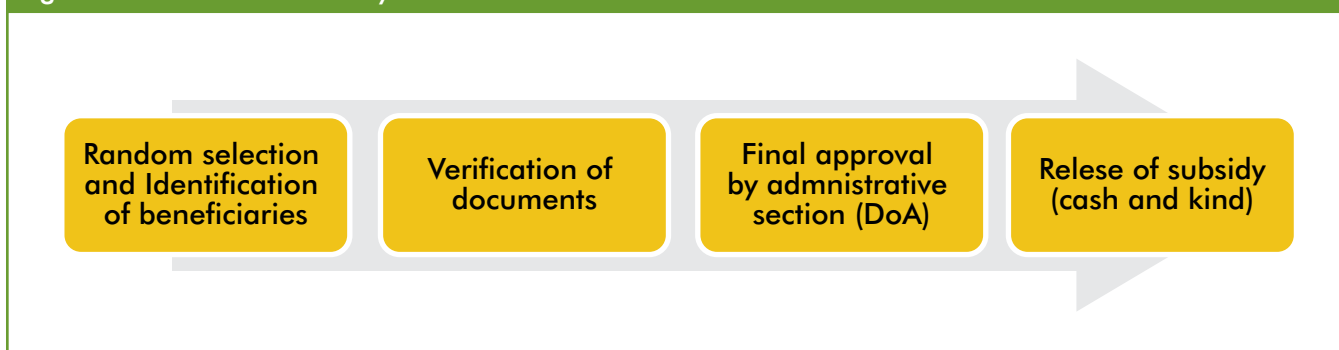
Budget Outlay and Expenditure (2011-12): The total budget outlay approved for the State for the year 2011-12 was Rs. 348.26 lakh. A provision of 1.2 % budget of the total budget outlay has been retained for administration purpose.

Figure 3: Flow of Fund



Release of Subsidy to Beneficiary

Figure 4: Release of Subsidy



Resource Institution

For the mobilisation of farmers and promotion of Farmers' Interest Groups (FIGs) and Farmers' Producers Organisations (FPOs), an Institution

Indian Gramin Services (IGS) has been appointed for both districts by SFAC. Targets of the RI in terms of Farmers' Mobilisation, FIG & FPO formation as well as current achievements are given below:

Table 3: Current Status of FIG and FPO Formation

Particulars	IGS (Papumpare)		IGS (Lower Subansiri)	
	Target	Achievement (registered)	Target	Achievement (registered)
FPO	1	---	1	---
FIG	44	44	58	42
Total farmers	875	875	875	875

Source: Secondary information from RI

Table 4: Coverage of Farmers' and Participation in Capacity Building

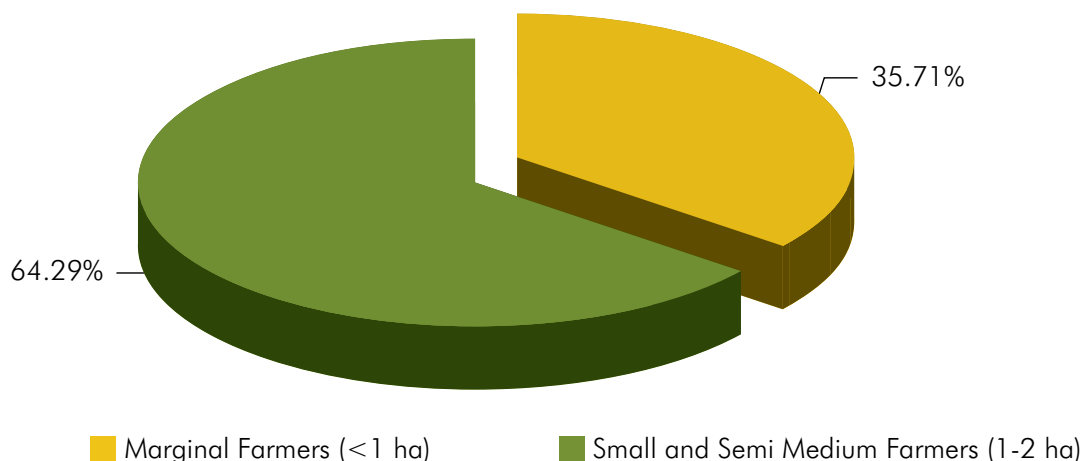
Particulars	Unit	Resource Institution	
		IGS (Papumpare)	IGS (Lower Subansiri)
Districts		2	
Clusters	Nos	4	3
Total Farmers	Nos	875	875
Break up of total farmers			
Marginal (< 1 Ha)	Nos	300	325
Small and semi-medium farmers (1-4 Ha)	Nos	575	550
Medium Farmers (4-10 Ha)	Nos	---	---
Large Farmers (> 10Ha)	Nos	---	---
Meetings Conducted			
FPOs	Nos	1	---
FIGs	Nos	120	75
Farmer	Nos	100	---
% of members regularly participating in meetings			
FPOs	%	---	---
FIGs	%	90	65
Farmer	%	90	80
Capacity Building for FIGs / FPOs			
FIG members oriented / trained & aware on NVI scheme	Nos	12	680
Group leaders oriented / trained on FIG/FPO concept and management	Nos	---	45
FIG/FPO members oriented / trained on Account Keeping in NVI scheme	Nos	50	52
FIG members trained on some or other best practices (for production, value addition and marketing) under NVI scheme	Nos	80	25
Bank Account Opened (Status)			
FPOs	Nos		
FPOS (Share Collection)			
FIGs	Nos	44	42
Total Saving	Rs. Lacs	4.25	2.15

Source: Secondary information from RI

As Arunachal Pradesh is a hilly terrain, lands are mostly in fragmented form. Therefore, all the farmers (around 100 percent) belong to small and marginal and semi-medium category.

Coverage of small and marginal farmers in the scheme is also fulfilling the criteria of economically weaker farmers group for their all round development.

Figure 5: Distribution of Farmers covered by RIs



Performance of the Scheme

This part investigates the overall success of the VIUC in terms of physical and financial achievement.

Farmers benefit directly from the following eight components of the scheme. The performance of these eight components is illustrated in the following figure:

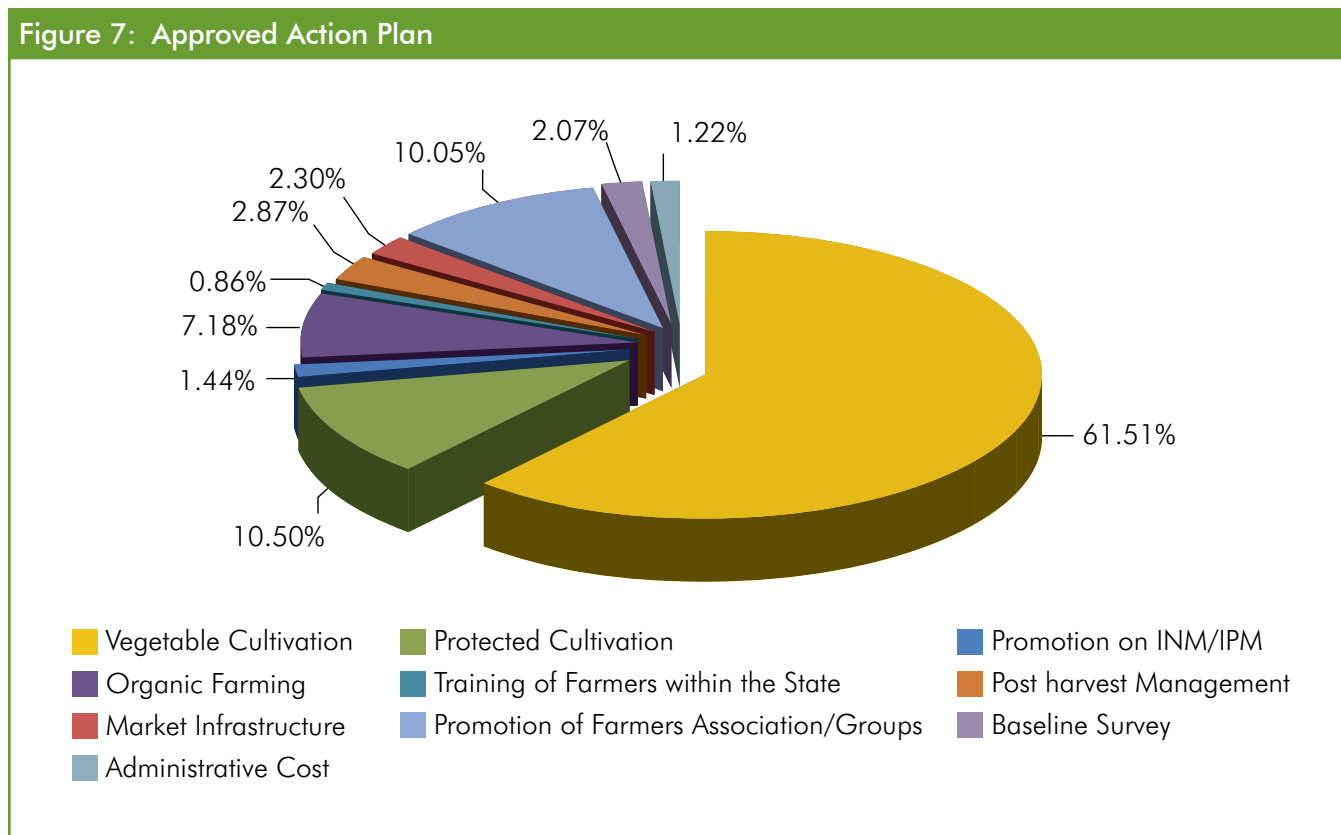
Figure 6: VIUC Performance



Proposed and Approved Action Plan

As per the proposed action plan for the year 2011-12, the Department proposed to take up

almost all the activities/components for the implementation of VIUC with the total financial outlay of Rs 348.26 lakh. The shares of all the components are illustrated in the figure below.



Of the total approved financial outlay of Rs 348.26 lakh for the year 2011-12, 61.51 % fund has been allocated for vegetable cultivation, followed by 10.50 % in protected cultivation, 10.05 % in promotion of farmers' association and 7.18 % in organic farming. Small fund has been allocated for other components. The nodal agency has very wisely distributed the fund into different components depending upon the requirement of the State.

Detailed component-wise Physical Targets & Financial Outlay for the year 2011-12 is given in Annex- II(A). Although, the present status of financial achievement of different components can be depicted from the following bar graph, in which target and achievement are noticeably evident.

Following components have been delineated in Figure 8

- ◆ Protected cultivation
- ◆ Promotion of farmers association
- ◆ Organic farming
- ◆ Vegetable cultivation

Component delineated in Figure 9 are as follows:

- ◆ Market infrastructure
- ◆ Promotion of INM/IPM
- ◆ Baseline survey
- ◆ HRD Training
- ◆ Mission management
- ◆ Post harvest management

Figure 8: Financial Target V/s Achievement, 2011-12

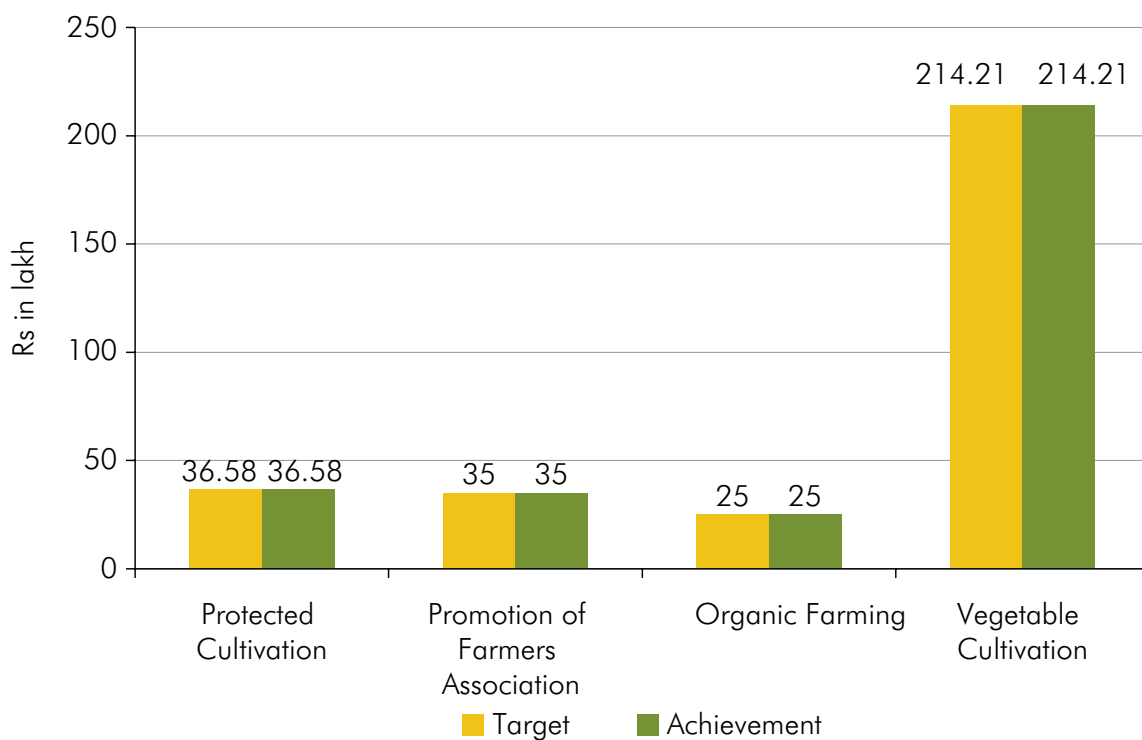
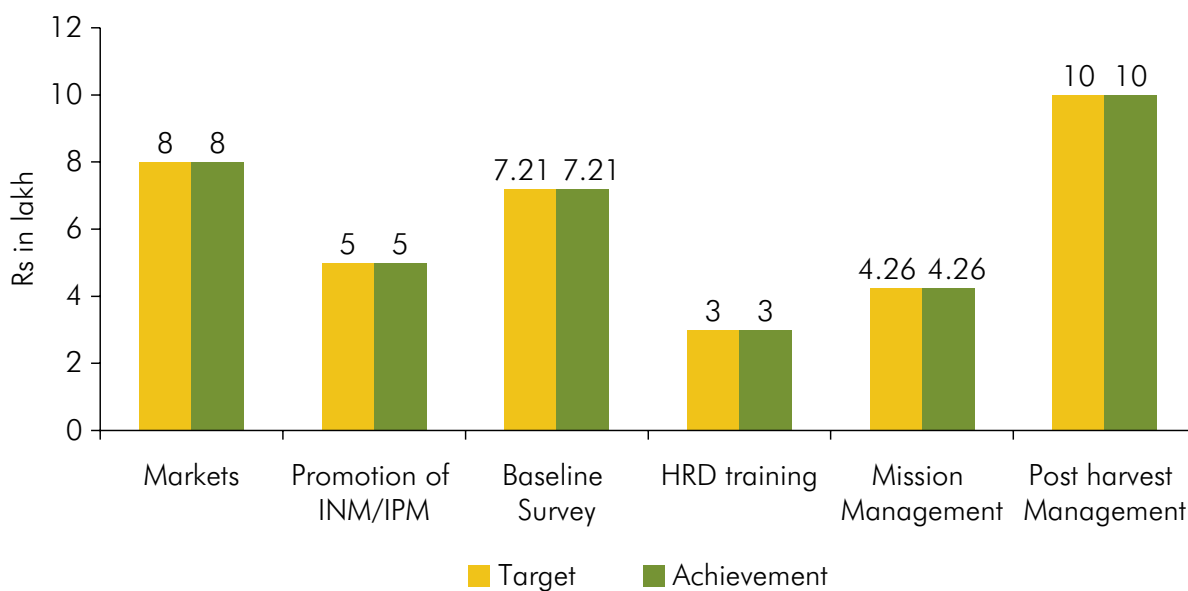


Figure 9: Financial Target V/s Achievement 2011-12



Component-Wise Physical and Financial Targets and Achievements (2011-12)

The following table illustrates the component-wise performance for FY 2011-12.

Table 5: Component-wise Physical and Financial Targets and Achievements

Component	Physical Performance	Financial Performance
Vegetable Cultivation	<p>100 percent achievement</p> <p>The physical allocation for expansion of vegetable cultivation was to cover 241 ha and 474 ha under open pollinated and hybrid cultivation respectively, of which entire area has been covered.</p>	<p>100 percent achievement</p> <p>Financial allocation for this component was 214.21 lakh, of which whole fund have been utilized.</p>
Protected Cultivation	<p>100 percent achievement</p> <p>The physical allocation for protected cultivation was under the following components:</p> <p>Naturally ventilated system</p> <p>Tubular structure: Physical allocation for this component was to establish the structure in 5000 sq ft area, of which entire area has been covered.</p> <p>Shadenet house</p> <p>Tubular structure: Physical allocation for this component was to establish the structure in 3000 sq ft area, of which entire area has been covered.</p> <p>Cost of planting material grown in polyhouse/shade net</p> <p>Physical allocation was to cover 8000 sq ft area for growing plant under protected cultivation, of which an entire area has been covered.</p>	<p>100 percent achievement</p> <p>Financial allocation of protected cultivation was under the following components:</p> <p>Naturally ventilated system</p> <p>Tubular structure: Financial allocation for this structure was Rs 23.38 lakh, of which total fund have been utilized.</p> <p>Shadenet house</p> <p>Tubular structure: Financial allocation for this component was Rs 9.00 lakh, of which total fund have been utilized.</p> <p>Cost of planting material grown in polyhouse/shade net</p> <p>Financial allocation for this component was Rs 4.2 lakh, of which total fund have been utilized.</p>
Promotion of IPM	<p>100 percent achievement</p> <p>Physical allocation for promotion of IPM was to cover 500 ha area, of which entire area has been covered.</p>	<p>100 percent achievement</p> <p>Financial allocation for this component was Rs 5.00 lakh, of which total fund has been utilized.</p>
Organic Farming	<p>100 percent achievement</p> <p>Allocation for organic farming was under the following components:</p> <p>Adoption of organic farming: Physical target for this component was to cover 100 ha, of which entire area has been covered.</p> <p>Vermicompost units: Physical target for this component was establishment of 50 units, out of which, the total 50 units have been created.</p>	<p>100 percent achievement</p> <p>Financial allocation for the following components are as follows:</p> <p>Adoption of organic farming: Financial allocation for adoption of organic farming was Rs 10 lakh, of which total fund have been utilized.</p> <p>Vermicompost units: Financial allocation for this component was Rs 15 lakh, of which total fund have been utilized.</p>

Component	Physical Performance	Financial Performance
Post Harvest Management	100 percent achievement Physical allocation for Post Harvest Management was to establish 500 Zero Energy Cool Chambers, of which total 500 structures have been created.	100 percent achievement Financial allocation for this component was Rs 10 lakh, of which, total fund have been utilized.
Market Infrastructure	100 percent achievement Physical allocation for this component was establishment of two collection centres, of which, two structures have been created.	100 percent achievement Financial allocation for this component was Rs 8.00 lakh, of which total fund have been utilized.
Promotion of Farmers' Association/Groups	100 percent achievement Physical allocation for this component was to associate around 1750 farmers into groups, of which, total 1750 farmers have been associated into groups.	100 percent achievement Financial allocation for this component was Rs 35.00 lakh, of which total fund have been utilized.
HRD Training of Farmers	100 percent achievement Physical allocation was to conduct training of 200 farmers, of which, the same has been covered	100 percent achievement Financial allocation for this component was Rs 3.00 lakh, of which total fund have been utilized.
Baseline Survey	100 percent achievement Physical allocation for this component was to cover two districts for baseline survey, of which, both the districts have been covered.	100 percent achievement Financial allocation for this component was Rs 7.21 lakh, of which total fund have been utilized.
Mission Management/ Administrative Cost		100 percent achievement Financial allocation for this component was Rs 4.26 lakh, of which total fund have been utilized.

Source: Progress report of VIUC Arunachal Pradesh

Out of the total fund of Rs 348.26 lakhs (2011-12), total expenditure is Rs 348.26 lakhs i.e. 100 percent of the total financial target has been achieved.

Situational Analysis of VIUC

This part of the chapter illustrates the situational analysis of VIUC in Arunachal Pradesh. It is an analysis of the State and condition of the farmers/beneficiaries after implementation of the initiative, identification of the major issues related with the components and analysis of key stakeholders. Situational analysis has been derived with the help of primary survey, secondary information and observations during field visits.

Findings of primary survey of farmers have been discussed in the following sections:

Findings of Primary Survey

For the purpose of Impact Assessment Study, around 40 farmer members (FIGs) were surveyed in both Papumpare and Lower Subansiri District. The major points emerged out of the survey have been discussed in the following section:

Land Holding: Average operational holding size of the surveyed farmer's area is around 1.2 ha.

- ◆ All the farmers belong to small and marginal category (79 percent small farmers and 21 percent marginal farmers).

- ◆ As Arunachal Pradesh is a hilly State, mostly broken patches of land have been found; therefore; operational holding size is small.
- ◆ Undulating topography, varied agro-climatic condition and erosion sensitive soil favours the cultivation of vegetable crops by mostly small and marginal farmers.
- ◆ Vegetable cultivation seems to be a remunerative enterprise in the State.

Irrigated Land: Out of the total cultivable area from surveyed farmers, only eight percent area is under irrigation, major percentage (92 percent) of cultivatable land remains unirrigated.

- ◆ Around 20 percent of the farmers use canal and spring source of irrigation.

- ◆ Based on primary survey and secondary data sources, we can conclude that irrigation is a big problem in the State.

Cost of Cultivation: Cost of vegetable cultivation has been calculated based on cost of land preparation, inputs, irrigation and labour employed by the farmers during farming operations (land preparation to harvesting). For some crops like cauliflower, radish and carrot cost of production has reduced significantly compared to cost of production during base-year. A Detailed comparison of current and base year cost of production has been mentioned in the section of Impact Assessment in this chapter. Average production cost mentioned by the surveyed farmers is as illustrated in Table 6 below. The detailed calculations have been given in Annex- II(E)

Table 6: Average Cost of Cultivation

S. No.	Produce	Average cost of cultivation (Rs./ha)
1.	Tomato	47,572.21
2.	Cabbage	28,943.72
3.	Beans	15,624.06
4.	Radish	4,759.12
5.	Peas	8,512.52
6.	Brinjal	22,156.67
7.	Cauliflower	16,483.39
8.	Carrot	6,575.00

Source: Primary Survey

Seed Used: Almost 51 percent of the surveyed farmers are using hybrid seeds.

- ◆ About half of the seeds are procured from Government agency and rest from local input supplier and own seeds.
- ◆ As per baseline survey, literacy level of the farmers in the State is very low, which limits the perception of the techniques, but use of hybrid seeds by more than half of the farmers of the surveyed area indicates the increase in penetration of the use of good quality inputs and new interventions.

Adoption of On-farm Management Practices and Organic Farming: Adoption of on-farm

management practices is negligible in the surveyed area; however; 100 percent of the farmers are adopting organic farming methods. A major source of organic input procurement is the Government agency. Farmers have not mentioned any other on-farm management practices for vegetable cultivation like drip and sprinkler irrigation, use of mulching and low cost tunnels etc. But 21-22 percent farmers are using low cost green-house and poly-sheets for protected cultivation.

Post harvest Losses and Value Addition: As per the data of primary survey, the extent of post harvest losses varies from crop to crop as mentioned below:

Table 7: Post harvest Loss of Major Vegetables

Crop Name	Post Harvest Loss (in percentage)
Beans	2.50
Carrot	3.00
Peas	3.70
Cauliflower	15.00
Cabbage	18.60
Radish	23.00
Tomato	30.00

Source: Primary survey

Value Addition at Field Level: Value addition at field level in the surveyed area is done only by sorting. Mostly gunny bags and plastic bags are used for packaging by more than 70 percent farmers. At very few places, plastic crates have been used. Average cost of packaging by gunny bags and plastic bags is Rs 20/- per quintal.

Mode of Transportation: Almost 100 percent farmers of the surveyed areas market their produce individually and using their own vehicles in the nearby market at a distance of 1-5 km. As per interaction with resource institution, for marketing the produce to other big markets like Assam and nearby States, farmers hire private vehicle, but heavy cost is incurred in long distance transportation.

Marketing of Produce: For marketing of the produce, around 75 percent of the farmers are taking their produce to local *mandi/haat* and village level markets, rest of the farmers are carrying to wholesale market and to Commission agents.

- ◆ More than 70 percent of the produce is sold within 1-2 km radius and rest upto 5 km distant market. Major mode of payment (around 80 percent) is by spot cash and rest by credit.
- ◆ Method of fixing the price is by negotiation.
- ◆ Major challenge in the marketing of the produce is poor marketing infrastructure.

Marketing Infrastructure Facilities: A collection centre is available regarding marketing infrastructure which is easily accessible to 50 percent of the farmers. Only 30 percent farmers are availing primary processing facility which results

in better quality and improvement in shelf life of the produce.

Government Support & Incentives: Almost 100 percent of the farmers of the area are aware about Government support and activity.

- ◆ Major source of information access is RI and NGOs working in the area.
- ◆ All the farmers are beneficiary of one or the other Government schemes.
- ◆ Major beneficiaries are from VIUC program and few from ATMA scheme.

Awareness about VIUC: During a survey all the farmers mentioned that they are aware about VIUC and its objectives.

- ◆ According to them, the major objective of the scheme is to increase vegetable production by learning good package of practices and direct linkage with market.
- ◆ The major benefits they are availing from the scheme are saving on input cost (seeds and organic manures), subsidy provided by the Government, distribution of vegetable trays, garden tools, facility of credit with financial institution and linkage with banks.

Resource Institution: Indian Grameen Services is the resource institution working in both the areas.

- ◆ Regular meetings of RI and farmers takes place at fortnightly intervals.
- ◆ Village and cluster meetings are organized to discuss the program.

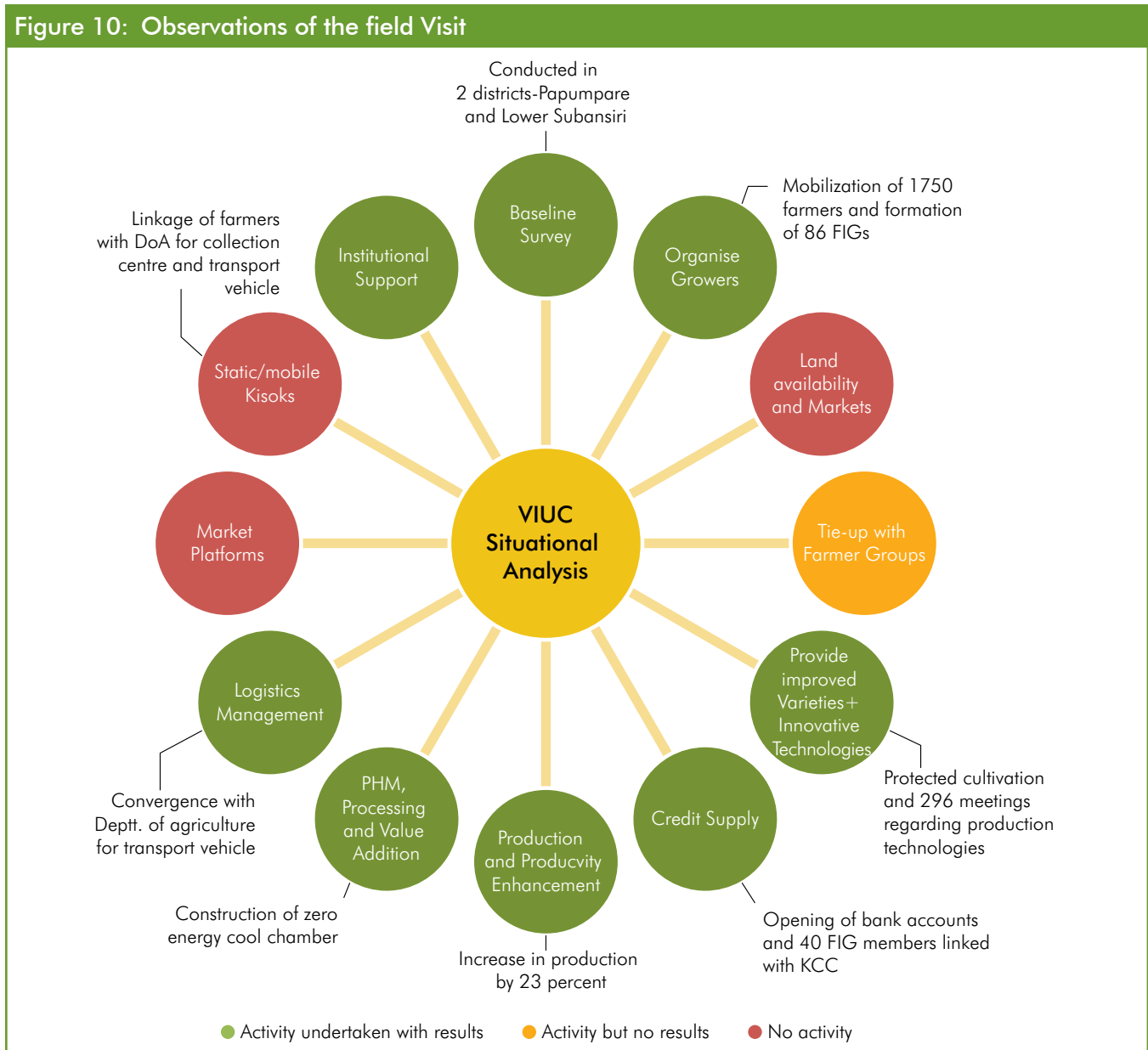
- ◆ State Department Officials participate in FIG/ cluster meetings in all the surveyed areas.
- ◆ Potential FIG/ Farmers have been identified on shared interest and they have full clarity about the objectives of the scheme.
- ◆ Around 20 percent of the FIGs of the surveyed areas are registered.
- ◆ Meetings with service providers, suppliers, MFI/bankers have not been organized.
- ◆ Only 20 percent of the farmers have been provided KCC. Once FPOs will be registered then linkage with aggregators will start.
- ◆ Very few buyer and seller meetings have been organized.

- ◆ Around 95 percent of the farmers have started joint procurement of inputs for vegetable cultivation.

Training and Training need Assessment: Training to FIGs and FPOs have been provided by RI with average 16 participants for one day at village level on all aspects cultivation, product quality improvement, record and account keeping.

Observations from Field Visit

As per the data received from the State Nodal Agency, 100 percent of the total budget has been utilized till date. The major observations of the field visit are as follows:



The Figure 10 is depicting the observations based on field visit and interaction with officials. It is sketching the present condition of the State in terms of direct impact as well as the activities which are in process.

Detailed observations of field visit

Cluster approach

Cluster approach for identification and selection of villages has been done. Total seven clusters have been identified for the implementation of the scheme. These clusters have been selected on the basis of availability of land for vegetable production and their connectivity to road for ease of operations.

Mobilisation of farmers and group formation

Group meetings and trainings have been organized at grassroot level on fortnightly and monthly intervals for awareness generation. Around 86 FIGs have been formed. Crop production aspects, joint procurement of inputs and marketing and other group activities are discussed. Monthly meetings of resource institution and district officials are being going on. Implementing agency officials regularly participate in cluster meetings. Farmers are being benefitted and participation has been increasing in group activity.

Training and capacity building

Training and capacity building programs are being conducted. The theme of such programs viewed to be need based depending upon the local scenario and farmer's requirement.

- ◆ Major training program are based on package of practices, marketing of produce, Post Harvest Management, value addition activities, internal management and functioning of FIGs.
- ◆ Training and capacity building program have been provided by livelihood resource persons of resource institution.
- ◆ Approximately 70 percent of the FIG members have been participating in such program and around 80 percent group leader of FIGs have been trained for FIG concept and management.

- ◆ Due to hilly terrain, frequent meeting and trainings have not been conducted but the program will soon be in its momentum as the farmers have now started taking interest in the program.

Disbursement of inputs and subsidy

The distribution of inputs have been going on and approximately 83 percent of FIG members have been provided inputs in the form of seeds, organic manures, garden tools, pesticides and cultivation assistance.

Cash subsidy is directly provided to FIG leader by DHO for further disbursement in hand. Although bank account of FIG members have been opened but disbursement of financial subsidy has been done directly in the form of cash to FIG leader. The reason for disbursement of cash has been incomplete sanction of funds for all farmers. Thus to prevent the confusion among farmers, cash has been disbursed in hand.

Functioning and coordination of resource institution

Resource institution have sufficient understanding about the scheme and they have been doing their work satisfactorily. They have been working dynamically on awareness generation, Farmer's Mobilisation, group formation, establishing input and output linkages. But lack of communication, transport facility and insufficient manpower has been the major bottlenecks in the program implementation. FPO formation is in the processing stage. As soon as FPO will get registered, other activities will accelerate itself for joint procurement and marketing. Frequent meetings are held at regular intervals with district officials for monitoring of the scheme activities.

Functioning of FIG

Potential FIG members have been selected based on shared interest.

- ◆ A total of 1750 farmers have been registered.
- ◆ Regular village meetings have been organized to discuss the program. Around 75% of the members have clarity about the scheme and functioning of FIG and FPO concept.

- ◆ In meetings, cultivation aspects, related problems, FIG functions, group procurement and marketing activities have been discussed.
- ◆ Although no separate working committee has been established for different issues but soon it will form. Decisions on all the issues have been made on consent of each farmer member. FIG members have jointly established an office with limited infrastructure.

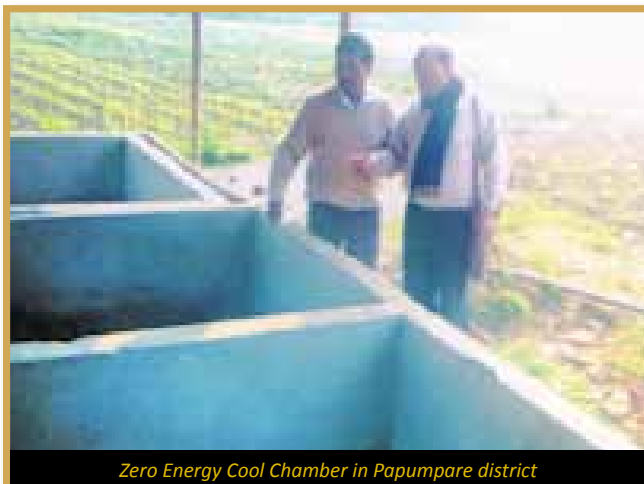
Linkage for input procurement and marketing

For establishing linkage regular cluster meetings have been organized. State and District officials have also been participating in the meetings regularly.

- ◆ Meetings with few service providers have been organized but merely 25% FIG members have been linked with KCC.
- ◆ For establishing marketing linkage, buyer and seller meetings have been organized. Discussions have been going on for supplying the produce to reputed academic institutions, nearby hotels and hostels and retail outlets once the FPO registers.

Infrastructure creation: For Post Harvest Management of vegetables, Zero Energy Cool chamber has been established in Papumpare District. These initiatives have created a positive change in the mindset of farmers. Participation of farmers for availing these facilities is increasing.

Marketing infrastructure: Collection centres has been established in Papumpare District. Around



Zero Energy Cool Chamber in Papumpare district

220 farmers have been benefitted by this collection centre.

Convergence of schemes

Other schemes of RKVY program have been converged for maximum benefit of farmers. A newly constructed collection centre of the Department of Agriculture has been used by FIG members, where they can also perform aggregation and sorting. Farmers can send their produce conveniently from this collection centre to any place.

Monitoring of the project

Monitoring of the project has been done by resource institution officials in one district of Papumpare. Any online monitoring system has not been developed.

HRD training to project management unit

Any HRD training has not been provided to project management unit.

Challenges/Issues

The scheme is progressing slowly in the right direction but being a hilly terrain with inefficient transport facility, there are some major challenges which have been slowing down the program.

Disparity in disbursement of inputs and subsidy- Prolonged process of release of subsidy has been the major barrier in implementation of the project successfully. Since the financial subsidy has not been releasing on time, therefore all farmers have not been availing it. Due to disbursement of few amount of subsidy and phase wise distribution, only 30-40% of the farmers have been covered for cash subsidy. This is creating confusion among farmers that they will not get the subsidy and consequently creating a negative impact on the program.

Marketing infrastructure: There has been no such facility of marketing infrastructure. Farmers have been marketing their produce individually. Although, some farmers have been jointly transporting their produce to Assam market for better price procurement but the expenditure incurred supersedes the earning. No transport facility has been provided by the Government, aggregation centres, pack house and retail outlets

are not available locally. Farmers have been marketing their produce to local traders through middlemen at poor prices due to non-availability of proper marketing channel and more competition.

Transport and communication problem: Since the State has a hilly and riverine topography; roads have not been properly developed. There has been no proper facility of transport and communication. Long distance between one block to another and district headquarter impedes the regular physical visit for monitoring of the scheme at frequent intervals.

Lack of manpower: Since the coverage area of the scheme is large and villages are far way from each other, therefore, for covering such long distance shortage of manpower has been observed.

Poor education level: Most of the farmers in the State are which uneducated, it causes low understanding of the objective and advantages

of the scheme. Repeated discussions lead to 70% understanding, still 30% are not completely aware about the scheme. This creates problem in opening of bank account and other activities, ultimately slows down the process.

Fund allocation for training: It has been reported by concerned resource institution that no fund has been allocated for conducting training and exposure visits; therefore; it becomes difficult to conduct training on different aspects of crop production, joint input procurement and marketing.

Share capital: Because of poor economic background and no other means of earning, share capital of Rs 1000 each becomes expensive for FIG/FPO activities.

High cost of production: Because of the lack of employment and no alternatives of earning, the labours are available on high wage rates. It increases the total cost of production.

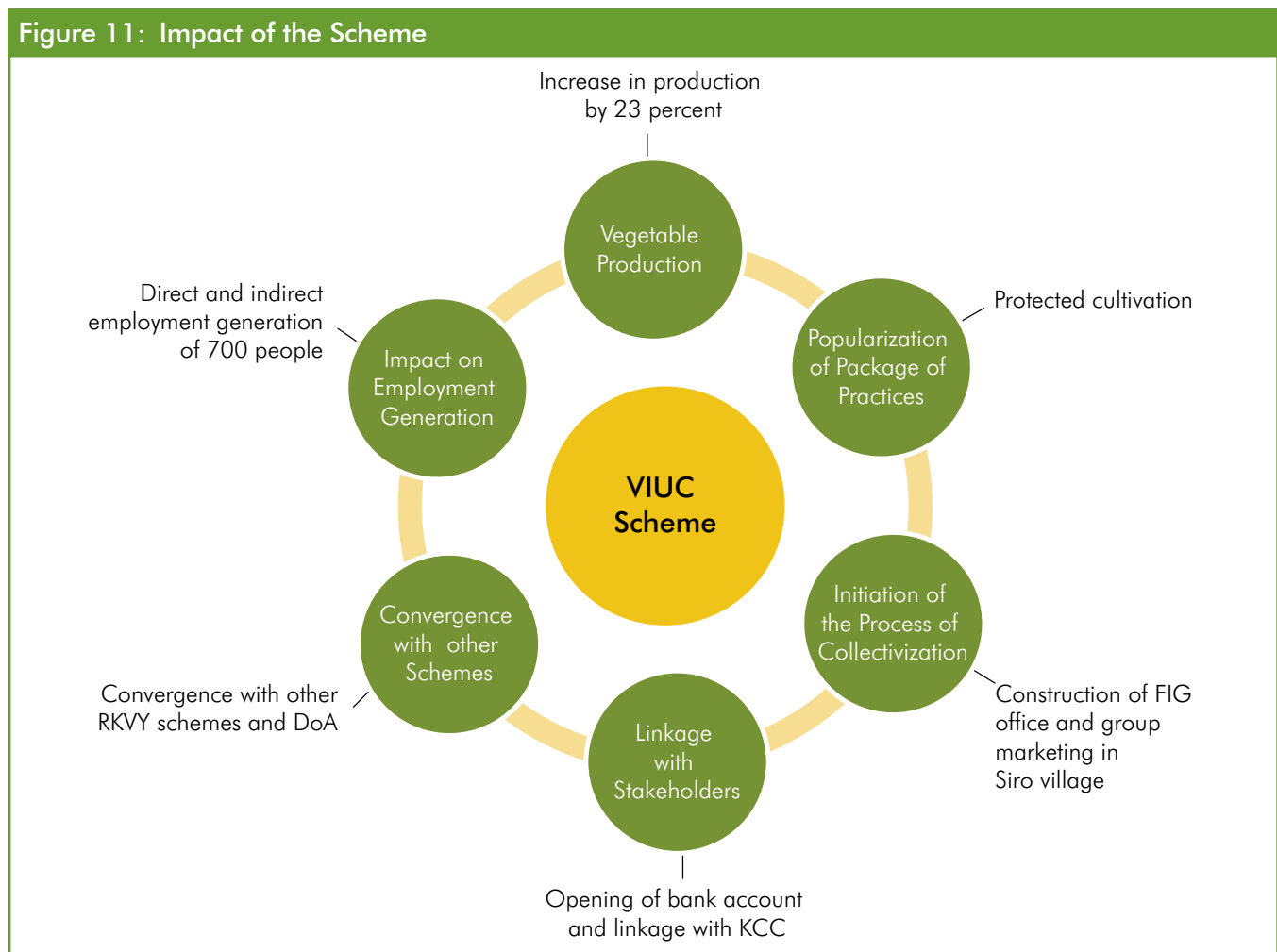
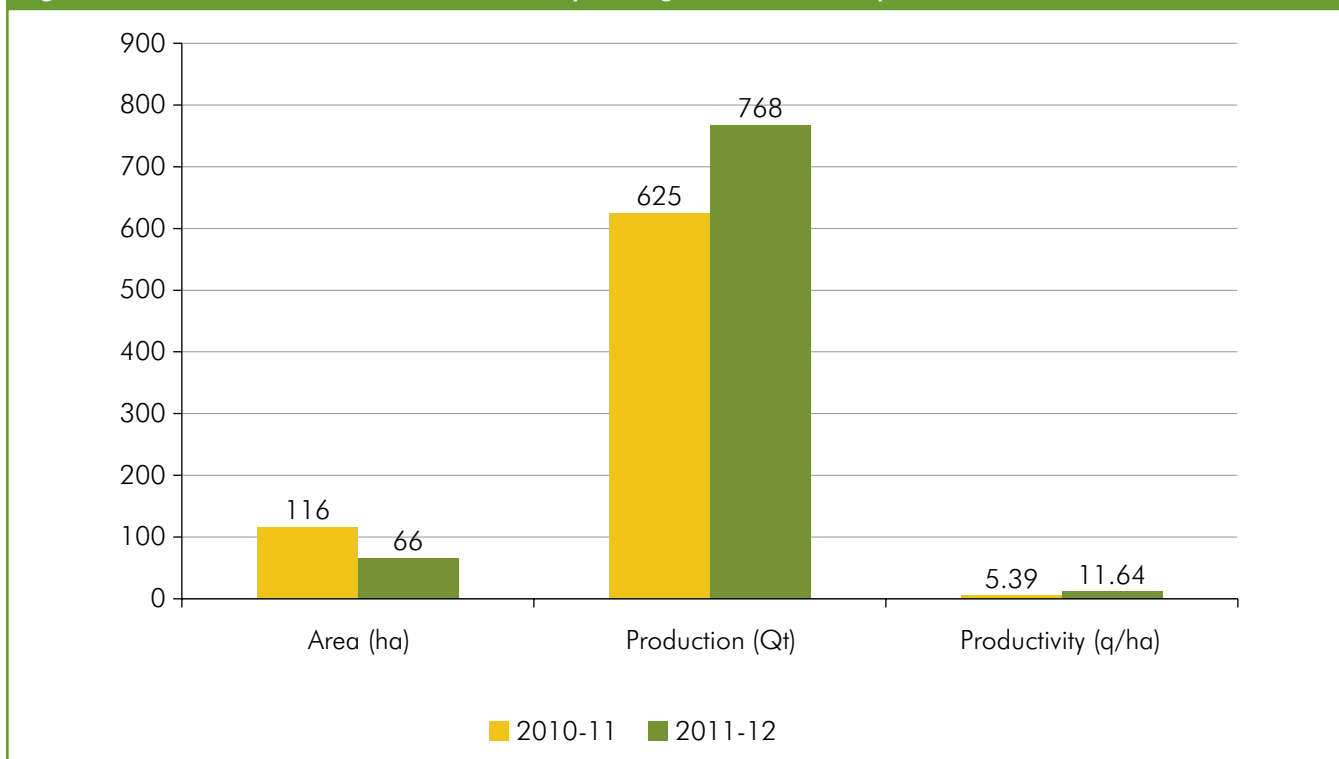


Figure 12: Area, Production and Productivity of Vegetables in Surveyed Areas in 2010-11 and 2011-12



Irrigation: Lack of irrigation facility is an important problem in the State. As per the primary survey data, almost 92% of the land remains unirrigated.

Impact of the Scheme

This chapter investigates the impact of VIUC on broader areas relating to procurement of quality inputs, linkages developed for procurement and marketing, saving and improvement in socio-economic status of farmers and employment generation induced by the initiative.

VIUC has been framed to cover all the segments of vegetable supply right from farmers' field up to its final absorption by the market with major emphasis on training for good production practices, Post Harvest Management, value addition with creation of marketing infrastructure and linkages. For the purpose of assessing impact of VIUC, the results of performance and situational analysis along with general dissemination has been assimilated.

Impact of VIUC

The following figure is outlining the direct impact of scheme in terms of the following six components:

The details of these components are described in the following sections:

Vegetable Production

According to the data of primary survey (for Baseline and current year) for the districts where scheme is being implemented, the area under vegetable production has decreased but the production has increased significantly. As per 2010-11 data, area under vegetable cultivation was 116.34 ha which decreased to 66.88 ha in 2011-12, which is showing a decrease of 42.5 percent. Production of vegetables in the baseline year was 625 qt which increased to 768 qt, showing an increase of 23 percent. Productivity of the vegetable also increased considerably by more than double. The production practices have improved considerably and farmers are now keener to learn and apply new practices. Increase in vegetable production has stabilized the price of vegetables and ensured the availability of fresh vegetable throughout the year.

Quality Inputs

The scheme has been really promoting the augmentation of modern production practices and improvement over the traditional cultivation



Sowing of off season vegetable



Large area covered under salad crop cultivation

system in respect of adoption of hybrid seeds, protected cultivation, off season vegetable production. For vegetable production, seeds, fertilizers, vermicompost and organic manures have been distributed among farmers. Such type of input use has increased the perception of farmers and increase in vegetable production to a substantial level. Approximately 83 percent farmers have been covered for input distribution.

Most of the farmers have been using hybrid seeds. Gradually local seeds have been replaced by hybrid seeds viewing its quality and performance. This indicates that farmers have become aware of the use of hybrid seeds and other package of practices. As most of the farmers are uneducated, therefore, use of hybrid seeds is an important indicator of the penetration of the scheme. It was reported in baseline survey that the farmers in the area have been facing the problem of fertilizer procurement. Distribution of organic manures, vermicompost and fertilizer packets have reduced this problem considerably. State and District officials' along-with RI have been putting tremendous efforts for motivation of FIG members for improvement in productivity of vegetables. Timely monitoring of the field has been going on for input use and better horticultural practices.

Production Cost

During the survey, the cost of production of various vegetables in the project area was captured and compared with the cost of production of vegetables mentioned in baseline survey report.

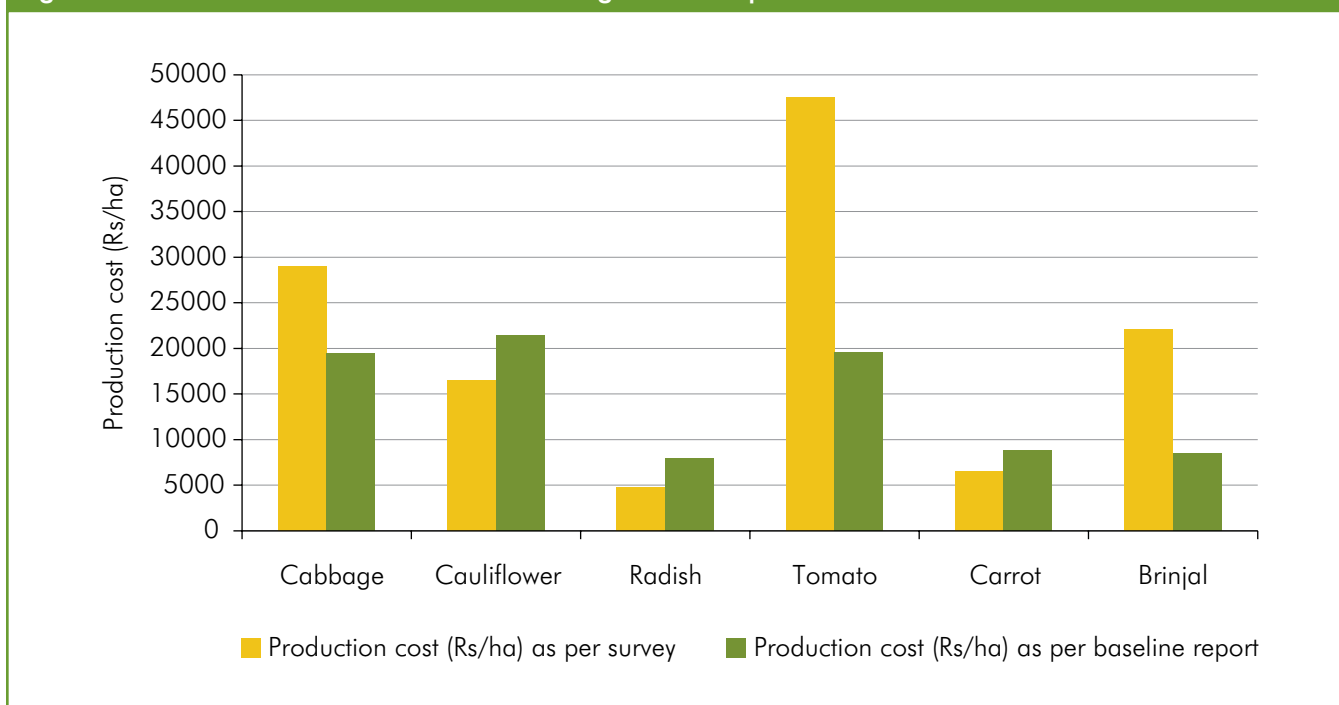
The production costs have been substantially reduced during project period for some vegetables, like for cauliflower, carrot and radish. Cost of production has reduced considerably 26-41 percent. This reduced cost of production can be attributed to financial support from Government, which farmers are availing in the form of subsidy for seeds, organic manures, fertilizers, garden tools etc. While at some places, for tomato, brinjal and cabbage cost of production increased. It was observed that the labour charge and irrigation is the major problem in areas which increases the total cost of production. For this, there is a need to converge scheme of water harvesting and also include provision of irrigation facility in the component of the VIUC scheme.

Difference in cost of production from baseline year to current year has been depicted in the graph below:



Cabbage production at Arunachal Pradesh

Figure 13: Cost of Production of Different Vegetable Crops



Popularization of Modern Package of Practices and Protected Production Technology

As per interaction with State and District officials, the scheme has been positively affecting the understanding of farmers regarding modern package of practices and protected cultivation methods. Farmers have been finding the scheme beneficial. Off season vegetable production of cabbage, tomato and other crops have been going on. These vegetables have high demand in market

due to consumer’s preference and supply to big hotels.

Therefore, farmers have been encouraged to carry out protected cultivation. These vegetables fetch a better price in market. Since the farmers in the State have been marketing their produce to Assam and nearby markets, so to procure remunerative prices, a major percentage of farmers have been encouraged for off season vegetable production in poly-house.



Initiation of Process of Collectivization

Resource institution have mobilised 1750 farmers under the scheme which have been associated into 86 FIGs. Process of registration of Farmers’ Producers’ Organisation (FPO) is in process in both the Districts. Collectivisation initiatives are going on actively and farmers have been working towards joint procurement, production and marketing activities in both the Districts. FIGs of lower Subansiri District have developed a temporary office with a small infrastructure. Meetings of FIGs have been organized in the office and activities of common interest being discussed. Observing the benefits of joint procurement of input on reasonable rates and good quality, more than 60 percent of the FIG members have started joint procurement of inputs.

Joint marketing of produce has also started at some places. Around four FIGs have started marketing their produce in groups to nearby Siro village and selling it on wholesale price. Farmer members have also been transporting their produce on truck and Tata magic in group to distant markets because individual farmers cannot bear the heavy transportation charges. This is showing that small and marginal farmers have been benefitted by the scheme optimistically and therefore encouraged for group activities.

Linkage with Stakeholders

Establishing linkage between various stakeholders, service providers, micro financing institutions, banks and research institutes is necessary for convenient flow of process. Regarding linkages, all 86 FIGs have their bank accounts opened and around 40 FIG members have been linked with KCC. Both the FIGs have been saving more than Rs 6.40 lakh.

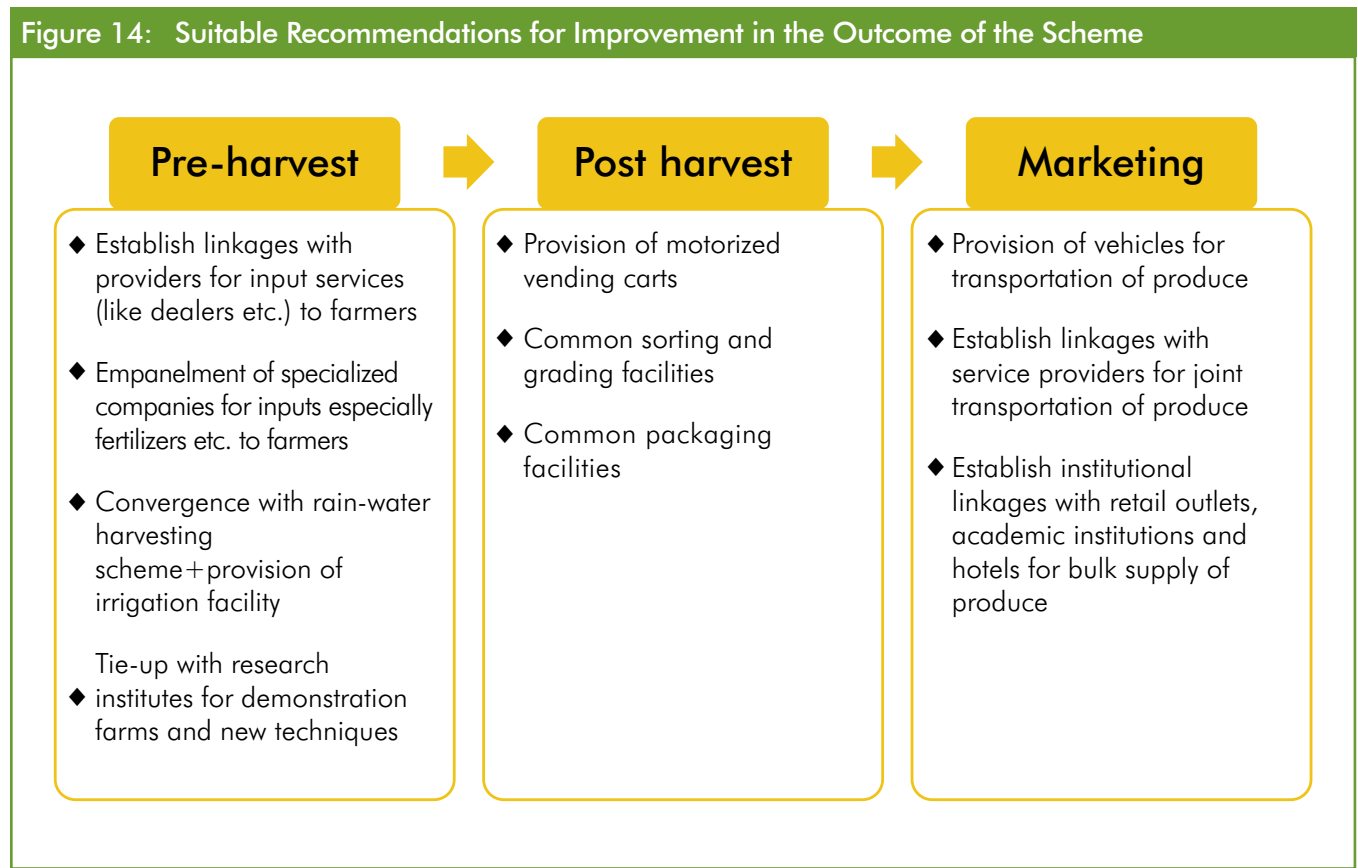
- ◆ Resource institution have been planning to organize meetings with input suppliers for

joint procurement of inputs one large scale. Once the FPO will be registered then farmers will be linked up with some renowned input suppliers of the area.

- ◆ Such linkages will develop a competitive market and will enable the farmers to purchase quality inputs on time and better prices.
- ◆ It was observed that farmers have problem in procurement of quality fertilizers. More emphasis will be given on linkage with fertilizer dealers.
- ◆ For establishing market linkages, buyer and seller meetings have been organized. Though any linkage or tie-up has not been established but resource institution have been making efforts for linkage with local academic institutions, hotels and hospitals for bulk supply of vegetables.

Convergence with Other Schemes

Other schemes of RKVY program have been converged. In addition to this, farmers have been linked with aggregation centres developed by



Department of Agriculture, Arunachal Pradesh. This aggregation centre is linked with roads with all States and markets, and farmers have been benefitted by such convergence. In addition to this, transport vehicles of Department of Agriculture has been used by FIG members for transporting their produce.

Impact on Employment Generation

Since the scheme was started only 1 year ago; therefore; it is not possible to assess the impact on employment generation but till now, the scheme has directly provided employment opportunities to people especially by vegetable cultivation and protected cultivation methods. Around 700 people have been provided employment directly and indirectly from the scheme.

Recommendations

This chapter describes the proposed recommendations and suggestions, which are based on secondary and primary research by the team in Arunachal Pradesh.

In Arunachal Pradesh, the VIUC is gaining momentum through the constant efforts of State and District officials and involved resource institution. There are some components which will require more effort.

Recommendations for proper administration of the scheme:

- ◆ Synchronized release of funds. Distribution of subsidy and inputs should be phase-wise in all the clusters and on time
- ◆ Provision of budget for training component and exposure visits
- ◆ Allocation of more manpower for proper monitoring of the scheme

Chapter 4

Gujarat

Project Area and Stakeholders

This part describes the implementation structure and functioning of the project at different levels and the major stakeholders involved in the project.

VIUC Scheme in Gujarat

VIUC in the State of Gujarat is being implemented in the State Capital - Ahmedabad having population of 5.57 million and the scheme started in the year 2011-12. Joint Director of Horticulture, Government of Gujarat has been appointed as the Nodal Officer for implementing the project at the State Level. Deputy Director Horticulture has been appointed as the Nodal Officer to look after the overall implementation of the scheme at the District level.

Baseline Survey

To identify major vegetable production Districts and clusters, an independent agency, Cohesion Foundation Trust, carried out the baseline survey in Gujarat. Baseline Survey highlighted the existing supply chain and other bottlenecks and also identified the vegetable growing districts and cluster within the district. During the interaction with the Nodal Agency and Resource Institutions, it was observed that areas/clusters, which were identified under the baseline survey, have been taken-up for the purpose of implementation of the scheme.

State/Districts/Clusters

The scheme is being implemented in one District of Gujarat i.e; Ahmedabad. Major vegetable clusters around Ahmedabad, ranging from 10 to 90 km, are supplying vegetables to targeted urban cluster i.e. Ahmedabad. However, during the field visit, it was

also found that some of the villages covered by the Development Support Centre (DSC), a Resource Institution, are not in the Ahmedabad District.

Implementing Partners of VIUC In Gujarat

In Gujarat, State Department of Horticulture has been assigned the task of overall implementation of the VIUC. Joint Director Horticulture is the designated Nodal Officer for the implementation of the scheme in the State. Deputy Director Horticulture (DDH) has been given overall responsibility to look after VIUC at the district level and Assistant Director Horticulture (ADH) is the nodal officer for implementation of the scheme at district level. At Tehsil level, Horticulture Officers (HOs) are responsible for implementation of the scheme. For implementation of VIUC in the State, staffs of State Department, district and block level are involved.

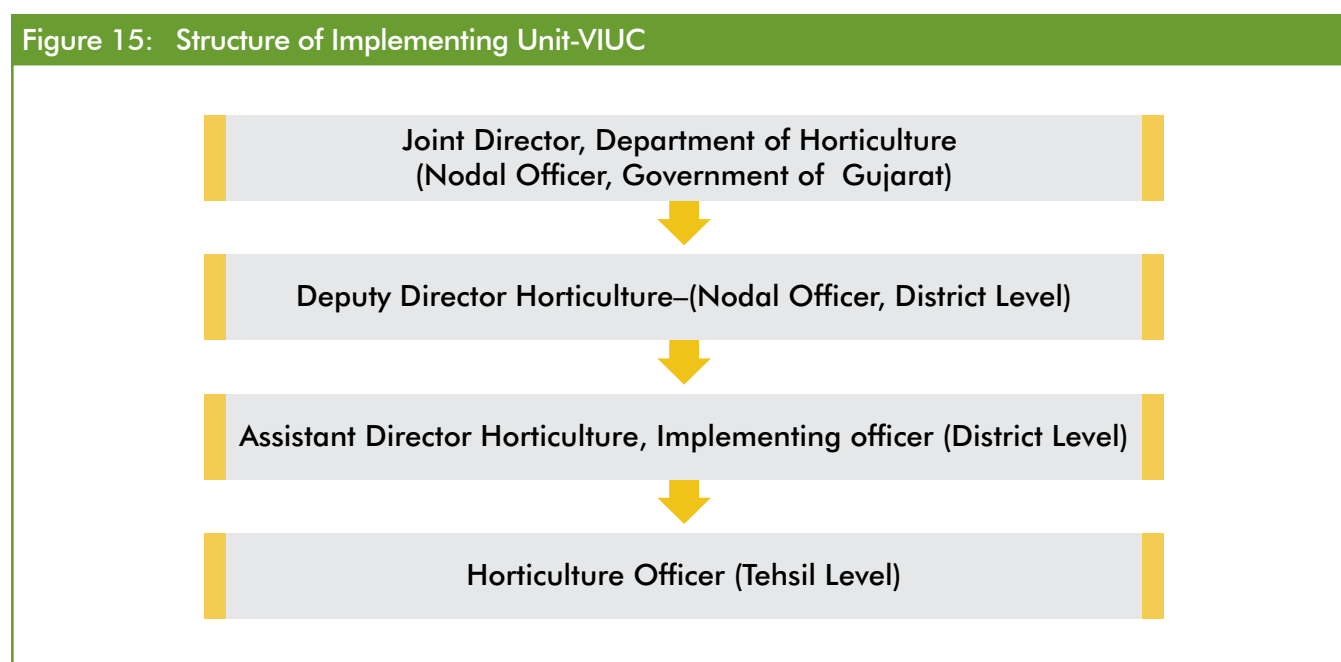
In order to mobilize farmers, formation of groups, training and capacity building and establishing market linkages, etc., two Resource Institutions (RI) have been appointed by SFAC in the State

covering different vegetable production clusters in Ahmedabad. Apart from these two RIs, other stakeholders, their role and area of coverage are summarised in the following table.

Table 8: Stakeholders and their Coverage Areas

Role	Name of Organization	Districts covered under VIUC scheme
Baseline Survey	Cohesion Foundation Trust	Ahmedabad
Nodal Agency	Joint Director Horticulture, Government of Gujarat (Nodal Officer, State level) Deputy Director Horticulture (Nodal Officer, District level)	Ahmedabad
Resource Institution	ITSL	Ahmedabad
Resource Institution	DSC	Ahmedabad

Detailed implementation structure, has been depicted in the following figure:



Fund Flow

Till last year, all the funds of the scheme used to be managed directly by the treasurer at district level. The Horticulture department had administrative and monitoring responsibilities, which included processing of application of a beneficiary and thereafter recommending the treasurer, on satisfactory verification of all project related documents and physical verification, for issuance of fund/cheque to the beneficiary. This

year (for the year 2012-13) the process has been changed and now instead of treasurer, fund is being managed by the State Seed Corporation.

Budget Outlay and Expenditure (2011-12): The total budget outlay approved for the State for the year 2011-12 was Rs. 1200.00 lakh. There is no separate provision of budget for administration purpose.

Release of Subsidy to Beneficiary

In the State, under VIUC, beneficiaries are identified and selected as per the guidelines of the scheme and applications are approved after proper scrutiny of documents by the concerned officials of the Department. Subsidy is released through Cheques in beneficiary's account by the Treasurer directly (till last financial year). Horticulture Officer receives the application and submits to DDH for approval. The application after verification and approval is forwarded to the Treasurer for issuing the cheques.

In case of distribution of inputs, specifically for seed, the State Government has empanelled

seed companies for distributing the seed to the farmers. The Government pays directly to the seed companies against total seed distributed.

Resource Institutions

For the mobilisation of farmers and promotion of Farmers' Interest Groups (FIGs) and Farmers' Producer Organisations (FPOs), two organisations – International Traceability Systems Ltd (ITSL) and Development Support Centre (DSC) have been appointed in the State by SFAC. The targets of these RIs in terms of Farmers' Mobilisation, FIG & FPO formation as well as current achievements are given below:

Table 9: Current Status of FIG and FPO Formation

Particulars	ITSL		DSC		Total	
	Target	Achievement (registered)	Target	Achievement (registered)	Target	Achievement (registered)
FPO	2	0	2	0	4	0
FIG	100	91	75	66	175	157
Total farmers	1500	1541	1500	1320	3000	2861

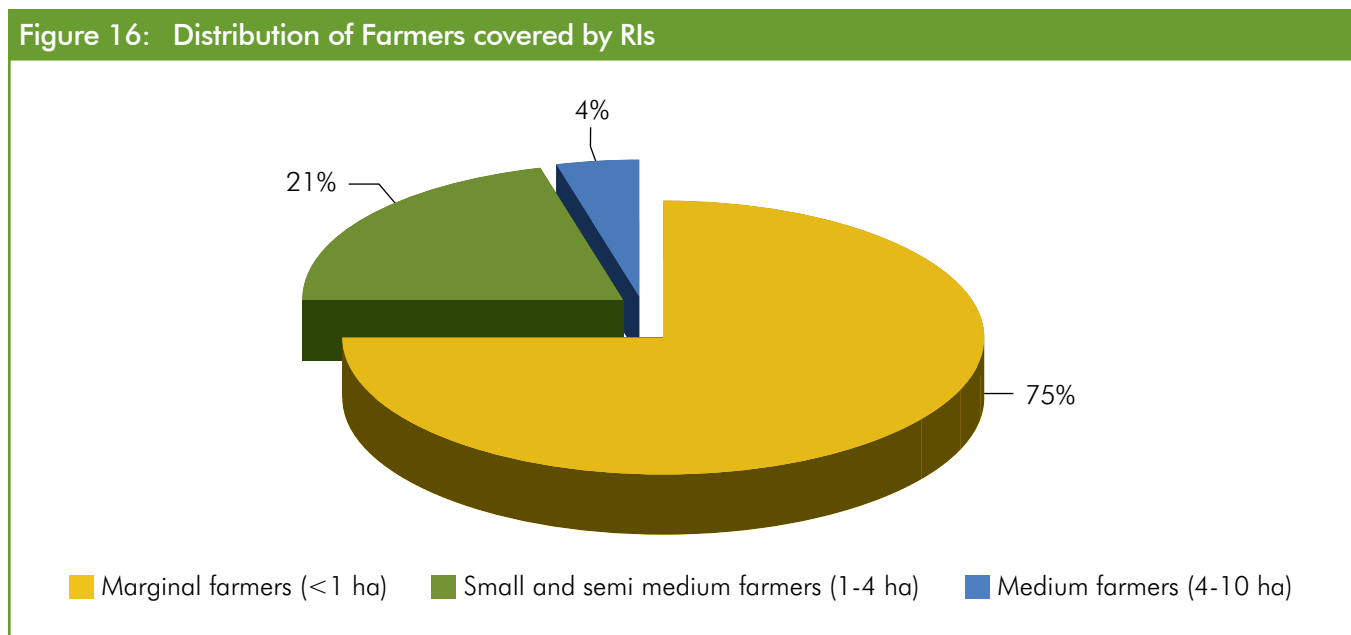
Source: Secondary information from RI

Table 10: Coverage of Farmers and Participation in Capacity Building

Particulars	Unit	Resource Institution		Total
		ITSL	DSC	
Districts		1		1
Clusters	Nos	3	4	7
Total Farmers	Nos	1541	1320	2861
Break up of total farmers				
Marginal (< 1 Ha)	Nos	1541	618	2159
Small and Semi-medium Farmer (1-4 Ha)	Nos	–	592	592
Medium Farmers (4-10 Ha)	Nos	–	110	110
Large Farmers (> 10Ha)	Nos	–	–	
Meetings Conducted				
FPOs	Nos	1	7	8
FIGs	Nos	108	381	489
Farmer	Nos	108	381	489
% of members regularly participating in meetings				

Particulars	Unit	Resource Institution		Total
		ITSL	DSC	
FPOs	%	70	74	72
FIGs	%	67	75	71
Farmer	%	67	100	84
Capacity Building for FIGs/FPOs				
FIG members oriented/trained & aware on NVI scheme	Nos	1323	1500	2823
Group leaders oriented/trained on FIG/FPO concept and management	Nos	66	150	216
FIG/FPO members oriented / trained on Account Keeping in NVI scheme	Nos	12	–	12
FIG members trained on some or other best practices (for production, value addition and marketing) under NVI scheme	Nos	– (Provided by Department)	250	250
Bank Account Opened (Status)				
FPOs	Nos	–	–	–
FPOs (Share Collection)		–	–	–
FIGs	Nos	12	–	12
Total Saving	Rs. Lacs	0.25	0.30	0.55

Source: Secondary information from RI



Majority of the farmers (almost 96 percent) covered under the scheme belong to small, marginal and semi-medium farmers' category as vegetable cultivation is mainly undertaken by marginal and small-semi medium

farmers in Gujarat. It also fulfills the criteria of selection of backward farmers for improvement in their socio-economic condition. None of the large farmers has been covered under the initiative.

Performance of the Scheme

This part investigates the overall success of the VIUC in terms of physical and financial achievement.

Farmers benefit directly from the following eight components of the scheme. The performance of these eight components is illustrated in the following figure.

Figure 17: VIUC Performance



Proposed and Approved Action Plan

As per the proposed action plan for the year 2011-12, the Department proposed to take up almost all the activities/components for the implementation of VIUC with the total financial outlay of Rs 1200.00 lakh. The share of all the components is illustrated in the figure below:

Of the total approved financial outlay of Rs 1200.00 lakh for the year 2011-12, maximum fund has been allocated for component of Protected cultivation (50.85 percent) followed by 'Vegetable cultivation' (30.65 percent), 'Post harvest management

(5.23 percent), 'Promotion of Farmers' Association (5 percent) and 'Vegetable seedling production (4.17 percent). The allocation of fund is more towards protected cultivation.

Detailed component-wise Physical Targets & Financial Outlay for the year 2011-12 is given in Annex- III(A). The present status of financial achievement of different components can be delineated from the following bar graph, in which physical and financial achievement is noticeably evident.

Figure 18: Approved Action Plan

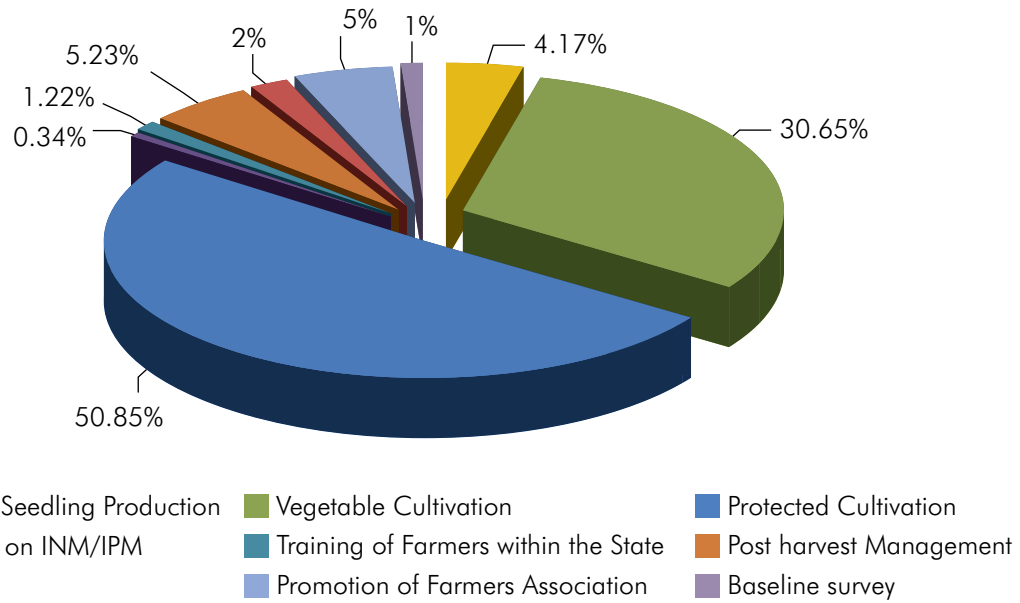
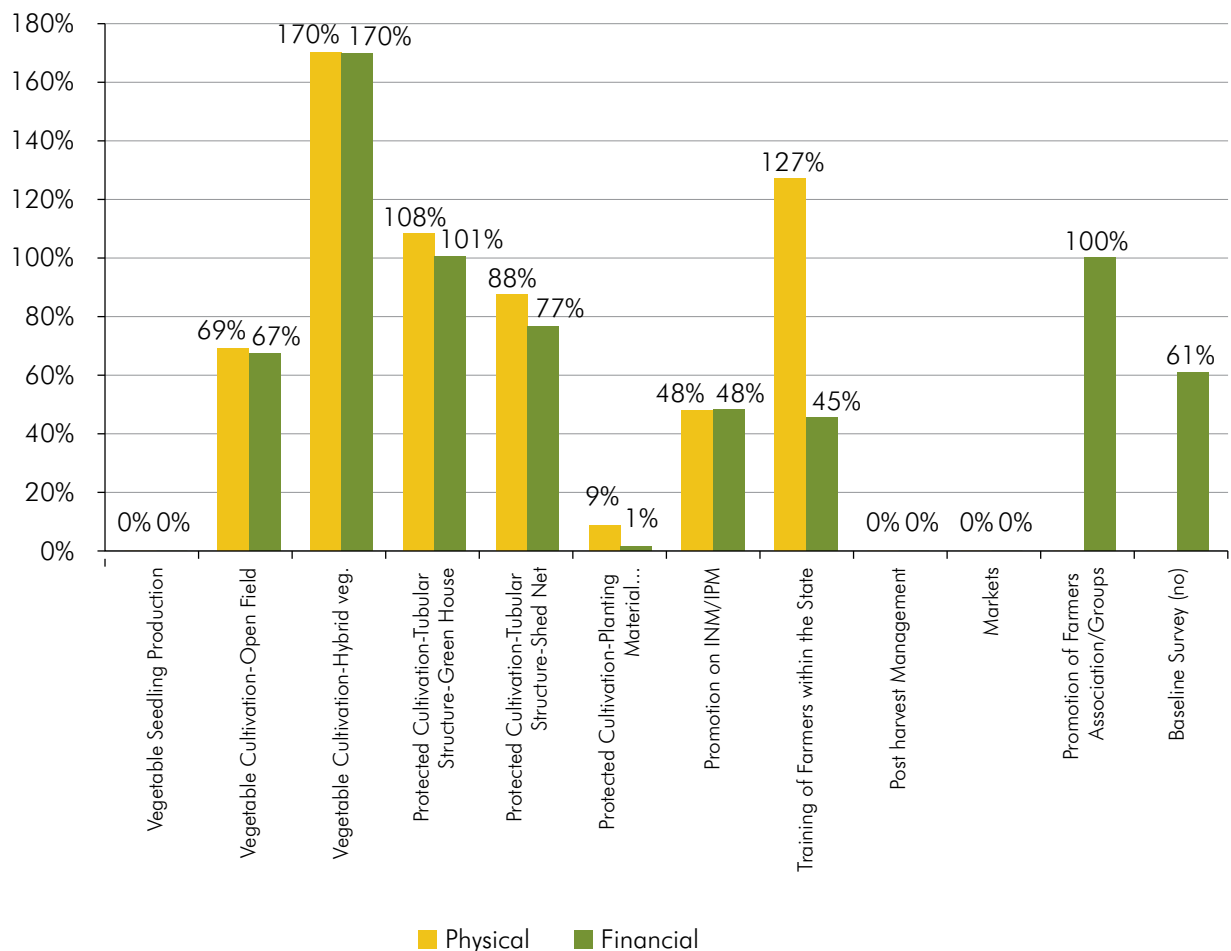


Figure 19: Physical & Financial Achievements of VIUC in Gujarat (Year 2011-12)



Component-Wise Physical and Financial Targets and Achievements (2011-12)

The following table illustrates the component-wise performance for FY 2011-12.

Table 11: Component-wise physical and financial targets and achievements

Component	Physical Performance	Financial Performance
Vegetable Cultivation	86 percent achievement As per the approved plan, 1260 ha area was approved for expansion of open pollinated and 250 ha hybrid vegetable cultivation, of which 871.33 ha area has been covered under open pollinated vegetable cultivation and 425.07 ha under hybrid cultivation. In case of hybrid cultivation, there has been 170 percent achievement of physical target.	91 percent achievement The financial allocation for vegetable cultivation was Rs 367.88 lakh. For open pollinated vegetable cultivation, financial allocation was Rs 283.5 lakh, of which Rs 190.68 lakh has been utilized. For hybrid vegetables cultivation, there was allocation of Rs 84.38 lakh, of which Rs 143.24 lakh has been utilized. Financial achievement for hybrid cultivation is 170 percent
Vegetable Seedling Production	No achievement For vegetable seedling production, physical target of 2 ha was allocated, of which no area has been covered.	No achievement Financial allocation for this component was Rs 50 lakh, of which nothing has been utilized.
Protected Cultivation	66 percent achievement Physical allocation for different components of protected cultivation are as under: Naturally ventilated system (Tubular structure) – Physical target for establishment of tubular structure was 60,000 sq m area, of which 65000 sq m area has been covered and physical achievement is 108 percent. Shadenet house (Tubular structure)- Physical target for establishment of tubular structure was to cover 96000 sq m area, of which, 84000 sq m area has been covered. Physical achievement is 87.5 percent. Cost of planting material- Physical target was to cover 80000 sq m area, of which 7000 sq m area has been covered. Physical achievement is 8.8 percent.	82 percent achievement Financial allocation for different components are as under: Naturally ventilated system (Tubular structure) - Financial allocation for this component was Rs 280.20 lakh, of which Rs 281.75 lakh has been utilized. Financial achievement is 101 percent. Shadenet house (Tubular structure)- Financial allocation for this component was Rs 288.00 lakh, of which Rs 220.81 lakh has been utilized. Financial achievement is 77 percent. Cost of planting material- Financial allocation for this component was Rs 42.00 lakh, of which Rs 0.61 lakh has been utilized. Financial achievement is 1.5 percent.
Promotion of INM/IPM	48 percent achievement Physical target for promotion of INM/IPM was to cover 405 ha area, of which 194.5 ha has been covered.	48 percent achievement Financial allocation for promotion of INM/IPM was 4.05 lakh, of which Rs 1.95 lakh has been utilized till date.

Component	Physical Performance	Financial Performance
Training of Farmers within State	127 percent achievement The physical target for training of farmers was 2000, against which training to 2538 farmers have been provided.	45 percent achievement Financial allocation for this component was Rs 14.67 lakh, of which Rs 6.67 lakh has been utilized.
Post harvest Management	No achievement The physical target for Post Harvest Management was establishment of 25 pack-houses, one pre-cooling unit and two refrigerated vans/containers, of which, none of the structure has been established.	No achievement Financial allocation for all these three components of Post Harvest Management was Rs 62.7 lakh, of which no fund has been utilized in all component.
Markets	No achievement Physical target for market was establishment of four collection centres and provision of 30 static/mobile vending cart with cool chamber, of which no component has been created till date.	No achievement Financial allocation for market establishment was Rs 20.5 lakh, of which no fund has been utilized in both components of market.
Promotion of Farmers Association/ Groups	No comment received from State Nodal Agency	100 percent achievement The financial allocation for this component was Rs 60 lakh, State has transferred total fund to SFAC.
Baseline Survey	100 percent achievement Financial allocation for this component was Rs 10 lakh, of which Rs 6.09 lakh has been utilized and the achievement is 100 percent because this was the lowest bidding amount.	

Source: Progress report of VIUC Gujarat

Out of the total fund of Rs 1200.00 lakhs, total expenditure is of Rs 911.80 lakhs i.e. 76 percent of the total financial target has been achieved.

Situational Analysis of VIUC

This part of the chapter illustrates the situational analysis of VIUC in Arunachal Pradesh. It is an analysis of the State and condition of the farmers/beneficiaries after implementation of the initiative, identification of the major issues related with the components and analysis of key stakeholders. Situational analysis has been derived with the help of primary survey, secondary information and observations during field visits.

Findings of primary survey of farmers have been discussed in the following sections:

Findings of Primary Survey

For the purpose of Impact Assessment Study, around 40 farmer members (FIGs) were surveyed in the Ahmedabad District. The major points emerged out of the survey have been discussed in the following section:

Land Holding: Average land holding size of the surveyed farmers is 1.3 ha. More than 70 percent of farmers belong to small and marginal farmers. Only small and marginal farmers have been covered under the scheme as beneficiary. None of the large farmers has been covered under the scheme.

Irrigated Land: Out of the total cultivable area of 54.7 ha, 100 percent area is irrigated. Majority of



the farmers use tube well as source of irrigation and a small percentage use canal/spring/stream for irrigation purpose.

Seed Used: Almost 75 percent of the surveyed farmers use hybrid seeds and others are using open pollinated seeds. Almost all the farmers are procuring seeds from local input supplier. Use of hybrid seeds indicates that the perception of farmers for modern package of practices has improved. As of now, collective procurement of seed has not been started yet. Very few

farmers have got the seeds from Government Department, under the scheme, reflecting poor linkages of farmers' mobilised by the RIs and State Implementing agency (as shown in Physical & Financial performance of the scheme, against overachievement of vegetable cultivation components, beneficiary farmers amongst FIG members are very less).

Input Procurement: All the farmers of surveyed areas are procuring the inputs like seeds, fertilizers and pesticides individually from local input supplier and cooperatives. Availability of all the inputs is average. There is no collective procurement by any FIG or member farmers.

Adoption of Integrated Pest Management: With reference to the baseline survey, it was observed that the adoption of Integrated Pest Management was very low and most of the small and marginal farmers face problem in procuring the inputs; therefore; adoption of IPM is nil in the surveyed areas.

Post harvest Losses and Value Addition: As per the data of surveyed farmers, the extent of post harvest losses varies from crop to crop as mentioned below:

Table 12: Post Harvest Loss of various Vegetables

Crop Name	Post Harvest Loss (in percentage)
Brinjal	10.40
Chilli	10.00
Cabbage	10.00
Cauliflower	7.30
Bitter gourd	10.00

As per the baseline survey report, post harvest loss of vegetables was observed to be more than 15 percent. According to the primary survey report, it was observed that the average post harvest loss in all the vegetables varied from 7-11 percent. It indicates that the component of Post Harvest Management of vegetables has improved among farmers by different training sessions provided by Resource Institutions on post harvest handling of vegetables. Almost 60 percent of the farmers are performing value addition at field level by sorting and others are performing grading, packaging

and secondary processing, etc. Value addition at field level results in improved shelf life and better quality of the produce.

Marketing of Produce: Almost 72 percent of the farmers are carrying their produce to the market in plastic bags and others in loose packaging and gunny bags. Average cost incurred on packaging is Rs 23/- per quintal of the produce. Almost all the farmers of the surveyed areas are carrying their produce to wholesale market upto a distance of 10 km.

All the farmers are carrying their produce individually in public transport vehicles and are selling to commission agent or *aarhtia*. Farmers are getting payment on spot cash basis on a fixed price. The major problem that the farmers are facing is high transportation cost, lack of cold storage facilities, dependency of middlemen and distant markets. Lack of storage facilities compels the farmers to sell the entire produce in a single delivery. Large availability of the produce lowers down the price in the market. In addition to this, influence of middlemen is also very high due to individual selling approach.

Bank Accounts and Savings: Savings have not been started by any of the FIG, being promoted by both the agency; neither any bank account has been opened as yet.

Government Support & Incentives: Around 100 percent of the farmers of the surveyed areas are aware about Government support and activity and major source of information access is Resource Institutions working in the area. With reference to the baseline survey report, earlier the awareness regarding Government support and subsidy was hardly four percent. This is a substantial achievement as all the farmers of the area are now aware about different Government support and schemes. None of the farmers are beneficiary of other Government schemes.

Awareness about VIUC scheme: All the farmers of surveyed areas mentioned that they are aware about VIUC scheme and its objectives. According to them, major objectives of the scheme is to increase the vegetable production and improve the economic condition of small and marginal farmers.

Resource Institutions: ITSL and DSC are the Resource Institutions working in the area. Regular meeting of RI and farmers takes place at monthly intervals. Village and cluster meetings are organized to discuss the program. Participation of State / District officials in cluster meetings was observed to be very low in all the surveyed areas. Potential FIGs/ Farmers have been identified on shared interest and they have full clarity about the objectives of the scheme. Meetings with service providers, suppliers, MFI/bankers have not been organized in the surveyed area. Buyer and seller meetings have not been organized and none of the

farmers are doing joint procurement of inputs for vegetable cultivation.

Training and Training need Assessment: Hardly 13 percent of the farmers have been provided any kind of training and capacity building by RIs with average 100 participants for 2 days at district level on aspects like FIG/FPO formation, record and account keeping, aggregation of produce, joint purchasing of inputs and joint marketing of produce, cultivation aspects, product quality improvement and value addition activities. The information emerging from primary survey is not matching with the number provided by the RIs, this reflects that the trainings organised by RIs are not very effective and impactful.

Overall, from primary survey, it is emerging that the performance of RIs are not very good in terms of motivation of farmers for formation of FPOs, imbibing the concept of collectivisation, facilitating any kind of training or linkages for direct procurement of agri-input and marketing of output.

Observations from Field Visit

During field visits, interactive meetings were organised with the farmers at Trent (Mandal), Kodral and Charani Muhadi (Kuha) villages.

The following figure is depicting the observations based on field visit and interaction with officials. It is sketching the present condition of the State in terms of direct impact as well as the activities which are in process.

Functioning and Coordination of Stakeholders: It was observed that there was lack of coordination amongst Nodal Implementing Agency and Resource Institutions implementing the scheme in the State. Due to this lack of coordination, most of the farmers who are being mobilized by the Resource Institutions are not the beneficiary of the financial assistance provided by the department under the scheme. There is no convergence of various components of scheme. Because of this, the overall impact of the scheme is not as visible as it would have been. During a meeting with the State implementing agency officials, it was intimated that they had not been able to contact Development Support Centre (DSC) for the last six months. Similarly,

Figure 20: Observations of the field visit



ITSL though it has very good coordination with department but it is still unable to reach to farmers due to lack of receipt of funds for movement from their central office.

Mobilisation of Farmers and Group Formation: Although, ITSL has registered more than the targeted number of farmers and DSC has registered lesser target but during the visit it was found that the structure of these FIGs is very weak and the concept has not been appropriately understood by the farmers. Specifically in clusters covered by the ITSL, farmers do not have basic understanding of

the concept, whereas understanding of farmers is better in clusters covered by DSC.

Functioning of FIG: It was observed that the farmers, especially from clusters of ITSL, have not been maintaining any document related to their FIG meetings, savings or any other activity. FIGs in areas of ITSL are not structured and there is lack of coordination amongst different FIGs within the same cluster. In clusters of DSC, situation is slightly better compared to ITSL. DSC field executives are managing documentation on behalf of FIGs. Formation of FPO in areas of ITSL will be

a distant target, though in case of DSC the process for formation of FPO has been initiated.

Backward Linkage: In clusters of both the RIs, no initiatives have been taken up for any kind of backward linkages.

State Horticulture Department has directly involved various seed companies for supplying seed to the farmers under the scheme. In addition to this, Department has also launched a new public-private partnership initiative, wherein input companies are asked to submit their proposal for working in a cluster. But the farmers mobilised by RIs are not able to take possible advantages of these initiatives due to lack of coordination amongst department and RI officials.

Forward Linkage: For the purpose of forward linkages, State nodal agency has identified two-three aggregators/retailers (Vegfru and fresh@home) for direct tie-up with the farmers. However, these aggregators have not yet started any direct procurement from the farmers. Lack of understanding and experience of RI staff in areas of marketing of vegetables is also a challenge, because of this; they are not able to facilitate the tie-up.

DSC, in Kodral village has recently started collective marketing of vegetables and 750 kg of vegetable was brought to the wholesale market at Ahmedabad by the FIG members. These initiatives are required in a more structured manner with scale to showcase the benefits to the farmers; otherwise the sustainability of these initiatives will be a major concern for the RIs.

Infrastructure Creation: State Horticulture Department has created a large number of green-houses and shade nets for protected cultivation; no infrastructure has been created for Post Harvest Management and markets. The beneficiaries of protected cultivation components are not members of FIGs being promoted by the RIs. The department has selected these beneficiaries on individual basis, due to this lack of coordination, farmers who are being mobilised by the RIs are not finding any incentive to continue in the groups.

Convergence of Schemes: State Horticulture Department is trying to converge other initiatives of the department such as promotion of clusters in PPP mode; however, there is lack of convergence

within the scheme components of such as Farmers' Mobilisation group formation, which is being promoted by RI and other components being implemented by the Department.

Monitoring of the Project: As of now, other than capturing regular data of physical and financial progress of the schemes by the department officials, there is no monitoring system in place.

Challenges/Issues

Major challenges in implementation of VIUC in Gujarat, as observed during the monitoring are as below:

- ◆ Lack of clarity of roles and responsibilities of State Nodal Agency and Resource Institutions;
- ◆ Lack of understanding of scheme and its implementation mechanism amongst the State as well as RIs officials;
- ◆ Lack of coordination and communication amongst different implementation partners;
- ◆ Lack of motivation of RI staff, specifically of ITSL, where the field staff is not having adequate resources for field movement and organising field activities, training and capacity building of farmers;
- ◆ Lack of resources and thrust for developing market linkages, post harvest and market infrastructure in the State Annual Plan;

The progress of scheme implementation in real terms is very slow (not from perspective of physical and financial targets). There is need for a



serious review of the implementation mechanism of the scheme, wherein each implementing partner should be made clear of their roles and responsibilities for better implementation.

Impact of the Scheme

This part investigates the impact of VIUC on broader areas relating to procurement of quality inputs, linkages developed for procurement and marketing, saving and improvement in socio-economic status of farmers and employment generation induced by the initiative.

VIUC has been framed to cover all the segments of vegetable supply right from farmers' field up to its final absorption by the market with major emphasis on training for good production practices, Post Harvest Management, value addition with creation of marketing infrastructure and linkages. For the purpose of assessing impact of VIUC, the results of performance and situational

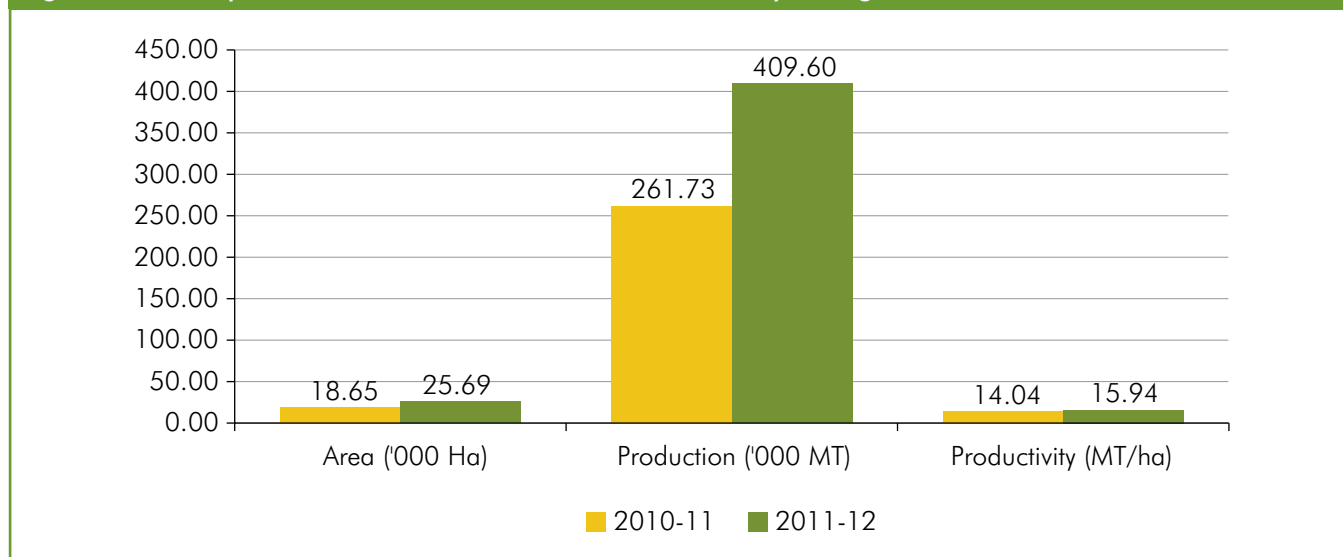
analysis along with general dissemination has been assimilated.

Impact of VIUC

According to the data collected from State Department of Horticulture, Gujarat, area, production and productivity of vegetables has shown positive changes from baseline year to a significant level. As per 2010-11 data, area under vegetable cultivation in Ahmedabad was 18.65 thousand ha which increased to 25.69 thousand ha in 2011-12, which is showing a significant increase of 38 percent. Production of vegetables in the baseline year was 261.73 thousand ton which increased to 409.60 thousand ton showing a remarkable increase of 57 percent. Productivity of the vegetables also increased from 14.04 ton/ha to 15.94 tonne ha, i.e. by 14 percent. The production practices have improved considerably and farmers are now keen to learn and apply new practices.

Vegetable Production

Figure 21: Comparison of Area, Production and Productivity of vegetables in 2010-11 and 2011-12



Quality Inputs

As State implementing agency has tied-up with various seed companies, availability of quality seed, in general, has improved. Increase in productivity of vegetables in the district can be correlated to this. However, the beneficiaries of this component are stand alone beneficiaries and are not linked to any other components such as

group formation and collectivisation, therefore; there is still scope for improvement.

Popularization of Modern Package of Practices and Protected Production Technology

In this case also, though, the department has promoted protected cultivation of vegetables

(promotion of green-house and shade net house) very aggressively, but this has not been linked to other components and the beneficiaries are not the same who have been mobilised by the RIs. The impact is not as visual as it would have been, if the scheme would have been implemented in an integrated manner.

Initiation of the Process of Collectivization

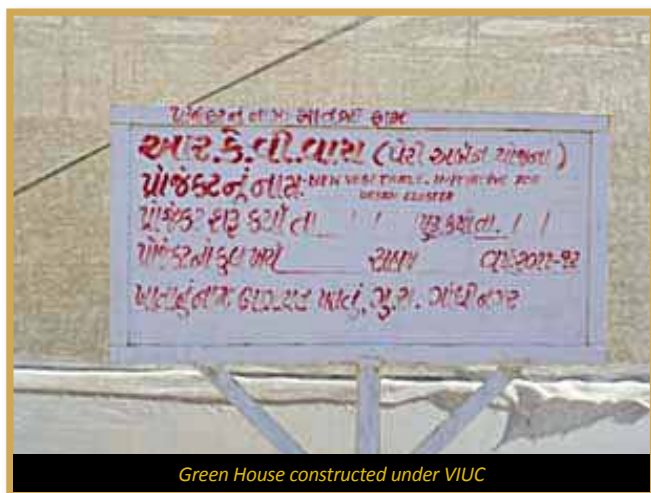
As the concept of collectivisation is not clear even amongst RI, specifically ITSL and also there is lack of understanding of the concept at the Government level, it is difficult to see a substantial collectivisation of demand and supply. DSC, in one cluster has recently started collective marketing,

but given the time period, since the project was started, the result is minuscule.

Linkage with Stakeholders

No formal linkages have been established at any end of the supply chain, neither for agri-input and services procurement nor for agri-output marketing.

Although there is increase in area under vegetable production and under protected cultivation in the district due to the VIUC, however, if the overall impact is assessed in terms of improved supply chain efficiencies, collectivisation, improved Post Harvest Management, infrastructure creation, etc., the impact is not visible. As backward and forward



Green House constructed under VIUC



Green House constructed under VIUC

integration has not taken place, the scheme has not been able to create any considerable employment opportunity in vegetable supply chain.

Recommendations

This part describes the proposed recommendations and suggestions, which are based on secondary and primary research by the team in Gujarat.

- Orientation and training of field staff of RI as well as of Government official for better clarity of objectives and approach of the scheme is pre-requisite;
- Resource Institutions should make firm plan of action for respective clusters, with detailed

activity schedule and should communicate it very effectively to its staff for executing at the field level;

- Government officials should also be involved in planning process and should be engaged actively while implementing.
- RIs should proactively talk to different stakeholders/potential partners for establishing business linkages. Most important amongst these potential partners are Aggregators/Organised retailers, agri-input suppliers and financial institutions/banks, etc. Tie-up can also be organised with research institutes such as Agricultural Research Station (ARS), Agricultural Colleges in SAUs, Krishi Vigyan Kendra (KVK), etc.

- e. There is need to intensify the interaction with the farmers and enhance training and capacity building activities, mainly on concept of collectivisation, its benefits, how to organise FPO and administrative & financial management etc.;
- f. RI should also make detailed business plan for each cluster based on vegetables being grown in respective cluster;
- g. Emphasis should be given on Post Harvest Management practices and accordingly for creating necessary infrastructure at the field level.
- h. State Implementing Agency should develop its customised Management Information System (MIS) and monitoring system, preferably IT based, for effective implementation.
- i. On technical aspects of handling vegetables such as need for infrastructure, technical specifications of infrastructure, vegetable movement and processes at Pack-House, etc., there is lack of understanding amongst RI staff. Therefore, they are not able to guide the FPO members properly. Specific training and support in terms of handholding on these technical aspects from SFAC is required.

Chapter 5

Jharkhand

Project Area and Stakeholders

This part describes the implementation structure and functioning of the project at different levels and the major stakeholders involved in the project.

VIUC Scheme in Jharkhand

VIUC in the State of Jharkhand is being implemented in the State Capital – Ranchi having a population of 1.07 million, being implemented from the year 2011-12. Secretary, Department of Agriculture, Government of Jharkhand has been appointed as the Nodal Officer for implementing the project at the State Level. Deputy Director Agriculture and Managing Director VEGFED Ranchi have been appointed as Nodal Officer to look after the overall implementation of the initiative at State and District level.

Baseline Survey

To identify major vegetable production districts and clusters, an independent agency, CTRAN, carried out the baseline survey in Jharkhand. Baseline Survey highlighted the existing supply chain and other bottlenecks and also identified the vegetable growing districts and cluster within the district. During the interaction with the Nodal Agency and Resource Institutes, it was observed that areas / clusters, which were identified under the baseline survey, have been taken up for the purpose of implementation of the initiative.

State/Districts/Clusters

The scheme is being implemented in one District of Jharkhand i.e.; Ranchi. Major vegetable clusters around Ranchi, ranging from 15 to 60 km, are supplying vegetables to target urban cluster i.e. Ranchi.

Implementing Partners of VIUC in Jharkhand

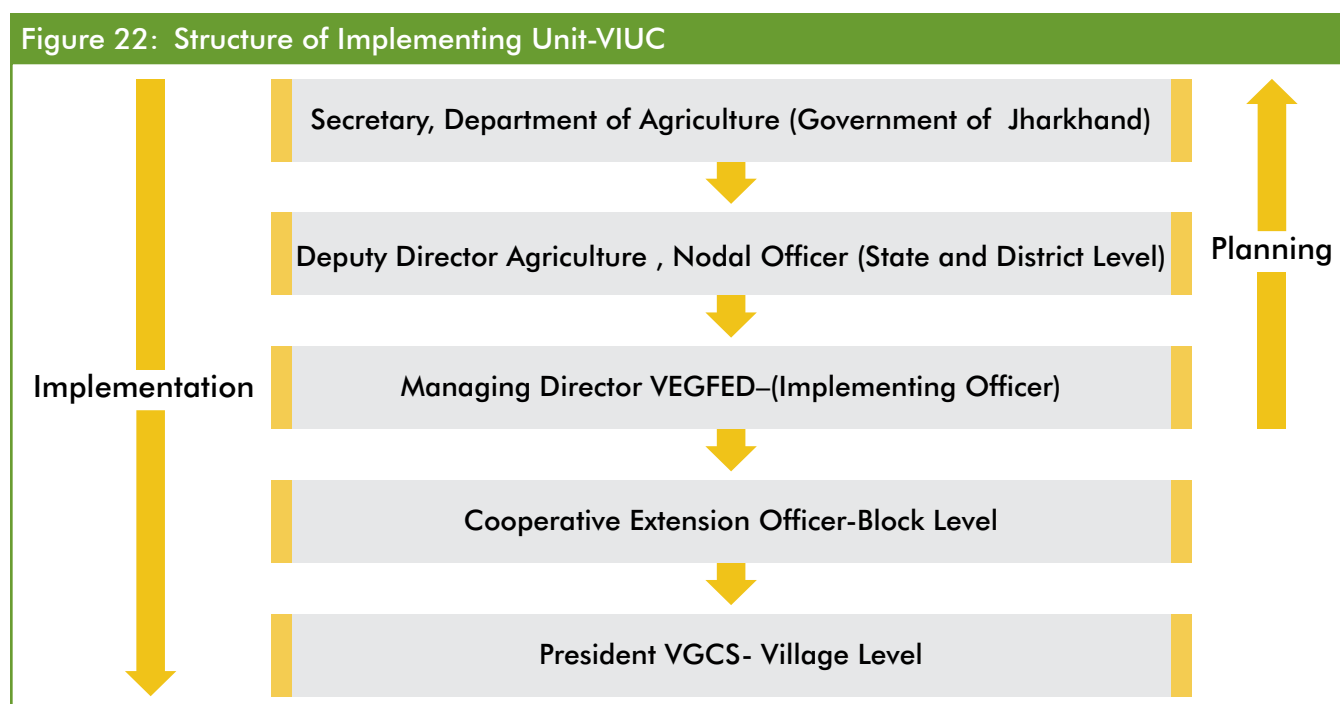
In Jharkhand, the State Department of Agriculture has been assigned the task of overall implementation of VIUC. Deputy Director, Agriculture is the designated Nodal Officer for the implementation of the initiative in the State and Managing Director VEGFED has been assigned the overall responsibility for VIUC at the district level. At the block level, Cooperative Extension Officers (CEOs) are responsible for implementation of VIUC. For implementation of VIUC in the State, staffs of State Department, district and block level are involved.

In order to mobilize farmers, formation of groups, training and capacity building and establishing market linkages, etc., two Resource Institutions (RI) have been appointed by SFAC in the State covering different vegetable production clusters in Ranchi. Apart from these two RIs, other stakeholders, their role and area of coverage are summarised in the following table.

Table 13: Stakeholders and their Coverage Area

Role	Name of Organization	Districts covered under VIUC scheme
Baseline Survey	CTRAN	Ranchi
Nodal Agency	Secretary, Department of Agriculture, Government of Jharkhand (DDA- Nodal Officer, State level and District level) (Managing Director VEGFED, District level)	Ranchi
Resource Institution	CTRAN	Ranchi
Resource Institution	IGS	Ranchi

Detailed implementation structure, has been depicted in the following figure:



Planning and Implementation of Activities:

The planning of the project activities starts at the district level, where VEGFED committee prepares the plan and submits to Deputy Director Agriculture (DDA) for approval. After approval from DDA, plan is submitted to Secretary, Department of Agriculture (State Level Sanction Committee (SLSC)) which is the final authority for approval of the implementation plan. The Approved State Plan is finally submitted to the Ministry of

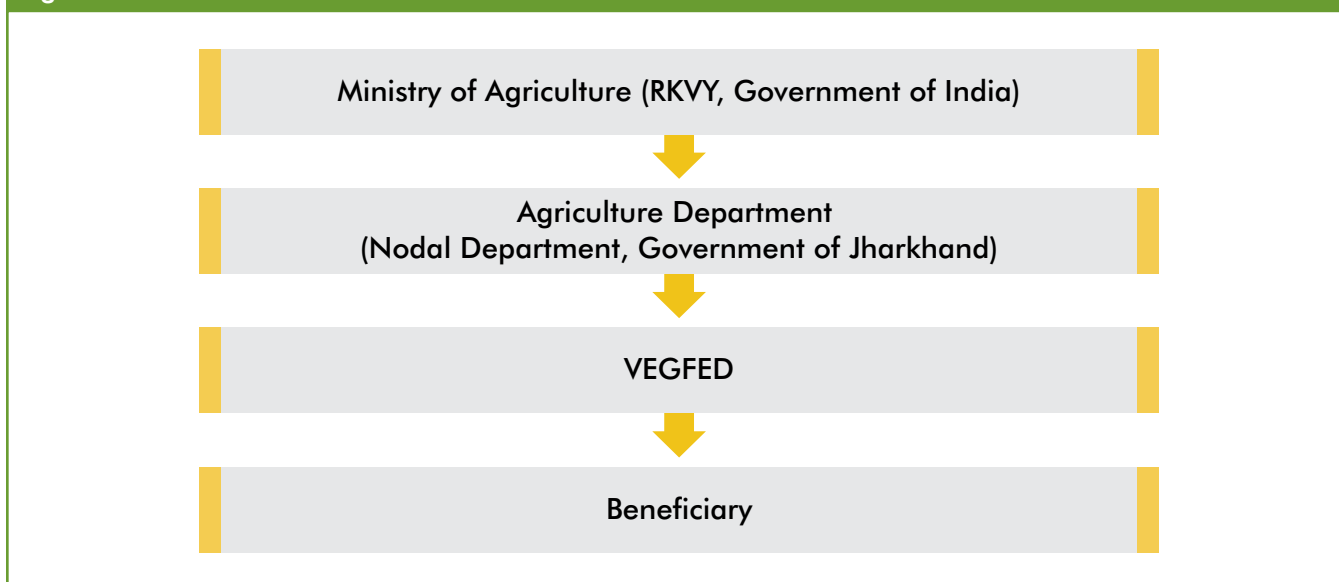
Agriculture (RKVY, Government of India) for approval and sanction of funds.

Fund Flow

The flow of fund is depicted in the figure below:

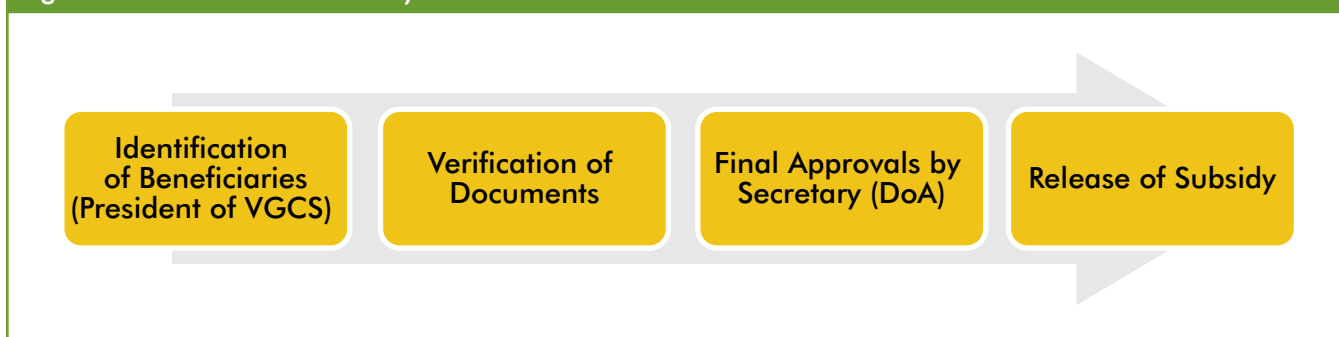
Budget Outlay and Expenditure (2011-12): The total budget outlay approved for the State for the year 2011-12 was Rs. 1200.00 lakh. A provision of 3.4% budget of the total budget outlay has been retained, for administration purpose, under this initiative.

Figure 23: Flow of Funds



Release of Subsidy to Beneficiary

Figure 24: Release of Subsidy



Subsidy for Seeds- Requirement of the seed type and its cost is calculated and application is forwarded to President VGCS; VGCS President, thereafter, submits the requirement to VEGFED the and subsidy is released directly into the beneficiary's bank account.

Subsidy for Infrastructure: For infrastructure creation, tender is advertised across the

country; thereafter the firm which qualifies and wins the tender is selected. The application for tender is submitted to Secretary, DoA for approval. Subsidy is provided to the firms once the structure is operational and is verified by the engineers. Payment of the contractors is provided as per their bill of quantity in different phases.

Table 14: Release of Subsidy to Beneficiaries

Phase	Subsidy released	Milestone
1st	20 percent	Advance of subsidy
2nd	40 percent	After verification of 30 days old crop by State/District officials
3rd	40 percent	After verification of 60 days old crop by State/District officials

Resource Institutions

For the mobilisation of farmers and promotion of Farmers' Interest Groups (FIGs) and Farmers' Producers Organisations (FPOs), two organisations –

Indian Gramin Services and CTRAN have been appointed by SFAC. Targets of these RIs in terms of Farmers' Mobilisation, FIG & FPO formation as well as current achievements are given below:

Table 15: Current status of FIG and FPO formation

Particulars	DSC		Total	
	Target	Achievement (registered)	Target	Achievement (registered)
FPO	5	---	5	---
FIG	350	391	250	250
Total farmers	5000	5484	5000	5000

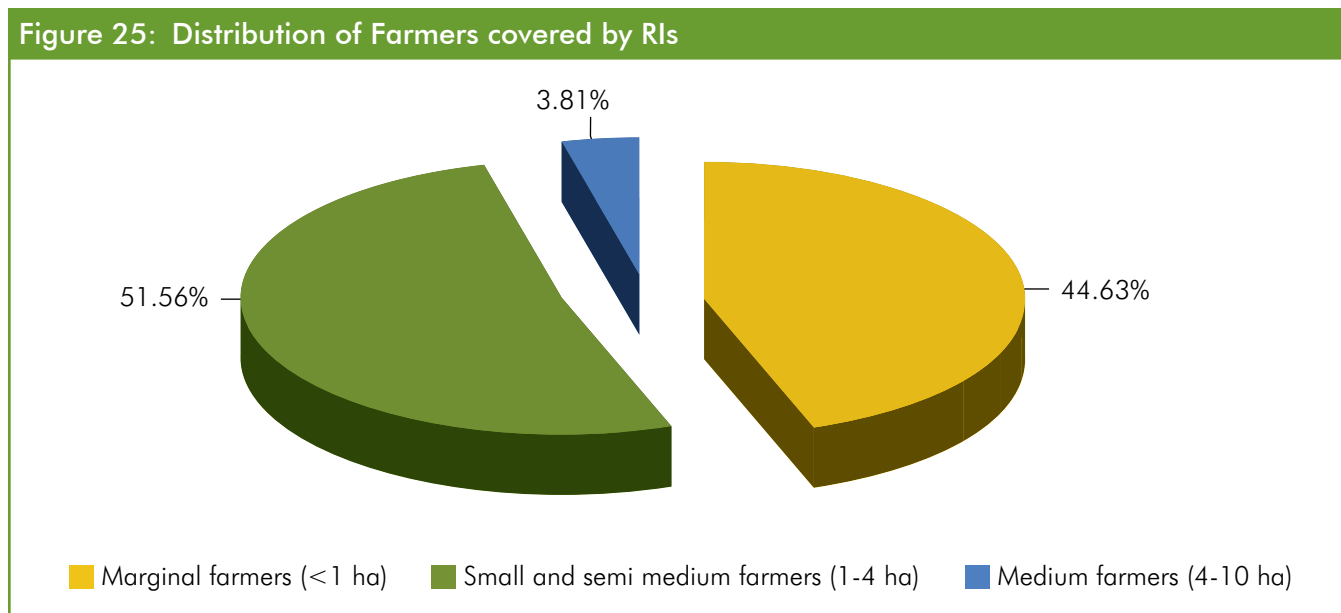
Source: Secondary information from RI

Table 16: Coverage of Farmers and Participation in Capacity Building

Particulars	Unit	Resource Institution	
		IGS	CTRAN
Districts			1
Clusters	Nos	2	1
Total Farmers	Nos	5584	5000
Break up of total farmers			
Marginal (< 1 Ha)	Nos	1413	3311
Small and Semi-medium Farmer (1-4 Ha)	Nos	3807	1650
Medium Farmers (4-10 Ha)	Nos	364	39
Large Farmers (> 10Ha)	Nos	---	---
Meetings Conducted			
FPOs	Nos	10	4
FIGs	Nos	13977	1500
Farmer	Nos	13977	1500
% of members regularly participating in meetings			
FPOs	%	100	80
FIGs	%	94	70
Farmer	%	94	70
Capacity Building for FIGs / FPOs			
FIG members oriented / trained & aware on VIUC	Nos	5584	5000
Group leaders oriented/trained on FIG/FPO concept and management	Nos	1173	---
FIG/FPO members oriented/trained on Account Keeping in VIUC	Nos	1173	---
FIG members trained on some or other best practices (for production, value addition and marketing) under VIUC	Nos	1762	1600

Particulars	Unit	Resource Institution	
		IGS	CTAN
Bank Account Opened (Status)			
FPOs	Nos	---	
FPOS (Share Collection)			
FIGs	Nos	391	
Total Saving	Rs. Lacs	42.1	3.75

Source: Secondary information from RI



More than 96 percent farmers covered under VIUC are small, marginal and semi-medium. Under VIUC the major emphasis is on socio-economic development of small and marginal farmers. It indicates that the initiative is progressing in the right direction, as most of the small and marginal farmers are not given priority for schematic enrolment owing to their small holding size.

five FIGs have been joined together to form one unit of Vegetable Grower's Cooperative Society (VGCS) at Panchayat level. These ten VGCS have been joined together to form one FPO at Block level.

To ensure the functioning of each VGCS, a management committee of each VGCS has been formed, comprising President and Secretaries.

Institutional Framework of FPO Formation in Jharkhand

The institutional structure of FPO formation in Jharkhand is different as compared to other States. Here, the formation of Cooperatives as well as Farmers' Producers' Organization is in process. Farmers' Interested Groups (FIGs) comprising 20 farmers has been created at village level, and then

Performance of the Scheme

This part investigates the overall success of the VIUC in terms of physical and financial achievement.

Farmers benefit directly from the following eight components of the scheme. The performance of these eight components is illustrated in the following figure.

Figure 26: Institutional Framework of FPO



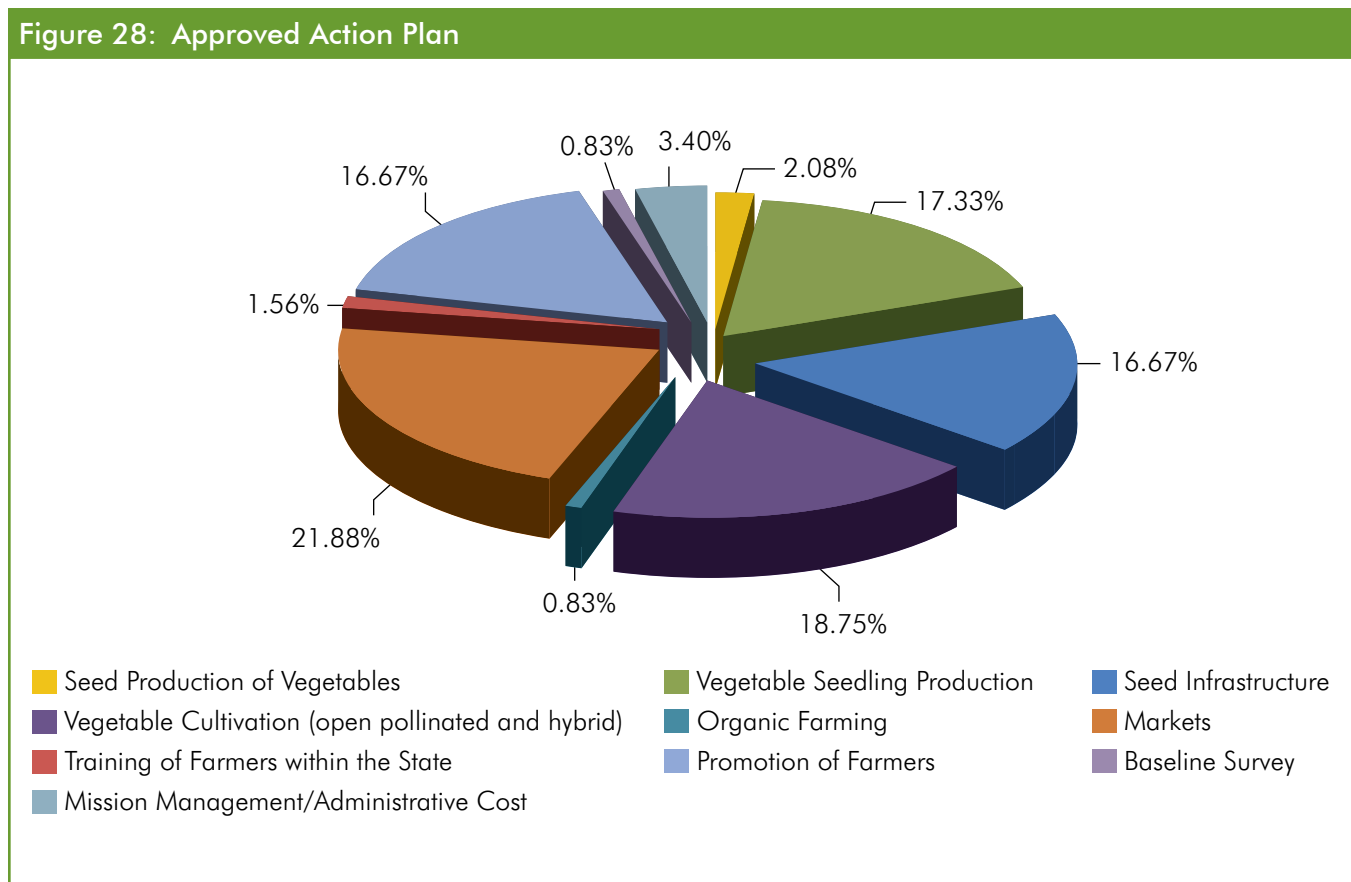
Figure 27: VIUC Performance



Proposed and Approved Action Plan

As per the proposed action plan for the year 2011-12, the Department proposed to take

up almost all the activities/components for the implementation of VIUC with the total financial outlay of Rs 1200.00 lakh. The share of all the components is illustrated in the figure below:



Of the total approved financial outlay of Rs 1200.00 lakh for the year 2011-12, 21.88 % has been allocated for component of creating markets and marketing infrastructure followed by 18.75 % for vegetable cultivation, 17.33 % for vegetable seedling production, 16.67 % for seed infrastructure and 16.67 % for promotion of farmers. Small fund has been allocated for other components. Overall, the allocation of fund is much vindicated for different components of the scheme depending upon the present scenario and requirement of the State.

Detailed component-wise Physical Targets & Financial Outlay for the year 2011-12 is given in Annex- IV(A). Although, the present status of financial achievement of different components can be delineated from the following bar graph,

in which target and achievement are noticeably evident.

The components in Figure 30 are:

- ◆ Vegetable seedling production
- ◆ Seed infrastructure
- ◆ Vegetable cultivation
- ◆ Promotion of farmers association
- ◆ Markets and infrastructure

Components in Figure 31 are:

- ◆ Seed production of vegetables
- ◆ Organic farming
- ◆ Training of farmers within State
- ◆ Baseline survey
- ◆ Mission management

Figure 29: Physical & Financial Achievements of VIUC in Jharkhand (Year 2011-12)

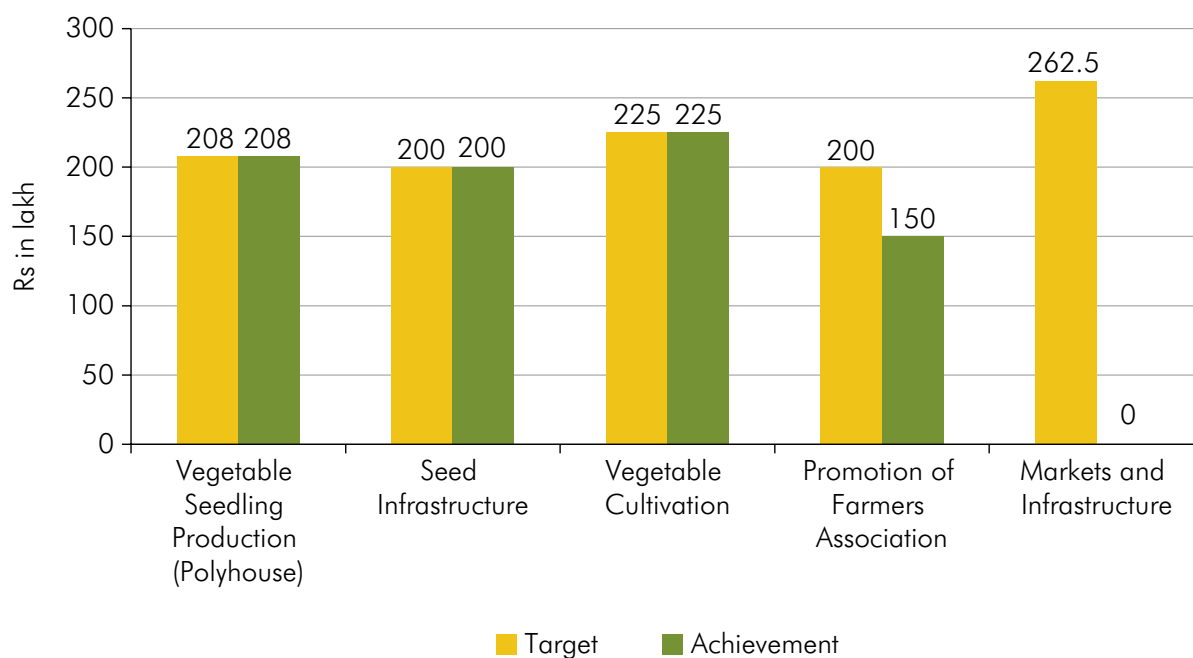
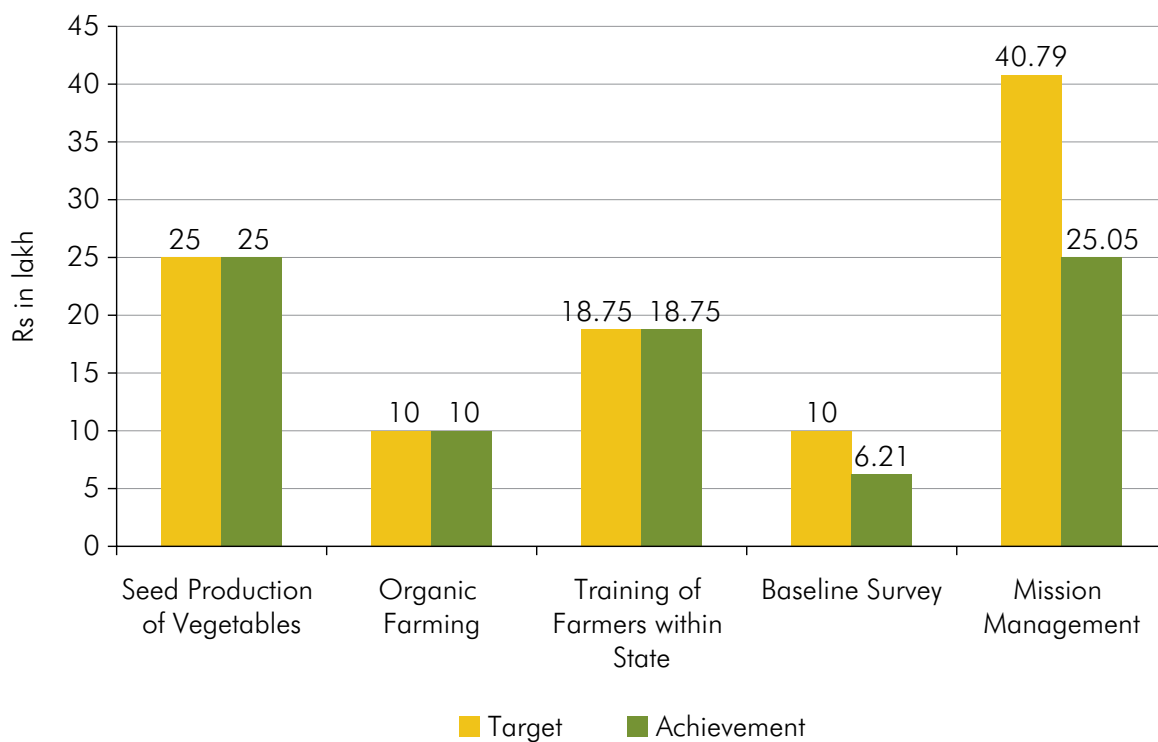


Figure 30: Financial Target V/s Achievement in Jharkhand, 2011-12



Component-Wise Physical and Financial Targets and Achievements (2011-12)

The following table illustrates the component-wise performance for the financial year 2011-12.

Table 17: Component-wise Physical and Financial Targets and Achievement

Component	Physical Performance	Financial Performance
Seed production of Vegetables	100 percent achievement For seed production of vegetables, targeted area was 50 ha; of which entire targeted area has been covered.	100 percent achievement Financial allocation for this component was Rs 25.00 lakh, out of which total fund have been utilized.
Vegetable Seedling Production	100 percent achievement For vegetable seedling production, physical target of 2 ha was set, of which total area has been covered.	100 percent achievement Financial allocation for this component was Rs 208 lakh, of which Rs 208 lakhs have been utilized.
Vegetable Cultivation	100 percent achievement As per the approved plan, 400 ha area was approved for expansion of each open pollinated and hybrid vegetable cultivation, of which total area has been covered under both open pollinated vegetable cultivation and hybrid cultivation	100 percent achievement The financial target for vegetable cultivation was Rs 225 lakh. For open pollinated vegetable cultivation, financial allocation was Rs 90 lakh and for hybrid vegetables cultivation was 135 lakh. Total amounts of Rs 90 lakh and Rs 135 lakh have been utilized.
Seed Infrastructure	100 percent achievement The physical target for creation of seed infrastructure was 1, of which 1 structure has been created.	100 percent achievement Financial allocation for this component was Rs 200 lakhs, of which Rs 200 lakhs have been utilized.
Organic Farming	111 percent achievement The physical target for distribution of HDPE vermibeds was 200, of which 222 vermibeds have been distributed.	100 percent achievement Financial allocation for this component was Rs 10 lakhs, of which entire amount has been utilized. The achievement of higher physical target within sanctioned amount is due to lower cost incurred in vermibeds.
Training of Farmers within State	100 percent achievement The physical target for training of farmers was 2500, of which training to all 2500 farmers have been provided.	100 percent achievement Financial allocation for this component was Rs 18.75 lakhs, of which, entire fund has been utilized.
Promotion of Farmers Association/ Groups	100 percent achievement The physical target was to form 100 groups of farmers, out of which 100 groups have been formed.	75 percent achievement The financial allocation for this component was Rs 200 lakhs, of which Rs 150 lakh have been utilized.

Component	Physical Performance	Financial Performance
Markets and infrastructure	Being implemented and concrete results yet to come The physical target for Market infrastructure was establishment of 9 Apni Mandi and 15 retail outlets, these structures are being established but have not been documented yet.	Being implemented and concrete results yet to come Financial allocation for Apni Mandi was Rs 180 lakhs, of which funds have been utilized but not documented yet.
Baseline Survey	62.1 percent achievement Financial allocation for this component was Rs 10 lakhs, of which Rs 6.21 lakh have been utilized	
Mission Management	61.41 percent achievement Financial allocation for this component was Rs 40.79 lakh, out of which Rs 25.05 lakh have been utilized.	

Source: Progress report of VIUC Jharkhand

Out of the total fund of Rs 1200.00 lakhs (2011-12), total expenditure is of Rs 868.01 lakhs i.e. 72.33 percent of the total financial target has been achieved. Remaining amount of fund i.e. Rs 331.99 lakhs have been carried forward for implementing some of the components under 2012-13 action plan.

Situational Analysis of VIUC

This part of the chapter illustrates the situational analysis of VIUC in Arunachal Pradesh. It is an analysis of the State and condition of the farmers/beneficiaries after implementation of the initiative, identification of the major issues related with the components and analysis of key stakeholders. Situational analysis has been derived with the help of primary survey, secondary information and observations during field visits.

Findings of primary survey of farmers have been discussed in the following sections:

Findings of Primary Survey

For the purpose of Impact Assessment Study, around 40 farmer members (FIGs) were surveyed in Ranchi District. The major points emerged out of the survey have been discussed in the following section:

Land Holding: Average operational holding size of the surveyed farmer's area is around 0.8 ha.

- ◆ Large farmers have not been covered under the scheme; therefore all the beneficiaries belong to small and marginal category.
- ◆ Vegetable cultivation seems to be remunerative venture among these farmers due of small land area.

Irrigated Land: Out of the total cultivable area of the surveyed farmers, almost 74 percent area is under irrigation. The major source of irrigation is tube well.

Cost of Cultivation: Cost of vegetable cultivation has been calculated based on cost of land preparation, inputs, irrigation and labour employed by the farmers during farming operations (land preparation to harvesting). Average production cost mentioned by the surveyed farmers is as illustrated in Table 18. The detailed calculations have been given in Annex- IV(E).

Seed Used: Almost 100 percent of the surveyed farmers use hybrid seeds.

- ◆ Main source of producing seeds is local inputs supplier. But lack of awareness regarding input use results in poor quality seeds procurement.
- ◆ Farmers often face the problem of poor seed germination. Adoption of hybrid seeds shows improvement and awareness regarding package of practices.

Table 18: Average Cost of Production

S. No.	Produce	Average cost of cultivation (Rs./ha)
1.	Tomato	23156.53
2.	Brinjal	34666.66
3.	Peas	29512.49
4.	Cabbage	30237.48
5.	Beans	32773.78

Source: Primary Survey

Input Procurement: All the farmers of surveyed areas are procuring the inputs like seeds, fertilizers and pesticides individually from local input supplier.

- ◆ Availability of such inputs is average; farmers are still facing the problem of quality input procurement.
- ◆ After proper training and capacity building exercises, farmers have now been encouraged to engage in group activity for procurement of good quality inputs through the input supplier.
- ◆ Such input suppliers will be linked with FIGs after FPO registration for bulk procurement.

Post harvest Losses and Value Addition: As per the data of surveyed farmers, the extent of post harvest losses varies from crop to crop as mentioned below:

- ◆ As per the baseline survey report, post harvest loss of vegetables was observed to be more than 30 percent. Non-availability of proper transport facility and far away markets are responsible factors for post harvest losses.

- ◆ After primary survey, it was observed that average post harvest loss in all the vegetables varied between 6-10 percent. It indicates that the component of Post Harvest Management of vegetables has improved among farmers through different training sessions provided by resource institutions on post harvest handling of vegetables.
- ◆ Almost 95 percent of the farmers are performing value addition at field level by sorting and grading. Very few farmers are performing packaging for value addition of the produce.
- ◆ Value addition at field level resulted in improved shelf life of the produce.

Marketing of Produce: More than 50 percent of the farmers are carrying their produce to market in loose packaging. Others are using gunny bags, baskets and plastic bags.

- ◆ Average cost incurred on packaging is Rs 35/- per quintal of the produce.
- ◆ Almost all the farmers of the surveyed area are carrying their produce to local *mandi/haat*.

Table 19: Post Harvest Losses of Major Vegetables

Crop Name	Post Harvest Loss (in percentage)
Bitter gourd	6.3
Beans	6.7
Cucumber	6.9
Peas	8
Tomato	9.4
Potato	9.5
Brinjal	9.8
Chilli	10
Cabbage	10

- ◆ Around 70 percent farmers are marketing their produce upto 5 km distance. Only 10 percent of the farmers are carrying their produce to distant market upto 10 km.
- ◆ Around 26 percent farmers are carrying their produce individually in their own vehicles while others use different modes of transportation.
- ◆ All the farmers of the surveyed areas are selling their produce to village traders on spot payment in the form of cash. Since the economic status of the farmers in Jharkhand is very poor; therefore; they sell their produce even at very low price to village traders owing to problem of transportation and lack of availability of good market.
- ◆ Major problem which the farmers are facing is lack of cold storage facilities and over involvement of middlemen.
- ◆ Lack of storage facilities compels the farmers to sell their produce all at once. Large availability of the produce lowers down the price in market. In addition to this, influence of middlemen is also very high due to individual selling approach.

Government Support & Incentives: Almost 100 percent of the farmers of the surveyed areas are aware about Government support and activity.

- ◆ Major source of information access is the resource institution working in the area.
- ◆ According to the baseline survey report, the awareness regarding Government support and schemes percolated to about one percent farmers.
- ◆ This is a concrete achievement as all the farmers of the area are now aware about different Government support and schemes.
- ◆ None of the farmers are beneficiary of other Government schemes.

Awareness about VIUC: All the farmers of the surveyed areas mentioned that they are aware about VIUC and its objectives.

- ◆ According to them, the major objective of the scheme is to increase vegetable production, minimize the cost of production, group activity and direct linkage with market and ultimately betterment of small and marginal farmers.

- ◆ All the farmers participated in FIG formation, PHM infrastructure and vegetable cultivation component of the scheme but none of them availed any subsidy.

Resource Institutions: IGS and CTRAN are the resource institutions working in the area.

- ◆ Regular meeting of RI and farmers takes place at monthly intervals.
- ◆ Village and cluster meetings are organized to discuss the program.
- ◆ There is no participation of State department officials in FIG/cluster meetings across the surveyed areas.
- ◆ Meetings with service providers, suppliers, MFI/bankers have not been organized in the surveyed areas.
- ◆ Buyer and seller meetings have not been organized and none of the farmers are undertaking joint procurement of inputs for vegetable cultivation.

Training and Training need Assessment: Training to all the farmers has been provided by RIs with average 50 participants for 2 days at village level.

Subject matter of the training is based on all aspects like FIG/FPO formation, record and account keeping, aggregation of produce, joint purchasing of inputs and joint marketing of produce, cultivation aspects, product quality improvement and value addition activities.

Farmers have perceived a positive impact of the initiative by increase in production and availability of inputs and decrease in post harvest losses. However, no changes have been observed in marketing and value addition component.

Observations from Field Visit

As per data received from the State Nodal Agency, 72.33 percent of the total budget has been utilized for the year 2011-12 and 27.67 percent of the same budget has been utilized for some of the components for the year 2012-13. The budget has been utilized majorly for vegetable seedling production, vegetable cultivation and infrastructure establishment.

The following figure is depicting the observations based on field visit and interaction with officials. It is sketching the present condition of the State

in terms of direct impact as well as the activities which are in process.



Detailed Observations of Field Visit

Cluster Approach

Cluster approach for identification, selection of potential villages and formation of FPOs and VGCs

has been done. Major vegetable producing clusters with sufficient water availability have been selected.

- ◆ Around three clusters have been created in 11 blocks of Ranchi District.

- ◆ The selected villages are the main vegetable producing belt of the district, which are contributing vegetable supply to Jharkhand as well as other adjacent States like West Bengal, Bihar, and Odisha etc.

Mobilisation of Farmers and Group Formation

- ◆ Group meetings and training are organized at cluster level.
- ◆ The program is largely covering small and marginal farmers who are unable to benefit from most of the Government schemes.
- ◆ The scheme is showing substantial progress in terms of Farmer Mobilisation, FIG and VGCS formation.
- ◆ Till now, 10484 farmers have been registered and 641 FIGs have been formed. Process of FPO formation is in progress and very soon two FPOs will be registered.

Training and Capacity Building

Capacity building and training programs for package of practices on different aspects of vegetable cultivation, protected cultivation, seasonal training of particular crops are provided. Training is provided by local resource persons and experts from Birsa Agriculture University, Ram Krishna Mission and other nearby research institute through Kissan Goshthi.

Disbursement of Subsidy

- ◆ The subsidy for different inputs is provided in the form of cash. The cumulative requirement



Sensitization meeting and training to farmers

of the FIGs is calculated, and then the money is transferred directly into the beneficiary's account.

- ◆ Since the farmers have different preference for seeds, therefore, money is provided instead of inputs.
- ◆ For buying the seeds farmers have been allied with State department for their seed requirement.
- ◆ Only the farmers registered with VEGFED have been provided the subsidy. Other farmers of the clusters have not been covered under subsidy distribution.

Functioning and Coordination of Resource Institutions

- ◆ Resource institutions are well versed with the objectives of the VIUC.
- ◆ The RIs work for Mobilisation and group formation of farmers, training on package of practices and marketing, linking with financial institutions and service providers, establishment of input and output linkages.
- ◆ The RIs are clear about their roles and responsibilities.
- ◆ Monthly meetings are organized with district officials.

Functioning of FIG

Potential FIG members have been identified based on shared interest. Group leader of the FIG has been elected through voting

- ◆ Weekly meetings of the FIGs are organized and the function, issues and initiatives of common interest are discussed.
- ◆ FIG members are being linked with bank and meeting with NABARD and service providers have been organized regularly.
- ◆ Till now around 22 exposure visits of the farmers have been organized. The farmers are being taken for exposure visit to other farmers' plot for SRI technique, nursery raising, and potato seed production technique. Farmers are being taken to nearby Khupi District for demonstration of group marketing concept and regional centre of ICAR, Horticulture & Agro-forestry Research Program, Palandu for learning horticultural practices.

Backward Linkage

For building up a competitive market for input procurement and improving the bargaining capacity of farmers, separate interface meeting with executive committee of each VGCS and input suppliers have been organized. Two input suppliers have been identified for joint input procurement.

- ◆ For seed requirement Syngenta, Vibha seeds and Nunhems have been identified.
- ◆ For fertilizers, Tata Chemicals and Shaktiman Fertilizers have been identified and will be linked with FPO very soon for bulk procurement.

Forward Linkage

Two aggregation points have been identified with consent of FIG members. These aggregation points are easily accessible to farmers and are well connected with roads.

- ◆ Construction of *Apni Mandi* and retail outlets is in process.
- ◆ Around 15 retail outlets will be launched, work on five outlets has started and they will be operational soon.
- ◆ Two market players Speed Mart and Bhangar Cooperative Society have been identified and modalities have been finalized for linkage.

Infrastructure Creation

As per the approved plan, VIUC is covering the construction of a polyhouse for seedling

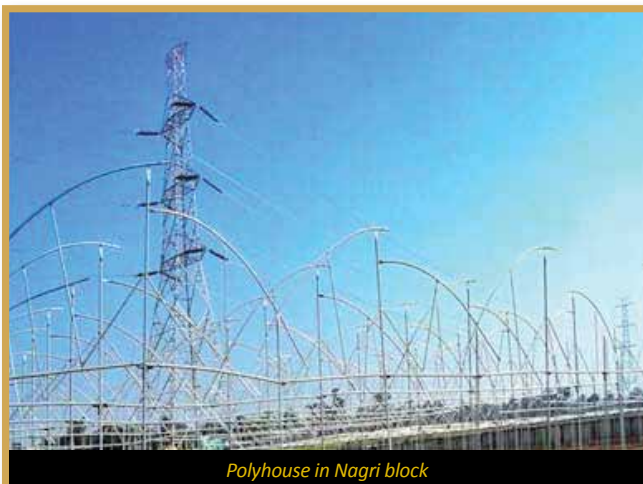


Seed processing unit in Itki block

production and a seed infrastructure unit exclusively for vegetable seed processing, packaging, storage and marketing.

Polyhouse for seedling production is being constructed in 15000 sq m area in Nagri block. This polyhouse is well equipped with micro sprinkler and fogger facility and other necessary instruments.

Vegetable seedling production will be undertaken by Namdhari seeds on contract basis and the farmers can purchase these seedlings at subsidized rates. This will not only help the farmers in procuring the seedlings at low cost but will save time on seedling production. Farmers can procure early and better prices. Construction of polyhouse is a mega project in the village as farmers do not have alternate facility for seedling procurement. District officials are working to establish this infrastructure. The polyhouse will



Polyhouse in Nagri block



Processing unit with installed equipments

become operational very soon and this will help farmers in becoming self sustainable in seedling requirement.

In addition to this, a seed processing unit is also under construction. This seed production unit is being constructed exclusively for vegetable seeds. The unit has been installed with all the necessary equipments for seed processing, packaging, testing and storage facility. Itki block is one of the main vegetable producing clusters of Ranchi where the structure has been established. VEGFED will purchase seeds from farmers. This processing unit will carry out complete processing and packaging of the purchased seeds and will deliver to the market. This initiative will break the monopoly of seed companies in the market and farmers will become self sufficient in vegetable seeds requirement. It will not only fulfil local requirement of seeds but will also help in supplying to other States. These infrastructures are still in construction stage and farmers can avail its benefit once it is completely established. Late release of tender and sanction of funds is responsible for late start of structure establishment.

Marketing Infrastructure

Marketing is one of the most important components which is lacking in the State. Farmers are mostly carrying their produce on their own or in individually hired vehicles. This causes 25-30 percent loss of produce as the traditional marketing system is unfavourable for farmers and the major share of revenue is pocketed by the middlemen and local traders. To facilitate the process of marketing and break the predominance of middlemen, construction of *Apni mandi* and retail outlets has started. The construction of *Apni mandi* (9 places) and retail outlets (15 places) is in processing and will come in operation soon.

- ◆ Retail outlet on the lines of *Reliance Fresh* will start the marketing of fresh fruits and vegetables. This marketing infrastructure will also open up the employment avenues directly and indirectly.
- ◆ Once the FPO is registered, then linkage with marketing organization will be established.
- ◆ The *Apni mandi* and retail outlets will cover farmers of nearby 363 villages and around 27000 farmers will be benefitted by this.

- ◆ Aggregation centres have also been identified. These aggregation centres will serve the purpose of sorting, grading, packaging, and value addition.
- ◆ Collection centres are being developed at certain places to start marketing of produce. These initiatives in marketing infrastructure and reduction in intermediaries of marketing will help the farmers to procure better prices for their produce.
- ◆ Nodal agency is also planning to create linkage between FPO and institutions like CRPF, JAP, Armed forces camp and BIT Mesra in Ranchi District for daily supply of vegetables. This will ensure the sale of fixed volume of vegetables from farmers at remunerative prices. It will also break the monopoly of middlemen.

Convergence of Schemes

Schemes of National Mission on Micro Irrigation, soil conservation, System of Rice Intensification (SRI) and seed inputs distribution from department has been dovetailed with VIUC.

Monitoring of the Project

Block level cooperative officers of VEGFED has been monitoring the scheme at field level. In addition to this, profiles of all farmers have been created; regular database of area and production is being updated at www.rkvy.nic.in portal.

HRD training to Project Management Unit

Proper HRD Training is being provided to all technical and supporting staff of VEGFED at Cooperative Training Centre regarding marketing of produce, cooperative rules, acts, control and supervision. Around four training sessions are organized each year.

Challenges/Issues

- ◆ **Availability of inputs:** It has been observed that the quality inputs are not available to farmers on time and reasonable prices. Most of the farmers purchase inputs from local input dealers who

provide redundant and non viable seeds to farmers, which generates germination problem.

- ◆ **Disparity in disbursement of subsidy:** It has been observed that most of the farmers have not been covered for distribution of subsidy for inputs.
- ◆ **Problem in marketing of produce:** Most important problem for farmers in the area is marketing of produce. There is no facility of transport vehicle and nearby good markets. They need to carry their produce on their own vehicle to markets which are far away. Farmers do not have any nearby market and aggregation facility. It also leads to 25-30 percent loss of the produce.
- ◆ **Influence of middlemen:** Due to non-availability of transport vehicles and unawareness of farmers, middlemen take the advantage of the situation and procure the farmers produce at almost half of the price at which they sell to big traders.
- ◆ **Storage facility:** The district is a major vegetable production cluster of the State and supplies vegetables to almost all adjacent States. Due to non-availability of storage facility for short term storage and in glut condition, farmers are compelled to sell their produce at below par prices.
- ◆ **High documentation requirement in VGCS formation:** Since the structure of farmers' group formation is different in Jharkhand as compared to other States, registering the FIG in Cooperative as well as creating FPO increases the documentation requirement, which increase work load for resource institutions.
- ◆ **Irrigation facility:** Irrigation of farms is one of the most important problems in Jharkhand. Farmers use dug wells filled during rainy season for irrigation. But once the dug wells become dry, they do not have any other alternative for irrigation. Most of the land area remains unutilized in Zaid season due to irrigation problem.
- ◆ **Linking with financial institutions and service providers:** The farmers in the surveyed villages are facing the problem of financial assistance. Linkage of the farmers with micro financing institutions, banks and other service providers is lacking.

- ◆ **Lack of manpower:** Although there is good coordination observed between resource institutions, State and District officials and other field staff but for each cluster, there is need for professionally qualified technical and marketing staff.

Impact of the Scheme

This part investigates the impact of VIUC on broader areas relating to procurement of quality inputs, linkages developed for procurement and marketing, saving and improvement in socio-economic status of farmers and employment generation induced by the initiative.

VIUC has been framed to cover all the segments of vegetable supply right from farmers' field up to its final absorption by the market with major emphasis on training for good production practices, Post Harvest Management, value addition with creation of marketing infrastructure and linkages. For the purpose of assessing impact of VIUC, the results of performance and situational analysis along with general dissemination has been assimilated.

Impact of VIUC

Following Figure 32 is outlining the direct impact of initiative in terms of following six components.

The details of these components are described in the following section.

Vegetable Production

As per the data provided by Nodal agency (VEGFED), total production of vegetables under both open pollinated and hybrid cultivation increased by about 15% (from 22175 MT to 25500 MT). The increase in productivity can be attributed to adoption of modern package of practices, efficient input use, and INM and IPM techniques by the proper training and inputs provided.

Quality Inputs

As per interaction with district officials, availability of good quality inputs i.e. seeds and fertilizers have improved. With continuous training session on use of the type of seeds, fertilizers, plant protection chemicals and other best package of

Figure 32: Impact of the Scheme

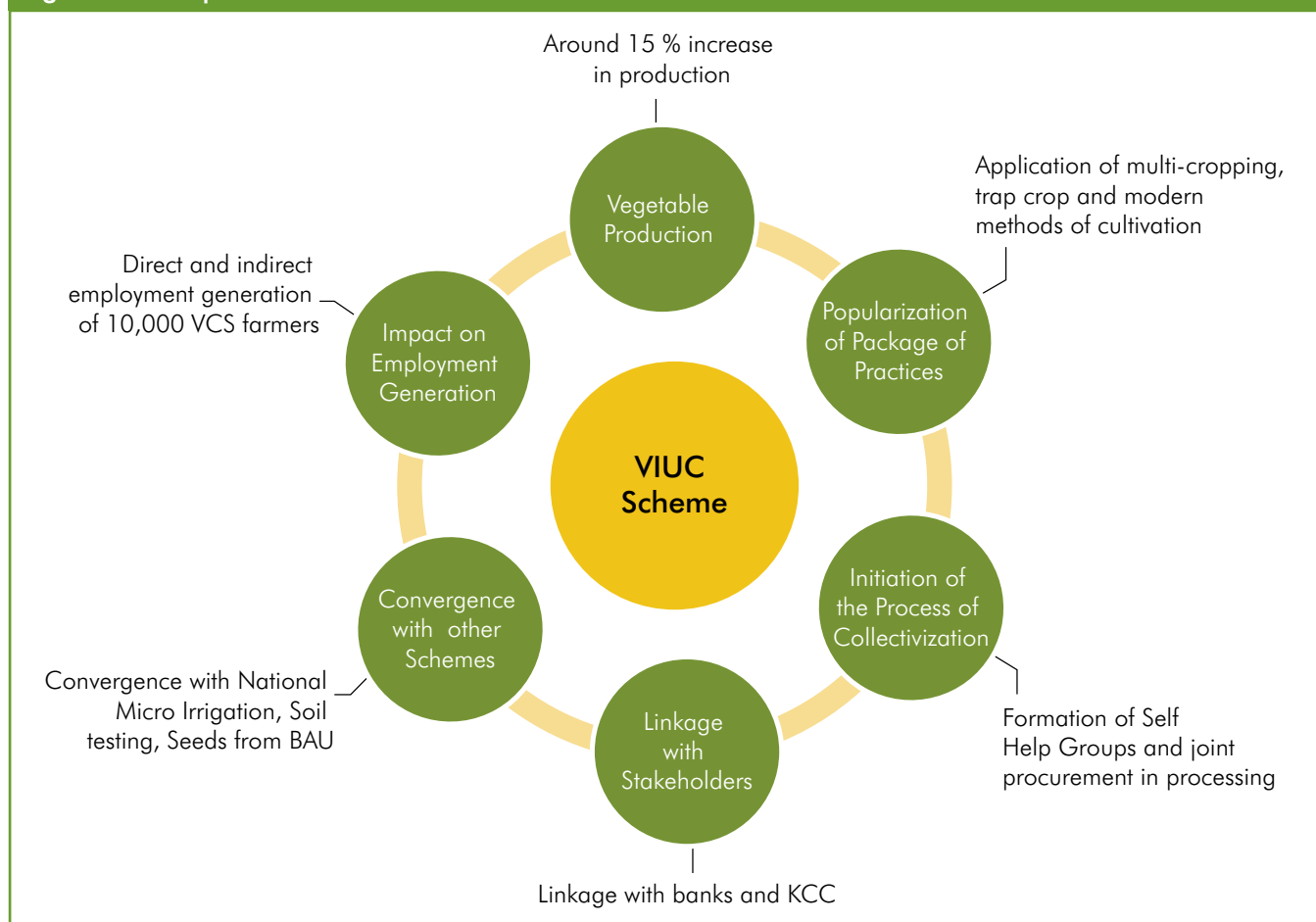
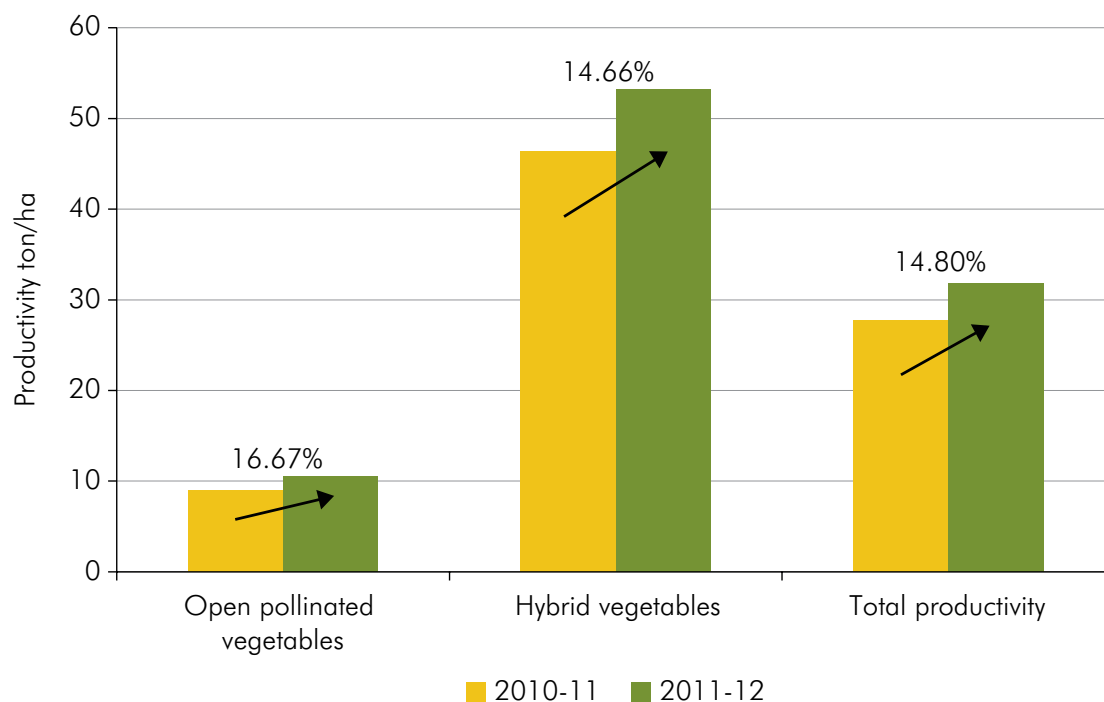


Table 20: Area and Production of Vegetables in Ranchi District in 2010-11 and 2011-12

S.No	Name of Vegetable	Type of Vegetable	Area (ha)	Production (MT)		Productivity (ton/ha)		Per cent increase in productivity
				2010-11	2011-12	2010-11	2011-12	
1	Peas	Open Field	200	2000	2400	10.0	12	20.00%
2	French bean	Open Field	200	1600	1800	8.0	9	12.50%
	Total		400	3600	4200	9.0	10.5	16.67%
3	Cauliflower	Hybrid	100	5000	5500	50.0	55	10.00%
4	Cabbage	Hybrid	75	3750	4125	50.0	55	10.00%
5	Tomato	Hybrid	75	3750	4125	50.0	55	10.00%
6	Capsicum	Hybrid	50	2250	3000	45.0	60	33.33%
7	Carrot	Hybrid	25	1250	1400	50.0	56	12.00%
8	Cucumber	Hybrid	25	1250	1600	50.0	64	28.00%
9	Ladyfinger	Hybrid	25	700	800	28.0	32	14.29%
10	Pumpkin	Hybrid	25	625	750	25.0	30	20.00%
	Total		400	18575	21300	46.40	53.20	14.66%

Source: VEGFED Ranchi

Figure 33: Increase in Productivity of Open Pollinated and Hybrid Vegetables



practices, understanding of the technology for inputs use have improved. Separate training sessions on package of practices for seasonal crops and efficient input use have increased the perception of farmers for use of good quality inputs. Also, farmers have been linked with Seed Department for seed requirement.

Farmers are participating in groups for learning and applying these techniques. In addition to this, implemented methods of multi cropping for better risk management and use of trap cropping

Popularization of Modern Package of Practices and Protected Production Technology

The component of modern package of practices was not very much popular among the farmers in the State. As per the baseline survey report, farmers in Ranchi are still practicing traditional methods of vegetable cultivation instead of commercial and improved scientific methods. But continuous efforts and timely training provided by the resource institutions have helped in percolation of scientific methods of cultivation to a remarkable level. Nursery raising of vegetables has started at some places, practical training provided on field has helped in improved perception of these techniques.





Trap crop of sunflower in chilli plot



Centralized Nursery preparation for Chilli by farmers' group

have started in some of the villages. For risk management, multi-cropping technique of root, leafy and cole crops is being grown. Trap crop of sunflower has also been grown with tomato and other crops to reduce pest infestation.

In the baseline survey report, the participation of farmers in technology transfer programs had been very low, owing to their low interest in the subject. But now farmers participation in such schemes has increased remarkably and more number of farmers are keen to participate and learn latest package of practices realizing its advantage.

Initiation of the Process of Collectivization

Both the Resource Institutions have mobilized approximately 10,484 farmers (approximately 5000 farmers each RI) and have formed a total of 641 Farmers' Interest Groups (FIGs).

Process of formation of Farmers' Producers' Organizations (FPOs) has been initiated, wherein the documents have been submitted for registration.

- ◆ Once the FPO is registered, the joint procurement of inputs will start commencement.
- ◆ Continued efforts are being made by resource institutions on initiating the concept of group procurement for the benefit of farmers.
- ◆ As per interaction with district officials and resource institutions, the concept of group activities and group formation was very poor

in the State. But now they are becoming part of the group and some started gaining interest in group activities.

- ◆ Interface meetings for backward linkage with input dealers are in process. The linkage will make the process of procurement easy; hence predicting its benefits; farmers are now becoming the part of the group for joint procurement of seeds, fertilizers and other inputs.
- ◆ In addition to procurement, marketing of the produce will also start in groups with the contacted retail outlets.

For inclusive development of the entire process from production to marketing, emphasis has been mainly given on timely procurement of inputs and availability of produce for market. To facilitate this entire chain of process i.e.; linkage of farmers with financial institutions, Government officials, banks, and support service providers is necessary.

- ◆ For backward linkage, some linkages have been established with banks, research institutes and input dealers. RIs are planning to conduct more number of such meetings so that farmers can jointly procure the good quality inputs, at affordable prices on time.
- ◆ FIG members are being identified and approximately 550 FIG members have been linked with KCC. A total of 100 VGCS bank accounts have been opened (50 by IGS & 50 by CTRAN). FIGs formed by IGS have saved more than Rs. 42.00 lakhs and FIGs formed by CTRAN have saved around Rs.3.75 lakhs.

- ◆ Formation of VGCS and their Self Help Group (SHG) has minimized the impact of local money lenders for financial assistance to a considerable extent.
- ◆ Approximately 308 FIG members have been linked with KVK and other research institutes for technical training and capacity building.
- ◆ For forward linkage, Speed Mart in Ranchi and Bhangar Cooperative Society, leading organized retailer of fresh fruits & vegetables in Kolkata has been identified.

Looking at the current status of formation of FPOs, which are almost ready for registration and starting business activities, resource institutions are making assertive efforts to accelerate the activities for linking with aggregators, buyers, input-suppliers and other stakeholders.

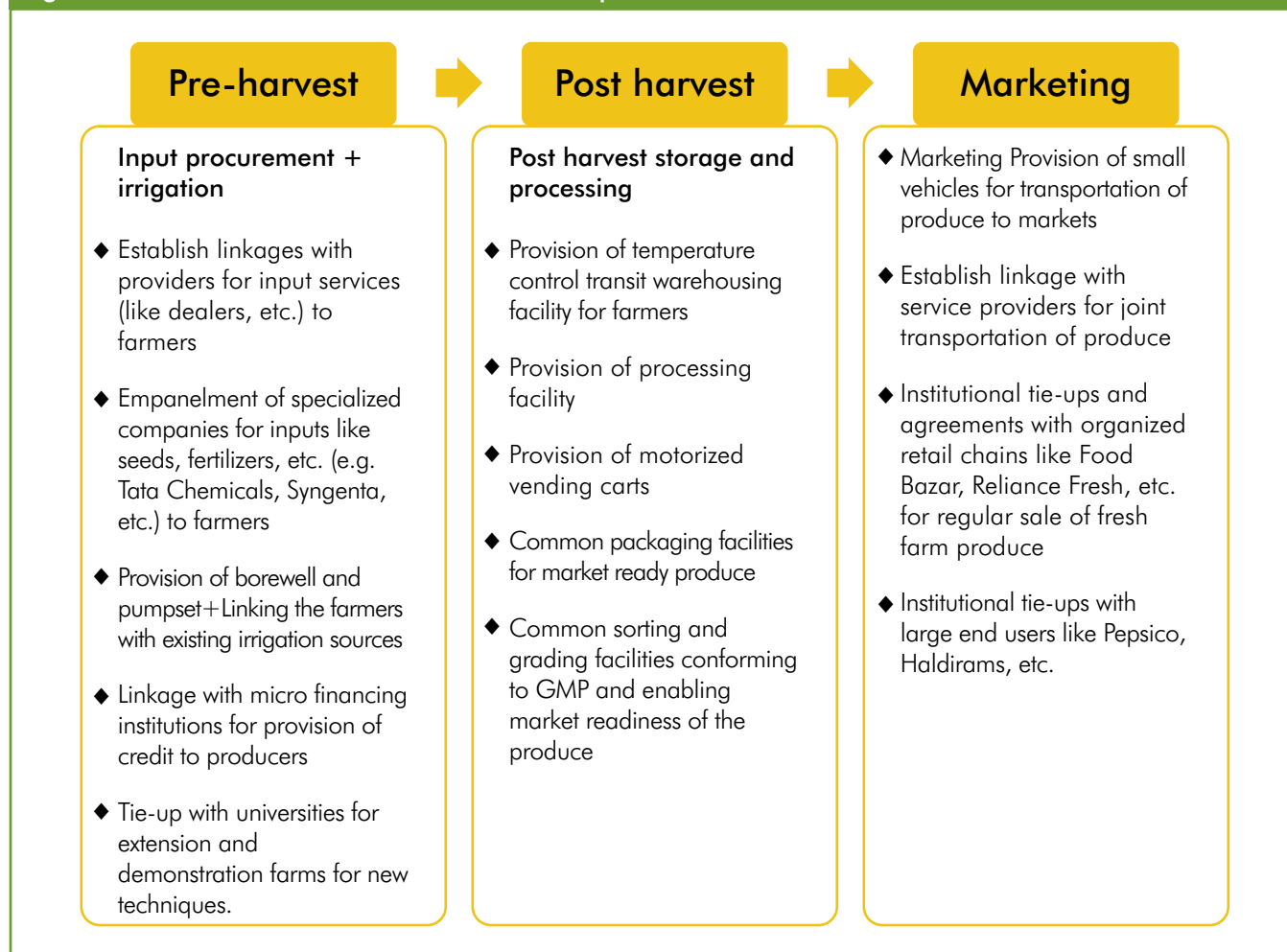
Convergence with Other Schemes

State Government is working towards convergence of other schemes in VIUC for benefit of farmers. Scheme of National Mission on Micro Irrigation (NMMI), soil testing and seed inputs from agriculture department, scheme of System of Rice Intensification (SRI) cultivation have already been converged.

Impact on Employment Generation

Though one year is not sufficient to assess the impact on employment generation but the scheme has directly and indirectly generated employment for approximately 10,000 farmers of VGCS itself. Once the seed production unit is operational, it will lead to generation of more employment of technical and non technical persons for processing, packaging, marketing, etc. In addition to this,

Figure 34: Suitable Recommendations for Improvement in the Outcome of the Scheme



after establishment of *Apni Mandi*, collection centre, aggregation centre and retail outlets, more employment will be generated. Approximately 5,000 people will be employed in both these units put together.

Recommendations

This part describes the proposed recommendations and suggestions, which are based on secondary and primary research by the team in Jharkhand.

In Jharkhand, the VIUC is gaining momentum through the constant efforts of State and district officials and involved resource institutions. There are some components which will require more effort.

More emphasis should be given on the supply chain from production to marketing

Recommendations for proper administration of the scheme:

- ◆ The release of fund should be synchronized with the work in progress
- ◆ Allocation of more funds for conducting training and exposure visits
- ◆ Constitution of empowered committee to resolve all bottlenecks in implementation
- ◆ Convergence with other parallel schemes to reduce multiplicity and overlap between them to provide higher benefits to farmers.

Case Study Jharkhand

Name of the farmer: Lakshmi Devi

Name of FIG: Jai Maa Durga

Village: Anedih

Block: Bundu

District: Ranchi

Resource Institution: Indian Gramin Services (IGS)

Laxmi Devi became the member of the group in February, 2012. She is the group leader of Jai Maa Durga FIG. She is a small farmer, doing cultivation of tomato, brinjal chili, potato and other vegetables and is highly benefitted in terms of saving of money and less crop loss. The resource institution is providing timely training on different aspects of vegetable cultivation like nursery raising, method of sowing, fertilizer application and special training on different crops in the season. Presently she is growing tomato and chilli and has learnt the method of nursery raising with proper spacing. Has Earlier, she was not aware about the proper spacing in nursery raising. Sowing the plants at proper spacing, helped the plants to grow more vigorously, increased the capacity to withstand fruit load and give more number of pickings.



Earlier due to closer spacing, the plants used to get mingled with each other and were not growing properly, yield was also low. But now, the plants are producing around 2.5-3 kg fruits more/ plant as compared to previous practice of vegetable growing.

As being the group leader of the FIG, she organizes weekly meetings with other group members and discusses the problem and issues. Jai Maa Durga FIG has all female members. They are all actively contributing in the vegetable cultivation on field and marketing component is performed by male members of the family. The program has increased employment generation among female members and women empowerment.

Due to increase in the crop yield, the group is able to save approximately Rs 1000/- per month. They also provide loan upto Rs 7000/- to each other on low interest rate of 3%. Earlier, for purchasing the inputs, they used to take loans from local moneylenders on high interest rates, but now they are availing the facility of finance. All members of the FIG are availing this facility and are highly benefitted. This initiative of the FIG as Self Help Group (SHG) has lessened the pressure of local moneylenders.



Chapter 6

Nagaland

Project Area and Stakeholders

This part describes the implementation structure and functioning of the project at different levels and the major stakeholders involved in the project.

VIUC Scheme in Nagaland

VIUC in the State of Nagaland is being implemented in the State Capital - Kohima having a population of 0.27 million. The Directorate of Horticulture, Government of Nagaland has been appointed as The Nodal Agency and Deputy Director of Horticulture is the Nodal Officer for implementing the project at the State Level. District Horticulture Officers have been appointed as Nodal Officer to look after the overall implementation of the scheme at district level. Production clusters have been identified in the districts of Kohima and Dimapur.

Baseline Survey

To identify major vegetable production districts and clusters, an independent agency, Indian

Society of Agribusiness Professionals, carried out the baseline survey in Nagaland. The Baseline Survey highlighted the existing supply chain and other bottlenecks and also identified the vegetable growing districts and cluster within the State. During the interaction with the Nodal Agency and Resource Institution, it was observed that areas/clusters, which were identified under the baseline survey, have been taken up for the purpose of implementation of the scheme.

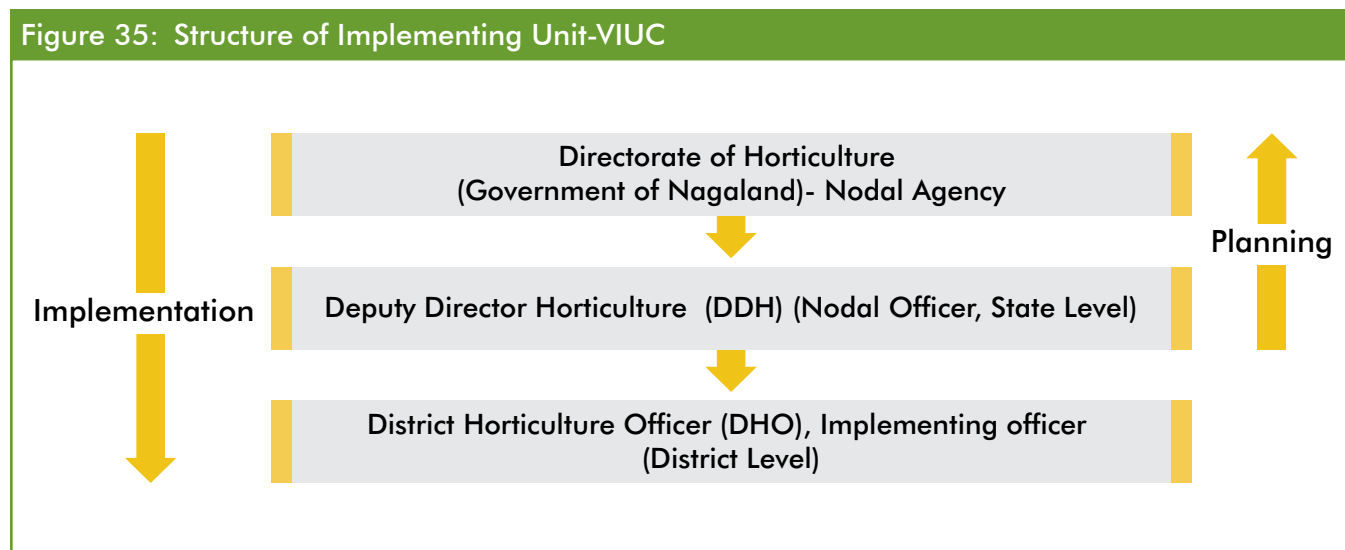
State/Districts/Clusters

The scheme is being implemented in two districts of Nagaland i.e; Kohima and Dimapur. Major vegetable clusters around Kohima ranging from 60 to 75 km, are supplying vegetables to target urban cluster i.e. Kohima.

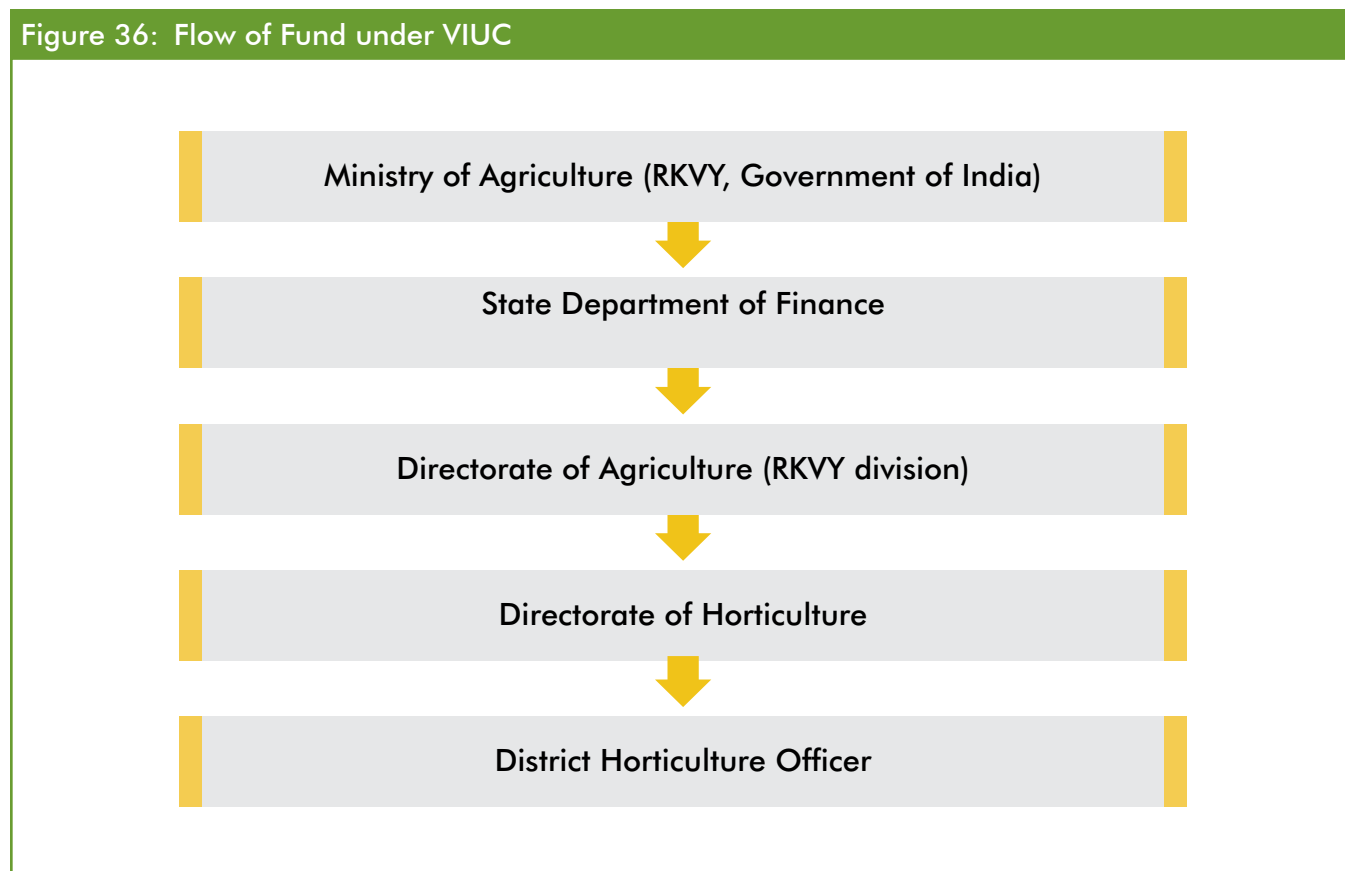
Table 21: Stakeholders and their Coverage Area

Role	Name of Organization	Districts covered under VIUC initiative
Baseline Survey	Indian Society of Agribusiness Professionals	Kohima and Dimapur
Nodal Agency	Directorate of Horticulture, Government of Nagaland (Nodal Agency) Deputy Director of Horticulture (Nodal Officer, State level) District Horticulture Officer (Nodal Officer, District level)	Kohima and Dimapur
Resource Institution	Indian Grameen Services (IGS)	Kohima and Dimapur

Detailed implementation structure, has been depicted in the following figure:

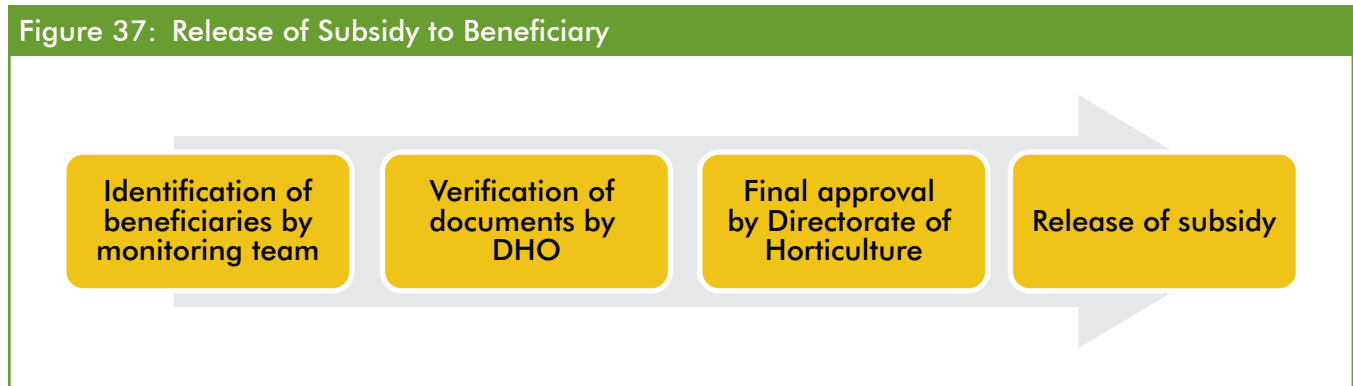


Fund Flow



Budget Outlay and Expenditure (2011-12): The total budget outlay approved for the State for the year 2011-12 was Rs. 350.00 lakh. There is no separate provision of budget for administration purpose.

Release of Subsidy to Beneficiary



Resource Institution

For the mobilisation of farmers and promotion of Farmers' Interest Groups (FIGs) and Farmers' Producers' Organisations (FPOs), Indian Grameen

Services (IGS) has been appointed in the State by SFAC. Targets of RI in terms of Farmers' Mobilisation, FIG & FPO formation as well as current achievements are given below:

Table 22: Current status of FIG and FPO formation

Particulars	IGS	
	Target	Achievement (registered)
FPO	2	0
FIG	120	139
Total farmers	1750	1750

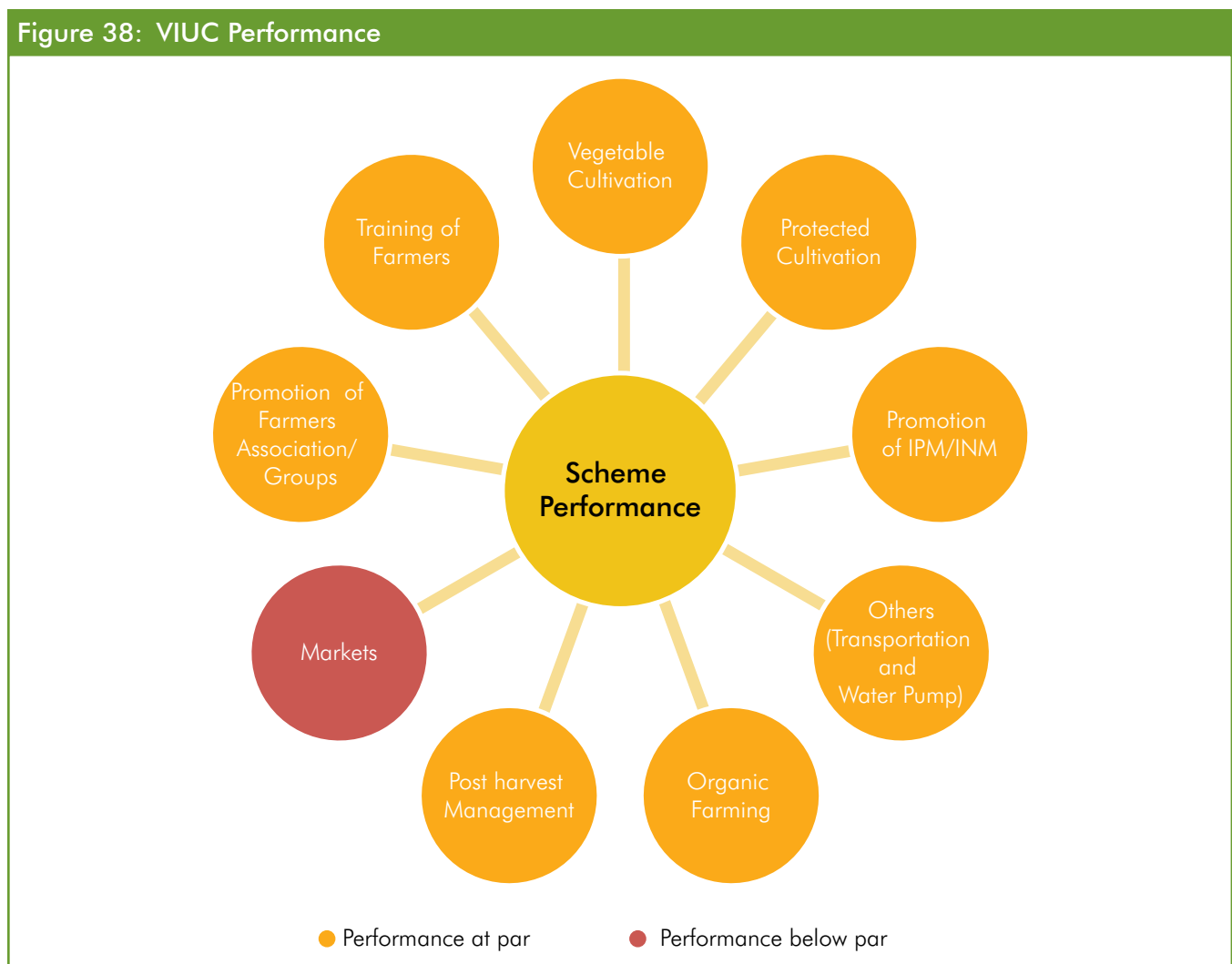
Source: Secondary information from RI

Table 23: Coverage of Farmers and Participation in Capacity Building

Particulars	Unit	Resource Institution
		IGS
Districts		2
Clusters	Nos	2
Total Farmers	Nos	1750
Break up of total farmers		Data Not Available
Marginal (< 1 Ha)	Nos	--
Small and Semi-medium Farmer (1-4 Ha)	Nos	--
Medium Farmers (4-10 Ha)	Nos	--
Large Farmers (> 10Ha)	Nos	--
Meetings Conducted		
FPOs	Nos	--
FIGs	Nos	3
Farmer	Nos	188
% of members regularly participating in meetings		
FPOs	%	

Particulars	Unit	Resource Institution
		IGS
FIGs	%	100
Farmer	%	100
Capacity Building for FIGs/FPOs		
FIG members oriented/trained & aware on NVI scheme	Nos	318
Group leaders oriented/trained on FIG/FPO concept and management	Nos	139
FIG/FPO members oriented/trained on Account Keeping in NVI scheme	Nos	139
FIG members trained on some or other best practices (for production, value addition and marketing) under NVI scheme	Nos	323
Bank Account Opened (Status)		
FPOs	Nos	--
FPOS (Share Collection)		--
Farmers	Nos	110
Total Saving	Rs. Lacs	Data not available

Source: Secondary information from RI



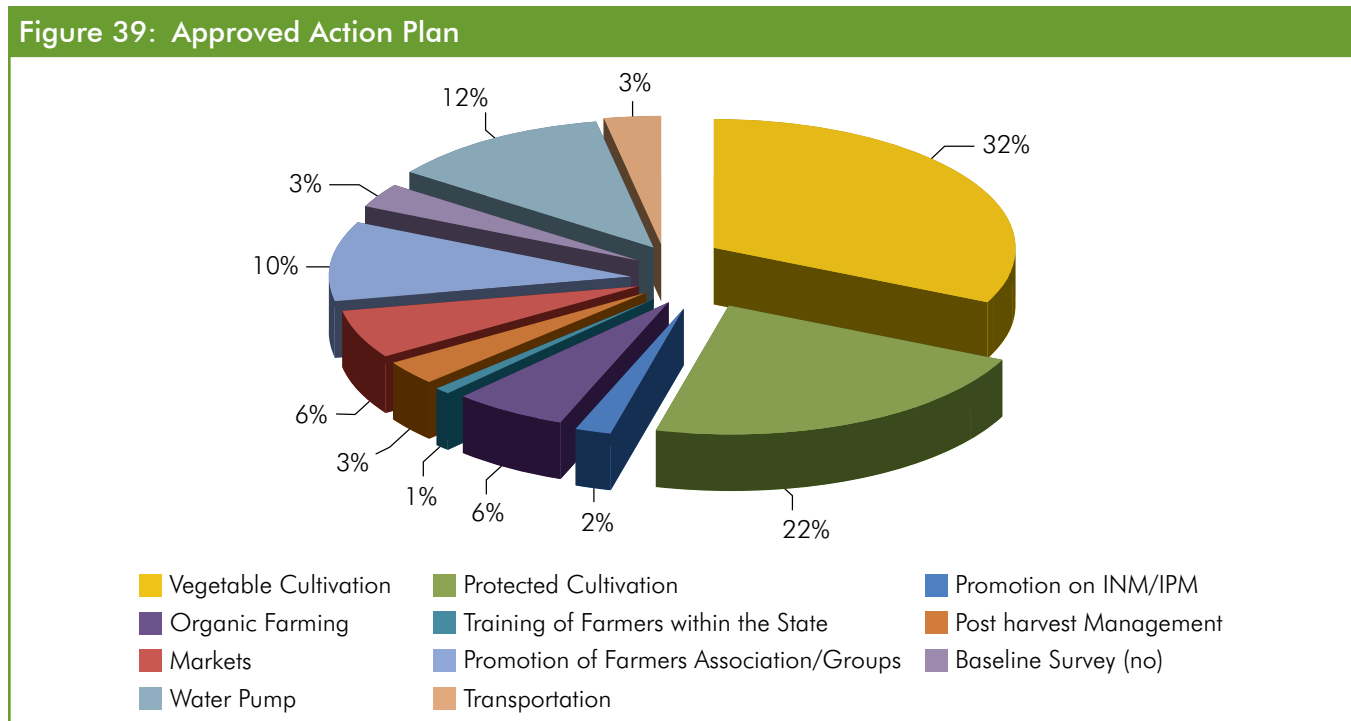
Performance of the Scheme

This part investigates the overall success of the VIUC in terms of physical and financial achievement.

Farmers benefit directly from the following nine components of the scheme. The performance of these nine components is illustrated in the Figure 38.

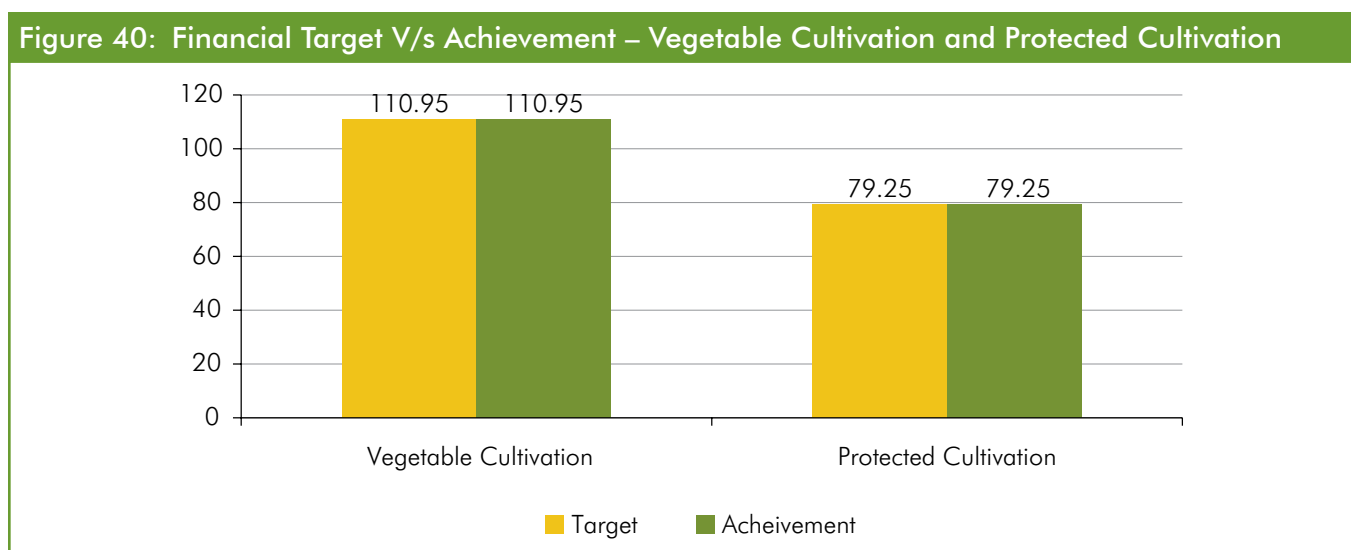
Proposed and Approved Action Plan

Out of the total planned outlay of Rs. 350.00 lakh, share of various components planned under the scheme during year 2011-12 is illustrated in the figure below:



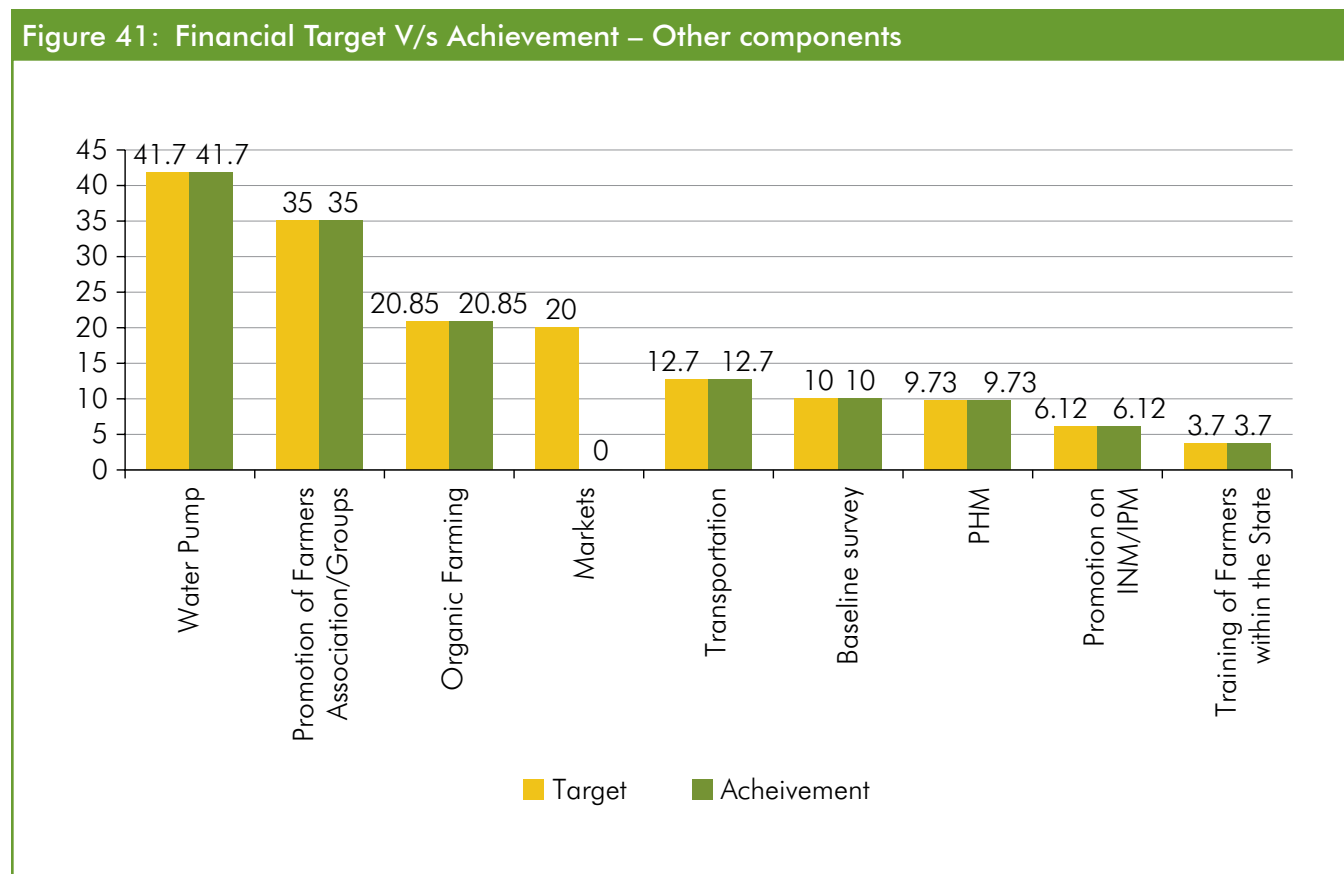
Of the total approved financial outlay of Rs 350.00 lakh for the year 2011-12, 32% has been allocated for component of vegetable cultivation followed by 22% for protected cultivation, 10%

for promotion of farmers associations and 3% for post harvest management. State had added two more components to the scheme, based on local requirement; these components are



transportation and water pump and funds of 3 percent and 12 percent respectively. Overall, the allocation of fund is much justified for different components of the scheme depending upon the present scenario and requirement of the State.

Detailed component-wise Physical Targets & Financial Outlay for the year 2011-12 is given in Annex- V(A). Although, the present status of financial achievement of different components can be delineated from the following bar graph, in which target and achievement are noticeably evident.



Component- Wise Physical and Financial Targets and Achievement (2011-12)

The following table illustrates the component wise performance for the financial year 2011-12.

Table 24: Component- wise Physical and Financial Targets and Achievement

Component	Physical Performance	Financial Performance
Vegetable Cultivation	<p>100 percent achievement</p> <p>As per the approved plan, 31.50 ha area was approved for expansion of open pollinated and 275.50 ha for hybrid vegetable cultivation, of which total area has been covered and recording 100 percent achievement.</p>	<p>100 percent achievement</p> <p>The financial target for vegetable cultivation was Rs 110.95 lakh. For open pollinated vegetable cultivation, financial allocation was Rs 32.30 lakh and for hybrid vegetables cultivation was 78.65 lakh. Total amounts of Rs 110.95 lakh have been fully utilized.</p>

Component	Physical Performance	Financial Performance
Protected Cultivation	100 percent achievement For protected cultivation, physical target was to establish 4000 sqm green - house structure and 4000 sqm for cost of planting material and other inputs of high value vegetable grown in green -house/poly house shade net house, of which total target has been achieved	100 percent achievement Financial allocation for protected cultivation was Rs 79.25 lakh, of which entire fund has been utilized.
Promotion of INM/IPM	100 percent achievement Physical target for promotion of INM/ IPM was to distribute 278 numbers of knapsack sprayer and total 278 numbers of knapsack sprayer has been distributed to FIGs.	100 percent achievement Financial allocation for this component was Rs 6.12 lakh. Total fund has been utilized under this component.
Training of Farmers within State	100 percent achievement Physical target was to provide training to 318 farmers and total 318 farmers has been trained on various subject.	100 percent achievement Financial allocation for this component was Rs 3.70 lakh and 100 percent fund has been utilized.
Organic Farming	100 percent achievement Physical target under this component was creation of 417 HDPE vermin-bed of 32 cft, of which total 417 vermibed has been created.	100 percent achievement Financial allocation for this component was Rs 20.85 lakh which has been fully utilized.
Post -harvest Management	100 percent achievement The physical target under this component is to distribute 1390 plastic crates and target is achieved	100 percent achievement The financial target for this component was Rs 9.73 lakh. Total fund has been utilized.
Promotion of Farmers' Association/Groups	100 percent achievement The physical target was to form 139 groups of farmers, and 139 groups have been formed.	100 percent achievement The financial allocation for this component was Rs 35 lakhs which has been fully utilized.
Markets	0 percent achievement In this component 1 rural market/apni mandis and 1 collection centre was to be established, of which achievement is zero.	0 percent achievement Financial allocation for market is Rs 20 lakh which is unutilized.
Water Pump	Target was to establish 139 water pump of which target has been achieved.	Financial allocation for this was Rs 41.70 lakh which has been fully utilized.
Baseline Survey	100 percent achievement Financial allocation for this component was Rs 10 lakhs which has been fully utilized.	
Transportation	Financial allocation for transportation was Rs 12.7 lakh which has been fully utilized.	

Source: Progress report of VIUC Nagaland

Out of the total fund of Rs 350.00 lakhs (2011-12), total expenditure is of Rs 330 lakhs i.e. 94.28 percent of the total financial target has been achieved.

Situational Analysis of VIUC

This part of the chapter illustrates the situational analysis of VIUC in Nagaland. It is an analysis of the State and condition of the farmers/beneficiaries after implementation of the initiative, identification of the major issues related with the components and analysis of key stakeholders. Situational analysis has been derived with the help of primary survey, secondary information and observations during field visits.

Findings of primary survey of farmers have been discussed in the following sections:

Findings of Primary Survey

For the purpose of Impact Assessment Study, around 40 farmer members (FIGs) were surveyed in Kohima and Dimapur. The major points emerged out of the survey have been discussed in the following section:

Land Holding: Average operational holding size of the surveyed farmer's area is around 1.5 ha.

- ◆ The land holdings are fragmented in nature.

- ◆ Most of the farmers covered under this scheme are small/marginal and medium farmers

Vegetable cultivation seems to be a remunerative venture among these farmers due to small land area.

Irrigated Land: Irrigation is by and large surface water which is fully dependent on the monsoon rain, and thus the entire irrigated areas fall under the category of rainfed.

Cost of Cultivation: Cost of vegetable cultivation has been calculated based on cost of land preparation, inputs (except seeds), irrigation and labour employed by the farmers during farming operations (land preparation to harvesting). Average production cost mentioned by the surveyed farmers is as illustrated in the Table below. The detailed calculations have been given in Annex- V(C).

Seeds Used: Almost 100 percent of the surveyed farmers use hybrid seeds.

- ◆ Main source of procuring seeds is the Department of Horticulture.

Input Procurement: All the farmers of surveyed areas are procuring the inputs like seeds from district horticulture department in group and fertilizers and pesticides from local input supplier.

Table 25: Average Cost of Cultivation

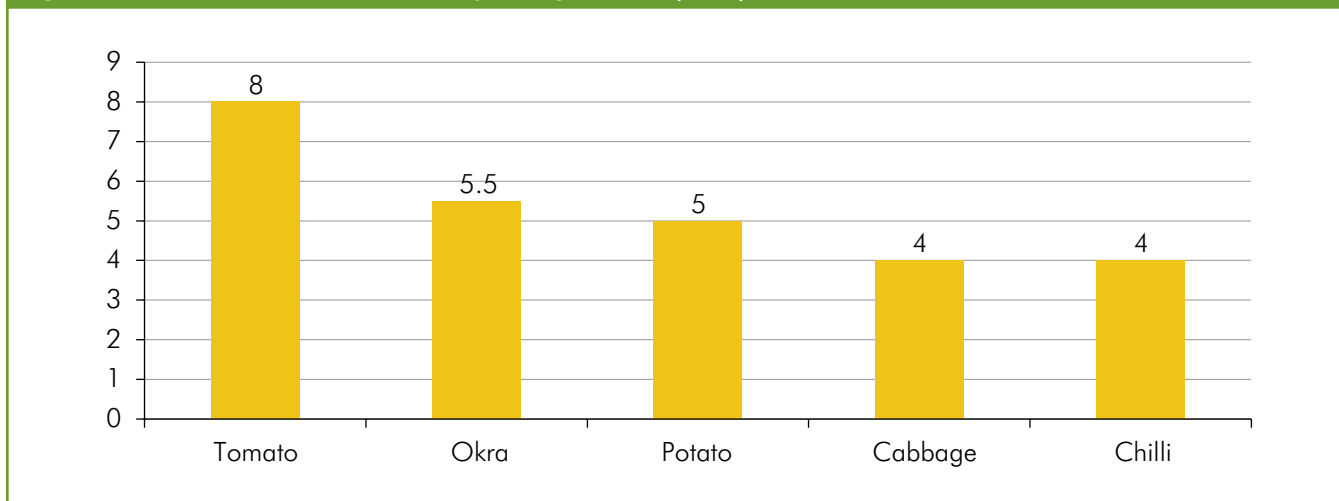
Crops	Average (Rs/Ha)
Beans	30333
Brinjal	34000
Cabbage	34889
Cauliflower	32167
Chilli	34374
Cole	37625
Gourds	29000
Onion	36500
Potato	37059
Pumpkin	14000
Tomato	36081
Water melon	27500

Source: Primary Survey

Post Harvest Losses and Value Addition: As per the data of surveyed farmers, the extent of

post harvest losses varies from crop to crop as mentioned below:

Figure 42: Post harvest loss of Major Vegetables (in %)



- ◆ After primary survey, it was observed that average post harvest loss in all the vegetables varied between 4-8 percent which is almost same as baseline data on post harvest losses. It indicated that no impact has been observed in post harvest losses.
- ◆ Non- availability of proper transport facility, far away markets and lack of knowledge of food processing factors are responsible for post harvest losses.
- ◆ Almost 95 percent of the farmers are performing value addition at field level by sorting and grading. Very few farmers are performing packaging for value addition of the produce.

Marketing of Produce: More than 65 percent of the farmers are carrying their produce to market in loose packaging. Twenty percent are using plastic bags and rest are using other means of packaging such as gunny bags.

- ◆ Average cost incurred on packaging is Rs 0.5/- per kg of the produce.
- ◆ Almost 50 percent farmers of the surveyed areas are selling their produce on farm gate and rest of them to local *mandi/haat*.
- ◆ Around 50 percent farmers are marketing their produce between 2-5 km distances. 30 percent of the farmers are carrying their produce to the

distant market upto 2 km and 20 percent to a distance of above 5 km.

- ◆ Around 60 percent farmers are carrying their produce individually in their own vehicles while others use different modes of transportation.

Government Support & Incentives: Almost 100 percent of the farmers of the surveyed areas are aware about Government support and activity.

- ◆ Major source of information access is the resource institution working in the area, Government officials and NGOs.
- ◆ This is a concrete achievement as all the farmers of the area are now aware about different Government support and schemes.
- ◆ Almost all the farmers are beneficiary of other Government schemes.

Awareness about VIUC: All the farmers of surveyed areas mentioned that they are aware about VIUC and its objectives.

- ◆ According to them, the major objectives of the scheme is to increase vegetable production, minimize the cost of production, group activity and direct linkages with market and ultimately betterment of small and marginal farmers.

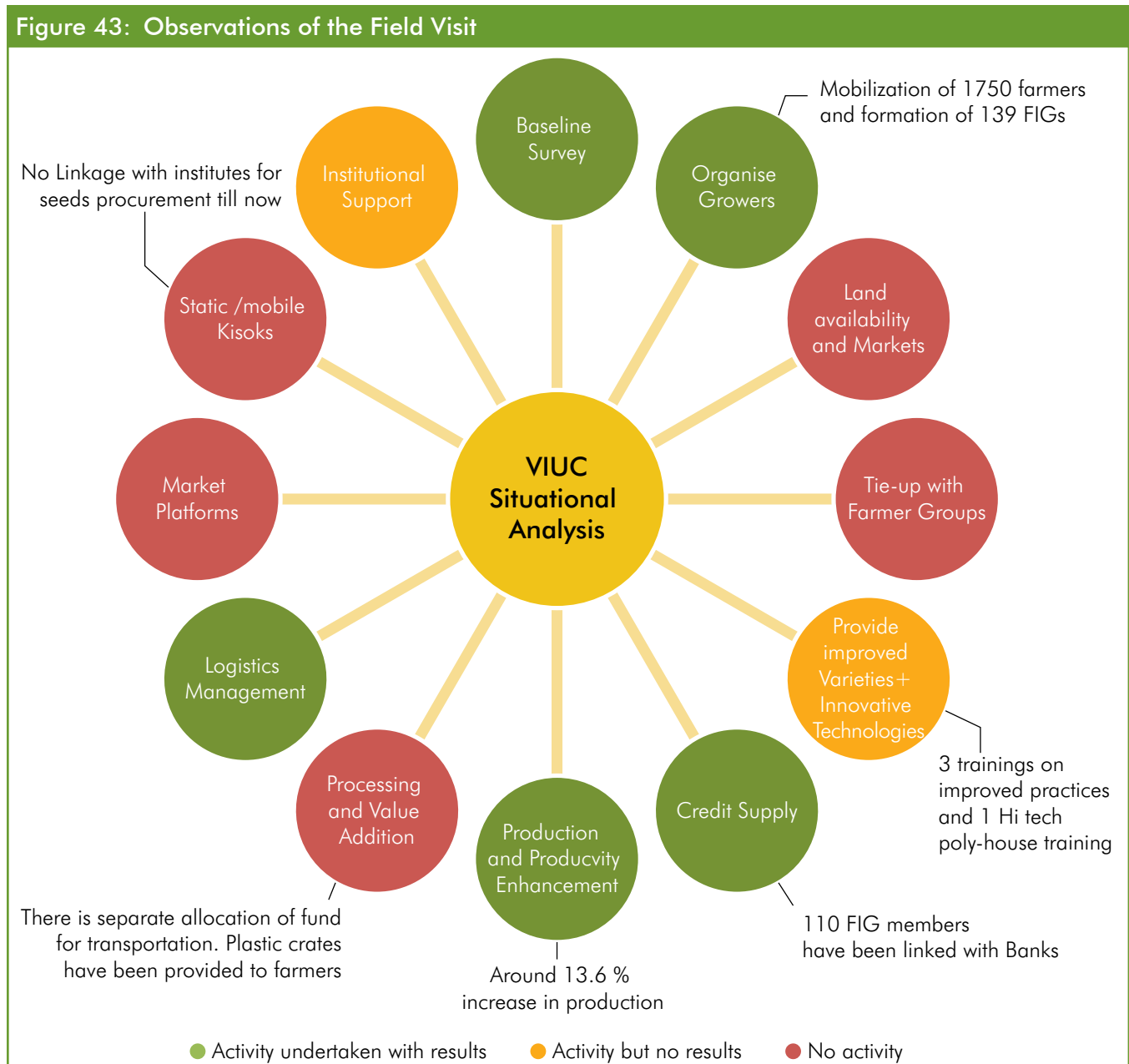
Resource Institution: IGS is the resource institution working in the area.

- ◆ Regular meeting of RI and farmers takes place at monthly intervals.
- ◆ Village and cluster meetings are organized to discuss the program.
- ◆ There is participation of State department officials in FIG/cluster meetings across the surveyed area.
- ◆ IGS member attended the training conducted by the NABARD on MIS and data entry.

Training and Training need Assessment: Training to all the farmers has been provided by the RI.

Training programmes for all the FIGs representatives and members of the IGS has been successfully conducted covering 355 participants. The trainings were organized by the State Nodal Agency. The Department of Horticulture with an objective has decided to impart Good Agriculture Practices for cultivation of Vegetables both under Hi Tech structures and Open field.

Observations from Field Visit



As per data received from the State Nodal Agency, 94.28 percent of the total budget has been utilized for the year 2011-12.

The Figure 43 is depicting the observations based on field visit and interaction with officials. It is sketching the present condition of the State in terms of direct impact as well as the activities which are in process.

Detailed Observations of Field Visit

Cluster Approach

Cluster approach for identification, selection of potential villages and formation of FPOs has been done. Major vegetable producing clusters with sufficient water availability have been selected.

- ◆ Around two clusters have been created in seven blocks of Kohima and Dimapur District.
- ◆ The selected villages are the main vegetable producing belt of the districts, which are contributing vegetable supply to Kohima.

Mobilisation of Farmers and Group Formation

- ◆ Group meetings and training are organized at cluster level.
- ◆ The program is largely covering small and marginal farmers who are unable to benefit from most of the Government schemes.
- ◆ Till now, 1750 farmers have been registered and 139 FIGs have been formed. FPO formation is under process.

Training and Capacity Building

Capacity building and training programs for package of practices on different aspects of vegetable cultivation, protected cultivation, seasonal training of particular crops, and training on food processing have been provided. Two IGS member attended the training conducted by the NABARD on MIS and data entry.

Along with IGS members, many FIGs participated in the recently concluded North East farmers meet on 2nd and 3rd October organized by the CIH, Medziphema in collaboration with the Department of Horticulture, Nagaland. However the training expenses were borne by the organizers.

Disbursement of Subsidy

- ◆ The subsidy for inputs is provided in the form of seeds. The cumulative requirement of the FIGs is calculated, and then the input in the form of kind is distributed to the beneficiary.
- ◆ In Nagaland, Horticulture department is providing subsidy in the form of kind.

Functioning and Coordination of Resource Institution

- ◆ RI staff has good understanding of the scheme as well as their roles and responsibility, however, there are wide gaps in project implementation;
- ◆ There is poor record keeping and documentation of various activities being undertaken at the field by RI. FIGs do not have any records of member farmers, their land holdings and inputs usage, minutes of meetings as well as of savings, etc.

Functioning of FIG

FIG members have been identified based on shared interest. Group leader of the FIG has been elected through voting. The Following activities are taken-up at the FIG level:

- ◆ Weekly meetings of the FIGs are organized and the functions, issues and initiatives of common interest are discussed.
- ◆ Two members from each FIGs of 139 groups was trained on best practices on the production, value addition and marketing of vegetables.

Infrastructure Creation

As per the approved plan, VIUC is covering the construction of a 12 unit installation of Hi tech green- house for whole year round production has completed at Dimapur. Installation of 3 units and site levelling of the remaining 5 units under Kohima Cluster is in progress and green house structure including drip irrigation system has been established.

Marketing of Produce

Around 50 percent of farmers sell their produce at farm gate and the rest to wholesale *mandi*. No work has been done on market infrastructure component.

HRD training to Project Management Unit

All management unit members are well equipped with training which were conducted before initiation of project. IGS members' attended workshops on MIS and Data entry organised by NABARD.

Challenges/Issues

- ◆ **Transportation:** This is one of the major problems faced by the farmers and RI. Production cluster covered under NVI are not accessible by mettle roads and hence, it is a constraint for the IGS members for regular monitoring of the fields and also for the farmers to bring their produce to the main market.
- ◆ Market Linkages for farmers are still a major issue due to road conditions and transportation cost.
- ◆ **Shortage of Man power:** IGS has insufficient number of staff at field level which is one of the big challenges in the way of project implementation in Nagaland. The identified cluster falls under hilly areas covering 7 blocks which require minimum 2 monitoring staff per block to execute field visit, data collection and supervision. However, IGS has only 5 member staff which is insufficient.
- ◆ IGS field executives are facing challenges with conveyance cost because of distant location of villages in different districts.
- ◆ The issue of hired immigrant labourers in Dimapur area is evident, some of the farmer groups under this project are not the actual farmers but they are undertaking farming by labours (Bangladeshi refugees) on contract basis of 50-50 profit sharing. These farmer groups are intermediaries between the real farmers and the project implementing agency/Government. Training is provided to the FIG members who are not actually involved in farming. This is a major challenge in certain parts of Nagaland which must be sorted out.
- ◆ **Lack of Road Connectivity:** Proper public transport system and road linkages are the major hurdles in Nagaland; even in urban locations the condition is not good.

Impact of the Scheme

This part investigates the impact of VIUC on broader areas relating to procurement of quality inputs, linkages developed for procurement and marketing, saving and improvement in socio-economic status of farmers and employment generation induced by the initiative.

VIUC has been framed to cover all the segments of vegetable supply right from the farmers' field up to retailing of vegetables with major emphasis on training of farmers on good production practices, Post Harvest Management, value addition along with ensuring availability of quality inputs, creation of marketing infrastructure and linkages. For the purpose of assessing impact of VIUC, the results of performance and situational analysis has been assimilated.

Impact of VIUC

The following Figure 44 is outlining the direct impact of initiative in terms of the following six components.

Vegetable Production

As per the data provided by the Nodal agency (Directorate of Horticulture), total production of vegetables under both open pollinated and hybrid cultivation increased by about 13.67 percent (from 60135 MT to 68356.3 MT) in districts covered under the scheme. However, there is decrease in average vegetable productivity.

Quality Inputs

As per interaction with district officials, they are providing input to farmers as part of the scheme. Quality of input is good as per the farmers. However, the same has not been reflected in terms of productivity enhancement, as the average productivity of vegetables has declined to 4.71 MT per ha during the year 2011-12 as compared to 6.94 MT per ha in the year 2010-11.

Popularization of Modern Package of Practices and Protected Production Technology

The component of modern package of practices is not very popular among the farmers in the

Figure 44: Impact of the Initiative

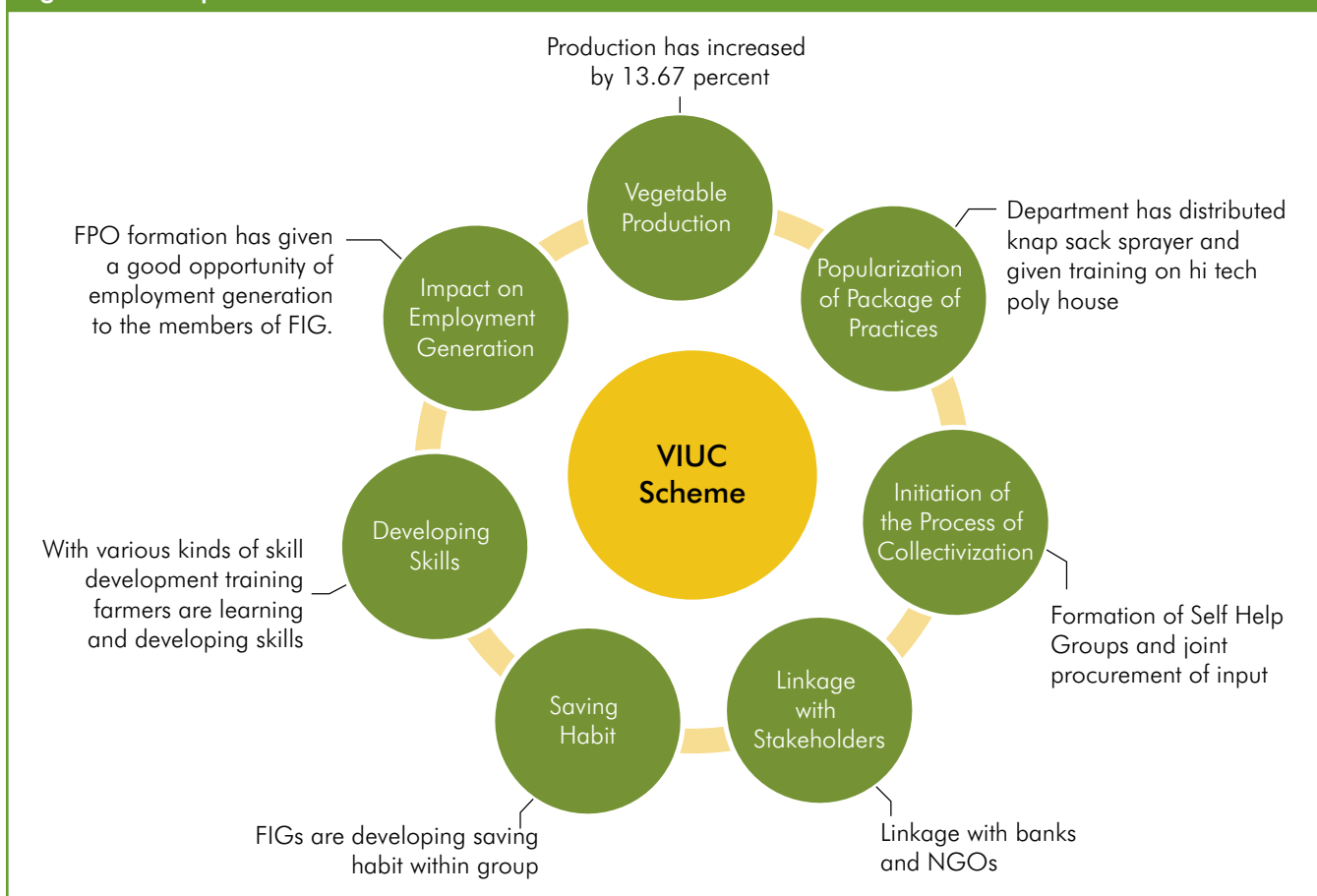


Table 26: Area and Production of Vegetables in Kohima and Dimapur Districts in 2010-11 and 2011-12

	Area (Ha)		Production (MT)		Productivity (MT/Ha)	
	2010-2011	2011-2012	2010-2011	2011-2012	2010-2011	2011-2012
Kohima	4955	10740	34295	38961.2	6.921292	3.627672
Dimapur	3715	3775	25840	29395.1	6.955585	7.786781
Total	8670	14515	60135	68356.3	6.94	4.71

Source: Data as per Horticulture census

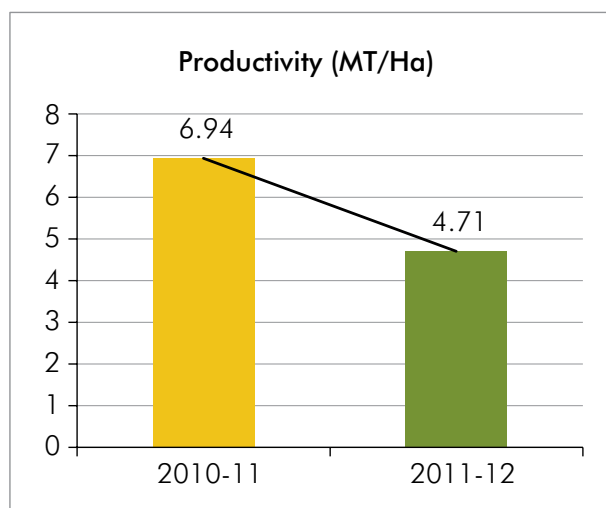
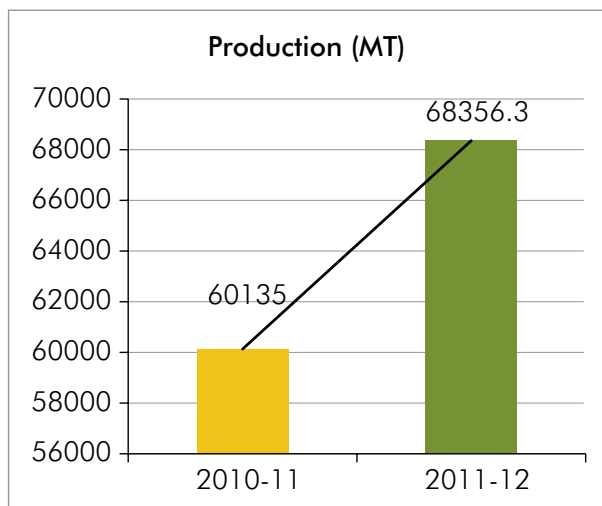
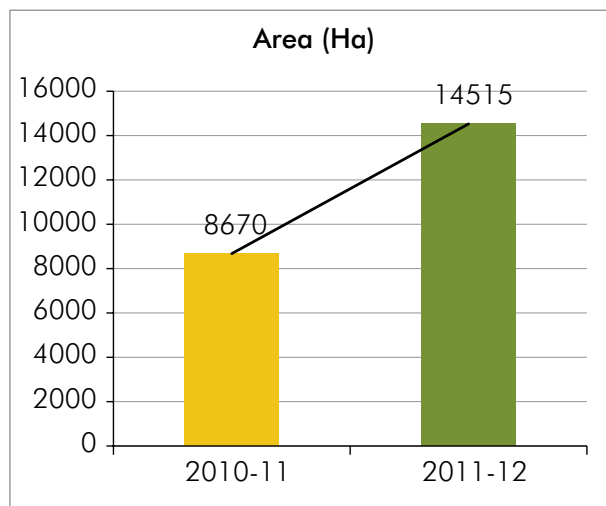
State. As per the baseline survey report, farmers in Kohima are practicing traditional methods of vegetable cultivation instead of commercial and improved scientific methods and their traditional practice is different from other parts of the country. Visible impact in terms of adoption of modern package of practices is still not there. But continuous efforts and timely training provided by the resource institution is facilitating the percolation of scientific methods of cultivation and will take time to reach at

remarkable level. Nursery raising of vegetables has already been carried out by FIGs members at some places.

Initiation of the Process of Collectivization

Resource Institution has mobilized approximately 1750 farmers, total of 139 Farmers' Interest Groups (FIGs). Formation of Farmers' Producers' Organizations (FPOs) is under process. As of now farmers have not started any formal procurement

Figure 45: Impact of the Initiative



Area under vegetable production has increased Area under vegetable production has increased by 67 percent from 8670 Ha in the year 2010-11 to 14515 Ha in the year 2011-12.

of agri-input or marketing of produce collectively. However, as per RI, once the FPO is registered collective activities will start taking place.

Linkage with Stakeholders

For inclusive development of the entire process from production to marketing, the scheme emphasizes on timely procurement of quality inputs and availability of produce for market. To facilitate this entire chain of process i.e.; linkage of farmers with financial institutions, Government officials, banks, input providers and support service providers is necessary.



- ◆ For backward linkage, some linkages have been established with banks wherein approximately 166 FIG members have been linked with bank.
- ◆ Till now no forward linkage has been established.

In terms of establishing linkages of farmers with various stakeholders, still there is a wide gap. RI needs to work very hard on this area by organising interactions with research institutes, university, input suppliers, aggregators etc.

Impact on Employment Generation

As of now, project has not been able to create any direct employment opportunity, however indirectly as the area under vegetable cultivation has increased and therefore, the demand for farm labour has increased. Over a period of time, once the FPO is established, linkages are formed and commercial activities get started, there will be opportunities for direct employment of educated people and local youth.

Recommendations

This part describes the proposed recommendations and suggestions, which are based on secondary and primary research by the team in Nagaland.

In Nagaland, the VIUC although it has completed one year yet it needs to gain momentum, the results have not been felt on ground in term of farming technology upgradation, improved skills of farmers, yield improvement or in terms of establishment of market linkage and improvement in vegetable supply chain. Emphasis is required on making interventions keeping whole supply chain in mind from production to marketing, instead of standalone disjointed interventions at different stages. Some of the recommendations, based on analysis of data and observation during field visit are as below:

- ◆ Convergence with other parallel schemes to reduce multiplicity and overlap between them to provide higher benefits to maximum number of farmers.
- ◆ IGS and the State department should devise more intensive training activities, engaging farmers not only on benefits of subsidy but

also on concept of self-sustainability, which includes more technical training on production and post harvest, FPO activity coordination, business skills and marketing;

- ◆ There is need to give more emphasis on concept of collectivisation and RI staff should try to actively facilitate/coordinate the activities such as joint procurement of inputs, joint farming, marketing, etc. and demonstrate the benefits of collective actions; Exposure visits of farmers should be organised to other part of the country, where the FPOs/FPCs are in advance form and are doing business;
- ◆ RI should accelerate the process of registration of FPO and thereafter should work on establishing formal linkages of FPOs with various stakeholders;
- ◆ State Nodal Agency should also focus on active participation and ownership from farmers for various components and ensure optimal utilisation of resources and infrastructure by the farmers.
- ◆ Direct marketing is one of the most important components in this Initiative which is still untouched. Given the fact that a lot of small farmers are currently marketing their vegetables directly, but in very small quantities, RI should organise in groups, which will showcase the benefits of this to the farmers.

Given the current practices of farming and marketing of vegetables by the farmers, where the farmers are small holders, mostly illiterate and not having any business/commercial understanding, RI will have to extra pain in Nagaland for starting different initiative on its own and then handing over ownership of these activities to the groups.

Recommendation for proper administration of the scheme

- ◆ Availability of updated data and information is a major challenge in Nagaland and it was also observed that whatever data was provided by the Department, are from secondary sources only, there was no field data available, except physical and financial achievements, specifically relating to implementation of scheme, beneficiary profile, area coverage, location of projects, etc with the department.

Therefore, Directorate of Horticulture should develop an MIS system to monitor the progress of the scheme at field.

- ◆ Improved coordination with RI for convergence of various activities are being undertaken by the Department as well as RI field staff. Joint efforts will enhance the impact of the scheme on ground.
- ◆ Given the different approach of implementation of VIUC, wherein multiple partners are involved, Nodal agency should also organise training and capacity building of its staff on objectives, approach and implementation of the scheme along with roles and responsibilities of different stakeholders.

Chapter 7

Punjab

Project Area and Stakeholders

This part describes the implementation structure and functioning of the project at different levels and the major stakeholders involved in the project.

VIUC Scheme in Punjab

The initiative of VIUC in the State of Punjab is being implemented in the city of Ludhiana since 2011-2012. The city has a population of 16 lakhs. The Department of Horticulture, Government of Punjab has been appointed as the Nodal Agency for implementation of the project in the State and Deputy Director, Horticulture, Ludhiana as the Nodal Officer to look after the overall implementation of the scheme.

Baseline Survey

To identify major vegetable production districts and clusters, Atech Information System Limited (AISL) carried out the baseline survey in Punjab. Baseline Survey not only highlighted the existing supply chain and other bottlenecks, but also identified the vegetable growing districts and clusters within it; in and around Punjab. During the interaction with the Nodal Agency and Resource Institutions, it was observed that areas/clusters, which were identified as production clusters during the baseline survey, have been taken-up for the purpose of implementation of the scheme.

State/Districts/Clusters

Ludhiana has been identified as the major urban cluster and nearby districts of Sangrur, Fatehgarh

Sahib, Jalandhar and Patiala have been identified as the production clusters in Punjab.

In Punjab, State Department of Horticulture has been assigned the task of overall implementation of the VIUC scheme. Director, Horticulture has been given the overall responsibility to look after VIUC at the State level and Deputy Director, Horticulture, Ludhiana is the designated Nodal Officer for the implementation of the scheme at the State level. At the district level, Deputy Director of Horticulture of that particular district looks after the implementation of the initiative. At the block level, Horticulture Development Officer (HDO) and at the cluster level, Sub inspector is responsible for implementation of the program. From the point of implementation of VIUC initiative in the State, regular staff of Department of Horticulture at State, district and block level are involved.

Implementing Partners of VIUC in Punjab

Ludhiana has been identified as the major urban cluster and nearby districts of Sangrur, Fatehgarh Sahib, Jalandhar and Patiala have been identified as the production clusters in Punjab.

In Punjab, State Department of Horticulture has been assigned the task of overall implementation of the VIUC scheme. Director, Horticulture has

been given the overall responsibility to look after VIUC at the State level and Deputy Director, Horticulture, Ludhiana is the designated Nodal Officer for the implementation of the scheme at the State level. At the district level, Deputy Director of Horticulture of that particular district looks after the implementation of the initiative. At the block level, Horticulture Development Officer (HDO) and at the cluster level, Sub inspector is responsible for implementation of the program. From the point of implementation of VIUC initiative in the

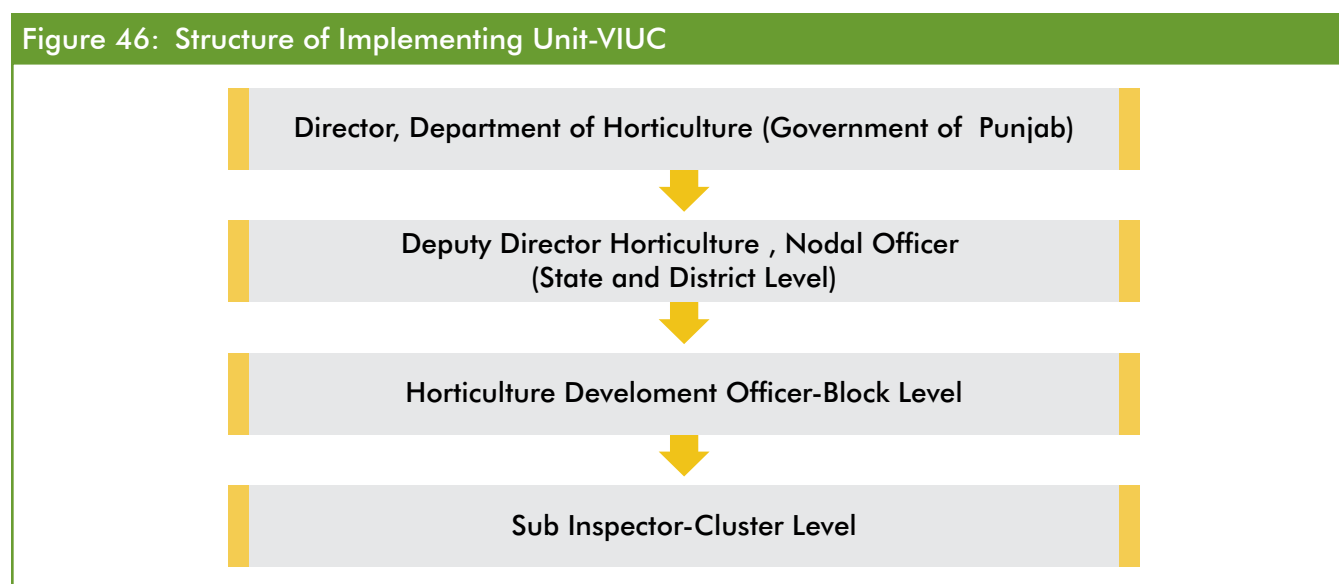
State, regular staff of Department of Horticulture at State, District and block level are involved.

For the purpose of Farmers' Mobilisation, group formation, training and capacity building and establishing market linkages etc., two Resource Institutions (RIs) have been appointed by SFAC in the State covering different vegetable production clusters in Punjab. Apart from these two RIs, other stakeholders and their role and area of activities have been summarised in the following table.

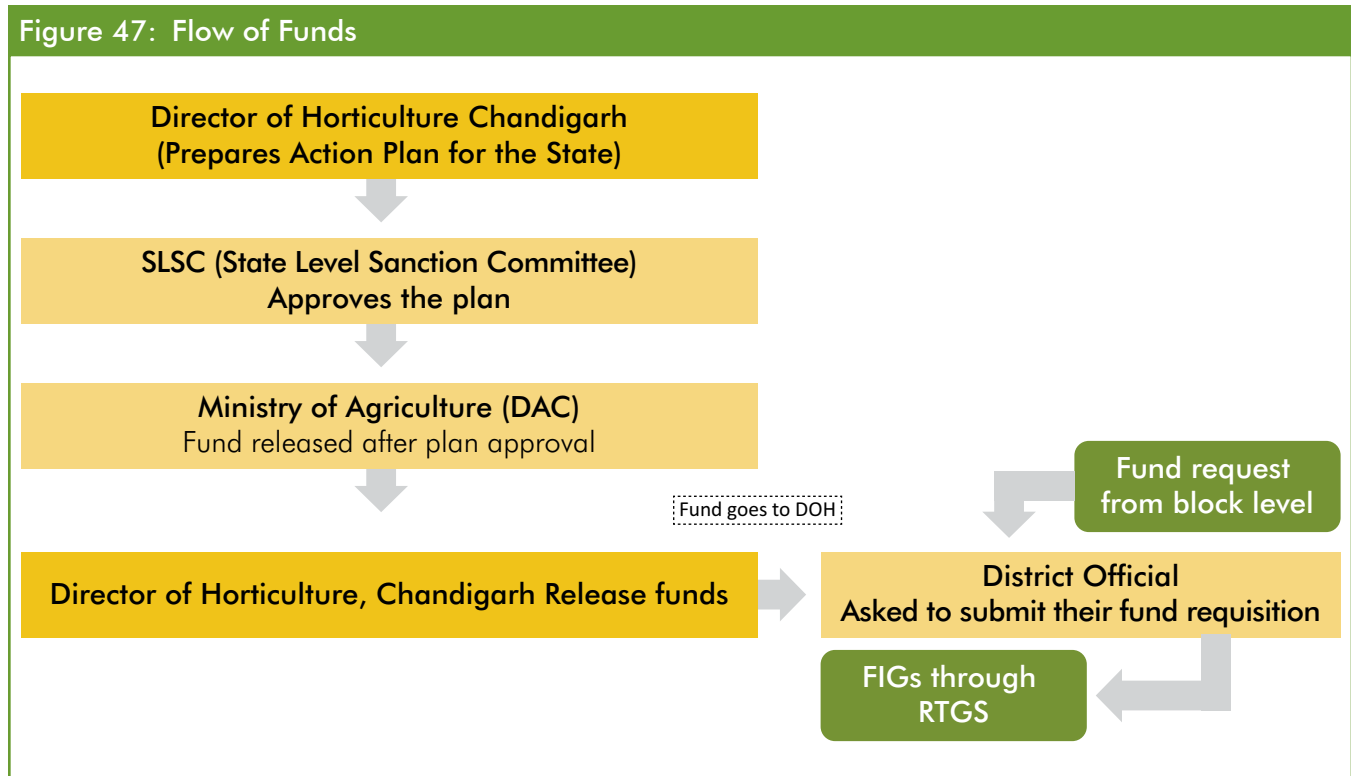
Table 27: Stakeholders and their Coverage Area

Role	Name of Organization	Districts covered	Block
Baseline Survey	AISL	Ludhiana	
Nodal Agency	Department of Horticulture, Government of Punjab	Ludhiana	
Resource Institution	ITSL	Ludhiana,	Dellon, Doraha, Khanna, Machiwara, Samrala, Ludhiana, Pakhowal, Sidhwan Bet, Raikot, Jagraon, Sudhar
		Patiala,	Bhunerhedy, Ghanour, Rajpura, Sanour, Nabha, Patiala, Patran, Samana
		Fatehgarh Sahib	Amloh, Bassi Pathana, Khamanoo, Kheda, Sirhind
Resource Institution	ACTECH	Jalandhar,	Nakodar, Nurmahal, Lohia, Shahkot
		Sangrur	Malerkotla, Dhuri, Sherpur, Sunam, Bhawanigarh, Amalgarh

Detailed implementation structure, within the State Government, has been depicted in the following figure:



Planning and Fund flow:



Budget Outlay and Expenditure (2011-12): The total budget outlay approved for the State for the year 2011-12 was Rs. 1200.00 lakh.

Release of Subsidy to Beneficiary

Farmers apply for subsidy and they need to submit the below mentioned documents:

a. For Input subsidy:

1. Application for availing Subsidy
2. Land Certificate Detail of Expenses
3. Verification Report for area under Open Pollinated Variety and Hybrid Variety verified by RI officer and HDO
4. Self Declaration Certificate
5. Retail Invoice/Bills
6. Attachment regarding Details of Bills

b. For subsidy under Infrastructure component:

1. Application for availing Subsidy
2. Land Certificate
3. Jamabandi

4. Self Declaration Certificate
5. Bills of Infrastructure and Construction material purchased
6. DPR (Detailed Project report)
7. Layout plan of the Infrastructure
8. Photograph of the Infrastructure

Resource Institutions: For the mobilisation of farmers and promotion of Farmers; Interest Groups (FIGs) and Farmers' Producers' Organisations (FPOs), two organisations –ITSL and ACTECH have been appointed in the State by SFAC. Targets for achievement of these RIs in terms of Farmers' Mobilisation, FIG & FPO formation as well as current achievements are given below:

Till November 2012, 95 FIGs in Sangrur and 57 FIGs in Jalandhar under AISL have been verified.

Initially RIs were not clear about the guidelines and mobilised the farmers who were not vegetable growers. Later on the Department of Horticulture ordered for verification of these FIGs members. Due to this reason their verification has not been completed yet.

Figure 48: Release of subsidy

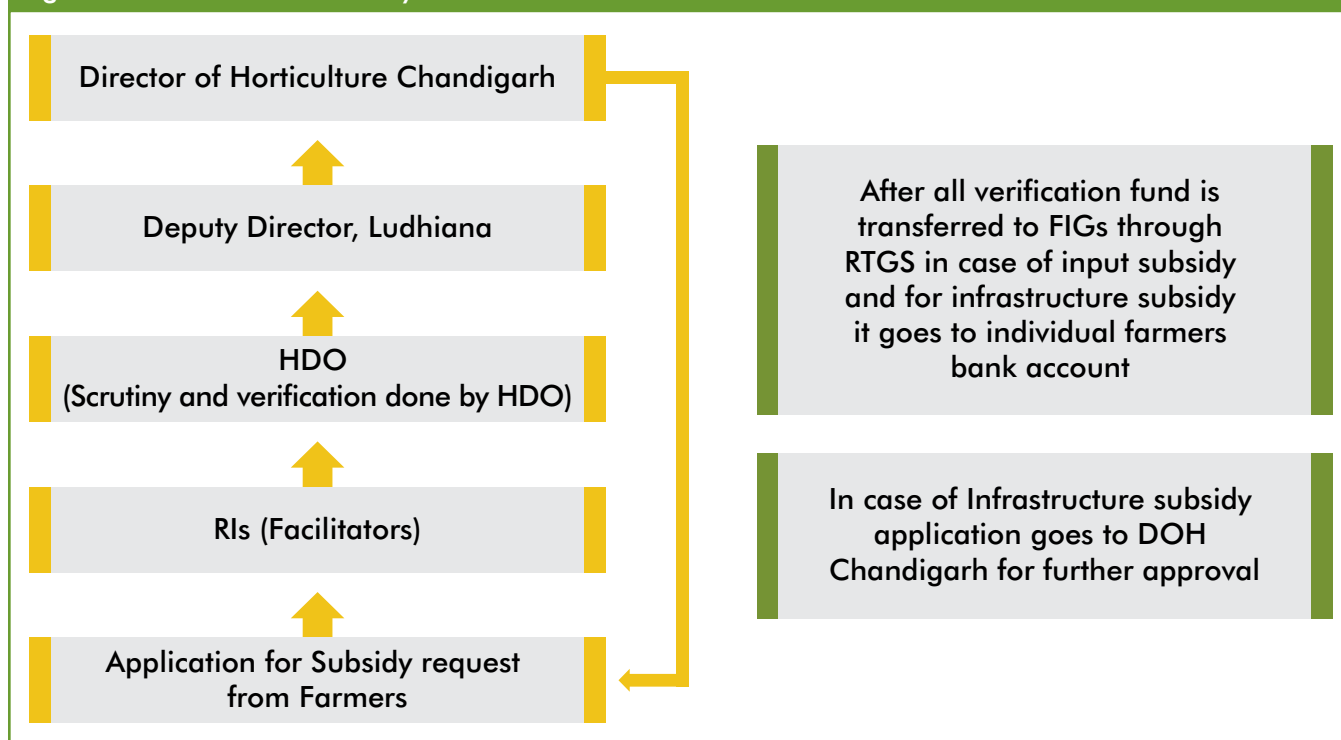


Table 28: Current status of FIG and FPO formation

Particulars	ITSL		ACTECH	
	Target	Achievement (registered)	Target	Achievement (registered)
FPO	5	0	2	0
FIG	164	164	203	203
Total farmers	3000	3005	3000	3000

Source: Secondary information from RI

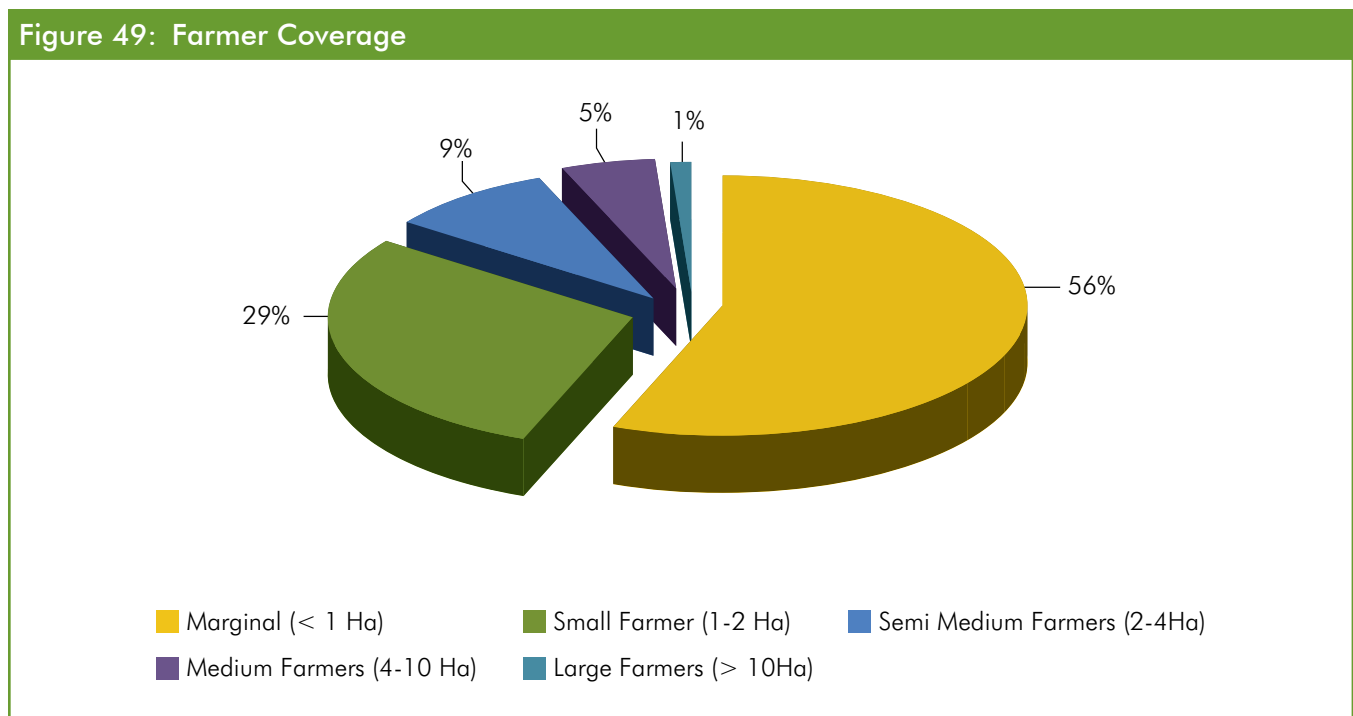
Table 29: Coverage of Farmers and Participation in Capacity Building

Particulars	Unit	Resource Institution	
		ITSL	ACTECH
Districts		3	2
Clusters	Nos	3	2
Total Farmers	Nos	3005	3000
Break up of total farmers			
Marginal (< 1 Ha)	Nos	1490	2050
Small Farmer (1-2 Ha)	Nos	1306	550
Semi Medium Farmers (2-4Ha)	Nos	104	436
Medium Farmers (4-10 Ha)	Nos	45	300
Large Farmers (> 10Ha)	Nos	---	83
Meetings Conducted			

Particulars	Unit	Resource Institution	
		ITSL	ACTECH
FPOs	Nos	45	
FIGs	Nos	255	110
Farmer	Nos	2943	1350
% of members regularly participating in meetings			
FPOs	%	75	
FIGs	%	74	65
Farmer	%	87	67.5
Capacity Building for FIGs / FPOs			
FIG members oriented/trained & aware on NVI scheme	Nos	164	168
Group leaders oriented/trained on FIG/FPO concept and management	Nos	130	168
FIG/FPO members oriented/trained on Account Keeping in NVI scheme	Nos	130	153
FIG members trained on some or other best practices (for production, value addition and marketing) under NVI scheme	Nos	119	80
Bank Account Opened (Status)			
FPOs	Nos	---	---
FPOS (Share Collection)			
FIGs	Nos	161	115
Total Saving	Rs. Lacs	4.90	2.80

Source: Secondary information from RI

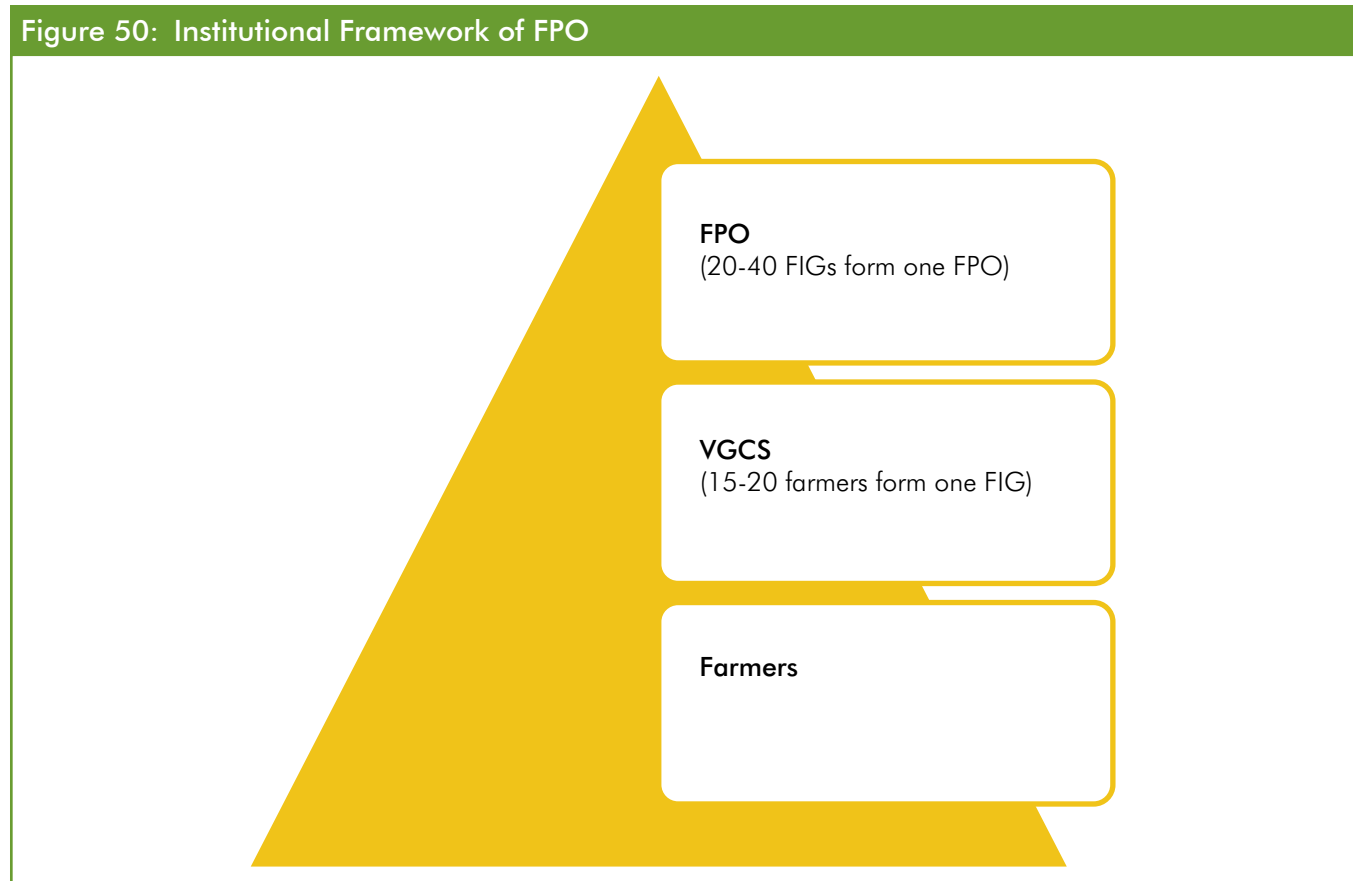
The following figure illustrates the combined coverage of target farmers by both the RIs.



The main objective of the scheme is to make farmers self sustainable, especially small and marginal farmers. Till now this scheme has covered 56 percent marginal farmers with land holding below 1 Ha followed by 29 percent small farmers with land holding between 1-2 Ha.

Institutional framework of FPO formation in Punjab

In Punjab, FPO (Farmers Producers' Organization) formation is under process of registration. Depending upon the distance between clusters, 20-40 FIGs are being federated into an FPO.



Performance of the Scheme

This part investigates the overall success of the VIUC in terms of physical and financial achievement.

Farmers benefit directly from the following eight components of the scheme. The performance of these eight components is illustrated in the following Figure 51.

Proposed and Approved Action Plan

As per the proposed action plan for the year 2011-12, the Department proposed to take up almost all the activities/components for the

implementation of VIUC with the total financial outlay of Rs 1200.00 lacs.

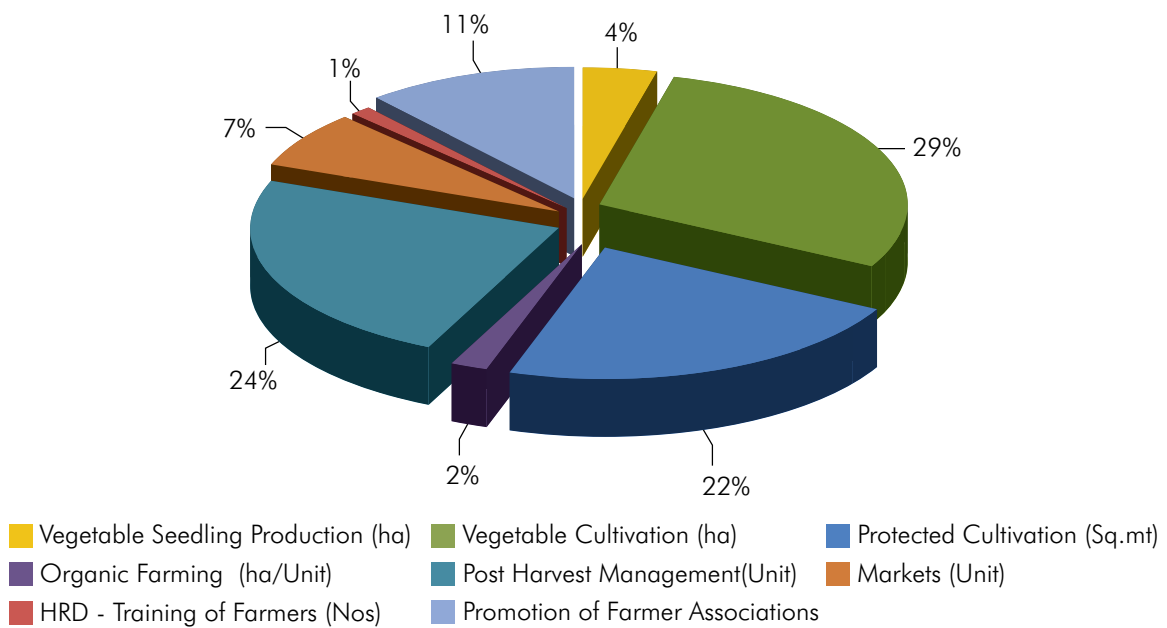
The following Figure 52 illustrates the break out of the Approved Action Plan as per specified components.

Of the total approved financial outlay of Rs 1200.00 lakh for the year 2011-12, 29 percent of finance allocation has been made for vegetable cultivation of hybrid and Open pollinated varieties and followed by 24 percent for Post Harvest Management which includes pack house on farm, cold storage unit, etc. and 22 percent for protected cultivation such as, green house, shade net house, Plastic tunnel etc. 7 percent of total budget has been allocated for market development which

Figure 51: VIUC Performance



Figure 52: Approved Action Plan



is one of the most important components of this program.

Detailed component-wise Physical Targets & Financial Outlay for the year 2011-12 is given in

Annex- VI(A). Although, the present status of financial achievement of different components can be delineated from the following bar graphs, in which target and achievement are noticeably evident.

Figure 53: Total Financial Target v/s Achievement

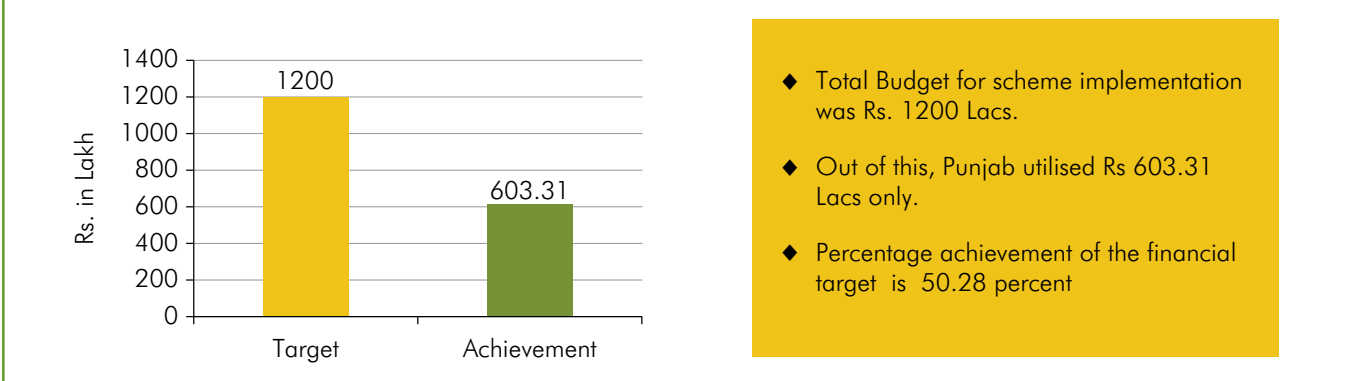


Figure 54: Component-wise Financial Target v/s Achievement

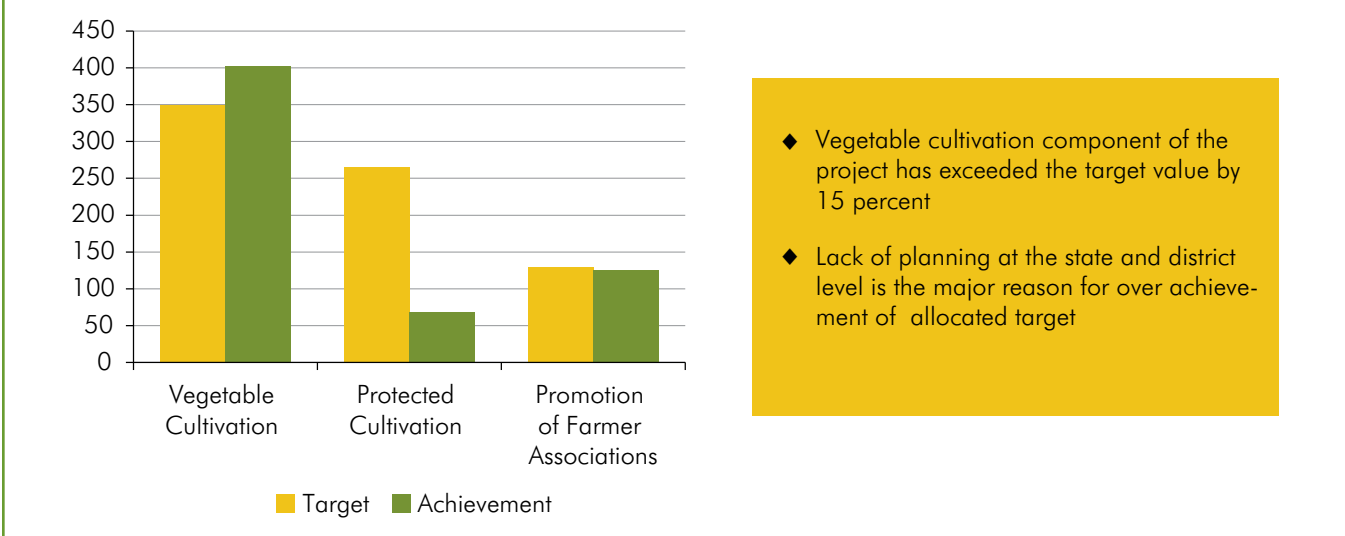
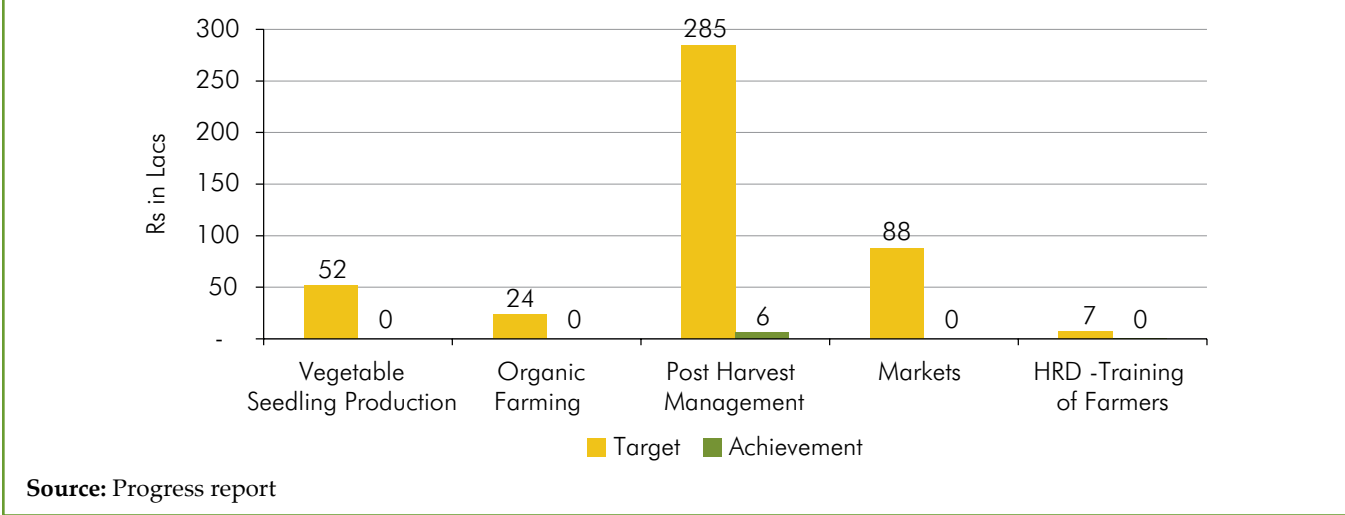


Figure 55: Component-wise Financial Target v/s Achievement



Component-Wise Physical and Financial Targets and Achievements (2011-12)

The following table illustrates the component- wise performance for the financial year 2011-12.

Table 30: Component-wise Physical and Financial Targets and Achievements

Component	Physical Performance	Financial Performance
Vegetable Cultivation	135.6 percent achievement As per the approved plan, 500 ha area was approved for expansion of open pollinated and 700 ha for hybrid vegetable cultivation, of which 1627.2 ha area (1306.8 ha for open pollinated and 236.25 ha for hybrid vegetables) has been covered recording 135.6 percent achievement.	115.3 percent achievement The financial target for vegetable cultivation was Rs 348.75 lakh of which Rs 112.5 lakh was for open pollinated and Rs 236.25 lakh for hybrid vegetable cultivation. Total amount of Rs 401.94 lakh has been utilized (Rs 293.96 lakh for open pollinated and Rs.107.98 lakh for hybrid vegetable cultivation).
Protected cultivation	9 percent achievement For protected cultivation, physical target was to establish 20,000 sqm green-houses, 1,78,000 sqm shade net house and distribute planting material and other input material, etc for 60,000 sqm. Out of these, green- houses have been established in 11616 sqm and planting material also has been distributed for 11616 sqm.	26 percent achievement Financial allocation for protected cultivation was Rs 265.4 lakh, of which Rs. 68.88 lakh has been utilized.
HRD - Training of Farmers (no) @ Rs. 1500/per farmer for 2 days	29.8 percent achievement Physical target was to provide training to 470 farmers, of which only 140 farmers have been provided the training.	7 percent achievement Financial allocation for this component was Rs 7.05 lakh, of which Rs 0.49 lakh has been utilized.
Organic Farming	0 percent achievement Physical target under this component was creation of 226 vermicompost units.	0 percent achievement Financial allocation for this component was Rs 23.80 lakh, which is unutilised.
Post Harvest Management	0.1 percent achievement The physical target for under this component are establishment of 90 pack-houses, cold storage with capacity of 6000 MT, 1 preservation unit and 10 low cost onion storage ; Out of this 4 pack houses have been established	2.1 percent achievement The financial target for this component was Rs 285 lakhs, out of this Rs 6 lakhs have been utilised.
Promotion of Farmers Association/Groups	100.1 percent achievement The physical target was to form 6000 groups of farmers, out of which 6005 groups have been formed.	96.9 percent achievement The financial allocation for this component was Rs 130 lakhs, of which Rs 126 lakhs have been utilized.
Markets	0 percent achievement Various components under marketing are collection centre, mobile/static vending cart and retail market, of which there is no physical achievement yet.	0 percent achievement Financial allocation for market is Rs 88 lakh, which is unutilised.

Source: Progress report of VIUC, Punjab

Vegetable cultivation is one of the components of the scheme in which the State has exceeded the physical targets by almost 36 percent. Lack of planning and communication at State and district level and improper allocation of funds for different components are the main reasons. As per district officials, they were not clear about the guidelines of the scheme and were considering it as a tentative plan. However, they are still disbursing the subsidy for vegetable cultivation despite over shooting the targets.

Situational Analysis of VIUC

This part of the chapter illustrates the situational analysis of VIUC in Arunachal Pradesh. It is an analysis of the State and condition of the farmers/beneficiaries after implementation of the initiative, identification of the major issues related with the components and analysis of key stakeholders. Situational analysis has been derived with the help of primary survey, secondary information and observations during field visits.

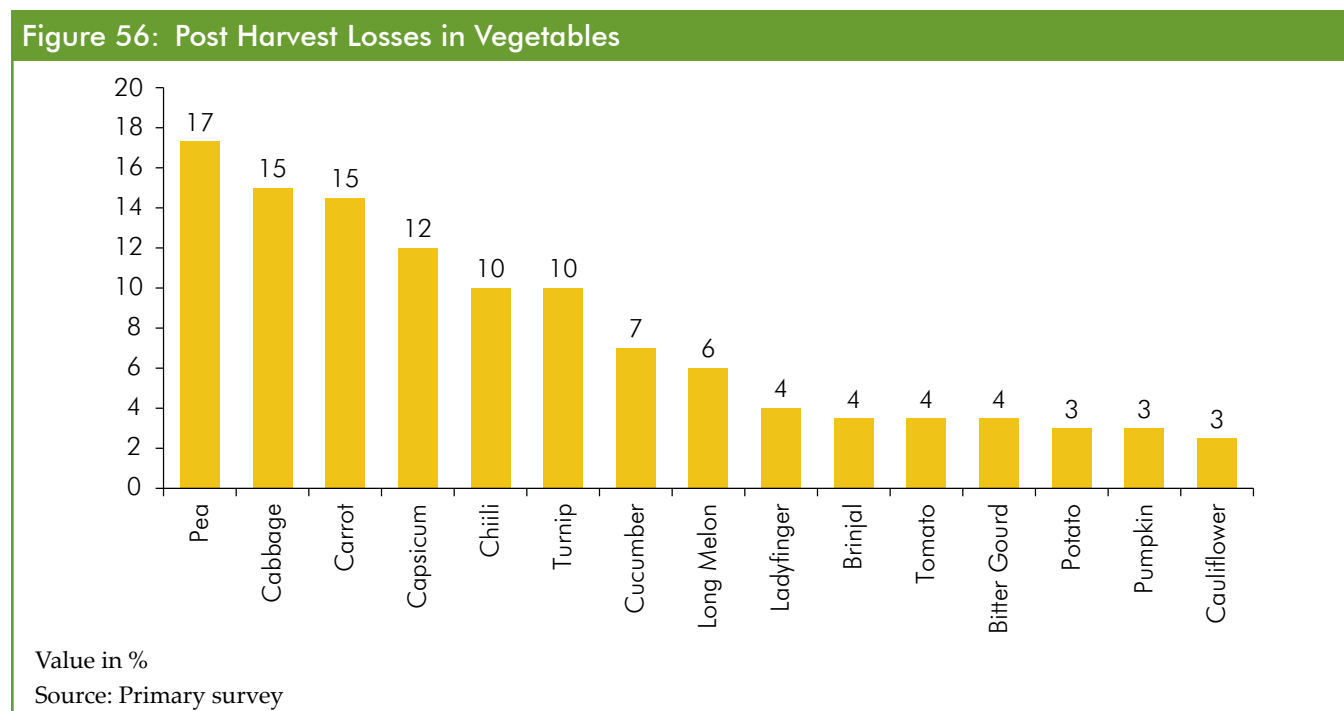
The findings of primary survey of farmers have been discussed in the following sections:

Findings of Primary Survey

For the purpose of Impact Assessment Study, around 40 farmer members (FIGs) were surveyed

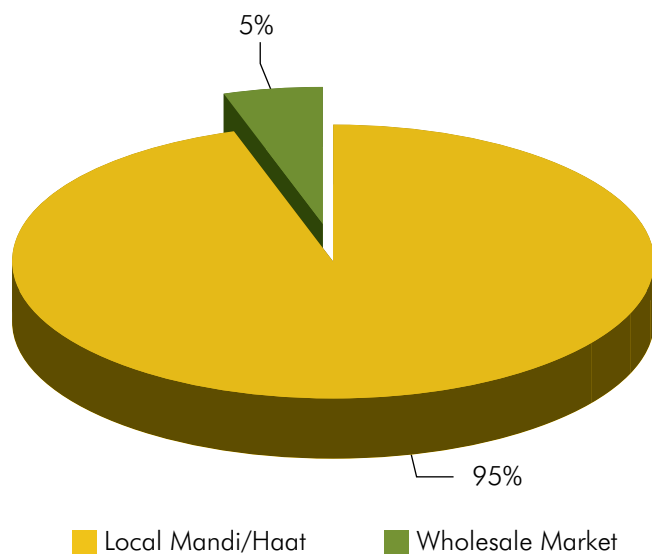
in two districts of Jalandhar and Ludhiana. The major points that emerged out of the survey have been discussed in the following section:

- ◆ **Land Holding:** Average operational holding size of the surveyed farmer's area is around 3.3 ha.
- ◆ **Irrigated Land:** Out of the total cultivable area of the surveyed farmers, almost 96 percent area is under irrigation. Major source of irrigation is tube well, open well and lift irrigation.
- ◆ **Seeds Used:** Almost 100 percent of the surveyed farmers use hybrid seeds. The main source of procuring seeds is local inputs supplier. Farmers often face the problem of poor seed germination. Adoption of hybrid seeds shows improvement and awareness regarding package of practices.
- ◆ **Input Procurement:** All the farmers of surveyed areas are procuring the inputs like seeds and pesticides individually from local input supplier. Availability of such inputs is good. It is expected that such input suppliers will be linked with FIGs after FPO registration for bulk procurement.
- ◆ **Post harvest Losses and Value Addition:** As per the data of surveyed farmers, the extent of post harvest losses varies from crop to crop as mentioned below:



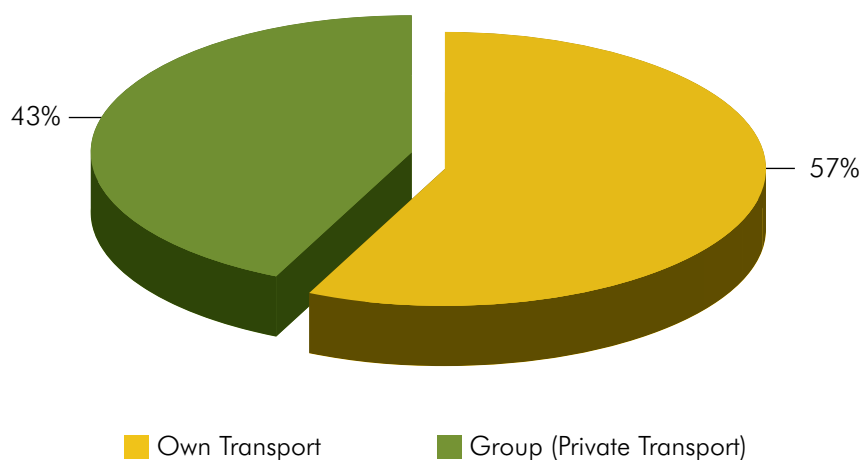
The following figures highlight the present point of sale and mode of transportation of the farmers.

Figure 57: Selling point



Source: Primary survey

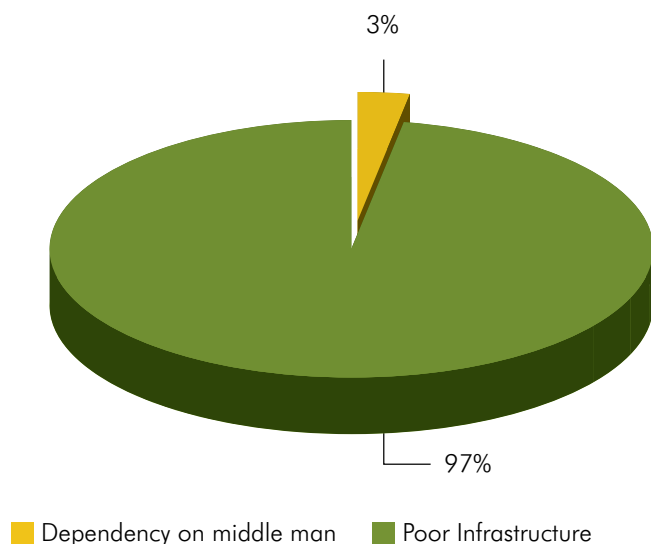
Figure 58: Mode of Transportation



Source: Primary survey

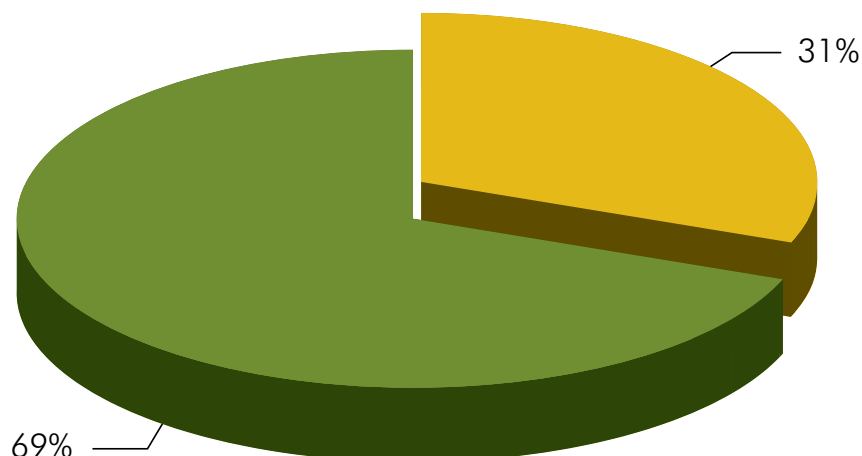
- ◆ **Marketing of Produce and Mode of Transportation:** Selling point of produce is mostly local mandi/haat and wholesale market. Farmers take their produce by their own vehicle or in groups through private vehicles to mandi where they sell the produce to retailers, contractor and commission agent and they are paid on the spot.
- ◆ **Price Discovery Mechanism:** Generally farmers sell the produce at the price prevailing in the mandi on that particular day and negotiation between buyers and sellers.
- ◆ **Marketing Channel Challenge-** Market infrastructure is the biggest challenge in Punjab followed by dependency on middle man. At the time of election, mandi place is used for election purpose and market operations are closed.
- ◆ **Primary Processing and Marketing Infrastructure Facilities:** There is lack of primary processing units and marketing infrastructure.

Figure 59: Market Channel Challenges



Source: Primary survey

Figure 60: Price Discovery Mechanism



Source: Primary survey

◆ **Awareness about VIUC Scheme:** Farmers know about this program but the main motive of the program is still far from them. They are lacking in commercial aspects of FPO formation.

Observations from Field Visit

As per data received from the State Nodal Agency, 50.28 percent of the total budget has been utilized till date. The budget has been mainly utilized for vegetable cultivation in which their financial

expenditure exceeded the targeted value and rest of the components are well –nigh untouched.

◆ **Lack of Proper Market Linkage:** Market linkage is the salient and noticeable problem of FIGs and farmers. Only a few retail players know about the VIUC initiative. Those who purchase vegetables from farmers groups purchase only small quantities and that also A grade. For the remaining, the farmers have to go to the *mandi* and sell at the prevailing price.

Figure 61: Observations of the Field Visit



◆ **Lack of Motivation:**

1. **Farmers:** There is lack of motivation among farmers. Farmers are more inclined towards receiving subsidy and less oriented towards the long term goal and objective of the initiative. Cognitive content of the scheme is still hazy among them.

2. **RI:** There are two RIs, ITSL and ACTECH working in Punjab. ACTECH resource persons are very demotivated as they are not getting enough salary. Apart from low remuneration, these staff members do not have office facilities and use the office of District Horticulture Official and Farmers field to carry out their office work. Another

observation was that there are only one/two Resource Persons per 2000 farmers approximately.

- ◆ **Dearth of Human Resources:** Sufficient manpower is not available at the last mile for implementation of the Project. This problem is more visible in case of Resource Institutions, especially AISL, who have employed only two staff members for the two districts of Jalandhar and Sangrur, with no support staff. In Resource Institutions, especially with ACTECH this problem is very noticeable.
- ◆ **Lack of Clarity on overall concept of the Scheme:** There is lack of clarity about the goals and objectives of the scheme, among farmers, Resource Institution and department officials of Punjab. As per the discussion with the Department officials, they expressed their lack of clarity of scheme guidelines and implementation. Even there was no district-wise allocation of funds as they were assuming plan as tentative and disbursing subsidy without any planning and proper allocation among districts. This is one of the reasons of exceeding budget target in vegetable cultivation component and failure of achieving other components.
- ◆ **Lack of Co-ordination among Stakeholders:** There is lack of co-ordination between RI and District/Block officer. This was observed especially in Patiala and Sangrur Districts.

It is observed that co-ordination between Jalandhar District official (DDH and HDO) and RIs is very good. They regularly meet with each other and HDO has good relationship with farmers.

- ◆ **Lack of Training & Capacity Building:** There was lack of quality training of farmers, District Officials and RIs. In one village of Nakodar, Balno carrot has been cultivated on 500 acres of land and farmers were complaining that they are not getting remunerative price of their produce. This was due to the lack of production planning, training and co-ordination among farmers. They have not received quality training on various subjects like Post Harvest Management, production planning, processing and infrastructure development and IPM/INM. Farmers are not even aware of

the remaining components of the scheme other than subsidy on vegetable cultivation.

- ◆ **Less focus on Infrastructure Development Component:** Under the infrastructure development component, the achievement is almost nil. Only four infrastructure facilities have been installed so far - one polyhouse in Muskabad, three pack - houses in Dhindsa, Dayalpura and Balala; which are in Samrala block of Ludhiana.
- ◆ **Document Requirement:** In Punjab, most of the farmers are cultivating vegetables on leased land for which they generally do not have any agreement with the land owner. However, to receive the subsidy under 'vegetable cultivation' component of the scheme, the farmer is required to submit either land record certificate or a affidavit for the leased land. The farmers usually have to go through quite a lot of formalities to prepare the documents and avail the subsidy.
- ◆ **Subsidy fixed on the basis of old Package of Practices:** The Department is following the old package of practices for disbursement of subsidy for 'vegetable cultivation' and 'input' component of the scheme. For e.g. as per new technology, the farmer is using less seed rate than recommended as per University guidelines. However, it was reported that few farmers sometimes submit forged bills to the department to get the exact amount of subsidy.

Impact of the Scheme

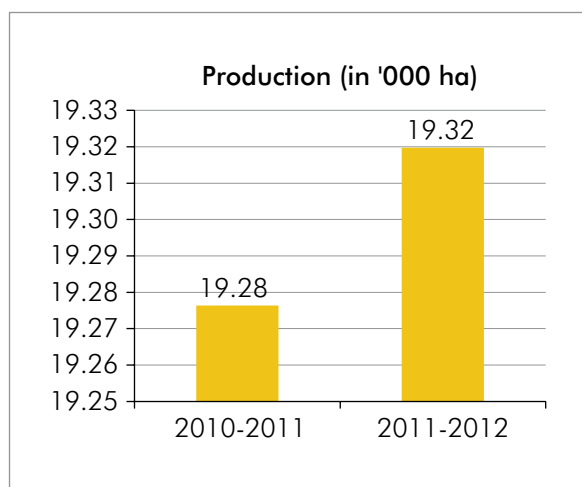
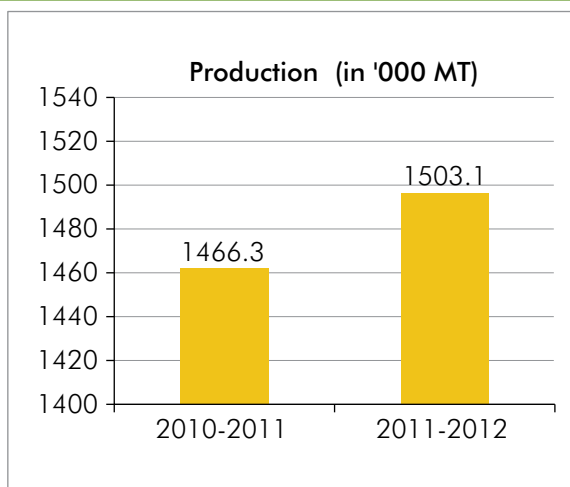
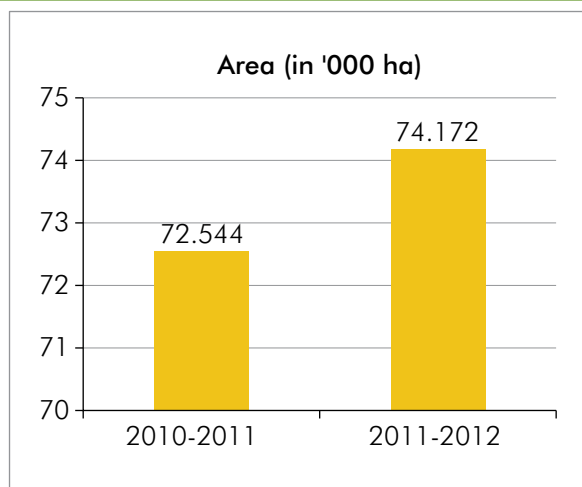
This section of the report investigates the impact of the scheme on broader areas relating to linkages developed for procurement and marketing, infrastructure creation, saving of member farmers, improvement in socio-economic status of farmers and employment generation induced by the scheme.

The VIUC initiative has been framed to cover all the segments of vegetable supply right from farmers' field up to its final disposal in the market with major emphasis on training for good production practices, farmers' capacity building, post - harvest management and value addition with creation of marketing infrastructure and market linkages. For the purpose of assessing impact of the scheme, multiple approach has been adopted, which included interaction with officials

of implementing partners, primary survey of stakeholders and field visits for verification and general observation.

The following Figures 62 illustrate the area, production and productivity of produce under the VIUC initiative.

Figure 62: Area, Production and Productivity of Vegetables in 2010-11 and 2011-12



- ◆ There is increase in area, production and yield of vegetables in all major production cluster and urban cluster.
- ◆ Production clusters which are taken in graphs are Ludhiana, Jalandhar, Patiala, Sangrur and Fatehgarh Sahib.
- ◆ % Increase in area, production and yield is not so high.

Source: Department of Horticulture, Punjab

Impact of VIUC

The area under vegetable cultivation in 2010-2011 was 73000 ha which has increased to 74000 ha in 2011-2012. There is increase in productivity of vegetable from 19.28 MT/ha to 19.32 MT/Ha. With the implementation of this scheme many farmers started cultivating vegetables which leads to increase in area and production of vegetables in these production cluster.

- ◆ **Quality Inputs:** The scheme has led to awareness among the farmers due to which the quality of inputs being used by them has

improved. Farmers now are purchasing seeds and other inputs from dealers in bulk quantity which leads to economies of scale and has increased their bargaining potential. To avail subsidy, the farmers need to submit the bills of the seeds and inputs, which they insist on while purchasing the inputs. Hence the chances of the dealer cheating the farmers have decreased and farmers are able to get quality inputs.

- ◆ **Provide a platform for discussion, information dissemination and ITK (Indigenous technology knowledge) extension among farmers:** With the formation

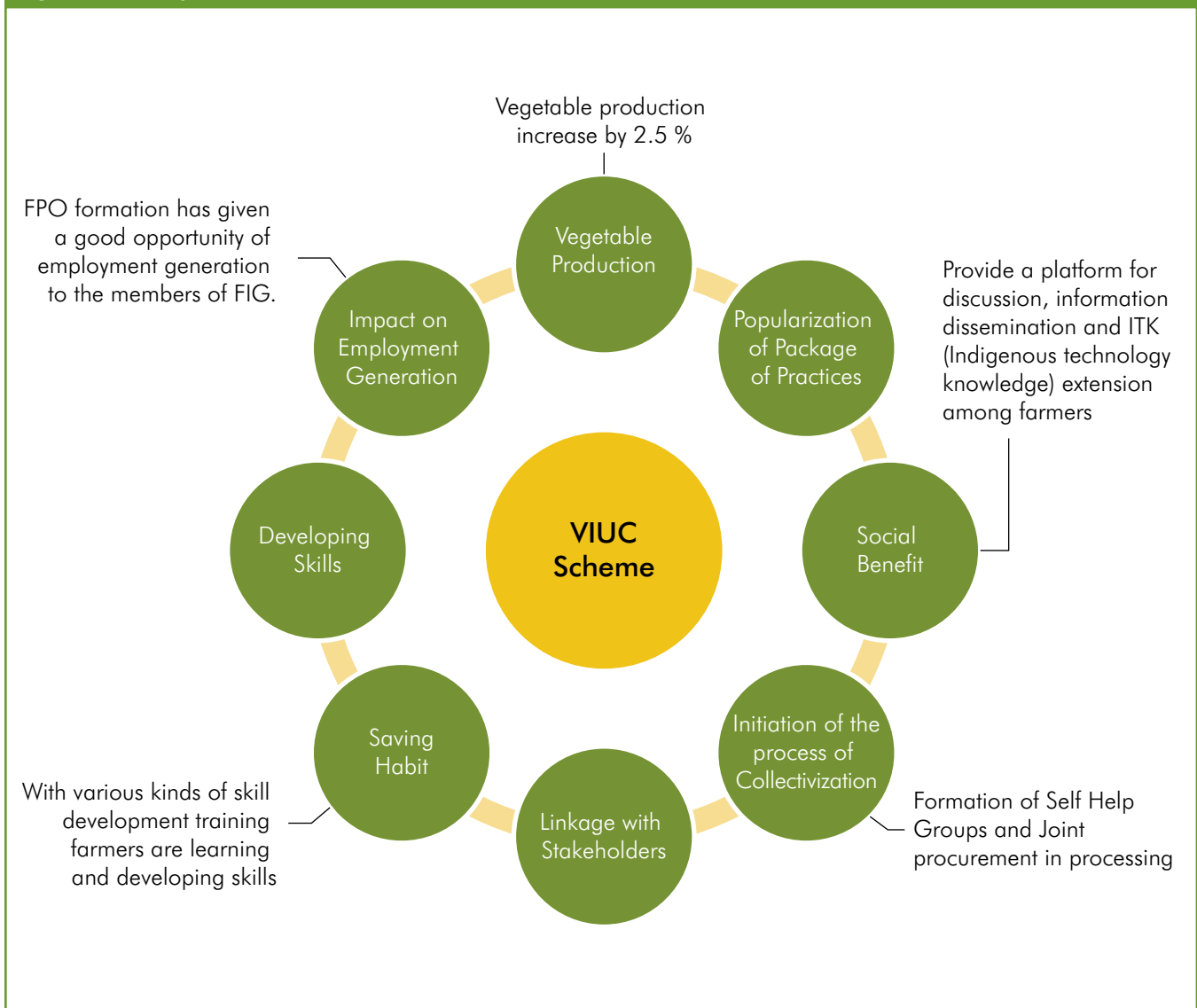
of FIGs, farmers are now meeting regularly. Monthly meeting of FIGs give them a platform to discuss various issues related to vegetable cultivation, exchange market information, *mandi* prices, planning on various activities like input procurement, joint marketing etc. and dissemination of new techniques amongst them. In the near future, it is expected that impact will be seen on production planning aspect also.

- ◆ **Collaborative approach for purchase and logistics:** The formation of groups and their monthly meetings have led to farmer members carrying out collective purchasing of inputs and marketing of their produce, which has

not only to decrease in their production costs, but also helped them to get a good price of their produce in market, saving on time and manpower.

- ◆ **Solve labour shortage problem:** There is shortage of labour in Punjab and vegetable cultivation is a labour intensive process. To solve the problem of labour, member farmers have collectively started working on each other's farm which helps them save on labour costs.
- ◆ **Savings:** Farmers members in groups have also started saving on a regular basis. In some groups, farmers are saving good amount and have saved up to Rs. 27000.

Figure 63: Impact of the Initiative



Impact of the Scheme

Popularization of Modern Package of Practices and Protected Production Technology

The component of modern package of practices was not very much popular among the farmers in the State. As per the baseline survey, farmers in Punjab are still practicing traditional methods of vegetable cultivation instead of commercial and improved scientific methods. But continuous efforts and timely training provided by the Resource Institutions have helped in percolation of scientific methods of cultivation to a remarkable level. Nursery raising of vegetables has started at some places, practical training provided on field has helped in improved perception of these techniques. Farmers are participating in groups for learning and applying these techniques.

Adoption of techniques leads to savings

Mr. Sukhbir Singh, member of Heddon sabji Utpadak Samuh (FIG), Ludhiana is producing brinjal round the year. He produces seedlings in tunnel shaped nursery fitted with bulb inside for optimum temperature attainment in off season. With this initiative he is saving Rs 20,000 per acre. This is a self driven initiative.

Initiation of Process of Collectivization

Both the Resource Institutions have mobilized 6424 farmers together. At present, all members of group are purchasing inputs individually, but now they have realised the importance of collective purchasing of inputs and collective marketing of their produce and are initiating the process of joint procurement and joint marketing.

Farmer members of Heddon Sabji Utpadak, a farmers' Interest Group in Samrala block, district Ludhiana have started collectivization of produce and joint marketing.

Presently, there is lack of understanding about FPO concept among farmers, however it is envisaged that continuous training and capacity building will help them to understand the commercial and management aspects of the FPO.

Training and Capacity Building

Majority of the farmers are linked to ATMA (Agricultural Technology Management Agency) and local KVKs for extension services, while some farmers are members of PAU Farmer Club. These linkages have helped them establish a sound knowledge base of cultivation techniques of vegetables. Department of Horticulture and Resource Institutions facilitate exposure visits for farmers to make them aware of the latest technologies. So far, the member farmers of various groups have visited the following events:

- ◆ AGRITECH, Chandigarh
- ◆ PAU Kisaan Mela
- ◆ Global Tech Fair, New Delhi for exposure to latest machinery

Linkages with Stakeholders

Resource Institutions working in the State are facilitating linkages with sellers, retailers and Banks. Regular buyer- seller meetings are conducted at the onset of the season to establish linkages with aggregators/ commission agents.

Out of the total 367 FIGs, 276 FIGs are linked to banks. These groups are doing transactions with banks and some are performing collective saving which will increase their credit worthiness with bank and make them eligible for loans in future.

Impact on Employment Generation

The impact of the scheme on employment generation cannot be assessed due to the short period of implementation. However, it is expected that both direct and indirect employment opportunities will increase in the coming years of scheme implementation. With the formation of the FPOs and establishment of market linkages, the requirement for trained and skilled manpower is bound to increase.

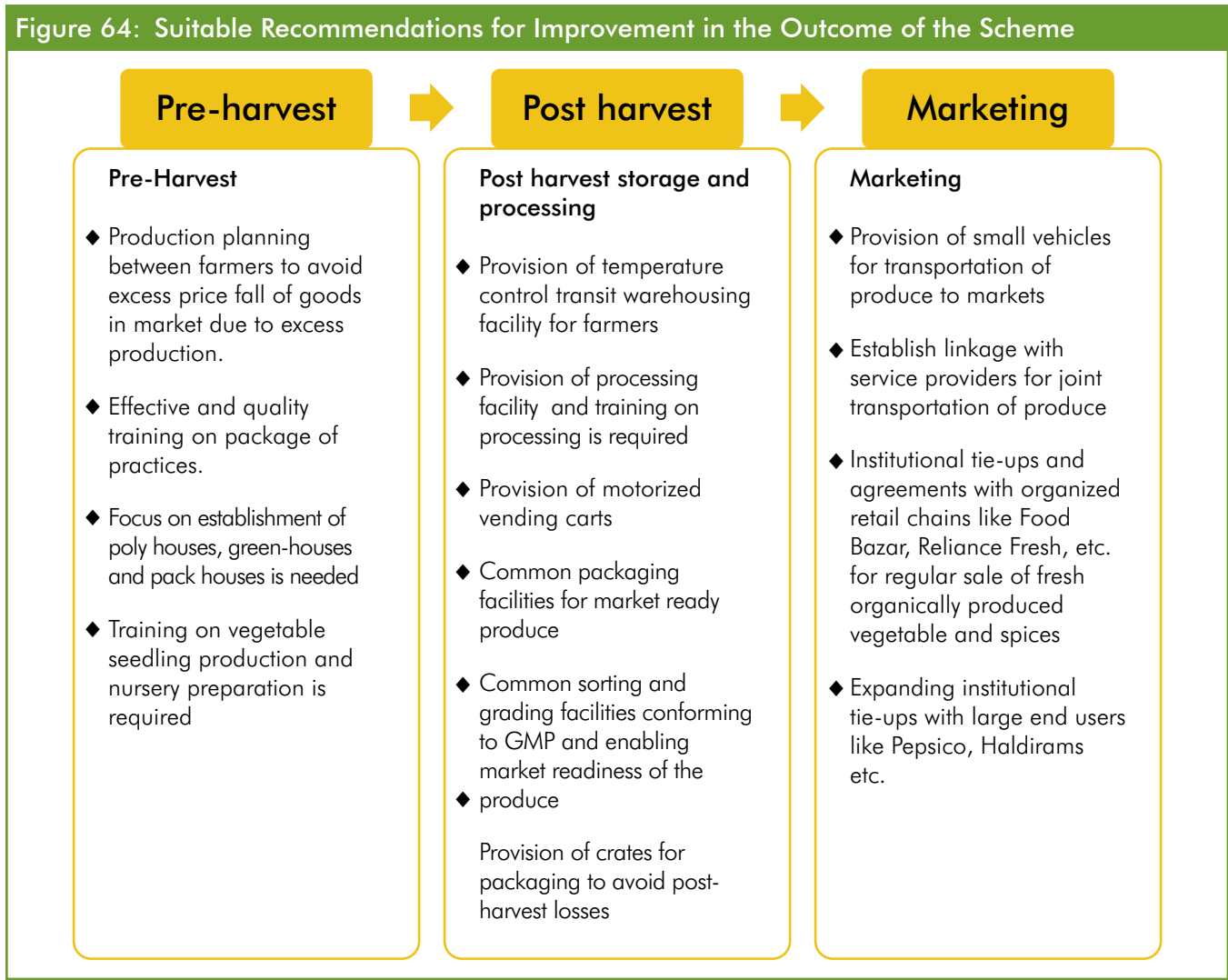
Recommendations

This part describes the proposed recommendations and suggestions, which are based on secondary and primary research by the team in Punjab.

- ◆ **Time frame for applications:** There should be a time limit on receiving applications from the farmers. It was observed that farmers submit

their application throughout the year for availing subsidy on seeds and inputs, which leads to wastage of time and resources on the part of department officials. It is suggested that the department should fix a season wise time frame for receiving of applications.

- ◆ Convergence with other parallel schemes to reduce multiplicity and overlap between them to provide higher benefits to farmers.
- ◆ Training on commercial aspect of FPO for enhancement of their understating on business



Recommendation for proper administration of the initiative:

- ◆ The release of fund should be synchronized with the work in progress
- ◆ Strengthen functioning and relationship with RIs for effective implementation of initiative
- ◆ **Increase of RI staff:** AISL should increase the number of field staff and revise the salary of their staff for motivation and better implementation of the scheme.

- ◆ Constitution of empowered committee at State level to resolve all bottlenecks in implementation. The constituents of this committee would comprise representation from all stakeholders including farmer groups (FIG/FPO).
- ◆ **Regularity of trainings:** There is a need for conducting regular trainings and capacity building workshops for officials of Department of Horticulture and Resource Institution representatives for better co-ordination, understanding of the scheme objectives and roles and responsibilities of various stakeholders.

Case Study

Name of the farmer: Mr. Sukhbir Singh

Name of FIG: Heddon Sabji Utpadak Samuh

Village: Heddon

Block: Samrala

District: Ludhiana

In Samrala block of Ludhiana District, members of the Heddon Sabji Utpadak Samuh are quite progressive and forward-looking. All the farmers are cultivating different vegetables and selling in distant markets of Chandigarh, Ludhiana and Ropar.

Mr. Sukhbir Singh, one of the members of this group has been farming for the level 10-12 years. He has 0.5 ha own land and 2.5 ha leased land. Total land is irrigated in nature. Source of irrigation is tube well. He is cultivating vegetables like brinjal, pumpkin and cucumber. He has achieved proficiency in cultivating brinjal round the year and now cultivates it in two acres of land. During the winter months, he has developed innovative methods to grow the nursery, wherein he raises the seedlings in temperature controlled low tunnels even in the winter months of December and January. This has helped him get year round production of brinjal and his savings have increased by almost Rs. 20,000 per acre.



Harvested Brinjal at farmers' field

Chapter 8

Uttarakhand

Project Area and Stakeholders

VIUC in the State of Uttarakhand is being implemented in the State Capital – Dehradun having a population of 16.98 lakhs, and is being implemented from 2011-12. The Director of Horticulture, Government of Uttarakhand has been appointed as The Nodal Officer for implementing the project at the State Level. District Horticulture Officer has been appointed as Nodal Officer to look after the overall implementation of the initiative at The district level.

Baseline Survey

To identify major vegetable production districts and clusters, an independent agency, Actech Information Systems Ltd carried out the baseline survey in Uttarakhand. Baseline Survey highlighted the existing supply chain and other bottlenecks and also identified the vegetable growing districts and cluster within the district. During the interaction with the Nodal Agency and Resource Institutes, it was observed that areas/clusters, which were identified under the baseline survey, have been taken-up for the purpose of implementation of the initiative.

Districts/Clusters

The scheme is being implemented in four districts of Uttarakhand i.e.; Dehradun, Haridwar, Tehri, Pauri Garhwal. Major vegetable clusters around Dehradun, ranging from 15 to 110 km, are supplying vegetables to target urban cluster i.e. Dehradun.

Implementing Partners of Viuc in Uttarakhand

In Uttarakhand, Director of Horticulture has been assigned the task of overall implementation of

Table 31: Stakeholders and their Coverage Area

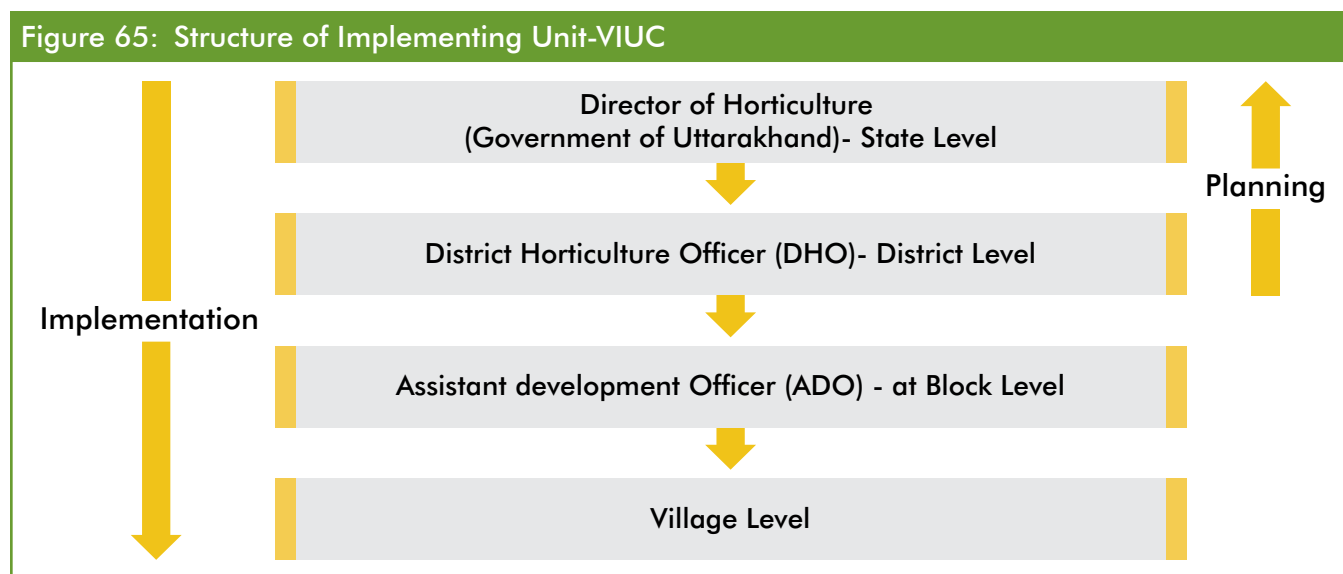
Role	Name of Organization	Districts covered under VIUC scheme
Baseline Survey	Actech Information Systems Ltd.	Dehradun, , Haridwar, Tehri, Pauri Garhwal
Nodal Agency	Director of Horticulture (Government of Uttarakhand) (DHO- (District level)	Dehradun, , Haridwar, Tehri, Pauri Garhwal
Resource Institution	Sumati Foundation	Haridwar, Pauri Garhwal
Resource Institution	Indian Farm Forestry Development Co-operative Ltd. (IFFDC)	Dehradun, Tehri Garhwal

VIUC. District Horticulture Officer (DHO) is the designated Nodal Officer for the implementation of the initiative at the district level. At the block level, Assistant Development Officers (ADOs) are responsible for implementation of VIUC. For implementation of VIUC in the State, staffs of State Department, district and block level are involved.

In order to mobilize farmers, formation of groups, training and capacity building and

establishing market linkages etc., two Resource Institutions (RI) have been appointed by SFAC in the State covering different vegetable production clusters in Dehradun. Apart from these two RIs, other stakeholders, their role and area of coverage are summarised in the following table.

Detailed implementation structure, has been depicted in the following figure:



Planning and Implementation of Activities: The planning of the project activities starts at the district level, where DHO prepares the plan and submits it to the Director Horticulture for approval (State Level Sanction Committee (SLSC)) which is the final authority for approval of implementation plan. Approved State Plan is finally submitted to the Ministry of Agriculture (RKVY, Government of India) for approval and sanction of funds.

through Block Level Officer and application is forwarded to DHO, thereafter; inputs are disbursed in the form of seeds, pesticides to beneficiaries directly.

Subsidy for infrastructure: Applications are submitted to DHO, who after physical verification provides subsidy in the form of cheques.

Fund Flow

The flow of fund is depicted in the Figure 67.

Budget Outlay and Expenditure (2011-12): The total budget outlay approved for the State for the year 2011-12 was Rs. 600.00 lakh. A provision of 1.01% budget of the total budget outlay has been retained, for administration purpose, under this initiative.

Release of Subsidy to Beneficiary

Disbursement of inputs: Cumulative requirement of the seed type is determined

Resource Institutions

For the mobilisation of farmers and promotion of Farmers' Interest Groups (FIGs) and Farmers' Producers' Organisations (FPOs), two organisations Sumati Foundation and IFFDC (Indian Farm Forestry Development Cooperative Limited) have been appointed by SFAC. Targets of these RIs in terms of Farmers' Mobilisation, FIG & FPO formation as well as current achievements are given in Table 32.

Figure 66: Flow of Funds

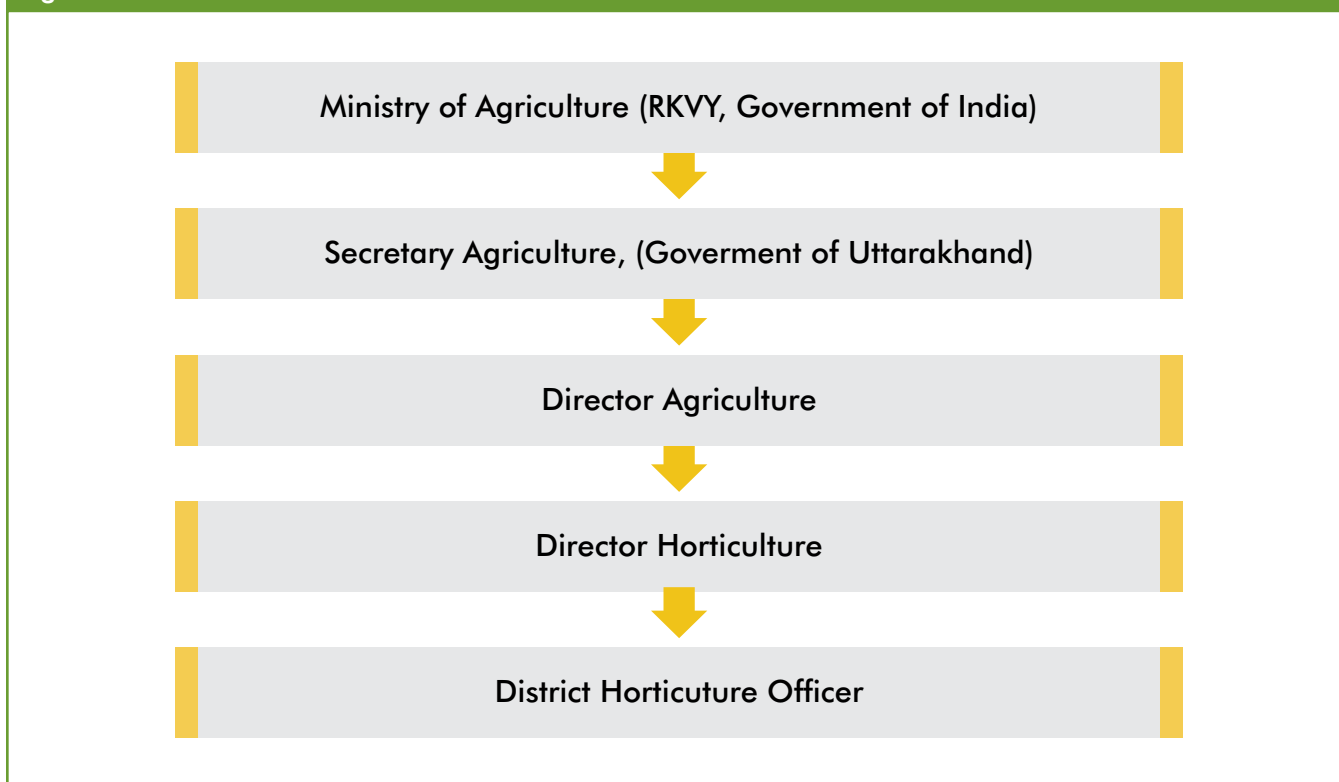


Figure 67: Flow of Funds

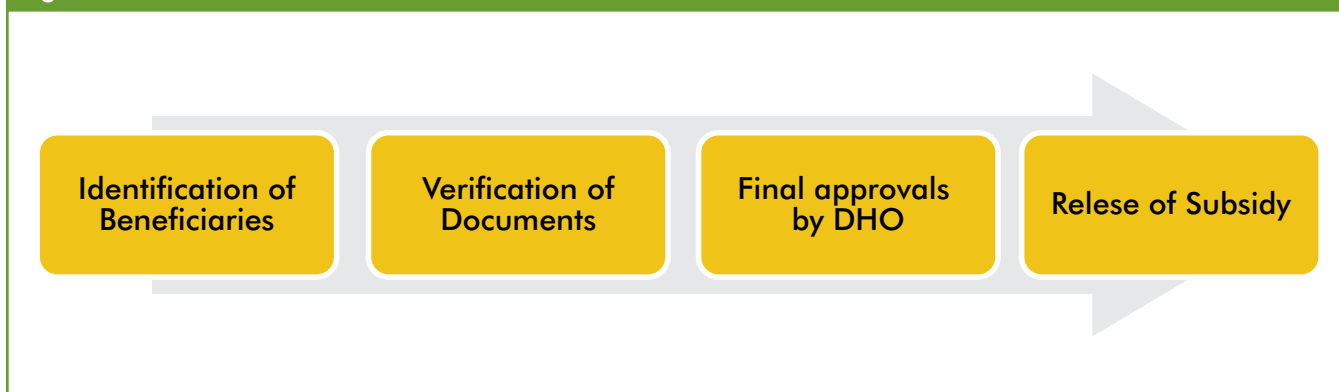


Table 32: Current status of FIG and FPO formation

Particulars	Sumati foundation		IFFDC	
	Target	Achievement (registered)	Target	Achievement (registered)
FPO	3	2	4	-
FIG	150	182	151	178
Total farmers	3000	3000	3000	3002

Source: Secondary information from RI

Table 33: Coverage of Farmers and Participation in Capacity Building

Particulars	Unit	Resource Institution	
		Sumati foundation	IFFDC
Districts		2	2
Clusters	Nos	3	2
Total Farmers	Nos		
Break up of total farmers			
Marginal (< 1 Ha)	Nos	2353	890
Small and semi-medium Farmer (1-4 Ha)	Nos	491	1710
Medium Farmers (4-10 Ha)	Nos	84	300
Large Farmers (> 10Ha)	Nos	72	100
Meetings Conducted			
FPOs	Nos	41	20
FIGs	Nos	3242	1353
Farmer	Nos	3242	1353
% of members regularly participating in meetings			
FPOs	%	95	98
FIGs	%	80	80
Farmer	%	85	80
Capacity Building for FIGs / FPOs			
FIG members oriented / trained & aware on VIUC	Nos	3000	2990
Group leaders oriented/trained on FIG/FPO concept and management	Nos	364	300
FIG/FPO members oriented/trained on Account Keeping in VIUC	Nos	3000	300
FIG members trained on some or other best practices (for production, value addition and marketing) under VIUC	Nos	3000	300
Bank Account Opened (Status)			
FPOs	Nos	3	--
FPOS (Share Collection)		0.70	
FIGs	Nos	146	120
Total Saving	Rs. Lacs	9.08	1.17

Source: Secondary information from RI

More than 90 percent farmers covered under VIUC are small and marginal. Under VIUC the major emphasis is on socio-economic development of small and marginal farmers. It indicates that the initiative is progressing, as intended, in terms of farmer coverage, as most of the small and marginal farmers are not given priority for schematic enrolment owing to their small holding size.

Performance of the Scheme

This part investigates the overall success of the VIUC in terms of physical and financial achievement.

The performance of these eight components is illustrated in the following Figure 69.

Figure 68: Farmers covered by RIs

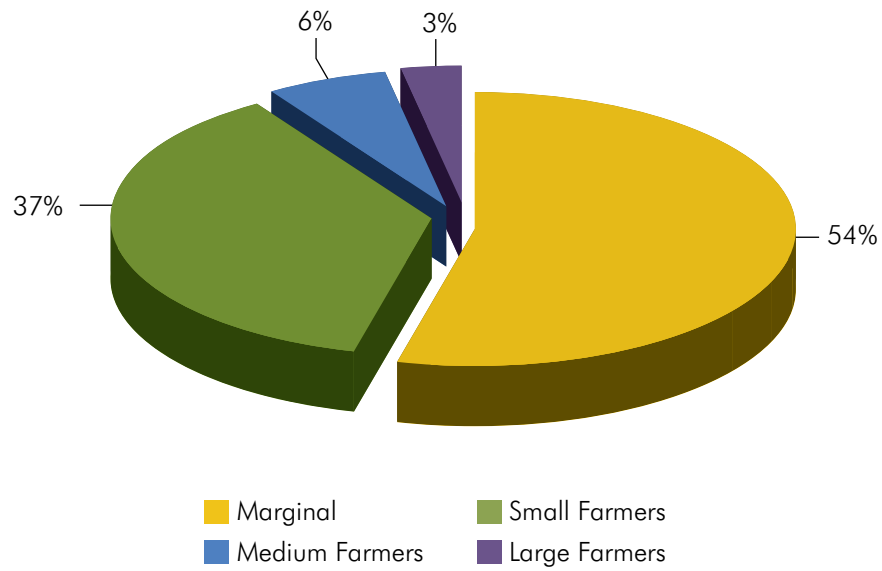


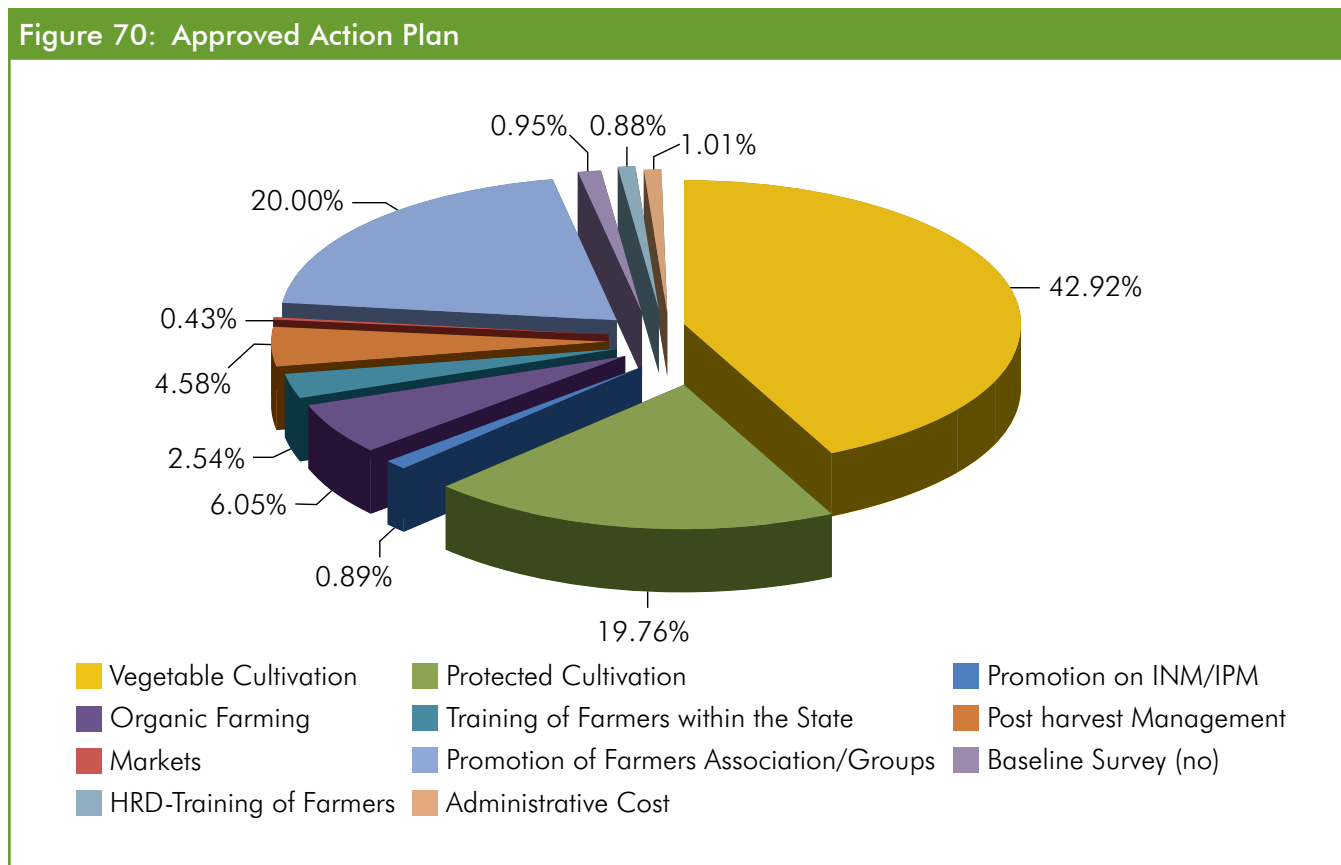
Figure 69: VIUC performance



Proposed and Approved Action Plan

As per the proposed action plan for the year 2011-12, the Department proposed to take up almost all the activities/components for the implementation of

VIUC with the total financial outlay of Rs 1200.00 lakhs. However, the Action plan was prepared and approved for 600.05 lakhs. The percentage share of all the components (as per approved AAP of 600.05 lakhs) is illustrated in the figure.



Of the total approved financial budget of Rs 600.00 lakhs released to the State till December 2012, for the year 2011-12, 42.92 % has been allocated for component of vegetable cultivation followed by 20% for promotion of farmers associations, 19.76% for protected cultivation, 6.05% for organic farming and 4.58% for Post Harvest Management. Small fund has been allocated for other components. Overall, the allocation of fund is much justified for different components of the scheme depending upon the present scenario and requirement of the State.

Detailed component-wise Physical Targets & Financial outlay for the year 2011-12 is given in Annex- VII(A). Although, the present status of financial achievement of different components can be delineated from the following bar graph, in which target and achievement are noticeably evident.

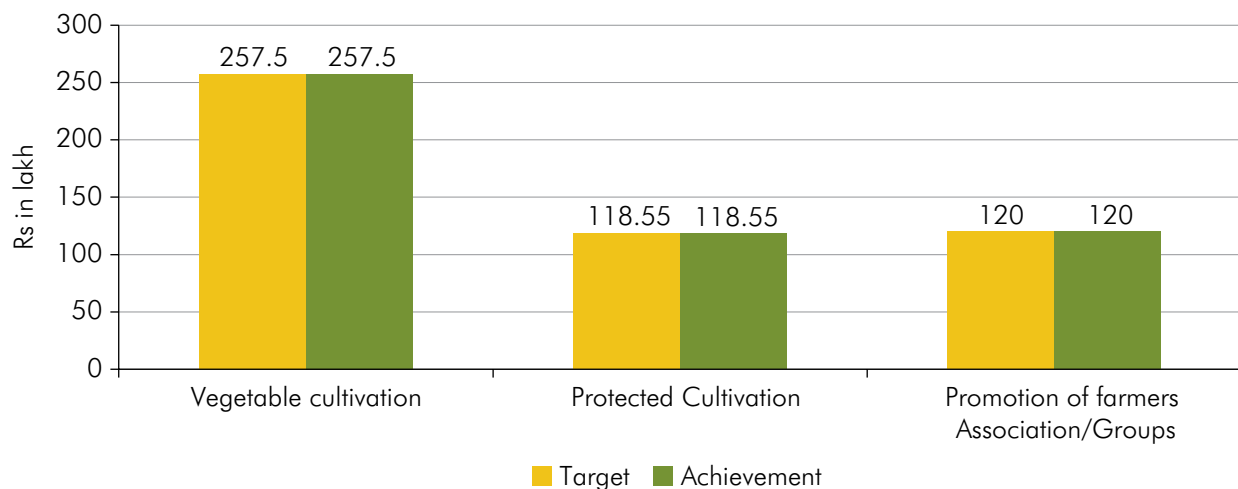
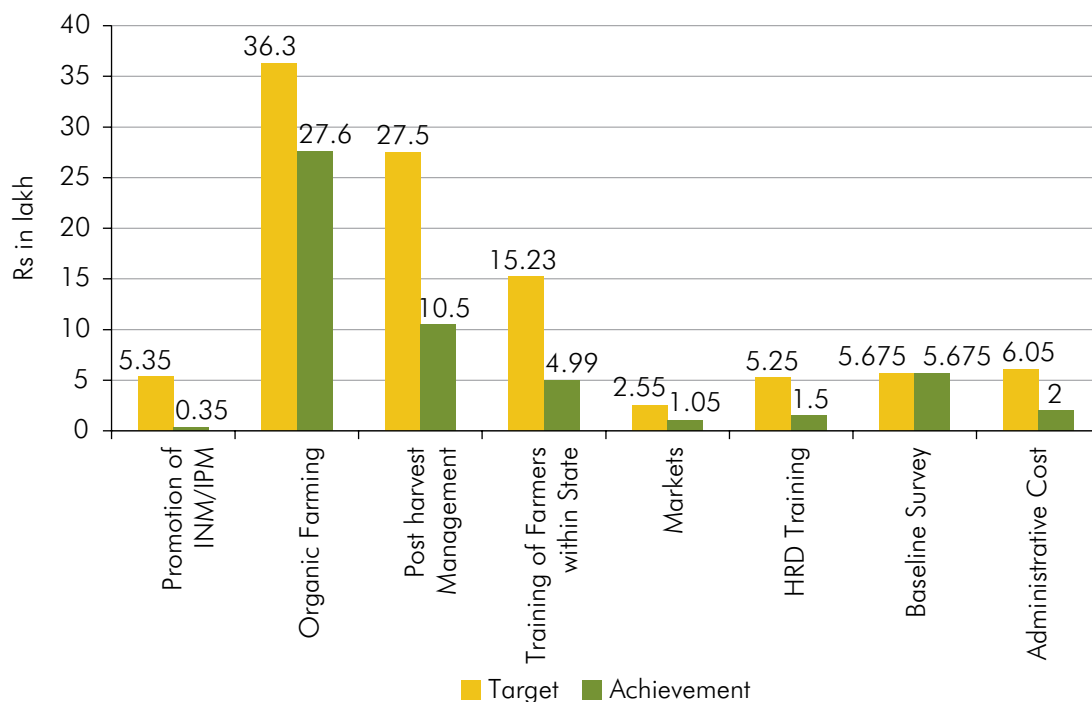
Components in above figure are:

- ◆ Promotion of INM/IPM
- ◆ Organic Farming
- ◆ Post harvest management
- ◆ Training of Farmers within State
- ◆ Baseline Survey
- ◆ Markets
- ◆ HRD Training and Administrative cost

The components in Figure below are:

- ◆ Vegetable Cultivation
- ◆ Protected Cultivation
- ◆ Promotion of Farmers Association

Figure 71: Physical & Financial achievements of VIUC in Uttarakhand (year 2011-12)



Component Wise Physical and Financial Targets and Achievement (2011-12)

The following Table 34 illustrates the component wise performance for the financial year 2011-12.

Out of the total released fund of Rs 600.00 lakhs (2011-12), total expenditure is of Rs 549.715 lakhs i.e. 91.62 percent of the total financial target has been achieved.

Situational Analysis of VIUC

This part illustrates the situational analysis of the initiative. It is an analysis of the State and condition of the farmers/ beneficiaries after implementation of the initiative, identification of the major issues related with the components and analysis of key stakeholders. Situational analysis has been derived with the help of primary survey, secondary information and observations during field visits.

Table 34: Component- wise Physical and Financial Targets and Achievements

Component	Physical Performance	Financial Performance
Vegetable Cultivation	80 percent achievement As per the approved plan, 416 ha area was approved for expansion of open pollinated and 524 ha for hybrid vegetable cultivation, of which total area has been covered for open pollinated vegetable cultivation recording 100 percent achievement. For hybrid cultivation, 336.86 ha area has been covered showing 64 percent achievement.	100 percent achievement The financial target for vegetable cultivation was Rs 257.50 lakh. For open pollinated vegetable cultivation, financial allocation was Rs 139.63 lakh and for hybrid vegetables cultivation was 117.87 lakh. Total amounts of Rs 139.63 lakh and Rs 117.87 lakh have been utilized.
Protected Cultivation	100 percent achievement For protected cultivation, physical target was to establish 12680 sq m in naturally ventilated (tubular structure), of which 12680 sq m structures have been established.	100 percent achievement Financial allocation for protected cultivation was Rs 118.55 lakh, of which entire fund has been utilized.
Promotion of INM/IPM	6.54 percent achievement. Physical target for promotion of INM/IPM was to cover 535 ha area, of which only 35 ha area has been covered.	6.54 percent achievement. Financial allocation for this component was Rs 5.35 lakh, of which 0.35 lakh has been utilized till date.
Training of Farmers within State	31.63 percent achievement Physical target was to provide training to 2030 farmers, of which only 642 farmers have been provided the training.	32.76 percent achievement Financial allocation for this component was Rs 15.23 lakh, of which Rs 4.99 lakh has been utilized.
Organic Farming	113 percent achievement Physical target under this component was creation of 121 vermicompost units, but against this 137 units have been established. Department has to facilitate the establishment of one unit at Rs 30,000 but they have disbursed subsidy for more than one unit within this cost limit(one unit at Rs 10,000) because they were unable to meet the land requirement of one unit for Rs 30,000. This is the reason of exceeding physical target in this component.	76 percent achievement Financial allocation for this component was Rs 36.30 lakh, of which Rs 27.60 lakh has been utilized.
Post Harvest Management	40 percent achievement The physical target for pack- house is 15; out of this 5 have been made. Target for preservation unit (low cost) was 5, of which 3 have been created.	37.2 percent achievement The financial target for this component was Rs 27.5 lakh, out of this Rs 10.5 lakh have been utilized.
Promotion of Farmers' Association/ Groups	100 percent achievement The physical target was to form 6000 groups of farmers, out of which 6000 groups have been formed.	100 percent achievement The financial allocation for this component was Rs 120 lakhs, of which Rs 120 lakh have been utilized.
Markets	41.18 percent achievement In this component static vending cart has been issued to the farmers. Out of 17 vending carts only 7 have been issued.	41.18 percent achievement Financial allocation for market is Rs 2.55 lakh, of which fund Rs 1.05 lakh have been utilized.
Baseline Survey	100 percent achievement Financial allocation for this component was Rs 5.675 lakhs which has been fully utilized	
Administrative Cost	33.06 percent achievement Financial allocation for this component was Rs 6.05 lakhs, out of which Rs 2 lakhs have been utilized.	

Source: Progress report of VIUC Gujarat

Findings of primary survey of farmers have been discussed in the following sections:

Findings of Primary Survey

For the purpose of Impact Assessment Study, around 40 farmer members (FIGs) were surveyed in Dehradun and Pauri Districts. The major points emerged out of the survey have been discussed in following section:

Land Holding: Average operational holding size of the surveyed farmer's area is around 0.3 ha.

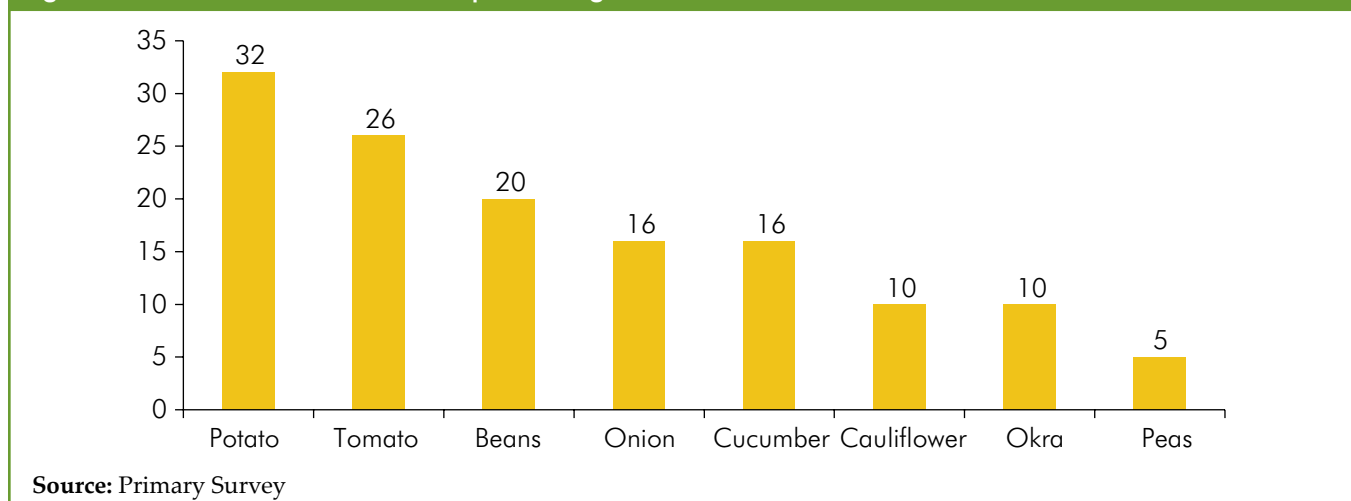
Irrigated Land: Out of the total cultivable area of the surveyed farmers, almost 88 percent in plain area and 14 percent of hilly areas are under irrigation. Major source of irrigation is tube well and canal. At some places rain water is harvested.

Seeds Used: Almost 100 percent of the surveyed farmers use hybrid seeds and open pollinated both. the main source of procuring seeds is local inputs supplier and department of Horticulture. But lack of awareness regarding input use sometimes results in poor quality seeds procurement.

Input Procurement: All the farmers of surveyed area are procuring the inputs like seeds, fertilizers and pesticides from district horticulture department in groups and local input supplier. Availability of such inputs is average; farmers are still facing the problem of quantity input procurement.

Post harvest Losses and Value Addition: As per the data of surveyed farmers, the extent of post harvest losses varies from crop to crop as mentioned below:

Figure 72: Post Harvest Losses in percentage



- ◆ As per the baseline survey report, post harvest loss of vegetables was observed to be more than 15 to 65 percent, as vegetables are highly perishable, post harvest losses occurs because of weight loss, temperature fluctuations, careless handling. Non-availability of proper transport facility, lack of proper packaging and far away markets are responsible factors for post harvest losses and lack of knowledge of food processing.
- ◆ After primary survey, it was observed that average post harvest loss in all the vegetables varied between 5 to 32 percent. It indicates that the component of Post Harvest Management

of vegetables has improved among farmers through different training sessions provided by resource institutions on post harvest handling of vegetables and its processing.

- ◆ Almost 95 percent of the farmers are performing value addition at field level by sorting and grading. Very few farmers are performing packaging for value addition of the produce.
- ◆ Value addition at field level resulted in improved shelf life of the produce.

Marketing of Produce: More than 50 percent of the farmers are carrying their produce to markets in loose packaging. Others are using plastic bags.

- ◆ Average cost incurred on packaging is Rs 50/- per quintal of the produce.
- ◆ Almost all the farmers of the surveyed areas are carrying their produce to local *mandi/haat*, commission agent and village trader.
- ◆ The quantity of vegetables produced by most of the farmers, as surveyed in Uttarakhand, were very low. Around 50 percent farmers are marketing their produce within a 2 km distance. Only 25 percent of the farmers are carrying their produce to distant market more than 10 km.
- ◆ Most of the FIGs are female groups which are not presently involved in marketing actively. If the quantity output is good, they sell it to the local *mandi* or collected by an aggregator to sell into get it a big market as organic produce.

Government Support & Incentives: Almost 95 percent of the farmers of the surveyed area are aware about Government support and activity.

- ◆ Major source of information access are the resource institutions working in the areas and fellow farmers
- ◆ According to the baseline survey report, it was observed that more than 80 percent farmers of the relevant districts were not aware of the Government programs on promotion of vegetables growing. Condition was good in Haridwar with 61 percent people not aware of Government program.
- ◆ This is a concrete achievement as all the farmers of the area are now aware about different Government support, schemes and programmes but still lack the basic initiative to derive various benefits under this initiative.

Awareness about VIUC: All the farmers of surveyed areas mentioned that they are aware about VIUC

- ◆ All the farmers participated in FIG formation, PHM infrastructure and vegetable cultivation component of the scheme. In Uttarakhand only input subsidy in the form of seed, pesticide and fertilizer have been provided and very few groups have been given sprayers. Quantity of inputs is insufficient as demand is higher.

Resource Institutions: IFFDC and Sumati Foundation are the resource institutions working in the area.

- ◆ Regular meeting of RI and farmers takes place at monthly intervals.
- ◆ Village and cluster meetings are organized to discuss the program.
- ◆ There is participation of State Department Officials in FIG/cluster meetings across the surveyed area.
- ◆ Workshop by NABARD on financial literacy and bandage making has been provided to FIGS in the surveyed area.

Training and Training need Assessment:

Training of farmers has been provided by RIs. Subject matter of the training is based on all aspects like FIG/FPO formation, record and account keeping, aggregation of produce, joint purchasing of inputs and joint marketing of produce, cultivation aspects, product quality improvement and value addition activities.

Farmers have perceived a positive impact of the initiative by increase in production and saving of FIGs. However, no changes have been observed in marketing and value addition component.



Training of FPO members

Observations from Field Visit

As the technical support team has not received progress report and secondary data from Nodal agency, report of monthly monitoring has been used.

The following figure is depicting the observations based on field visit and interaction with officials. It is sketching the present condition of the State in terms of direct impact as well as the activities which are in process.

Figure 73: Observations of the Field Visit



Detailed Observations of Field Visit

Mobilisation of farmers and group formation

- ◆ Group meetings and training are organized at cluster level.
- ◆ The program is largely covering small and marginal farmers who are unable to benefit from most of the Government schemes.
- ◆ The scheme is showing substantial progress in terms of Farmers Mobilisation, FIG with financial benefits in the form of savings
- ◆ Till now, 6000 farmers have been registered and 360 FIGs have been formed. Process of FPO formation is in progress and 2 FPOs have been registered under Pauri Garhwal District.



FPO Promotion in Kotdwar

Training and capacity building

Capacity building and training programs for package of practices on different aspects of vegetable cultivation, protected cultivation, seasonal training of particular crops, and training on food processing have been provided but its result is yet to be realised.

Disbursement of subsidy

- ◆ The subsidy for different inputs is provided in the form of seeds, fertilizers and pesticides. The cumulative requirement of the FIGs is calculated, and then the input in kind is distributed to the beneficiary.
- ◆ In Uttarakhand, the Horticulture department are providing subsidy in kind only.
- ◆ They are not providing subsidy in the form of cash on purchase of input from local dealer/ input supplier. They have not communicated to farmers and RIs that farmers can claim for subsidy on input, purchased from input supplier.



Training and capacity building

Functioning and coordination of resource institutions

- ◆ Resource institutions are aware with the objectives of the VIUC.
- ◆ At their level RIs are involved in mobilisation and group formation of farmers, training on package of practices and marketing, linking with financial institutions and service

providers, establishment of input and output linkages.

- ◆ The RIs are clear about their roles and responsibilities but Government official interference is very high. Their suggestions are not considered by the horticulture department. Coordination between RIs and Government official is not satisfactory.

Functioning of FIG

Potential FIG members have been identified based on shared interest. Group leader of the FIG has been elected through voting

- ◆ Weekly meetings of the FIGs are organized and the function, issues and initiatives of common interest are discussed.
- ◆ FIG members are being linked with bank and workshops organized by NABARD and RI.

Infrastructure Creation

As per the approved plan, VIUC is covering the construction of a polyhouse for seedling production and a seed infrastructure unit exclusively for vegetable seed processing, packaging, storage and marketing and pack house for value adding activity after harvesting of produce.

Under this initiative, one pack house is under construction, as observed in Sahaspur block of Dehradun District. The location of this pack house is not advantageous for other FIGs. Even farmers were not aware of its utility.



Pack house under construction

Marketing infrastructure

In Uttarakhand most of the FIGs are women groups and their quantity of produce is only self sufficient for them.

- ◆ Most of the produce is collected from farms by some local supplier and supplied to retailers as organically produce vegetables.
- ◆ In Tehri Garhwal, farmers produced is collected by MDFVL and local cooperatives and supplied to SAFAL (Mother Dairy).

Convergence of schemes

Schemes of Sampurna Gramin Rojgar Yojana, District run programs on animal husbandry and dairy, ATMA are harmonized with this scheme. Many farmers are common beneficiaries of other programmes also.

HRD training to project management unit

All management unit members are well equipped with training which were conducted before initiation of the project.

Challenges/Issues

- ◆ **Availability of inputs:** It has been observed that the quality and quantity of seeds are not available to farmers. There are some places in Pauri District where seeds have been disbursed a few days ago for the first time, since the implementation of the scheme. Most of the FIGs are not getting enough quantity of seeds. So farmers have to purchase from local input dealers also. On purchasing of seeds from an open market, farmers do not claim subsidy for it as they are not aware of it and are not even intimated by the Horticulture Department about it.
- ◆ **Irrigation facility:** In hilly regions of Uttarakhand, there are few sources of irrigation. At some places tube well and canals are available but their reach is limited.
- ◆ **Lack of coordination between RIs and Horticulture department officials:** It is observed that there is a lack of coordination between RIs and the Horticulture officials. As mentioned by RIs, their recommendations are not considered by officials.

- ◆ **Lack of proper documentation by Horticulture Department:** During field visit by the TS-MSG in Uttarakhand, the Director's office of Horticulture department had not provided progress report of scheme, beneficiary list and area under vegetable of production cluster. The monitoring team had received some hand written documents which were incomplete. State and District officials are not proactive in record keeping and maintenance of all data. Some discrepancies have been observed such as in the beneficiary list of vermicompost unit, there are repetitions of names of same beneficiary. During field inspection it was discovered that the beneficiary does not have a vermicompost unit. Till now, the team has not received complete beneficiary list and secondary data
- ◆ **Output is very low:** Output quantity of produce is very low which is sufficient for self-consumption only. This is true for most of the FIGs. The nature of soil is very fertile, which can be utilised for increased outputs.
- ◆ In baseline survey it was reported that availability of fertilizer to farmers was untimely or late. It was observed during this study that this trend is continuing even after one year. FIG is not aware of function of pack house

Impact of the Scheme

This part investigates the impact of VIUC on broader areas relating to procurement of quality inputs, linkages developed for procurement and marketing, saving and improvement in socio-economic status of farmers and employment generation induced by the initiative.

VIUC has been framed to cover all the segments of vegetable supply right from farmers' field up to its final absorption by the market with major emphasis on training for good production practices, Post Harvest Management, value addition with creation of marketing infrastructure and linkages. For the purpose of assessing impact of VIUC, the results of performance and situational analysis along with general dissemination has been assimilated.

Impact of VIUC

The following Figure 74 is outlining the direct impact of initiative in terms of the following eight components.

Vegetable Production

The details of these components are described in the following section.

As per the data provided by RIs, total production of vegetables both under open pollinated and hybrid cultivation increased by about 72 percent (from 8317 MT to 13581 MT).

As per data received from both RIs, area of vegetables in production cluster has been increased from 3054 ha to 5263 ha which is around 72 percent increase in area. Production has increased almost 63 percent, from 8317.5 MT to 13580.9 MT. But productivity has declined from 2.72 MT/ha to 2.58 MT/ha.

Quality inputs: As per interaction with district officials, they are providing input to farmers as subsidy but on interaction with farmers it was found that quantity of input is not sufficient.

Popularization of Modern Package of Practices

Modern package of practices was not very much popular among the farmers in the State. As per the baseline survey report, farmers in Uttarakhand are still practicing traditional methods of vegetable cultivation instead of commercial and improved scientific methods. With time and training farmers are moving towards modern package of practices but it will take time in its adoption by farmers. Nursery raising of vegetables has already been carried out by some FIGs member at certain places.

Farmers are participating in groups for learning and applying these techniques. In addition to this, RI has arranged a workshop of financial literacy with NABARD.

Initiation of the Process of Collectivization

Both the Resource Institutions have mobilized approximately 6000 farmers (approximately 3000 farmers each RI) and have formed a total of 360 Farmers' Interest Groups (FIGs).

Figure 74: Impact of the Initiative

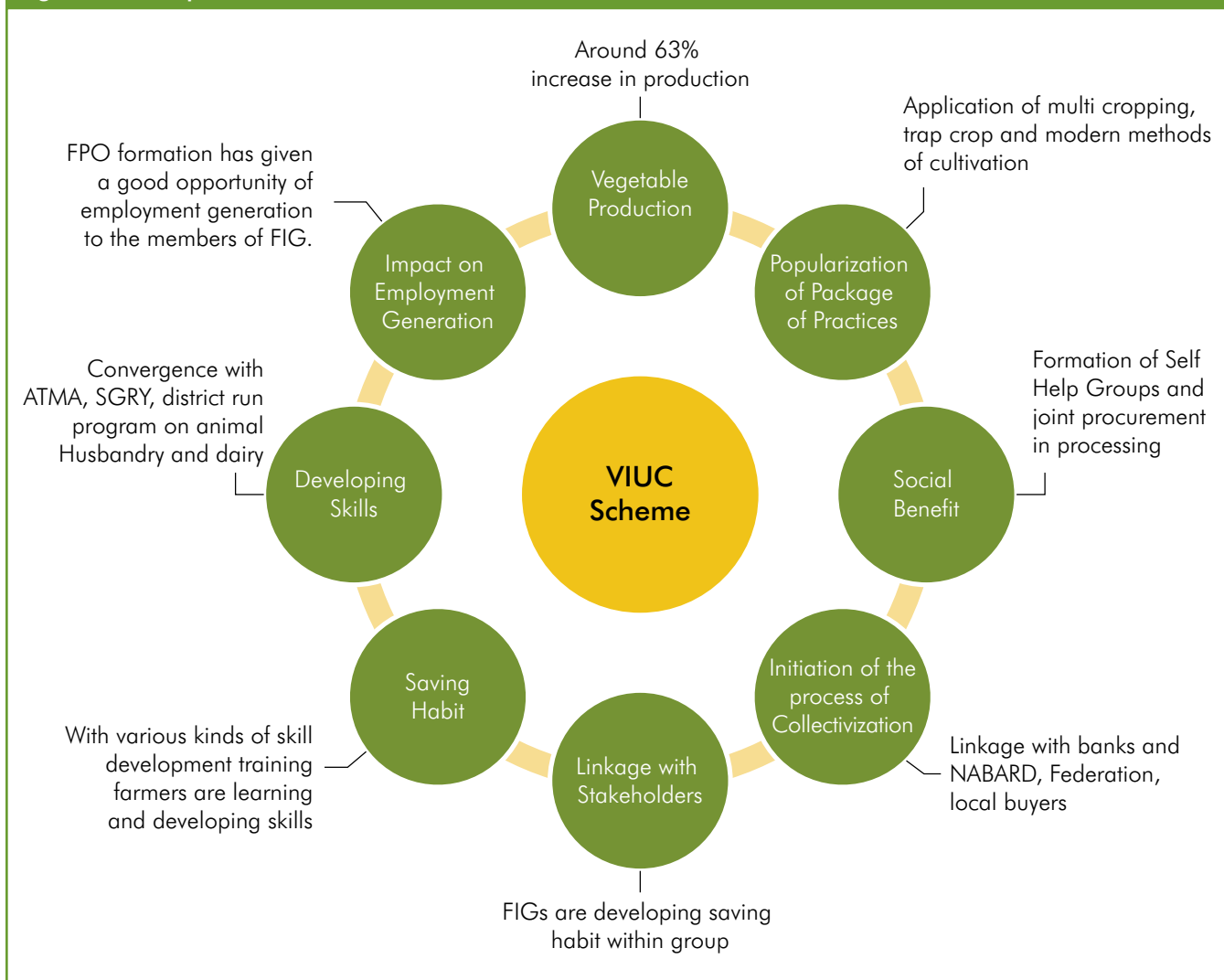
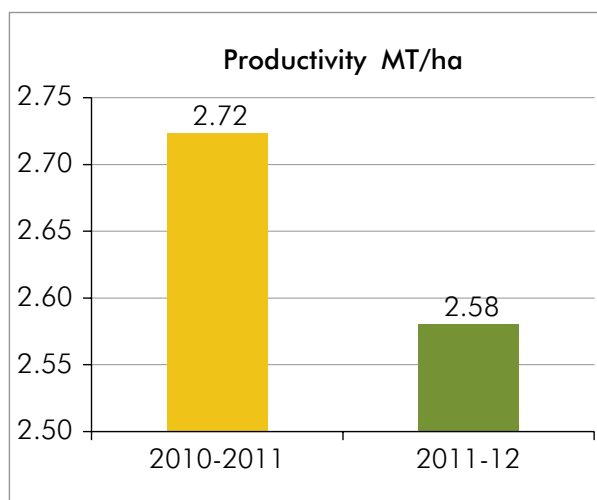
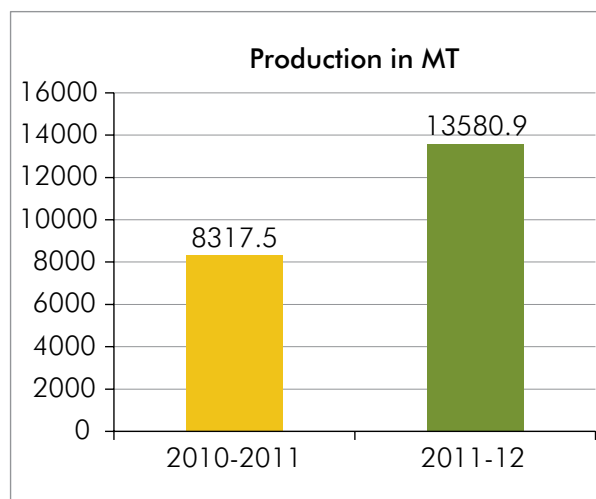
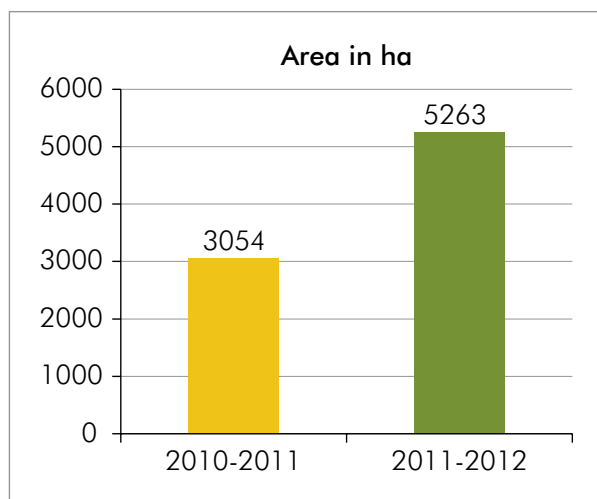


Table 35: Area and Production of Vegetables of Production clusters in 2010-11 and 2011-12

Crop	Area (ha)		Production (MT)		Productivity (MT/ha)	
	2010-2011	2011-2012	2010-2011	2011-2012	2010-2011	2011-2012
Cucumber	333.69	539.03	872.7	1411.8	2.62	2.62
Pea	569.89	1035.92	1605.8	2641.7	2.82	2.55
Potato	505.59	930.65	1436.2	2366.9	2.84	2.54
Okra	745.19	1205.28	1950.5	3155.8	2.62	2.62
Beans	690.8	1241.88	1932.7	3174.6	2.80	2.56
Capsicum	209	310.59	519.6	830.2	2.49	2.67
Total	3054.16	5263.35	8317.5	13580.9	2.72	2.58

Source: RIs Uttarakhand

Figure 75: Area, Production and Productivity of Vegetables



Dress code of FIG

Process of formation of Farmers' Producers' Organizations (FPOs) has been initiated, wherein the documents have been submitted for registration. Two FPOs has been registered in Pauri Garhwal District.

- ◆ Once the FPO is registered, the joint marketing of produce will commence.
- ◆ Efforts are being made by resource institutions for initiating the concept of group procurement for the benefit of farmers.
- ◆ As per interaction with district officials and resource institutions, the concept of group activities and group formation was very poor

in the State. But now they are becoming part of the group and have started gaining interest in group activities.

- ◆ In addition to procurement, marketing of the produce by FPOs will also start in groups with the contacted retail outlets.
- ◆ Female FIGs are highly motivated. Few groups have started dress code for their meetings and group activities to represent their group.

Linkage with Stakeholders

For inclusive development of the entire process from production to marketing, emphasis has been mainly given on timely procurement of inputs and availability of produce for market. To facilitate this entire chain of process i.e.; linkage of farmers with financial institutions, Government officials, banks, and support service providers is necessary.

- ◆ For backward linkage, some linkages have been established with banks and research institutes. RIs are planning to conduct more number of such meetings so that farmers can jointly procure the good quality inputs, at affordable prices on time.
- ◆ FIG members are being identified and approximately 286 FIG members have been linked with Banks. FIGs formed by IFFDC have saved more than Rs. 1 lakh and FIGs formed by Sumati Foundation have saved around Rs.9.08 lakhs.
- ◆ For forward linkage, MDFVL are linked to SAFAL (Mother Dairy) in Tehri Garwal. Farmers are linked to local buyer of organic

produce; RIs are also planning to link farmers with PEPSICO (Frito Lays) for potato.

Looking at the current status of formation of FPOs, in which some are registered and some are almost ready for registration and starting business activities, resource institutions are making assertive efforts to accelerate the activities for linking with aggregators, buyers, input-suppliers and other stakeholders.

Convergence with other Schemes

State Government is working towards convergence of other schemes in VIUC for benefit of farmers. Scheme of SGRY District run scheme on animal husbandry and Dairy have already been converged.

RIs are trying to initiate work on soil testing facilities with this scheme.

Impact on Employment Generation

Though one year is not sufficient to assess the impact on employment generation but the scheme has directly and indirectly generated employment for approximately 6,000 farmers. Once the FPOs will start operations, it will lead to generation of more employment of technical and non technical persons for processing, packaging, marketing, etc.

Saving Habit

With coordination amongst group members, farmers have started developing the habit of

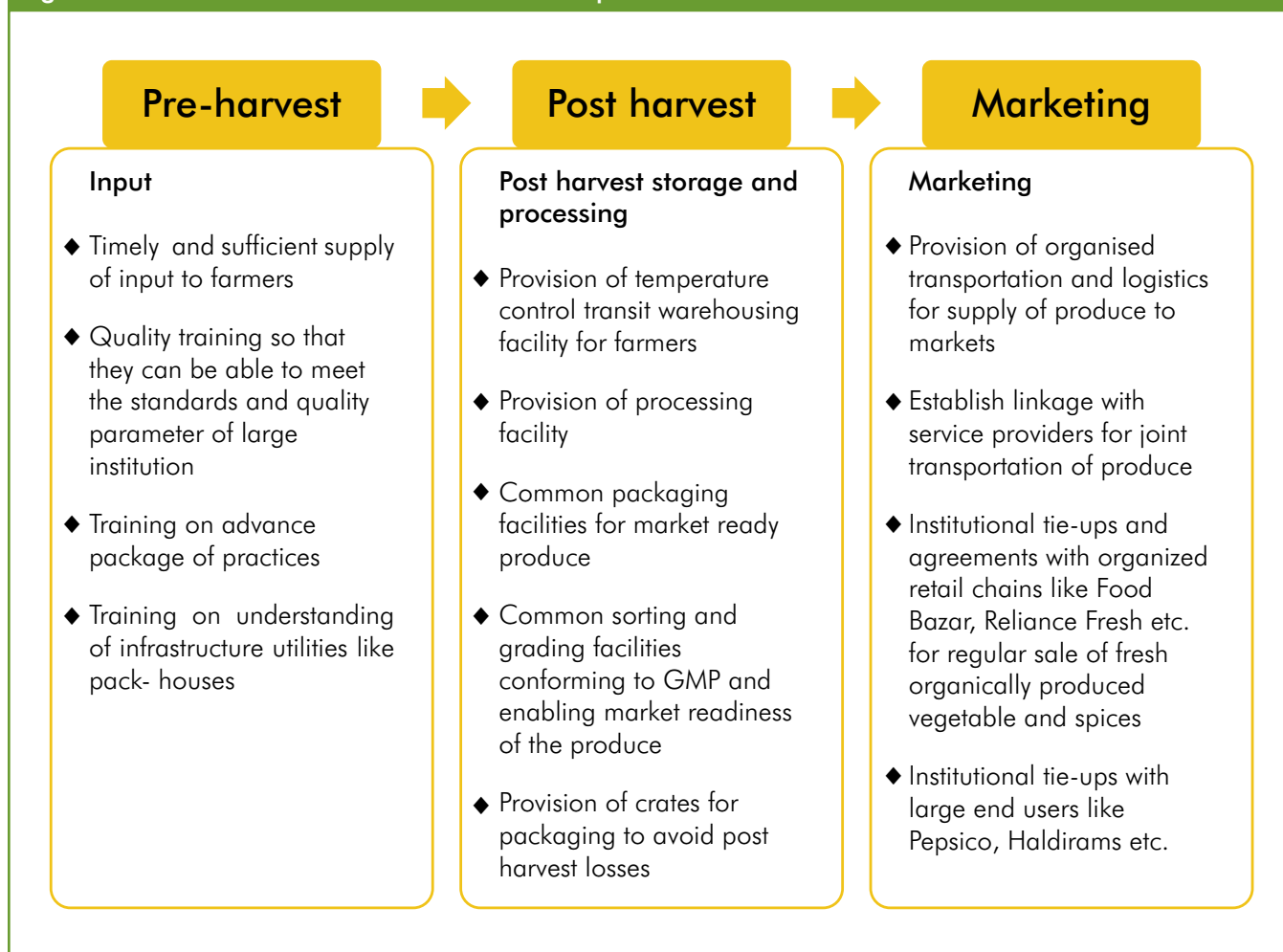


Training on food processing



Workshop on financial literacy

Figure 76: Suitable Recommendations for Improvement in the Outcome of the Scheme



savings and this change has been felt by them. This is a stepping stone for prosperity among groups if they pursue this course of action.

Development of Skills

With the help of RIs, farmers have given training of food processing in Pauri District and workshop has been organized by NABARD in association with RI on financial literacy and bandage making. Similarly, farmers are exposed to many skill development training with the help of RIs will surley make them self- sufficient and self-sustainable.

Recommendations

This part describes the proposed recommendations and suggestions, which are based on secondary and primary research by the team in Uttarakhand.

In Uttarakhand, the VIUC is still in need to gain momentum although it has already completed one year but the result has not been felt. Most of the components of the scheme has been achieved on paper but its physical presence and realization are almost absent.

More emphasis should be given on strengthening the supply chain from production to marketing

- ◆ Convergence with other parallel schemes to reduce multiplicity and overlap between them to provide higher benefits to farmers.
- ◆ Collective marketing approach for making the volume sizable and marketable will be introduced. Construction of pack- house and poly house should be at a common point where all members can commute easily. Although it is not possible in hilly areas, but to some extent it can be taken

into consideration which establishment of infrastructure.

Recommendations for proper administration of the scheme:

- ◆ The release of funds should be synchronized with the work in progress
- ◆ Constitution of empowered committee to resolve all bottlenecks in implementation and for regular inspections
- ◆ Training on commercial aspect of FPO for enhancement of their understating on business
- ◆ Regular documentation by respective State Departments

Annexures

Annexure I: Project Components

Project Components/Activities
1. Baseline Survey
2. Promotion of Farmers Association (FPOs/FIGs)
3. Vegetable Seed/Seedling Production
4. Vegetable Seed Infrastructure (for handling, processing, packaging, storage, etc. of seeds of horticulture crops)
5. Vegetable Cultivation <ul style="list-style-type: none"> i. Open Field ii Hybrid Vegetable
6. Vegetable Cultivation Protected Condition <ul style="list-style-type: none"> I. Green- House Structure <ul style="list-style-type: none"> a Fan & Pad System b Naturally Ventilated System i Tubular Structure ii Wooden Structure iii Bamboo Structure II. Shade Net House <ul style="list-style-type: none"> i Tubular Structure ii Wooden Structure iii Bamboo Structure
7. HRD <ul style="list-style-type: none"> i Training of Farmers within State ii Training of Farmers (2 Days) HRD
8. Promotion of <ul style="list-style-type: none"> i Integrated Nutrient Management (INM) ii Integrated Pest Management (IPM)
9. Organic Farming <ul style="list-style-type: none"> i Adoption of Organic Farming ii Organic Certification iii Vermi compost Units (to be renamed as organic input production) <ul style="list-style-type: none"> a Permanent Structure of (30'×8'×2.5') b HDPE vermin bed of 96 cft (12'×4'×2')

Project Components/Activities	
10. Post Harvest Management Infrastructures	<ul style="list-style-type: none"> i Pack House ii Pre Cooling Unit iii Mobile Pre Cooling Unit iv Cold Storage Units <ul style="list-style-type: none"> a Construction b Expansion c Modernization v Refer Vans/Containers vi Primary/Mobile/Minimal Processing Unit vii Evaporative/Low Energy Cool Chamber (8MT) viii Preservation Units (Low Cost) ix Low Cost Onion Storage Structure (25MT) x Pusa Zero Energy Cool Chamber (100Kg)
11. New Markets	<ul style="list-style-type: none"> i Rural Markets/Apni Mandies/Direct Markets ii Retail Markets/Outlets (Environmentally Controlled) iii Collection/Aggregation Centre at Production Cluster @ Rs. 8Lakhs/unit iv Static/Mobile Vending Cart/Platform with Cool Chamber v Motorized Vending Cart

Annexure II: Arunachal Pradesh

A. Physical & Financial Outlay of the Scheme for the Year 2011-12

S. No.	Item	Units	Target	
			Physical	Financial (Rs in lakh)
1	Vegetable Cultivation			
	Open Field	Ha	241	54.23
	Hybrid Vegetable	Ha	474	159.98
2	Protected Cultivation	Sq ft		
	Naturally Ventilated System	Sq ft		
	Tubular Structure	Sq ft	5000	23.38
	Shade Net house	Sq ft		
	Tubular Structure	Sq ft	3000	9.00
	Cost of Planting Material and other inputs of high value vegetables grown in Green House/Poly House Shade Net House	Sq ft	8000	4.20
3	Promotion of INM/IPM	Ha	500	5.00
4	Organic Farming			
	Adoption of organic farming	Ha	100	10.00
	Vermicompost units	No.	50	15.00
5	Post harvest Management			
	Zero Energy Cool Chamber	No.	500	10.00

S. No.	Item	Units	Target	
			Physical	Financial (Rs in lakh)
6	Market			
	Collection/Aggregation centre at production Cluster	No.	2	8.00
7	Promotion of farmers Groups/Association	No.	1750	35.00
8	Baseline Survey	No.	2	7.21
9	HRD Training of Farmers	No.	200	3.00
10	Administrative Cost			4.26
	Total			348.26

B. Physical Target and Achievements

S. No.	Item	Units	Physical	
			Target	Achievement
1	Vegetable Cultivation			
	Open Field	Ha	241	241
	Hybrid Vegetable	Ha	474	474
2	Protected Cultivation	Sq ft		
	Naturally Ventilated System-	Sq ft		
	Tubular Structure	Sq ft	5000	5000
	Shade Net House-	Sq ft		
	Tubular Structure	Sq ft	3000	3000
	Cost of Planting Material and other inputs of high value vegetables grown in Green- House/Poly House Shade Net House	Sq ft	8000	8000
3	Promotion of INM/IPM	Ha	500	500
4	Organic Farming			
	Adoption of Organic Farming	Ha	100	100
	Vermicompost Units	No.	50	50
5	Post harvest Management			
	Zero Energy Cool Chamber	No.	500	500
6	Market			
	Collection/Aggregation Centre at Production Cluster	No.	2	2
7	Promotion of Farmers Groups/Association	No.	1750	1750
8	Baseline Survey	No.	2	
9	HRD Training of Farmers	No.	200	200
10	Administrative Cost			

C. Financial targets & Achievement of VIUC during 2011-12

S. No.	Item	Units	Financial (Rs in lakh)	
			Target	Achievement
1	Vegetable Cultivation			
	Open Field	Ha	54.23	54.23
	Hybrid Vegetable	Ha	159.98	159.98
2	Protected Cultivation	Sq ft		
	Naturally Ventilated System	Sq ft		
	Tubular Structure	Sq ft	23.38	23.38
	Shade Net House-	Sq ft		
	Tubular Structure	Sq ft	9.00	9.00
	Cost of Planting Material and other inputs of high value vegetables grown in Green- House/Poly House Shade Net House	Sq ft	4.20	4.20
3	Promotion of INM/IPM	Ha	5.00	5.00
4	Organic Farming			
	Adoption of organic Farming	Ha	10.00	10.00
	Vermicompost Units	No.	15.00	15.00
5	Post harvest Management			
	Zero Energy Cool Chamber	No.	10.00	10.00
6	Market			
	Collection/Aggregation Centre at Production Cluster	No.	8.00	8.00
7	Promotion of Farmers Groups/Association	No.	35.00	35.00
8	Baseline Survey	No.	7.21	7.21
9	HRD Training of Farmers	No.	3.00	3.00
10	Administrative Cost		4.26	4.26
	Total		348.26	348.26

D. Area, Production & Productivity, mentioned by Farmers during the Survey

Response by Papumpare and Lower Subansiri farmers			
Vegetable	Area (ha)	Production (qt)	Productivity (qt/ha)
Tomato	9.84	134.38	13.66
Radish	11.18	288.16	25.77
Brinjal	1.80	0.56	0.31
Cabbage	22.68	283.50	12.50
Cauliflower	8.58	47.18	5.50
Beans	5.60	0.20	0.04
Peas	7.20	14.38	2.00
Total	66.88	768.36	11.49

E. Cost of Production of Major crops mentioned by Farmers

Crops	Land Preparation Cost (RS/ha)	Seed (Rs/ha)	Fertilizer (Rs/ha)	Plant Protection Chemicals (Rs/ha)	Irrigation (Rs/ha)	Labour (Rs/ha)	Any other cost (Rs/ha)	Total (Rs/ha)
Tomato	16,070.83	3,130.08	2,401.25	891.71	33.33	22,150.00	2,895.00	47,572.21
Cabbage	9,940.56	1,700.98	1,888.56	1,108.50	41.18	12,928.94	1,335.00	28,943.72
Beans	7,449.30	678.07	666.15	1,216.92	0.00	5,613.60	0.00	15,624.06
Radish	1,838.33	313.25	261.25	150.00	45.45	2,150.83	0.00	4,759.12
Peas	2,980.52	425.10	1,001.25	1,140.50	22.86	2,942.29	0.00	8,512.52
Brinjal	8,866.66	1,070.00	1,633.33	1,380.00	140.00	9,066.67	0.00	22,156.67
Cauliflower	6,270.88	1,332.22	512.22	288.89	55.56	7,191.11	832.50	16,483.39
Carrot	3,000.00	543.33	176.67	141.67	80.00	2,633.33	0.00	6,575.00

Annexure III: Gujarat

A. Physical & Financial Outlay of the Scheme for the Year 2011-12

S. No.	Item	Units	Target	
			Physical	Financial (Rs in lakhs)
1	Vegetable Seedling Production	Ha.	2	50.00
2	Vegetable Cultivation	Ha.	1510	367.88
	i Open Field	Ha.	1260	283.50
	ii Hybrid Veg.	Ha.	250	84.38
3	Protected Cultivation		236000	610.20
	i Naturally Ventilated System-Tubular Structure	Sq. M	60000	280.20
	ii Shade Net House- Tubular structure	Sq. M	96000	288.00
	iii Cost of Planting Material and other inputs of high value vegetables grown in Green -House/Poly House shade Net House	Sq. M	80000	42.00
4	Promotion on INM/IPM	Ha.	405	4.05
5	Training of Farmers within the State	Nos.	2000	14.67
6	Post harvest management		28	62.7
	i Pack House	Nos.	25	37.50
	ii Pre-cooling Unit	Nos.	1	6.00
	iii Refer Vans/Containers	Nos.	2	19.20
7	Markets		34	20.50
	i Collection/Aggregation Centre at Production Cluster @ Rs. 8 lakh/unit	Nos.	4	16.00
	ii Static/Mobile Vending Cart/ platform with Cool Chamber	Nos.	30	4.50
8	Promotion of Farmers Association/Groups of 15-20 farmers/20 ha and tie- up with Financial Institution and aggregators (@ Rs. 2 lakh/Group/annum) (no)			60.00
9	Baseline Survey (no.)			10.00
	Total			1200.00

B. Physical targets & Achievements of VIUC during the year 2011-12

S. No.	Item	Units	Physical	
			Target	Achievement
1	Vegetable Seedling Production	Ha.	2	-
2	Vegetable Cultivation	Ha.	1510	1296.40
	i Open Field	Ha.	1260	871.33
	ii Hybrid Veg.	Ha.	250	425.07
3	Protected Cultivation		236000	156000
	i Naturally Ventilated System-Tubular Structure	Sq.M	60000	65000
	ii Shad Net House- Tubular structure	Sq.M	96000	84000
	iii Cost of Planting Material and other inputs of high value vegetables grown in Green House/Poly House Shade Net House	Sq.M	80000	7000
4	Promotion on INM/IPM	Ha.	405	194.50
5	Training of Farmers within the State	Nos.	2000	2538
6	Post harvest Management		28	-
	i Pack house	Nos.	25	-
	ii Pre-cooling Unit	Nos.	1	-
	iii Refer Vans/Containers	Nos.	2	-
7	Markets		34	-
	i Collection/Aggregation Centre at production Cluster @ Rs. 8 lakh/unit	Nos.	4	-
	ii Static/Mobile Vending Cart/ platform with cool chamber	Nos.	30	-
8	Promotion of farmers Association/Groups of 15-20 farmers/20 ha and tie up with Financial Institution and Aggregators (@ Rs. 2 lakh/group/annum) (no)			
9	Baseline Survey (no)			

C. Financial Targets & Achievements of VIUC during 2011-12

S. No.	Item	Financial	
		Target	Achievement
1	Vegetable Seedling Production	50.00	-
2	Vegetable Cultivation	367.88	333.92
	i Open Field	283.50	190.68
	ii Hybrid Veg.	84.38	143.24
3	Protected Cultivation	610.20	50.3.17
	i Naturally Ventilated System-Tubular Structure	280.20	281.75

S. No.	Item	Financial	
		Target	Achievement
	ii Shade Net House- Tubular Structure	288.00	220.81
	iii Cost of Planting Material and other inputs of high value vegetables grown in Green House/Poly House shade Net House	42.00	0.61
4	Promotion on INM/IPM	4.05	1.95
5	Training of Farmers within the State	14.67	6.67
6	Post harvest Management	62.70	-
	i Pack House	37.50	-
	ii Pre-cooling Unit	6.00	-
	iii Refer Vans/Containers	19.20	-
7	Markets	20.50	
	i Collection/Aggregation Centre at Production Cluster @ Rs. 8 lakh/unit	16.00	-
	ii Static/Mobile Vending Cart/ Platform with Cool Chamber	4.50	-
8	Promotion of Farmers' Association/Groups of 15-20 Farmers/20 ha and tie up with Financial Institution and aggregators (@ Rs. 2 lakh/group/annum) (no)	60.00	60.00
9	Baseline Survey (no)	10.00	6.09
	Total	1200.00	911.80

D. Area Production & Productivity, mentioned by Farmers during the Survey

Response by ITSL and DSC farmers			
Vegetable	Area (ha)	Production (qt)	Productivity (qt/ha)
Brinjal	3.98	143.60	36.08
Chilli	0.98	70.48	71.92
Beans	0.78	11.28	14.46
Coriander	2.50	59.52	23.81
Methi	2.82	49.92	17.70
Galaki	1.35	13.68	10.13
Cauliflower	1.00	23.04	23.04
Cabbage	0.40	8.32	20.80
Cucumber	0.10	16.32	163.20
Bitter gourd	0.20	1.60	8.00
Total	14.11	397.76	28.19

E. List of Beneficiaries of Protected Cultivation Structure (Green House and Shade Net House)

S. No.	Name	Village	Taluka	Area(Sq-mt)	Subsidy	S.N/G.H
1	Harshad Kumar K. Patel	Mandal	Mandal	4000	17.75	G.H
2	Navghanbhai A. Dodiya	Dodar	Sanand	4000	16.73	G.H
3	Gautambhai R Parmar	Dodar	Sanand	4000	16.61	G.H
4	Ramanbhai D Patel	Oad	Dascrol	4000	17.29	G.H
5	Rakeshbhai D Patel	Oad	Dascrol	4000	17.29	G.H
6	Rushil Rajubhai Shah	Jetalpur	Dascrol	4000	16.75	G.H
7	Rahil Rajubhai Shah	Jetalpur	Dascrol	4000	16.75	G.H
8	Parvinbhai G Patel	Kunpur	Mandal	4000	17.53	G.H
9	Damodarbhai I Patel	Vinzuvada	Mandal	4000	17.53	G.H
10	Prahaladbhai G Patel	Kunpur	Mandal	4000	17.53	G.H
11	Maheshbhai G Patel	Rakhiyana	Mandal	4000	17.53	G.H
12	Jagjivanbhai I Patel	Vinzuvada	Mandal	4000	17.53	G.H
13	Ashwinbhai I Patel	Chiyala	Bavla	4000	17.48	G.H
14	Maheshbhai I Patel	Chiyala	Bavla	4000	17.48	G.H
15	Ranchhodbhai K Patel	Badarkha	Dascrol	4000	17.48	G.H
16	Dharmendrabhai D Patel	Kanbha	Dascrol	4000	17.48	G.H
17	Anandiben M Patel	Jetalpur	Dasrol	1000	4.00	G.H
	Total			65000	281.74	

Source: DHO, Ahmedabad

F. List of Shade Net House beneficiary under Peri-Urban

S. No	Name	Village	Taluka	Area (Sq-mt)	Subsidy	S.N/G.H
1	Jyotsnaben Amabalal Pandya	Miroli	Dascrot	1000	3.00	S.N
2	Dlipbhai Dhoribhai Patel	Miroli	Dascrot	1000	3.00	S.N
3	Amabalal Labhshankar Pandya	Miroli	Dascrot	1000	3.00	S.N
4	Sanjaybhai Chimanbhai	Miroli	Dascrot	1000	3.00	S.N
5	Rajeshwariben K. Patel	Miroli	Dascrot	1000	3.00	S.N
6	Vinodkumar Nanjibhai Patel	Ubhad	Mandal	1000	3.00	S.N
7	Kubarben Trikambhai Patel	Ubhad	Mandal	1000	3.00	S.N
8	M. P. Patel	Ubhad	Mandal	1000	3.00	S.N
9	Pareshbhai P. Patel	Ubhad	Mandal	1000	3.00	S.N
10	Pushakarbhai P. Shukla	khoraaj	Sanand	1000	2.92	S.N
11	Parnit P.Shukla	khoraaj	Sanand	1000	2.92	S.N

S. No	Name	Village	Taluka	Area (Sq-mt)	Subsidy	S.N/G.H
12	Gitaben P. Shukla	khoraaj	Sanand	1000	2.92	S.N
13	Gopi P. Shukla	khoraaj	Sanand	1000	2.92	S.N
14	Rameshbhai K. Patel			1000	2.88	S.N
15	Heenaben H. Patel	Mandal	Mandal	4000	10.42	S.N
16	Anjnaben Vipulbhai Patel	Gamdi	Dascroi	1000	2.95	S.N
17	Savitaben Dahyabhai Patel	Gamdi	Dascroi	1000	2.95	S.N
18	Vipulbhai Prabhudas Patel	Gamdi	Dascroi	1000	2.95	S.N
19	Prabhudas Becharbhai Patel	Gamdi	Dascroi	1000	2.95	S.N
20	Kalaben K. Patel	Vatava	Dascroi	1000	2.88	S.N
21	Pravinbhai K. Patel	Gamdi	Dascroi	1000	2.85	S.N
22	Vinubhai K. Patel	Gamdi	Dascroi	1000	2.86	S.N
23	Jivansingh V. Dabhi	Bagodara	Bavla	4000	9.49	S.N
24	Induben M. Dabhi	Bagodara	Bavla	4000	9.49	S.N
25	Jamben Dabhi	Bagodara	Bavla	4000	9.49	S.N
26	Mahendra Singh Dabhi	Bagodara	Bavla	4000	9.49	S.N
27	Keshva Jivan Dasji Guru Gyan Jivan Dasji	Sarangpur	Baravala	4000	10.25	S.N
28	Sadhu Shree Jiprakash Dasji Guru Gyan Narayana Swroop Dasji	Sarangpur	Baravala	4000	10.25	S.N
29	Tribhovanbhai H. Patel	Odhavapuri	Detroj	1000	2.70	S.N
30	Vinubhai H. Patel	Odhavapuri	Detroj	1000	2.70	S.N
31	Anilbhai N. Iani	Sanand	Sanand	1000	2.88	S.N
32	Gautam kumar D. Parmar	Virpur	Dholka	1000	2.38	S.N
33	Hashmu khbhai D. Parmar	Virpur	Dholka	1000	2.38	S.N
34	Dahyabhai M. Parmar	Virpur	Dholka	1000	2.38	S.N
35	Madhuben D. Parmar	Virpur	Dholka	1000	2.38	S.N
36	Sanjaybhai M. Patel	Sarangpur	Barvala	4000	10.25	S.N
37	Gordhanbhai D. Patel	Sarangpur	Barvala	4000	10.25	S.N
38	Amarben G. Parmar	Dodar	Sanand	4000	10.07	S.N
39	Ghanshyambhai R. Parmar	Dodar	Sanand	4000	10.07	S.N
40	Mahendrabhai K. Patel	Mandal	Mandal	4000	9.62	S.N
41	Ambaben K. Patel	Vatava	Dascroi	2000	5.12	S.N
42	Pareshbhai R. Patel	Gamdi	Dascroi	3000	8.40	S.N
43	Jogeshbhai R. Patel	Gamdi	Dascroi	3000	8.40	S.N
	Total			84000	220.81	

Annexure IV: Jharkhand

A. Physical and Financial Outlay of the Scheme for year 2011-12

S. No.	Item	Units	Target	
			Physical	Financial (Rs in lakh)
1	Seed production of Vegetables	Ha.	50	25.00
2	Vegetable seedling production	Ha	2	208.00
3	Seed infrastructure (for handling, processing, packing, storage etc. of seed of horticulture crops)	No.	1	200.00
4	Vegetable cultivation	Ha.		
	Open field	Ha.	400	90.00
	Hybrid veg.	Ha.	400	135.00
5	Organic farming			
	HDPE	No.	200	10.00
6	Markets			
	Apni Mandi		9	180.00
	Retail outlet		9	82.50
7	Training of farmers within the State	No.	2500	18.75
8	Promotion of farmers	No	100	200.00
9	Baseline survey		1	10.00
10	Mission management/Administrative Cost			40.79
	Total			1,200.00

Source: VEGFED, Ranchi

B. Physical targets & Achievement of VIUC during 2011-12

S. No.	Item	Units	Physical	
			Target	Achievement
1	Seed production of Vegetables	Ha.	50	50
2	Vegetable seedling production	Ha	2	2
3	Seed infrastructure (for handling, processing, packing, storage etc. of seed of horticulture crops)	No.	1	1
4	Vegetable cultivation	Ha.		
	Open field	Ha.	400	400
	Hybrid veg.	Ha.	400	400
5	Organic farming			
	HDPE	No.	200	222
6	Markets			
	Apni Mandi		9	---
	Retail outlet		9	---
7	Training of farmers within the State	No.	2500	2500
8	Promotion of farmers	No	100	---
9	Baseline survey		1	
10	Mission management/Administrative Cost			

Source: VEGFED, Ranchi

C. Financial targets & Achievement of VIUC during 2011-12

S. No.	Item	Units	Financial (Rs in lakh)	
			Target	Achievement
1	Seed production of Vegetables	Ha.	25.00	25.00
2	Vegetable seedling production	Ha	208.00	208.00
3	Seed infrastructure (for handling, processing, packing, storage etc. of seed of horticulture crops)		200.00	200.00
4	Vegetable cultivation	Ha.		
	Open field	Ha.	90.00	90.00
	Hybrid veg.	Ha.	135.00	135.00
5	Organic farming			
	HDPE	No.	10.00	10.00
6	Markets			
	Apni Mandi		180.00	---
	Retail outlet		82.50	---
7	Training of farmers within the State	No.	18.75	18.75
8	Promotion of farmers	No	200.00	150.00
9	Baseline survey		10.00	6.21
10	Mission management/Administrative Cost		40.79	25.05
	Total		1,200.00	868.01

Source: VEGFED, Ranchi

D. Area, production & productivity, mentioned by Farmers during the Survey

Response by IGS and CTRAN farmers			
Vegetable	Area (ha)	Production (qt)	Productivity (qt/ha)
Tomato	5.74	50.53	8.80
Potato	1.82	17.13	9.41
Brinjal	2.36	37.88	16.05
Chilly	0.32	3.39	10.60
Cabbage	17.26	44.80	2.60
Cucumber	0.98	8.16	8.33
Okra	0.24	1.61	6.70
Peas	0.42	14.62	34.82
Bitter gourd	0.40	3.20	8.00
Onion	10.00	0.80	0.08
Beans	0.39	8.03	20.29
Total	39.93	190.15	4.76

E. Cost of production of major crops mentioned by farmers

Crops	Land Preparation Cost (Rs/ha)	Seed (Rs/Ha)	Fertilizer (Rs/Ha)	Plant protection chemicals (Rs/Ha)	Irrigation (Rs/Ha)	Labour (Rs/Ha)	Total (Rs/Ha)
Tomato	5654.76	4171.43	5279.16	3685.71	3508.33	857.14	23156.53
Brinjal	8375.00	5375.00	7875.00	5166.67	4541.66	3333.33	34666.66
Peas	7125.00	6166.67	5325.00	5104.16	5166.66	625.00	29512.49
Cabbage	7666.66	4504.16	5066.67	5058.33	5066.66	2875.00	30237.48
Beans	7301.58	4951.05	5952.38	4674.60	4656.08	5238.09	32773.78

Annexure V: Nagaland

A. Physical & Financial Outlay and Achievement of the Scheme for Year 2011-12

VIUC Progress in Nagaland till October 12						
S. No.	Item	Units	Target		Achievement	
			Physical	Financial	Physical	Financial
1	Vegetable cultivation	Ha.				
	i Open field	Ha.	31.50	32.30	31.50	32.30
	ii Hybrid veg.	Ha.	275.50	78.65	275.50	78.65
2	Protected Cultivation					
	I Green House Structure	Sq.M	4,000	74.52	4,000	74.52
	i Fan & Pad system	Sq.M				
	ii Naturally ventilated system	Sq.M				
	iii Tubular structure	Sq.M				
	iv Wooden structure	Sq.M				
	v Bamboo structure	Sq.M				
	II Shade Net House					
	i Tubular structure	Sq.M				
	ii Wooden structure	Sq.M				
	iii Bamboo structure	Sq.M				
	III Cost of planting material and other inputs of high value vegetables grown in green house/poly house shade net house	Sq.M	4,000.00	4.73	4,000.00	4.73
3	Promotion on INM/IPM					
	i IPM (Knap Sack Sprayer)	Nos.	278.00	6.12	278.00	6.12
4	Organic Farming					
	i Vermicompost Units (to be renamed as organic input production)					

VIUC Progress in Nagaland till October 12						
S. No.	Item	Units	Target		Achievement	
			Physical	Financial	Physical	Financial
	a Permanent structure of (30*8*2.5")					
	b HDPE vermibed of 32 cft (4*4*2')		417	20.85	417.00	20.85
5	Training of farmers within the State		318	3.70	318	3.70
6	Post harvest management					
	Plastic Crates	Nos.	1,390	9.73	1,390	9.73
7	Markets					
	i Rural Market/Apni mandies/Direct markets	Nos.	1	10.00	-	-
	ii Collection/aggregation centre at production cluster @ Rs. 8 lakh/unit	Nos.	1	10.00	-	-
8	a Promotion of farmers Association/Groups of 15-20 farmers/20 ha and tie up with financial Institution and aggregators (@ Rs. 2 lakh/group/annum) (no)	FIG	139.00	35.00	139.00	35.00
	b Baseline survey (no)	Nos.	1.0	10.00	1.0	10.00
9	HRD - Training of Farmers (no) @ Rs. 1500/per farmer for 2 days					
10	Water Pump	Nos.	139.00	41.70	139.00	41.70
11	Transportation			12.7		12.7
	Total			350.00		330.00

B. Area, production & productivity, mentioned by Farmers during the Survey of 2010-2011 and 2011-2012

Districtwise Area and Production of Vegetables in Nagaland During 2010-11																
Area=Hectare																
Production=Mt.																
District	Potato		Sweet Potato		Cabbage		Cauliflower		Brinjal		Chillies		Peas		Others	
	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P
Kohima	500	3000	110	1400	110	800	60	180	25	225	400	2500	120	1000	3630	25190
Dimapur	450	3600	100	1000	110	1000	70	200	45	300	300	2100	220	1500	2420	16140
Total	950	6600	210	2400	220	1800	130	380	70	525	700	4600	340	2500	6050	41330

Districtwise Area and Production of Vegetables in Nagaland During 2011-12																
Area=Hectare																
Production=Mt.																
District	Potato		Sweet Potato		Cabbage		Cauliflower		Brinjal		Chillies		Peas		Others	
	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P
Kohima	520	4000	110	1400	120	900	60	180	35	245	600	3000	100	500	3875	28486.2
Dimapur	470	3700	100	1000	110	1100	70	200	45	310	300	2100	220	1500	2460	16360.1
Total	990	7700	210	2400	230	2000	130	380	80	555	900	5100	320	2000	6335	44846.3

C. Cost of production of major crops mentioned by farmers

	Seed	Land preparation (Rs/Ha)	Fertilizer (Rs/Ha)	Plant protection (Rs/Ha)	Irrigation (Rs/Ha)	Labour (Rs/Ha)	Total (Rs/Ha)
Beans	Deppt	4875	14750	1000	4833	4875	30333
Brinjal	Deppt	4500	15500	5000	4500	4500	34000
Cabbage	Deppt	6278	16000	1500	4833	6278	34889
Cauliflower	Deppt	5000	14667	2000	5500	5000	32167
Chilli	Deppt	5438	15117	4667	3714	5438	34374
Cole	Deppt	6500	15750	4875	4000	6500	37625
Gourds	Deppt	5500	15000	0	3000	5500	29000
Onion	Deppt	7000	17500	0	5000	7000	36500
Potato	Deppt	6958	15545	3875	3722	6958	37059
Pumpkin	Deppt	7000	0	0	0	7000	14000
Tomato	Deppt	6650	15340	3024	4417	6650	36081
Water Melon	Deppt	3000	16000	1000	4500	3000	27500

Annexure VI: Punjab

A. Physical & Financial Outlay and Achievement of the Scheme for Year 2011-12

VIUC Progress in Punjab till October 12						
S. No.	Item	Units	Target		Achievement	
			Physical	Financial	Physical	Financial
1	Seed production of Vegetables					
2	Vegetable seedling production	Ha.	1	52	0	0
3	Seed infrastructure (for handling, processing, packing, storage etc. of seed of horticulture crops)					
4	Vegetable cultivation	Ha.				
	i Open field	Ha.	500	112.5	1306.8	293.96

VIUC Progress in Punjab till October 12

S. No.	Item	Units	Target		Achievement	
			Physical	Financial	Physical	Financial
	ii Hybrid veg.	Ha.	700	236.25	320.4	107.98
5	Protected Cultivation					
	I Green House Structure	Sq.M				
	i Fan & Pad system	Sq.M				
	ii Naturally ventilated system	Sq.M				
	iii Tubular structure	Sq.M	20000	93.5	11616	62.78
	iv Wooden structure	Sq.M				
	v Bamboo structure	Sq.M				
	II Shade Net House					
	i Tubular structure	Sq.M	178000	140.7	0	0
	ii Wooden structure	Sq.M				
	iii Bamboo structure	Sq.M				
	III Cost of planting material and other inputs of high value vegetables grown in green house/poly house shade net house	Sq.M	60000	31.2	11616	6.1
6	Promotion on INM/IPM					
7	Organic Farming					
	i Adoption of organic Farming	Ha.	100	10	0	0
	ii Organic Certification		100	10	0	0
	iii Vermicompost Units (to be renamed as organic input production)		26	3.8	0	0
8	Training of farmers within the State					
9	Post harvest management					
	i Pack house	Nos.	90	135	4	6
	ii Pre-cooling unit	Nos.				
	iii Mobile pre cooling unit	Nos.				
	iv Cold storage units (Construction/ expansion/ Modernization)	MT	6000	144	0	0
	v Refer vans/containers	Nos.				
	vi Primary/Mobile/ Minimal processing unit	Nos.				
	vii Evaporative/ low energy cool chamber (8 MT)	Nos.				
	viii Preservation Unit (low cost)	Nos.	1	1	0	0
	ix Low cost onion storage structure (25MT)		10	5	0	0

VIUC Progress in Punjab till October 12						
S. No.	Item	Units	Target		Achievement	
			Physical	Financial	Physical	Financial
	x Pusa Zero energy cool chamber (100 kg)					
	xi Others					
10	Markets					
	i Rural Market/Apni mandies/Direct markets	Nos.	3	24	0	0
	ii Retail Markets/outlets (environmentally controlled)	Nos.	9	36	0	0
	iii Collection/aggregation centre at production cluster @ Rs. 8 lakh/unit	Nos.	5	20	0	0
	iv Static/Mobile Vending Cart/ platform with cool chamber.	Nos.	20	3	0	0
	v Motorized vending cart	Nos.	10	5	0	0
11	a Promotion of farmers Association/ Groups of 15-20 farmers/20 ha and tie up with financial Institution and aggregators (@ Rs. 2 lakh/group/ annum) (no)	No. of farmers	6000	130	6005	126
	b Baseline survey (no)					
12	HRD - Training of Farmers (no) @ Rs. 1500/per farmer for 2 days		470	7.05	140	0.49
13	Administrative Cost					
14	Others					
	Total			1200		603.3163

* Plastic Tunnels included under Tubular Structure for Vegetables, HDPE Vermi bed included in Vermicompost Unit

B. Area, production & productivity, mentioned by Farmers during the Survey of 2010-2011 and 2011-2012

Districts	Area (000 ha)		Production (000 MT)		Yield (MT/ha)	
	2010-2011	2011-2012	2010-2011	2011-2012	2010-2011	2011-2012
Jalandhar	31.125	31.698	688.552	705.642	22.1222	22.2614
Ludhiana	12.4	13.135	252.014	264.806	20.3237	20.1603
Sangrur	7.337	7.28	111.296	113.262	15.1691	15.5580
Patiala	14.46	14.673	268.66	270.185	18.5795	18.4138
F. Sahib	7.222	7.386	145.794	149.234	20.1875	20.2050
Total	72.544	74.172	1466.316	1503.129	19.27640	19.31969

Annexure VII: Uttarakhand

A. Physical & Financial Outlay and Achievement of the Scheme for Year 2011-12

S. No.	Item	Units	Target		Achievement	
			Physical	Financial	Physical	Financial
1	Seed production of Vegetables					
2	Vegetable seedling production	Sq.M				
3	Seed infrastructure (for handling, processing, packing, storage etc. of seed of horticulture crops)					
4	Vegetable cultivation	Ha				
	i Open field	Ha.	416	139.63	416	139.63
	ii Hybrid veg.	Ha.	524	117.87	336.86	117.87
5	Protected Cultivation					
	a Green House Structure	Sq.M				
	i Fan & Pad system	Sq.M				
	ii Naturally ventilated system	Sq.M				
	iii Tubular structure	Sq.M	12680	118.55	12680	118.55
	iv Wooden structure	Sq.M				
	v Bamboo structure	Sq.M				
	b Shade Net House					
	i Tubular structure	Sq.M				
	ii Wooden structure	Sq.M				
	iii Bamboo structure	Sq.M				
	c Cost of planting material and other inputs of high value vegetables grown in green house/poly house shade net house	Sq.M				
6	Promotion on INM/IPM	Ha	535	5.35	35	0.35
7	Organic Farming					
	i Adoption of organic Farming	Ha.				
	ii Organic Certification	No.				
	iii Vermicompost Units (to be renamed as organic input production)	Nos.	121	36.3	137	27.6
8	Training of farmers within the State		2030	15.23	642	4.99
9	Post harvest management					
	i Pack house	Nos.	15	22.5	5	7.5
	ii Pre-cooling unit	Nos.				
	iii Mobile pre cooling unit	Nos.				
	iv Cold storage units (Construction/expansion/ Modernization)	Nos.				
	v Refer vans/containers	Nos.				
	vi Primary/Mobile/ Minimal processing unit	Nos.				

S. No.	Item	Units	Target		Achievement	
			Physical	Financial	Physical	Financial
	vii Evaporative/low energy cool chamber (8 MT)	Nos.				
	viii Preservation Unit (low cost)	Nos.	5	5	3	3
	ix Low cost onion storage structure(25MT)					
	x Pusa Zero energy cool chamber (100 kg)					
	xi Others					
10	Markets					
	i Rural Market/Apni mandies/Direct markets	Nos.				
	ii Retail Markets/outlets (environmentally controlled)	Nos.				
	iii Collection/aggregation centre at production cluster @ Rs. 8 lakh/unit	Nos.				
	vi Static/Mobile Vending Cart/ platform with cool chamber.	Nos.	17	2.55	7	1.05
	v Motorized vending cart	Nos.				
11	i Promotion of farmers Association/ Groups of 15-20 farmers/20 ha and tie up with financial Institution and aggregators (@ Rs. 2 lakh/group/ annum) (no)		6000	120	6000	120
	ii Baseline survey (no)		1	5.675	1	5.675
12	HRD - Training of Farmers (no) @ Rs. 1500/per farmer for 2 days		300	5.25	100	1.5
13	Administrative Cost		1	6.05		2
	Total			600		549.715

Source: Department of Horticulture and Food Processing, Uttarakhand

B. Area, production & productivity, mentioned by Farmers during the Survey of 2010-2011 and 2011-2012

Crop	Area (ha)		Production (MT)		Productivity (MT/ha)	
	2010-2011	2011-2012	2010-2011	2011-2012	2010-2011	2011-2012
Cucumber	333.69	539.03	872.7	1411.8	2.62	2.62
Pea	569.89	1035.92	1605.8	2641.7	2.82	2.55
Potato	505.59	930.65	1436.2	2366.9	2.84	2.54
Okra	745.19	1205.28	1950.5	3155.8	2.62	2.62
Beans	690.8	1241.88	1932.7	3174.6	2.80	2.56
Capsicum	209	310.59	519.6	830.2	2.49	2.67
Total	3054.16	5263.35	8317.5	13580.9	2.72	2.58



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