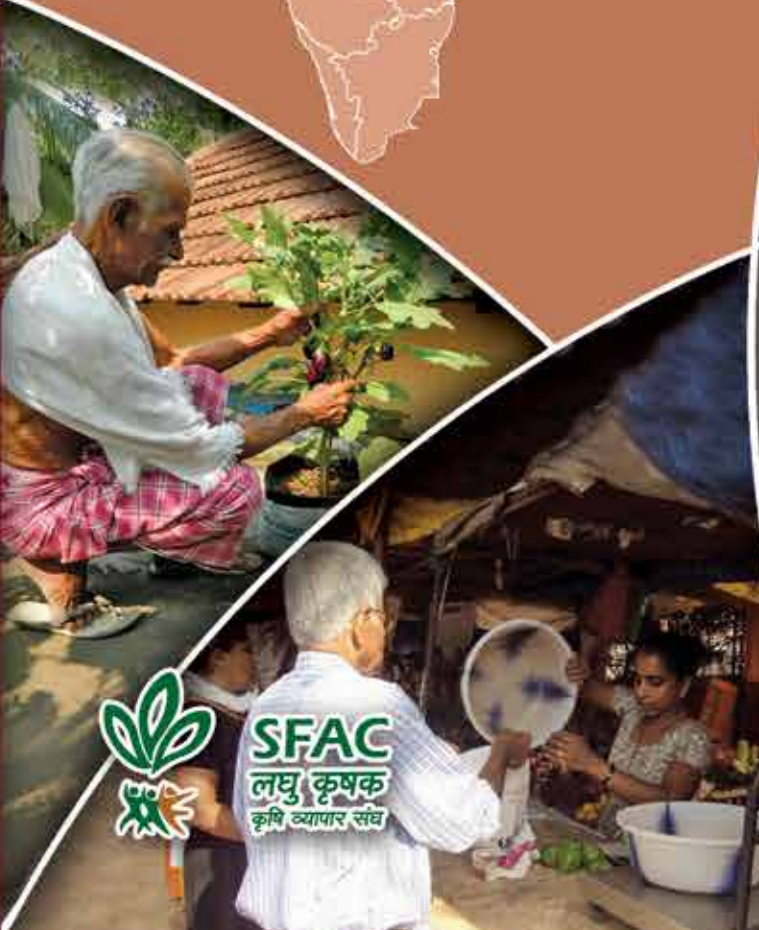
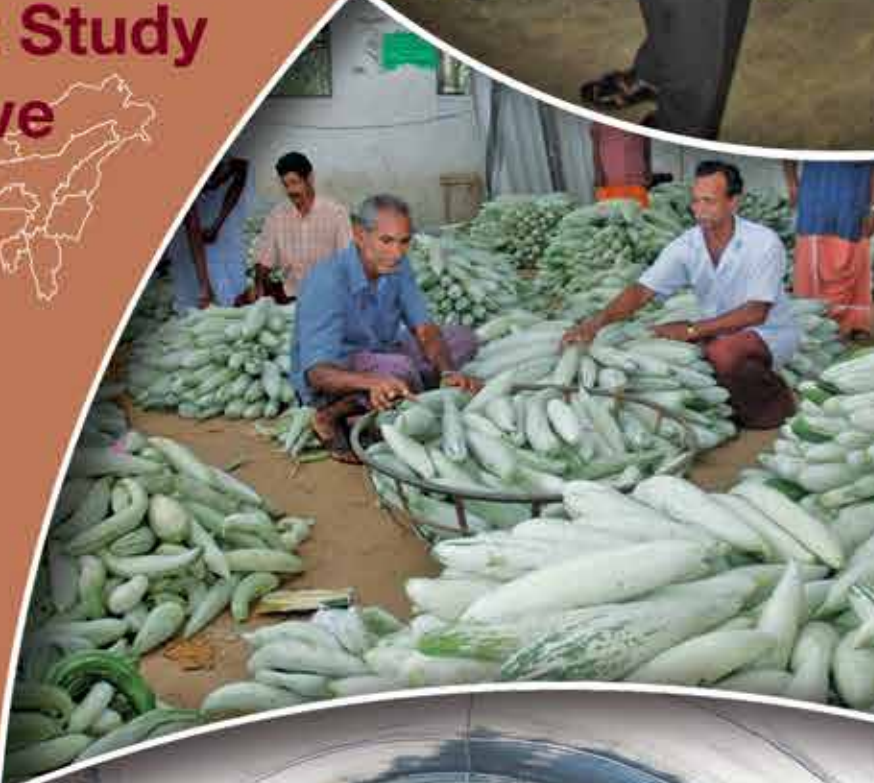




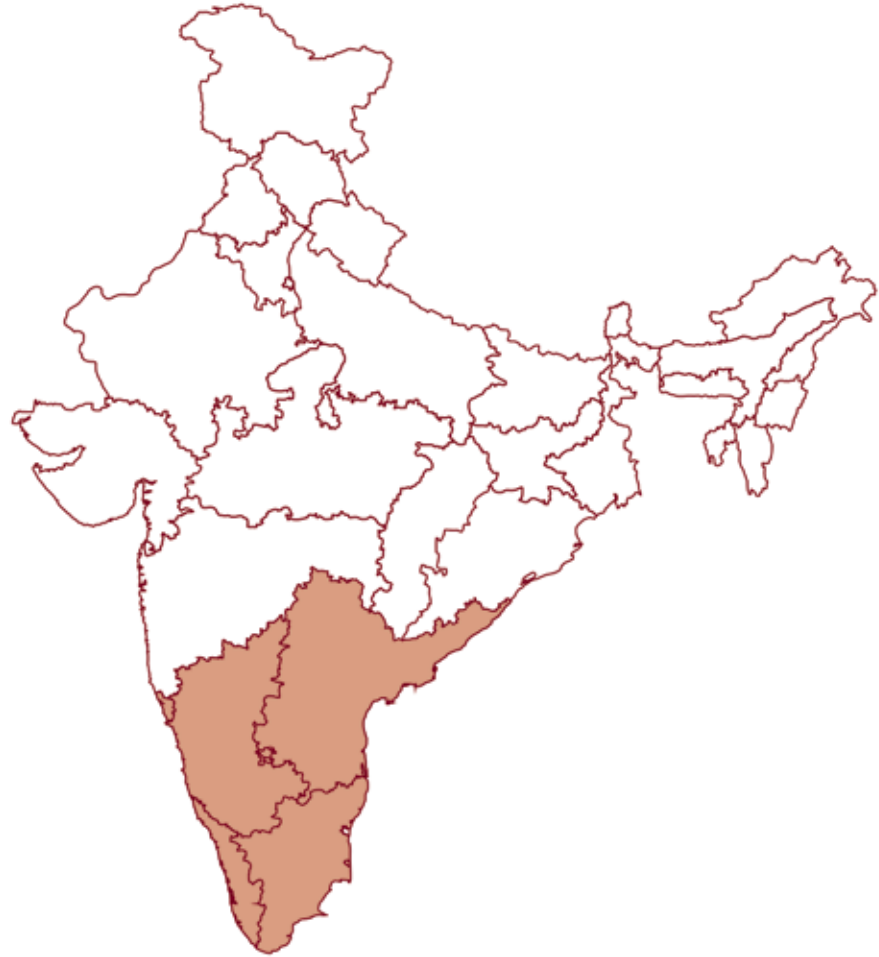
Impact Assessment Study of Vegetable Initiative for Urban Clusters

Andhra Pradesh | Goa
Karnataka | Kerala
Manipur | Tamil Nadu



SFAC
സസ്യ കൃഷക
കൃഷി വ്യാപാര സംഘം

Impact Assessment Study of Vegetable Initiative for Urban Clusters



**Andhra Pradesh | Goa | Karnataka
Kerala | Manipur | Tamil Nadu**



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 mobilization 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 mobilization 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 March 2013, SFAC commissioned the present Impact Assessment Study of VIUC through a Technical Support Agency (TSA) in the States of Andhra Pradesh, Goa, Karnataka, Kerala, Manipur and Tamil Nadu.

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.

Glossary

of Terms Used in This Report

ADH – Additional Director, Horticulture

ADO – Agricultural Development Officer

ASD – Agricultural Subdivisions

BKPCL – Bakhtiarpur Kishan Producer Company Limited. A registered FPO in Bihar

CFT – Cohesion Foundation Trust

DAO – District Agriculture Officer

DDH – Deputy Director, Horticulture

DH – Director, Horticulture

DHO – District Horticulture Office

DLMC – District Level Monitoring Committee

DoH & SC – Directorate of Horticulture and Soil Conservation

DPC – District Level Planning Committee

DPC – District Level Planning Committee

FGD – Field Group Discussions

FIG – Farmer Interest Group

FPO – Farmer Producer Organisation

HDO – Horticulture Development Officer

ICAR – Indian Council of Agricultural Research

IGS – Indian Grameen Services

IPM/INM Kits – Integrated Pest Management/Integrated Nutrient Management Kits

KCC – Kisan Credit Card

KVK – Krishi Vigyan Kendra
MFI – Microfinance Institutions
MIS – Management Information Systems
NGO – NON-Government Organisation
NHM – National Horticulture Mission
NMMI – National Mission on Microirrigation
PHM – Post Harvest Management
RI – Resource Institution
RKVY – Rashtriya Krishi Vikas Yojana
SAU – State Agriculture University
SDAO – Subdivisional Agriculture Officer
SHG – Self Help Group
SLEC – State Level Executive Committee
SLSC – State Level Sanction Committee
TSA – Technical Support Agency

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 with sample size of 50-55 across the stakeholders in the six states – Andhra Pradesh, Goa, Karnataka, Kerala, Manipur and Tamil Nadu. Out of the total sample size of 40, 40, 45, 46, 40 and 40 numbers of

Table 1: Statewise Details of Funds Released and Expenditure Incurred

	Release (Rs in lakh)	Expenditure (Rs in lakh)	Farmers' Interest Group (FIG)	Farmers' Producers' Organizations (FPOs)
India	30000	19884	5826*	54*
Andhra Pradesh	1700	1700	479**	3**
Goa	350	84.35	116	--
Karnataka	1700	1289.47	230	46#
Kerala	1,071.64	1070.94	158	2@
Manipur	350.29	294.97	84	2
Tamil Nadu	1700.44	5368.68	--	--

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

** These FPOs in Andhra Pradesh have been promoted by RI active in Medak district and part of Rangareddy. Overall the State Government had promoted about 150 Farmer Cooperatives (registered under amended Cooperatives Act of the state) covering 2250 farmers.

The State Government of Karnataka had promoted these Farmers' Associations registered under Societies Act.

@ The State Government had promoted these FPOs as Section 25 and Producer Company.

farmers' were surveyed to understand the impact of the scheme at the ground level.

The following table provides a snapshot of the statewise 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 FY 2011-12.

Andhra Pradesh

Impact of the Scheme:

- ◆ As per the baseline year (2010-11) area under vegetables was 651.20 thousand ha which increased to 660.97 thousand ha. Production increased by 1.5% from 11847 thousand MT to 12025.27 thousand MT.
- ◆ Farmers of the state are efficiently practicing improved package of practices like adoption of INM/IPM, organic farming, drip irrigation, plastic mulching and use of protected cultivation structures.
- ◆ The process of collectivisation in Andhra Pradesh has picked up momentum with the establishment of 82 farmers' cooperatives across the five districts. These cooperatives comprise 20-30 members, are legally registered to undertake business activities.

Recommendations

- ◆ Component of Training and capacity-building of farmers needs to be strengthened; this should also include exposure visits of farmers to production facilities as well as existing large FPOs.
- ◆ The staff of the implementing agency (SHM and Directorate of Horticulture) should undertake exposure visits for gaining knowledge on modern processing techniques and technologies being implemented.
- ◆ In order to sustain the infrastructure created for Protected Cultivation of vegetable under the initiative, implementing Department should engage horticulture experts either from State Agricultural University or any research institute.
- ◆ There is a need to increase intensity of work on components such as Post Harvest

Management, training on cultivation practices, collectivisation of farmers, creating operational farmers' collectives, which are in demand from farmers;

- ◆ Mechanism should be derived for linking farmers with institutional buyers, exporters, processing and value adding units, organised/mainstream markets.
- ◆ At the State level, mechanism for monitoring along with MIS should be developed by the State Implementing Agency to supervise the progress of the scheme on a regular interval basis.

Goa

Impact of the Scheme

- ◆ Area under vegetables increased slightly by 2.6 percent from 77 ha to 79 ha but production increased by 5 percent (1000 MT to 1050 MT).
- ◆ The concept of collectivization has been initiated in the state. A total of 1750 farmers have been mobilized into 116 farmers' groups, which will soon be registered as two Farmers' Producers' Organizations. Around 20-22 percent of the farmers have started joint procurement of inputs and marketing of the produce.
- ◆ Farmers have been linked with Department of Agriculture for their input requirement of seeds and planting materials. For other inputs, buyer and seller meetings have been organized.
- ◆ Direct and indirect employment has been generated by the scheme in the state. At collection centres and kiosks nearly 2500 people has been provided indirect employment in marketing of the produce.

Recommendations

- ◆ Component of Training and capacity-building of farmers needs to be strengthened; this should also include exposure visits of farmers to production facilities as well as existing large FPOs.
- ◆ The staff of the implementing agency (SHM and Directorate of Horticulture) and RI should undertake exposure visits for gaining knowledge on modern processing techniques and technologies being implemented.

- ◆ Cross pollination of practices and ideas from other similar states like Kerala can help improve the effectiveness of the initiative.
- ◆ There is a need to increase the intensity of work on components such as Post Harvest Management, training on cultivation practices, collectivisation of farmers, creating operational farmers' collectives, which are in demand from farmers;
- ◆ Mechanism should be derived for linking farmers with institutional buyers, exporters, processing and value adding units, organised/mainstream markets.
- ◆ At the State level, mechanism for monitoring along with MIS should be developed by the State Implementing Agency to supervise the progress of the scheme on a regular interval basis.

Karnataka

Impact of the Scheme

- ◆ The project cluster has been estimated to produce about 1.1 lakh MT of vegetables annually and this represents around 15 percent of the demand of urban cluster like Bangalore city.
- ◆ The farmers are carrying out large scale cultivation of hybrid vegetables. The fruit size of capsicum has been observed to be approximately 150 gm which has a very high market value. In addition to this, they are also growing special vegetables like red cabbage, green lettuce, red lettuce, broccoli, zucchini, cherry tomato, etc. and are getting premium prices for these vegetables.
- ◆ The Department of Horticulture has promoted modern package of practices and protected cultivation of vegetables (promotion of green house and shade net house) very aggressively. From nursery raising to harvesting of the vegetable, farmers have adopted innovative package of practices. They are using mulching papers, GI wire staking, drip irrigation and other protected cultivation structures for tomato, brinjal, cucumber, capsicum, gourds, etc. The beneficiaries of these structures are the FIG members themselves and they have been highly benefitted from this initiative.

- ◆ Among infrastructure creation, poly-house, shade net house, pack house and collection centres have been established.

Recommendations

- ◆ Component of Training and capacity-building of farmers needs to be strengthened; this should also include exposure visits of farmers to production facilities as well as existing cluster associations
- ◆ In order to sustain the infrastructure created for Protected Cultivation of vegetable under the initiative, implementing Department should engage horticulture experts either from State Agricultural University or any research institute;
- ◆ As only limited components were taken up during the year 2011-12, there is a need to include other components such as inclusion of Post Harvest Management and Market infrastructure, which are in demand from farmers;
- ◆ Project management fund should compulsorily have provision for contractual staff at the District level as well as provision for movement/local travel of field staff;
- ◆ Department and implementing staff need more clarity on importance of farmers' collectives in the entire development process.
- ◆ Mechanism should be derived for linking farmers to the market, as this aspect has totally been neglected in the first year of implementation of the scheme.
- ◆ Although some of the districts have taken initiative for convergence of various Government initiatives, strategy should be framed at the State level based on synergy amongst different schemes of the department, to derive optimum results from the initiative.
- ◆ At the State level, mechanism for monitoring along with MIS should be developed by the State Implementing Agency to supervise the progress of the scheme on a regular interval basis.

Kerala

Impact of the Scheme:

- ◆ Total area and production of vegetables in the surveyed clusters under both open pollinated and hybrid cultivation have increased

marginally, the yield increased by about 54% (from 107 q/ha to 165 q/ha).

- ◆ Availability of good quality inputs i.e. seeds and fertilizers have improved among farmers. Seed production and seedling component has also been included in the scheme for supplying of quality planting material.
- ◆ Department included the components of roof top gardens, terrace cultivation, kitchen homestead garden and other interventions for increasing the vegetable production. Good production has been obtained from rooftop cultivation and households are able to meet their own demand.
- ◆ The formation of FPOs in the State started in 2001 with VFPC. Sanghamaitri was formed recently, under the initiative. Both FPOs have a majority shareholding from the farmer.

Recommendations:

- ◆ Component of Training and capacity-building of farmers needs to be strengthened; this should also include exposure visits of farmers to production facilities as well as existing FPOs.
- ◆ The staff of the implementing agency (SHM and Directorate of Horticulture) should undertake exposure visits for gaining knowledge on modern processing techniques and technologies being implemented in other parts of the country. This will provide the necessary impetus for them to motivate farmers' groups.
- ◆ In order to sustain the infrastructure created for Protected Cultivation for vegetables under the initiative, implementing Department should engage horticulture experts either from State Agricultural University or any research institute.
- ◆ As only limited components were taken up during the year 2011-12, there is a need to include other components such as inclusion of Post Harvest Management and Market infrastructure namely mobile vans/carts, which are in demand from farmers;
- ◆ Mechanism should be derived for linking farmers with institutional buyers, exporters, processing and value adding units, organised/mainstream markets, as this aspect has totally

been left out in the first year of implementation of the scheme.

- ◆ Linkages can be established between FPOs of different States. This will help them barter specific produce of their respective States between themselves, help them fulfil demand and introduce varieties of vegetables in their respective States.
- ◆ The State should introduce the concept of value addition for vegetables. This can increase the shelf life of the vegetables and also realise a higher value for the farmer.
- ◆ At the State level, mechanism for monitoring along with MIS should be developed by the State Implementing Agency to supervise the progress of the scheme on a regular internal basis.

Manipur

Impact of the Scheme

- ◆ It has been observed that cost of production has not reduced in spite of the coverage of 60-65 percent farmers under distribution of inputs. Although, inputs like seeds, vermicompost and some other inputs have been provided to farmers but due to lack of employment labour wages is quite high and 70-80 percent of the production cost is incurred on labour charges for land preparation and harvesting of vegetables.
- ◆ Major percentage of farmers has been encouraged for off season vegetable production in shade net houses.
- ◆ A few FIGs have initiated collective farming of vegetable on leased land.
- ◆ The Department of Horticulture and Soil conservation has initiated the process and is trying to converge Microirrigation Mission with VIUC.
- ◆ Two registered FPOs will open new opportunities of employment among farmers who are directly or indirectly linked to it.

Recommendations:

- ◆ Timely and systematically synchronized release of funds is essential for timely execution of the scheme.

- ◆ Provision of budget for training component and exposure visits should be added to it.
- ◆ Allocation of additional funds and manpower engaged for proper monitoring of the scheme.
- ◆ RI and Department of Horticulture need more human resources for better implementation of VIUC as they are facing challenges in account keeping, training and capacity-building.
- ◆ Although resource institution and department are very clear about their objective but they need regular training on capacity-building, on aspect of FPO commercial business sustainability, package of practices and for creation of forward and backward linkages with different stakeholders.
- ◆ Need to hire technical staffs that have good knowledge of computer and IT for better and timely handling of MIS aspects of all the components of the scheme for the State.
- ◆ Provision of transportation allowance for certain and specific period and hiring of vehicles for easy monitoring and implementation by field staff as Manipur is a hilly terrain and transportation is one of the challenges on the way of better implementation.
- ◆ Presently fund is routed through State Exchequer which normally delays the fund transfer to the Department and finally obstructs the supply of seeds and other essential inputs to farmers. This part of the scheme needs serious consideration to ensure time framed and planned execution of the scheme.
- ◆ Allocation of funds to different components should be reviewed and revised according to the cost norms being incurred in the State.
- ◆ Farmers need to impose with more number of quality training on every aspects of FPO , FIG and modern package of practices.

Tamil Nadu

Impact of the Scheme:

- ◆ There was no noticeable or visible improvement on any activity resulting in additional employment generation in the project area of the State.
- ◆ Overall, the impact of the scheme cannot be objectively ascertained. Even the interaction with farmers and field visits revealed that there was no significant progress in any of the components under the scheme.

Recommendations:

- ◆ Component of Training and capacity-building of farmers needs to be strengthened; this should also include exposure visits of farmers to production facilities as well as existing commercially successful vegetable handling FPOs. Training is required on modern package of practices for vegetable production, protected cultivation as well as on functioning of FIGs/ farmers' cooperatives and FPOs.
- ◆ It is seriously suggested that the staff of the Implementing Agency should initially be thoroughly oriented about the implementation process and importance of the activities under each of the component under the scheme. All the staff involved in the implementation process of different components should also undertake exposure visits for gaining knowledge on modern production, processing techniques and technologies for improved production and marketing of vegetables. This may provide encouragement and the necessary impetus for them to motivate farmers' groups, further.
- ◆ Cross pollination of practices and ideas from other States like Kerala, Karnataka and Goa can help improve the effectiveness of the initiative in Tamil Nadu. For example, homestead and terrace kitchen gardens as practiced in Kerala, protected cultivation techniques practiced by Karnataka, retail selling approach by Goa, etc. can be implemented in the State.
- ◆ There is a need to increase focus on components such as Pre & Post Harvest Management, training in improved vegetable cultivation practices, collective production and marketing of produces by the farmers, establishing collection centres, pack houses, on farm sorting/grading as per requirement of the consumers, collective use of packaging material and transport are some of the major initiatives that need to be introduced to improve the efficiency in the production and marketing chain in vegetable sector in the State.
- ◆ Mechanism should be developed for linking vegetable growing farmers with institutional

buyers, exporters, processing and value adding units, organised/mainstream markets, as these aspects have been hardly covered in the first year of implementation of the scheme.

- ◆ At the State level, mechanism for monitoring along with proper MIS should be developed by the State Implementing Agency to supervise the progress of the scheme on a regular interval basis.

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 approval of Rs. 300 cr for the year 2011-12. This was dovetailed under Rashtriya Krishi Vikas Yojana (RKVY) to enhance production and productivity of vegetables and augmentation of farmers' income alongwith 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 population of over one million. In case, no city in a State satisfied this criteria, then other urban cluster closer to one million populations 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 include 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, and
- ◆ Improved availability of quality vegetable at affordable prices to consumers
- ◆ Overall impact on vegetable pricing in targeted urban areas.

Chapter 2

Approach and Methodology

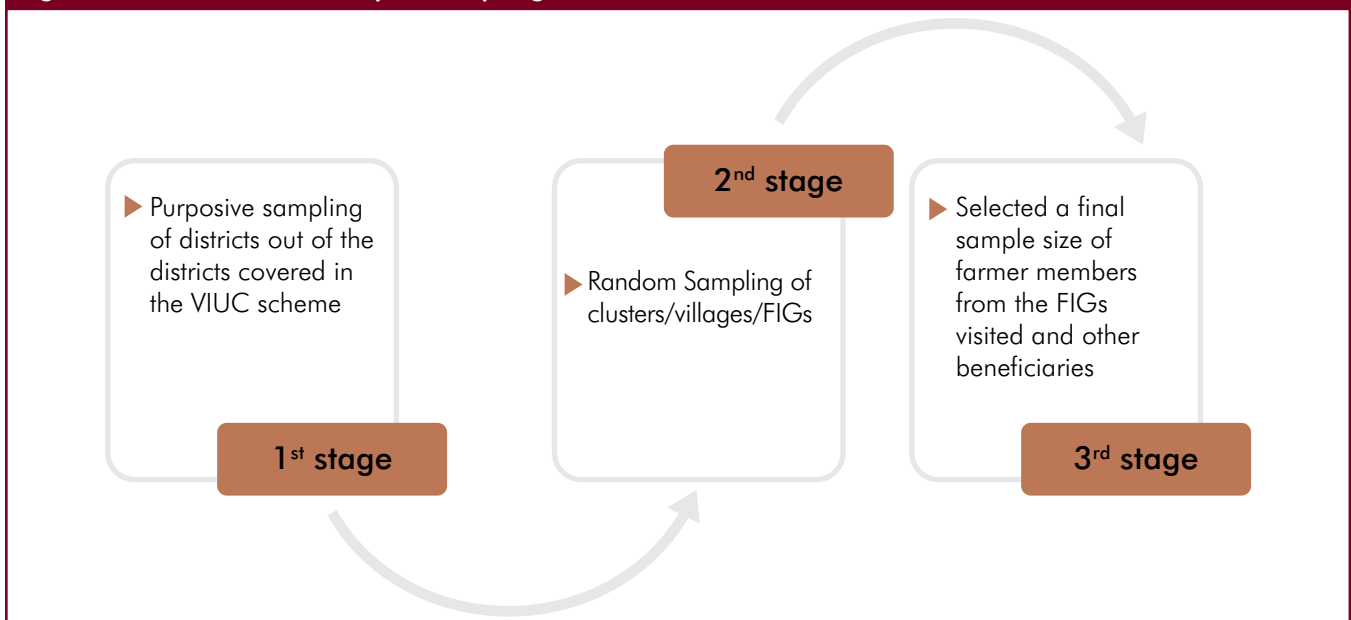
This chapter describes the approach and methodology adopted for assessing the overall impact of the initiative.

Approach & Methodology

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 the following steps:

- ◆ **Secondary Research:** analysis of available documents in 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;

Figure 1: Three-fold Multilayer Sampling



- ◆ **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:

Table 2: Number of Respondents in Various States

Respondents	Andhra Pradesh	Goa	Karnataka	Kerala	Manipur	Tamil Nadu
Implementing agency officials (State, District, Block)	6	2	4	4	3	6
Resource Institutions (State, District, LRPs)	--	4	--	--	1	--
Farmers Members (Farmers Interest Groups-FIGs)	40	40	45	46	40	40
Scheme beneficiaries (other than farmers such as infrastructure owners, aggregators, consolidators, etc.)	2	--	2	2	--	--
Total	48	46	51	52	44	46

A survey was initiated by conducting initial one-on-one meetings with officials of the Nodal Agency at the State and District level. This was followed by separate meetings with RIs and beneficiaries.

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. Andhra Pradesh— Technical Support Agency (TSA - MSG) visited the project area which is spread in the District of Rangareddy and Mahbubnagar.
2. Goa-- Technical Support Agency (TSA - MSG) visited the project area which is spread in the District of North Goa and South Goa.
3. Karnataka-- Technical Support Agency (TSA - MSG) visited the project area which

is spread in the District of Bangalore urban and Bangalore rural.

4. Kerala-- Technical Support Agency (TSA - MSG) visited the project area which is spread in the District of Thiruvananthapuram and Ernakulam.
5. Manipur-- Technical Support Agency (TSA - MSG) visited the project area which is spread in the District of Bishnupur and Imphal East
6. Tamil Nadu — Technical Support Agency (TSA - MSG) visited project area which is spread in the District of Thruvallur and Kancheepuram.

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

Andhra Pradesh

Project Area and Stakeholders

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

VIUC Scheme in Andhra Pradesh

VIUC in the State of Andhra Pradesh is being implemented in the State capital: Hyderabad, having a population of 6,809,970 since 2011-12. State Horticulture Mission, Government of Andhra Pradesh has been appointed as the Nodal agency for implementing the project in the State and RKVY Cell under the Department of Horticulture looks after the overall implementation of the scheme. At the District level, Additional Director Horticulture (ADH) is the Nodal Officer looking after the implementation of the scheme.

Baseline Survey

To identify major vegetable production Districts and clusters, an independent agency, carried out the baseline survey in Andhra Pradesh. Baseline Survey highlighted the existing supply chain and other bottlenecks and also identified the vegetable growing clusters within the district. During the interaction with the Nodal Agency, 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

Presently the scheme is being implemented in five Districts - Rangareddy, Medak, Mahbubnagar, Chittoor and Vishakhapatnam. In 2011-12, the scheme was being implemented in only three

districts i.e. Rangareddy, Medak and Mahbubnagar but seeing its success, the initiative extended to two more Districts Chittoor and Vishakhapatnam in 2012-13. Major vegetable clusters which are 30 – 50 km from urban markets, are supplying vegetables to their respective targeted urban cluster.

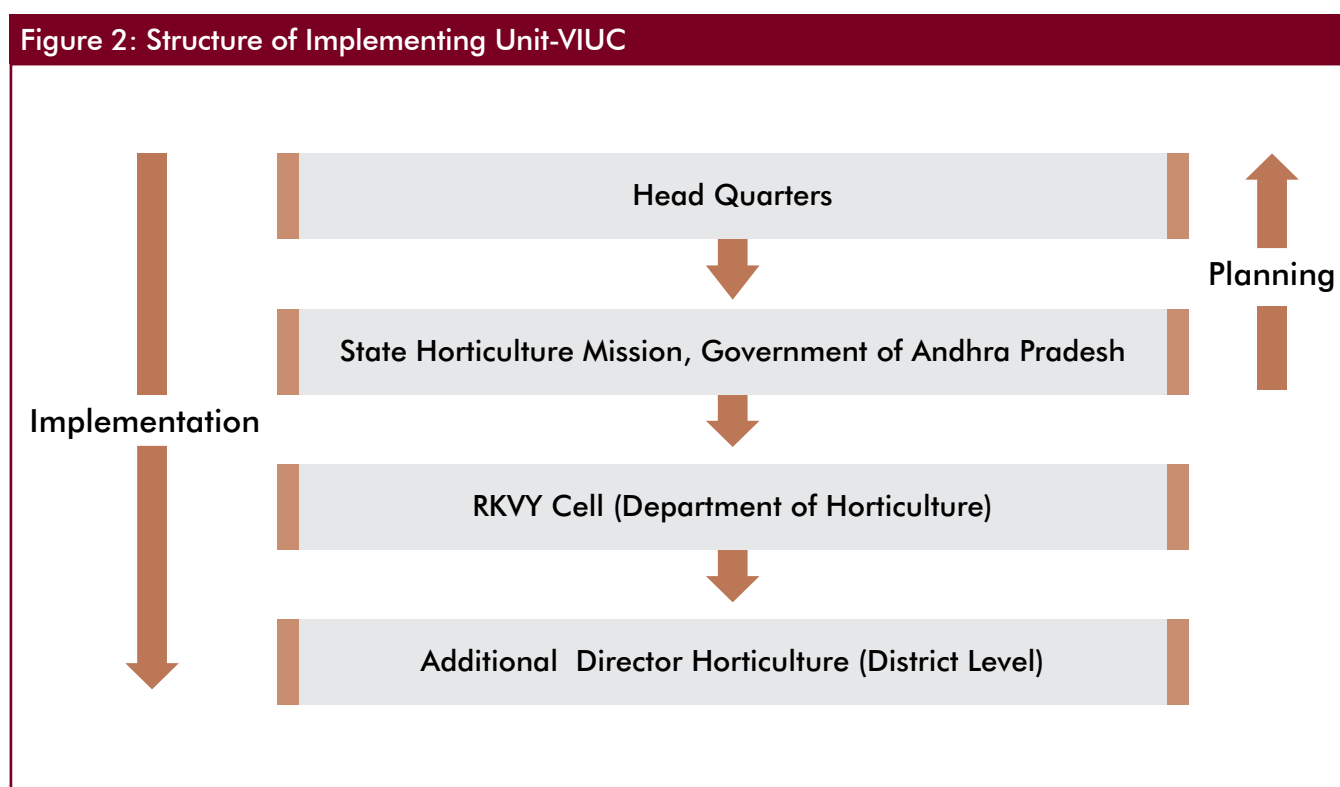
Implementing Partners of VIUC in Andhra Pradesh

The State Horticulture Mission, Government of Andhra Pradesh has been appointed as the Nodal agency for implementing the project in the State and RKVY Cell under the Department of Horticulture is looking after the overall implementation of the scheme. At District level, Additional Director Horticulture (ADH) is responsible for the overall implementation of the initiative.

Table 3: Stakeholders and their Coverage Area

Role	Name of Organization	Districts Covered under VIUC Scheme
Baseline Survey	Vrutti Livelihood Resource Centre	Rangareddy, Medak, Mahbubnagar
Nodal Agency	State Horticulture Mission, Government of Andhra Pradesh	Rangareddy, Medak, Mahbubnagar

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



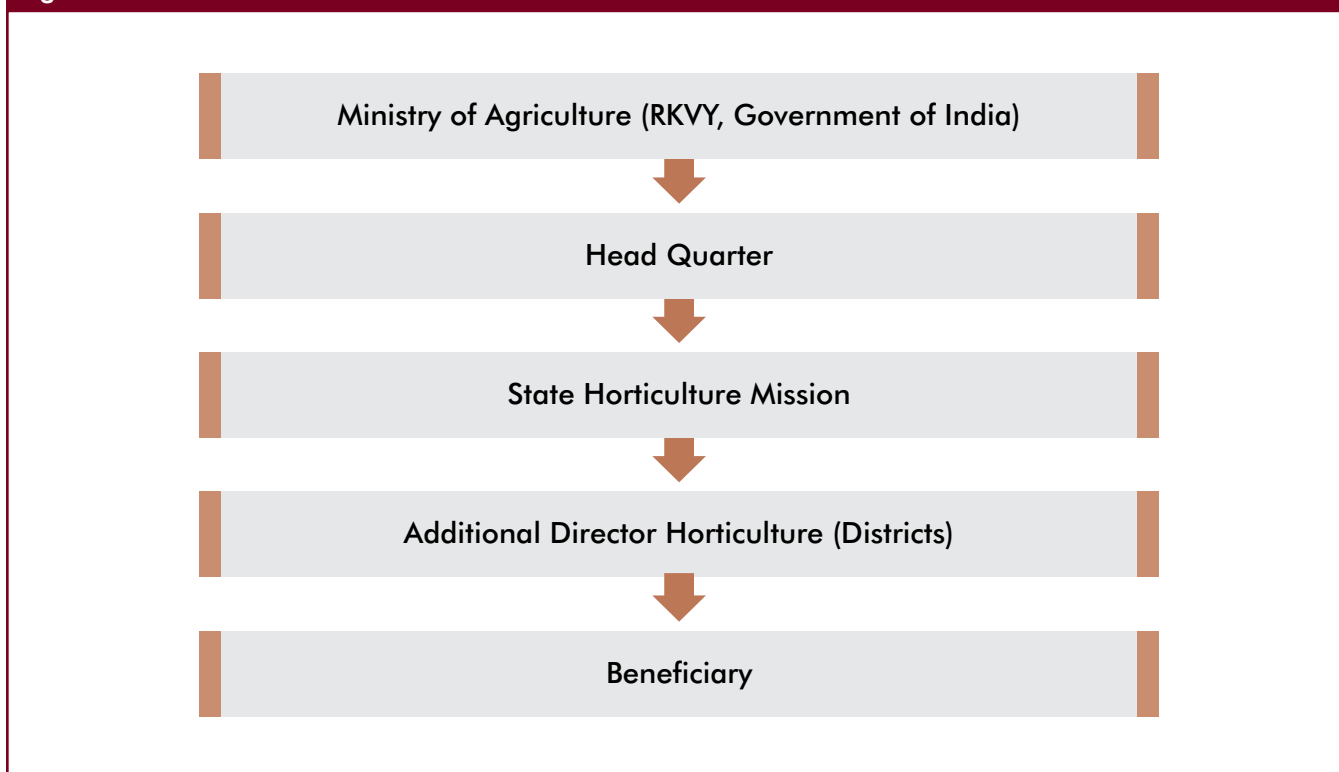
Planning and Implementation of Activities: The planning of the project activities takes place at the State level where the State Horticulture Mission prepares the State plan. From State Horticulture Mission, State plan is submitted to State Level Executive Committee (SLEC) which is the final authority for approval of plan for implementation. The approved State Plan is finally submitted to the 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 below:

Budget Outlay and Expenditure (2011-12): The total budget outlay approved for the State for the year 2011-12 was Rs. 1700.00 lakh. There is a separate provision of 7% budget for administration and miscellaneous expenditure.

Figure 3: Flow of Fund



Release Of Subsidy To Beneficiary

Figure 4: Release of Subsidy



The applications for subsidy are received through various channels, the most common of which are: through the farmers; through Additional Director Horticulture and direct application by beneficiaries. Once the applications are received and scrutinised, the fund flow takes place from the Head Quarters to the same channel through which the application was received.

The Mobilization of farmers and promotion of Farmers' Interest Groups (FIGs) and Farmers' Producers' Organisations (FPOs) in the State is being undertaken by only one Resource institution, Vrutti Livelihood Resource Centre, in some clusters of Rangareddy and Medak. In other districts and clusters, State Horticulture Department is undertaking the task.

Table 3 (i): Current status of FIG and FPO formation in Rangareddy and Medak clusters

Particulars	Target	Achievement (formed)
FPO	6	3
FIG	485	479
Total farmers	7500	7471

Source: Secondary information from RI

Table 3 (ii): Coverage of Farmers and Participation in capacity-building in Rangareddy and Medak clusters

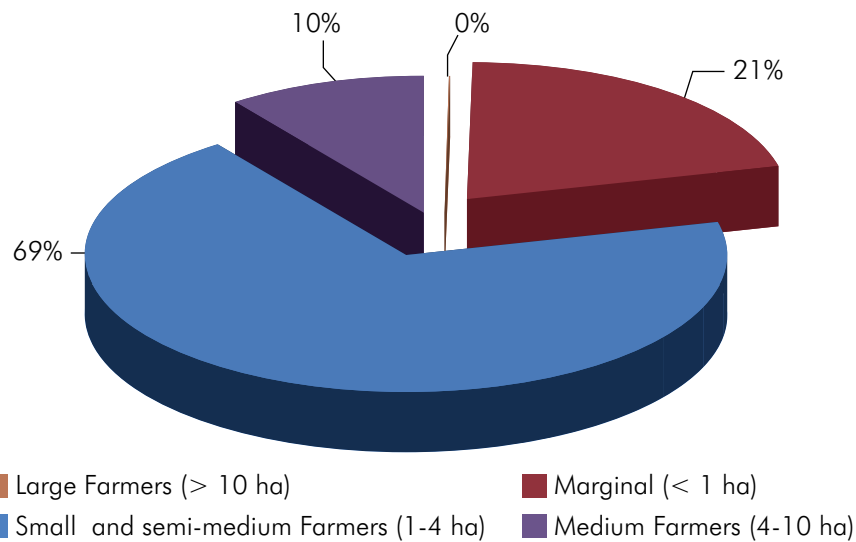
Particulars	Unit	Vrutti Livelihood Resource Centre
Districts		2
Clusters	Nos	6
Total Farmers	Nos	
Break-up of total farmers		
Marginal (< 1 Ha)	Nos	1539
Small and semi-medium Farmers (1-4 Ha)	Nos	4993
Medium Farmers (4-10 Ha)	Nos	729
Large Farmers (> 10Ha)	Nos	9
Meetings Conducted		
FPOs	Nos	14
FIGs	Nos	2780
Farmer	Nos	5245
% of members regularly participating in meetings		
FPOs	%	80
FIGs	%	63
Farmer	%	63
Capacity-Building for FIGs/FPOs		
FIG members oriented/trained & aware on VIUC	Nos	7200
Group leaders oriented/trained on FIG/FPO concept and management	Nos	479
FIG/FPO members oriented/trained on Account Keeping in VIUC	Nos	7200
FIG members trained on some or other best practices (for production, value addition and marketing) under VIUC	Nos	5540
Bank Account Opened (Status)		
FPOs	Nos	-
FPOS (Share Collection)		-
FIGs	Nos	213
Total Saving	Rs. Lacs	0.90

Source: Secondary information from RI

The following figure shows the coverage of farmers in the area covered by Resource Institution Vrutti Livelihood Resource Centre. As

illustrated, 90 percent of the small and marginal farmers have been covered.

Figure 5: Distribution of farmers covered by RI



Performance of the Scheme

This section 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 6.

This section 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.

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. 1700.00 lakhs. The share of all the components is illustrated in Figure 7 below.

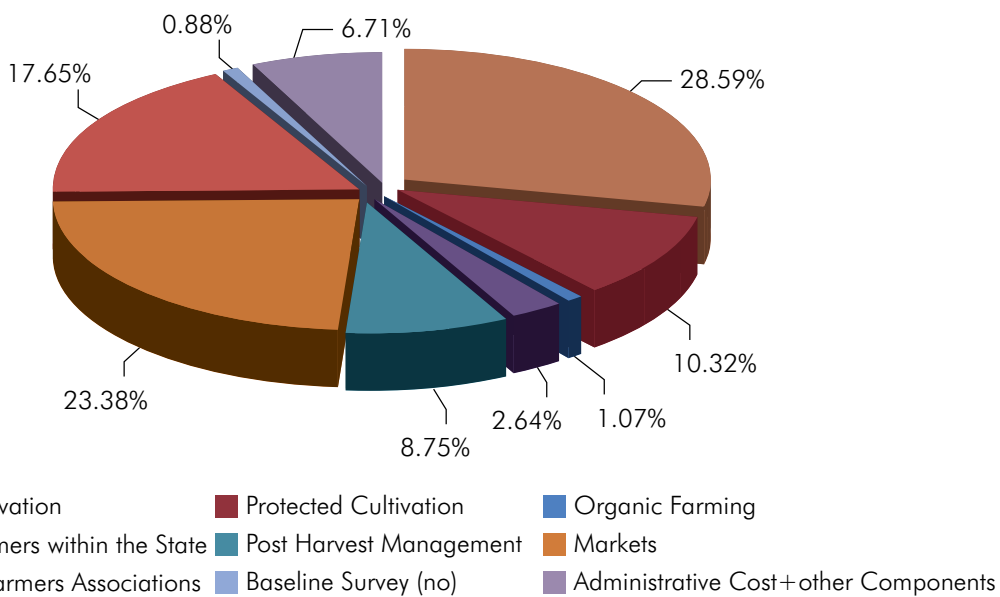
Of the total approved financial outlay of Rs. 1700.00 lakhs, maximum fund has been allocated for the component of vegetable cultivation (28.59%) followed by market infrastructure (23.38%), promotion of farmers' association (17.65%) and protected cultivation (10.32%). Small funds have been allocated for other components. The allocation of fund is very appropriate and almost all the components have been covered.

A detailed component-wise Physical targets & Financial outlay for the year 2011-12 is given in Annex- I. Although, the present status of financial achievement of different components can be delineated from the following bar graph, in which physical and financial achievement are noticeably evident.

Figure 6: Performance of the Scheme

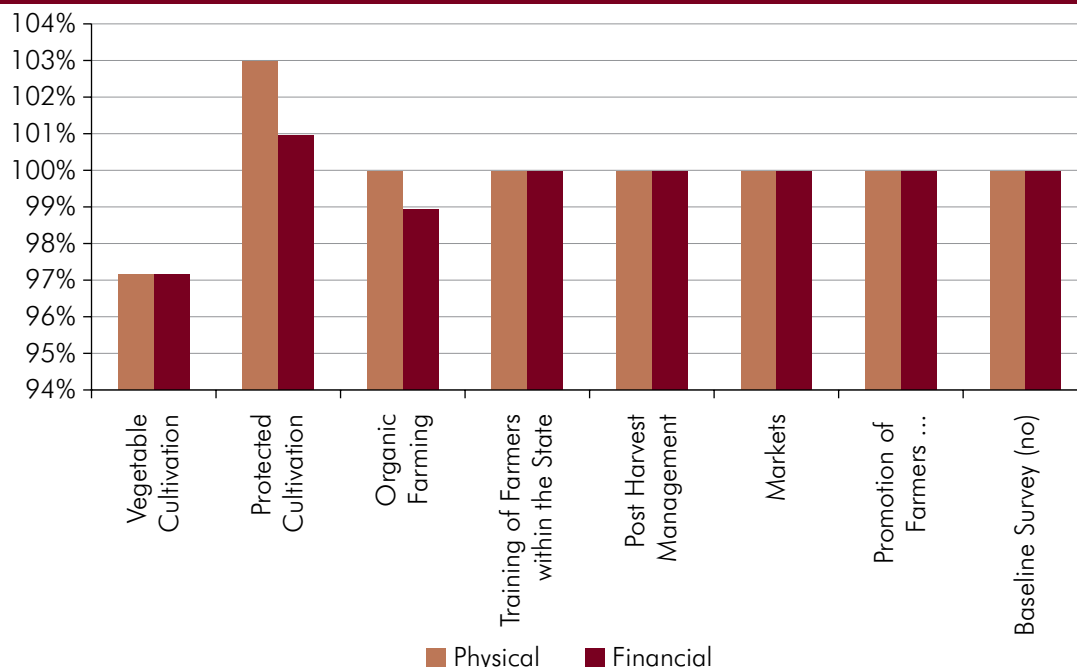


Figure 7: Approved Action Plan (2011-12) for Andhra Pradesh



Source: Department of Horticulture, Andhra Pradesh

Figure 8: Physical and financial Achievement for VIUC in Andhra Pradesh



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

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

Table 4: Component-wise physical and financial targets and achievements

Component	Physical Performance	Financial Performance
Vegetable Cultivation	<p>97 percent achievement</p> <p>As per the approved plan, 1440 ha area was approved for expansion under hybrid vegetable cultivation, of which 1400 ha area has been covered.</p>	<p>97 percent achievement</p> <p>The financial allocation for vegetable cultivation under hybrid cultivation was Rs. 486 lakh of which Rs. 472.50 lakh has been utilized.</p>
Protected Cultivation	<p>103 percent achievement</p> <p>Physical allocation for different components of protected cultivation are as under:</p> <ul style="list-style-type: none"> i Naturally ventilated system– Physical target for establishment of naturally ventilated structure (Pandals for gourd/cluster and trellis for tomato) was 165 sq m area, of which 175 sq m area has been covered and physical achievement is 106 percent. ii Shade-net house - Physical target for establishment of shade net house was to cover 3600 sq m area, of which entire area has been covered. Physical achievement is 100 percent. <p>In addition to this, 0.4 sq m area has also been covered under construction of shade net in nursery raising.</p>	<p>101 percent achievement</p> <p>Financial allocation for different components are as under:</p> <ul style="list-style-type: none"> i Naturally ventilated system- Financial allocation for this component was Rs. 67.50 lakh, of which Rs. 68.25 lakh has been utilized. Financial achievement is 101 percent. ii Shade-net house- Financial allocation for this component was Rs. 108 lakh, of which Rs. 108 lakh has been utilized. Financial achievement is 100 percent. <p>In addition to this, Rs. 42 lakh has also been utilized under construction of shade net in nursery raising.</p>

Component	Physical Performance	Financial Performance
Organic Farming	<p>100 percent achievement</p> <p>i Adoption of organic farming- For adoption of organic farming, the target to was cover 150 ha area, of which around 150 ha area has been covered. Therefore, physical achievement is 100 percent.</p> <p>ii Organic certification- For organic certification, the target was to cover 100 ha area, of which entire area has been covered, and physical achievement is 100 percent.</p> <p>iii Vermicompost units/other units for input production- Physical target for this component was establishment of 150 units, of which 150 units have been established. Therefore, physical achievement for this component was 100 percent.</p>	<p>99 percent achievement</p> <p>i Adoption of organic farming- Financial allocation for this component was Rs. 6.00 lakh, of which Rs. 6.00 lakh has been utilized, therefore financial achievement is 100 percent.</p> <p>ii Organic certification- For organic certification, there was financial allocation of Rs. 4.75 lakh, of which Rs. 4.50 lakh has been utilized and financial achievement is 95 percent.</p> <p>iii Vermicompost units/other units for input production- Financial allocation for this component was Rs. 7.50 lakh, of which Rs. 7.50 lakh has been utilized and financial achievement is 100 percent.</p>
Post Harvest Management	<p>100 percent achievement</p> <p>The physical target for post harvest management was under the following components:</p> <p>i Pack house- As per the approved action plan, there was physical target of establishing 75 pack houses, of which 75 pack houses has been established. Physical achievement is 100 percent.</p> <p>ii Cold storage unit – Physical target was establishment of 4500 cold storage units of which 4500 units have been established, therefore physical achievement is 100 percent.</p> <p>iii Low cost onion storage structure- Physical target for this component was establishment of two onion storage structure, of which two structures, has been established. Therefore, physical achievement is 100 percent.</p> <p>iv Pusa zero energy cool chamber - Under this component, there was target of establishment of 75 units, of which 75 units have been established. Therefore physical achievement is 100 percent.</p>	<p>100 percent achievement</p> <p>Financial allocation for all these different components of post harvest management are as follows:</p> <p>i Pack house- Financial allocation for pack house was Rs. 112.5 lakh, of which Rs. 112.5 lakh has been utilized. Therefore, financial achievement is 100 percent.</p> <p>ii Cold storage unit- Financial allocation for this component was Rs. 33.75 lakh, of which entire fund has been utilized. Therefore, financial achievement is 100 percent.</p> <p>iii Low cost onion storage- Financial allocation for this component was Rs. 1.00 lakh, of which, Rs. 1.00 lakh has been utilized. Therefore, financial achievement is 100 percent.</p> <p>iv Pusa zero energy cool chamber- Financial allocation for this component was Rs. 1.50 lakh, of which entire fund has been utilized. Therefore, financial achievement is 100 percent.</p>
Market Infrastructure	<p>100 achievement</p> <p>The physical target for market infrastructure was under the following components:</p> <p>i Retail markets- Physical target under this component was establishment of 15 retail markets, of which 15 retail markets have been established, physical achievement is 100 percent.</p>	<p>100 achievement</p> <p>Financial allocation for market infrastructure was under the following components:</p> <p>i Retail markets- Financial allocation under this component was Rs. 60 lakh, of which Rs. 60 lakh has been utilized; therefore, financial achievement is 100 percent.</p>

Component	Physical Performance	Financial Performance
	<p>ii Collection centre- Physical target under this component was establishment of 75 collection centres of which 75 collection centres have been established and physical achievement is 100 percent.</p> <p>iii Motorized vending cart- Physical target under this component was distribution of 75 vending carts, of which 75 vending carts have been distributed. Therefore, physical achievement is 100 percent.</p>	<p>ii Collection centre- Financial allocation under this component was Rs. 300 lakh, of which only 300 lakh has been utilized; therefore, financial achievement is 100 percent.</p> <p>iii Motorized vending cart- Financial allocation for this component was Rs. 37.50 lakh, of which entire fund has been utilized; therefore, financial achievement is 100 percent.</p>
Promotion of Farmers Association/ Groups	<p>100 percent achievement Physical target was to form 150 farmers' group, of which 150 groups have been established.</p>	<p>100 percent achievement The financial allocation for this component was Rs. 300 lakh, of which total fund has been utilized.</p>
Training of Farmers+ Exposure Visits and other Training	<p>100 percent achievement Physical target under this component was to organise 1500 trainings, of which 1500 trainings have been organized.</p>	<p>100 percent achievement Financial allocation for this component was Rs. 45 lakh, of which Rs. 45 lakh has been utilized.</p>
Baseline Survey	<p>100 percent achievement Financial allocation for baseline survey was Rs. 15 lakh, of which entire fund has been utilized.</p>	
Administrative Cost	<p>Target was not provided in action plan. Rs 85 lakh has been utilized on technical support and management.</p>	

Out of the total fund of Rs. 1700.00 lakhs, total expenditure is of Rs. 1700 lakhs i.e. 100 percent of the total financial target has been achieved.

Summary

- ◆ As per the proposed action plan, total financial outlay for the year 2011-12 was Rs. 1700.00 lakhs.
- ◆ Maximum fund has been allocated for vegetable cultivation followed by protected cultivation; small fund has been allocated for other components.
- ◆ Except the component of vegetable cultivation and organic farming, all the components have achieved 100 percent of the target.
- ◆ Total utilization of the fund is Rs. 1700 lakhs, which is 100 percent of the total target.

Situational Analysis of the Scheme

This section 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.

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 different clusters of Andhra Pradesh. The major points emerged out of the survey have been discussed in following section:

Land Holding: Average land holding size of the surveyed farmers is 1.45 ha. All the farmers of the area belong to marginal farmers' category. Only small farmers have been covered under the scheme as beneficiary. None of the medium and

large farmers has been covered under the scheme in the surveyed area.

Irrigated Land: Out of the total cultivable area of 58 ha, more than 50 percent of the cultivable area is under vegetables. Almost 100 percent of the farmers use tubewell irrigation as a major source of irrigation. Of the total cultivable area, about 20% is under shade nets.

Seed Used: Almost 100 percent of the surveyed farmers are using hybrid seeds. Of which around 75% of the farmers are procuring these seeds from local input suppliers and 25 percent procure from Government and private agencies. 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 started only in one cluster.

Input Procurement: All the farmers of surveyed area are procuring the inputs like seeds, fertilizers and pesticides, irrigation equipment, tractors and credit facilities from Government and private agencies. Almost 50 percent of the farmers have started collective procurement of inputs in Rangareddy cluster but in other clusters farmers are still procuring the inputs individually.



Fig 9: Vermicompost Preparation

Adoption of Integrated Pest Management: Almost 100 percent of the farmers of the surveyed clusters are adopting integrated pest and nutrient management techniques on 80 percent of the area. Around 50 percent of the farmers are adopting organic farming techniques. Inputs for IPM and organic farming are procured both from Government as well as private agencies.

Adoption of On-farm Management Practices: All the farmers of the surveyed area are adopting on-farm management practices like drip irrigation, plastic mulching and shade net house on 54 percent of the area. For learning about these technologies, all the farmers approached State Horticulture Department.

Post Harvest Losses and Value Addition: As per the data of surveyed farmers, the extent of post harvest losses of major crops like tomato, capsicum, cauliflower, cabbage, pole beans, ridge gourd, cucumber, bottle gourd, bitter gourd, varies from 10-15%, which was earlier 30-40%. This indicates that the crop loss has now been reduced by more than 60%. It indicates that the component of post harvest management of vegetables has improved among farmers by different training sessions provided by the Department of Horticulture. Only 50 percent of the farmers are carrying out value addition at field level by sorting and grading. Value addition at field level results in improved shelf life and better quality of the produce.

Marketing of Produce: Almost 80 percent of the farmers are carrying their produce to markets in plastic bags and gunny bags and 15 percent of the farmers are using net bags (nylon) for packaging of tomato, brinjal and bottle gourd in little green stage. Average cost incurred on packaging is Rs. 20/- per quintal in plastic bags and gunny bags, for net bags average cost is Rs. 15 per quintal of the produce.

- ◆ Around 5 percent of the farmers are using plastic crates for packaging which is available on subsidized price of Rs. 240 by State Government. Some farmers are also using recycled baskets for packaging.
- ◆ Almost 100 percent of the surveyed farmers are selling their produce to Local *mandi* and Wholesale market upto a distance of more than 10 km.
- ◆ Almost all the farmers are carrying their produce individually in private and public transport vehicles, of which 50 percent of the farmers are selling to commission agents or wholesale traders and others are selling to retailers and housing societies.
- ◆ Farmers are getting payment on spot cash and credit basis, within the day of sale on fixed price, by farmers as well as by traders.

- ◆ A major problem faced by farmers is dependency on middlemen. They remit prices for only 98 percent of the produce with additional 2% commission. In addition to this, influence of middlemen is also very high due to individual selling approach. It indicates that the collective approach for marketing is very lacking in the State which needs to be strengthened up.

Marketing Infrastructure: Among the marketing infrastructure component, there is cold storage unit, packaging units and mobile van for transportation of the produce. These mobile vans are equipped with plastic crates and can be opened from all three sides at the back. These units are easily accessible and help the farmers in realising better quality, shelf life, better price and improved bargaining capacity of the farmers.

Marketing Linkages: No market linkage has been developed.

Government Support & Incentives: Around 100 percent of the farmers of the surveyed areas are aware about Government support and activity and a major source of information access is Government officials, working in the area. This is a significant achievement as earlier only 48 percent of the farmers were aware about these schemes and participation was only 14 percent. All of the farmers are beneficiaries of Government support and schemes like Quality Management Programme, State Government programmes and other Government supported programmes.

Awareness about VIUC Scheme: None of the farmers of surveyed areas are specifically aware about VIUC initiative and its objectives. Almost 50 percent of the surveyed farmers participated in different components of the initiative like Farmers' Group formation, vegetable seedling production, seed infrastructure, protected cultivation, INM/IPM, organic farming and training component. None of the farmers reported receiving any direct cash subsidy from this scheme. There is only one resource institution (Vrutti) working in the State, majorly Department of Horticulture is implementing the VIUC initiative.

Training and Training-need Assessment: All of the farmers have been provided different

kind of training and capacity-building skills by Government officials at IIHR Bangalore with an average of 20 participants on aspects of cultivation, product quality improvement and joint marketing of the produce.

Overall, from the primary survey, it is emerging that the farmers have been benefitted in terms of increase in production, productivity and availability of inputs and decreases in post harvest losses but no change has been observed in the price increase of the produce.

Observations from Field Visit

In Andhra Pradesh, the project is being implemented by the State Horticulture Mission under the aegis of Directorate of Horticulture, with assistance of one Resource Institution in select clusters across two districts. Therefore, field officials of directorate and RI are jointly responsible for implementing all the components including formation of FIGs across all five districts.

Detailed Observations of Field Visit

Cluster Approach

In Andhra Pradesh, for the purpose of promotion of vegetable cultivation and supporting these farmers through various other components of the scheme, well defined clusters have been formed. One FIG has been formed in one village, selected for the initiative. These FIGs have been registered as legal entities under the amended Cooperatives Act of the State.

Clusters of existing vegetable producing villages as well as of new villages have been formed. Impact of cluster approach is clearly visible and can be observed while discussing with the farmers, as farmers mention that they are adopting various technology (e.g. protected cultivation, plastic mulching, drip irrigation) and other package of practices along with post harvest management forms like sorting, grading in plastic crates. The efforts of officials at District level are highly appreciable in convincing farmers for adopting some of the new techniques.

Figure 10: Observation of the Field Visit



Mobilization of Farmers and Group Formation

Farmers have been mobilised for getting benefits of various component of the schemes such as agri-input supply, installation of protected cultivation structure, etc. which has been done for collective selling of their produce as well. Farmers' cooperatives have been formed at the village level by the Government officials and RI (Vrutti). Some of these Cooperatives formed by the department

follow book keeping, maintain accounts and any other records of activities. Field officials of the implementing agency are not fully aware of the concept of formation of FPOs.

As the other components of the scheme have been implemented in clusters and farmers have seen the success in terms of increased yield and income, they are highly motivated and forward looking. At this juncture, if assistance is provided to train them

on concept of FPO/FPC and support in terms of hand holding, there is potential to form successful FPOs in almost all the clusters across five districts covered under the initiative.

Training and Capacity-building

Capacity-building and training programmes for package of practices on different aspects of vegetable cultivation, protected cultivation, improved technology and organic farming have been organised by the Nodal Department with the help of State Agriculture University and by engaging individual experts.

Disbursement of Subsidy

In Andhra Pradesh, during the year 2011-12, most of the components namely vegetable production, HRD training, promotion of farmers' groups, vermin compost unit, mobile kiosks/vans, and PHM activities had been taken up by the State Nodal Agency i.e. State Horticulture Mission. Some innovative ideas have also been implemented by the State in terms of fabricated mobile vans/kiosks for selling produce and cultivation in elevated buckets.



Fig 12: Vegetable Cultivation in Bucket



Fig 11: Fabricated Mobile Van



Fig 13: Pack House with Support from APEDA



Fig 14: Cold Storage Unit

Functioning and Coordination of Resource Institution

The State had engaged two Resource Institutions (Vrutti and ALC) for farmers' mobilisation and FPO formation. One of them (ALC) decided to withdraw from providing these services in the State. However, now as FIGs/cooperatives have been formed market linkages with organised

buyers and mainstream markets need to be established. At present the State Government is involved in coordinating majority of the work of FIGs/cooperatives, training farmers on aspects of operation, future planning and facilitating linkages, specifically market linkages. In Andhra Pradesh, 82 farmers' cooperative societies, have been registered under the amended Cooperative Societies Act of the State. These comprise about 20-30 farmers each and collective procure and sell farm inputs and fresh produce respectively.

Functioning of FIG/Farmers' Cooperatives

As it has been discussed above, the farmers' groups formed by the State Government have been formed as Cooperative Societies. These are formal groups of farmers from the same village. Members have basic training on aspects of organisation of farmers' groups; there is record keeping of saving activities by these groups. Most of these groups are taking up collective activities of procurement or marketing.

Infrastructure Creation

During the financial year 2011-12, State Action Plan had utilised amounts for protected cultivation, pack houses, mobile vans/kiosks, retail markets in urban areas, capacity-building, technologies for precision farming and drip irrigation. The State Government has effectively utilised funds from APEDA to set up pack houses cum cold stores, indicating convergence of various schemes.

Marketing of Produce

In Andhra Pradesh, Rythu Bazars, have been established prior to this initiative and are currently active. Farmers directly sell their produce to end consumers at these Bazars, daily.

In addition to this platform, the State Government has provided cooperative societies with mobile vans/kiosks at a subsidy. These vans are mostly of 1MT capacity and have been specially fabricated to display and sell the produce in residential colonies.

All the District level, officials have raised the concern for including market facilitation with organised buyers and mainstream markets outside the State, including exporters.



Fig 15: Rythu Bazaar



Fig 16: Farm Fresh Van provided by Department

HRD training to Project Management Unit

Training for the farmers has been conducted under the scheme for orientation, objectives of the scheme and on initiative implementation. The State has conducted almost 1500 trainings on various subjects and has utilised the entire budget amount of Rs.45 Lakhs for this purpose.

Challenges and Issues

As it has been discussed above, most components of the initiative were taken up in Andhra Pradesh and there is minimal engagement of one resource institution. Therefore, from the perspective of achievement of physical and financial targets of

the scheme, few but important challenges have been faced by the officials implementing the scheme at the field level, except in some cases it was difficult to convince farmers for adopting new practice. However, if it is seen from a holistic point of view, there are many issues; some of these have been discussed as under:

- ◆ Although the officials from the SHM and Directorate of Horticulture have put in their best efforts in promoting the initiative, however, limited lack of exposure regarding various aspects of value chain such as value addition, primary processing and market facilitation is limiting the impact of the scheme;
- ◆ Although the farmers have ready access to the Rythu Bazars, owned and operated by the State Government, these have not been able to link majority of the farmers with the segment of organised retail and institutional buyers.
- ◆ Although convergence of schemes has happened in some areas, e.g. pack houses cum cold stores supported by APEDA, it is yet to deliver direct benefits to the farmers.
- ◆ Most of the FIGs have been registered legally as cooperative societies, which comprise 20-30 farmers each. About 82 such cooperative societies have been registered under the initiative so far. Most of them are small legal entities which lack direction and motivation for collective input procurement and selling of produce. They need to be federated into larger legal entities, which would be able to provide benefits to farmers resulting from economies of scale.
- ◆ Currently the State is implementing this initiative in five districts (Rangareddy, Medak, Mehbubnagar, Chittoor, Vishakhapatnam), which are spread across the State. Involvement of State Government officials and one RI (Vrutti) may not suffice for mobilising the farmers to organise themselves and be federated into larger legal entities like Producer Companies.
- ◆ Most of the farmers are currently operating with erratic power supply situations and are not sure of the soil conditions and water table

in their respective areas. They have demanded for regularisation of power supply along with survey for soil and water table. This will enable them to plan production and enable operational logistics like installation of water pump sets, etc.

- ◆ Most of the farmers have also expressed concern about lack of training of cultivation practices and sharing of practices from other States/regions.

Summary

- ◆ Technological interventions have been perceived well among the farmers as most of the farmers have started the use of on-farm management practices like drip irrigation, protected cultivation on a major part of their cultivable area.
- ◆ State Department of Horticulture is working satisfactorily in terms of providing inputs and marketing facilities to the beneficiary farmers.
- ◆ For realizing the maximum benefit of the scheme, more exposure is required for improving the value chain.

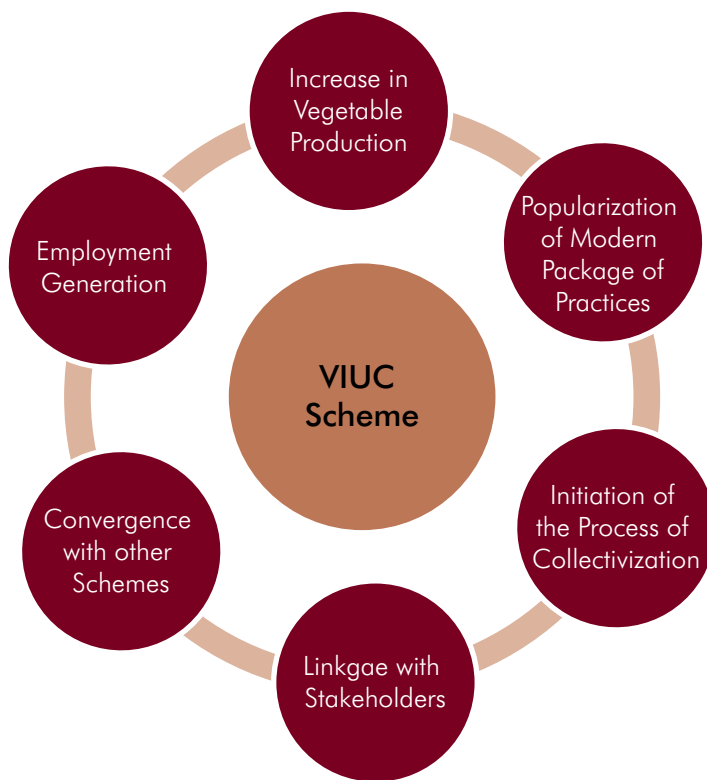
Impact of VIUC

This section investigates the impact of VIUC on broader areas relating to increased production of vegetables, availability of quality inputs, linkages for procurement and marketing, savings 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 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.

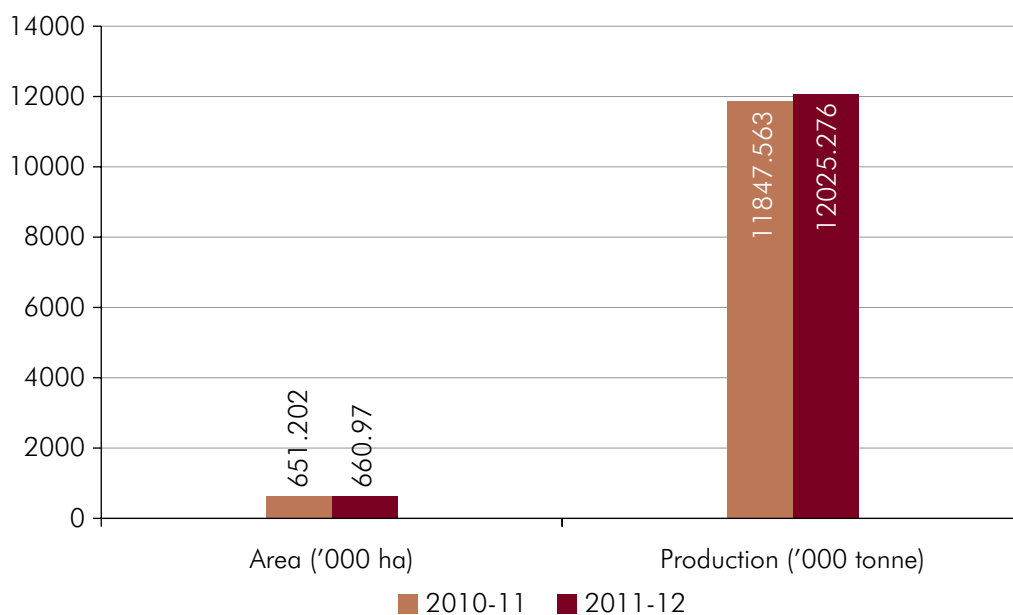
The following figure outlines the direct impact of the initiative in terms of the following four components.

Figure 17: Impact of the Scheme



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

Figure 18: Increase in Area and Production of Vegetables in Andhra Pradesh from Baseline Year to Current Year



Vegetable Production

As per the data received from the Nodal Agency for the baseline year and current year, for the districts, where the scheme is being implemented in the State of Andhra Pradesh, area and production of vegetables showed a positive change. As per the baseline year (2010-11) area under vegetables was 651.20 thousand ha which increased to 660.97 thousand ha. Production also increased from 11847 thousand MT to 12025.27 thousand MT. Though area and production has increased, no change in the productivity of the vegetables has been observed.

Quality Inputs

Farmers of the State are very progressive in terms of the use of quality inputs. Almost 100 percent area under the scheme in vegetable cultivation component has been covered by hybrid seeds. The impact of the scheme is not very clear, as the scenario was already good among the farmers for the use of quality seeds and fertilizers. The production and productivity crucially depend on the availability and access to various services that farmers are able to avail. These services provide cost effective options to farmers to avail inputs, to access credit, to buy various inputs. As per the baseline report, earlier the farmers were mainly facing the problem in procurement of fertilizers which has improved now by the kits and subsidy provided for the inputs under the scheme.

Popularization of Modern Package of Practices

The impact on the adoption of modern package of practices is clearly visible in the State. As per the baseline survey report, adoption of drip irrigation, mulching, biofertilizers and inputs was very low among only 10-15 percent farmers, but from the primary survey and situational analysis of the schemes, it has been reported that the farmers of the State are efficiently practicing improved package of practices like adoption of INM/IPM, organic farming, drip irrigation, plastic mulching and use of protected cultivation structures. The Nodal Agency utilized almost 14 percent of the funds on adoption of such practices, which have shown

positive result and farmers have been benefitted. This can also be attributed to the training provided by the Department of Horticulture for input use and production practices.

Initiation of the Process of Collectivization

The process of collectivization in Andhra Pradesh has picked up momentum with the establishment of 82 farmers' cooperatives across the five districts. These cooperatives comprise 20-30 members, and are legally registered to undertake business activities. These cooperatives are, in effect, FIGs which have been registered as legal entities. These cooperatives, being limited in size, are not able to fully explore their business potential.

Linkage with Stakeholders

At the time of undertaking this assignment, no formal linkages had been established for input procurement and output marketing. Regarding input procurement, neither any linkage had been established, nor was any activity proposed. For marketing of the produce also, no linkage had been established.

Although there is a marginal increase in area under vegetable production along with overall production, 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 integration have not taken place, the initiative has not been able to create any considerable employment opportunity in vegetable supply chain.

Convergence with other Schemes

It was observed during the field visit that some convergence has taken place in the area of PHM, wherein pack houses cum cold stores set up is being supported by APEDA. As the initiative is being implemented under the aegis of RKVY, the regular convergence of other schemes is natural.

Summary

The impact of the initiative has been positive in the State but most of the component of the scheme has already been covered in the State.

- ◆ Area and production of the vegetables have been impacted positively from the scheme, although no increase in productivity has been observed.
- g. The production and productivity depends upon the availability and access to various services that farmers are able to avail. These services have been provided by the State Department of Horticulture in the form of inputs and subsidy for various inputs.
- ◆ The impact on the adoption of modern package of practices is clearly visible in the State. The Nodal Agency utilized almost 14 percent of the funds on adoption of such practices, which have shown positive result and farmers have been benefitted. This can also be attributed to the training provided the Department of Horticulture for input use and production practices.
- ◆ Although, there are 82 Cooperative Societies in the State but lack of awareness has limited the potential of the business from these Cooperatives.
- ◆ Regarding linkage with stakeholder and service providers, no linkage has been established.

Recommendations

In Andhra Pradesh, the VIUC has made a good headway in terms of selling of produce through mobile vans/kiosks and popularisation of high yielding seed varieties and better production practices including protected cultivation. However, it has not been able to impact other areas of improving vegetable productivity, vegetable value chain, primary value addition at the farm level, market linkages with institutions and organised/mainstream markets and collectivisation of input procurement. Given the development in areas of production, the impact of the scheme can be made manifold, if interventions are made in other areas also.

Some of the recommendations, based on analysis of data and observation during field visit are as below:

- ◆ Component of Training and capacity-building of farmers needs to be strengthened; this should also include exposure visits of farmers to production facilities as well as existing large FPOs. Training is required on modern package of practices for vegetable production, protected cultivation as well as on functioning of FIGs/farmers' cooperatives and FPOs;
- ◆ The staff of the implementing agency (SHM and Directorate of Horticulture) should undertake exposure visits for gaining knowledge on modern processing techniques and technologies being implemented. This will provide the necessary impetus for them to motivate farmers' groups.

In order to sustain the infrastructure created for Protected Cultivation

- ◆ The staff of the implementing agency (SHM and Directorate of Horticulture) should undertake exposure visits for gaining knowledge on modern processing techniques and technologies being implemented. This will provide the necessary impetus for them to motivate farmers' groups.
- ◆ In order to sustain the infrastructure created for Protected Cultivation of vegetables under the initiative, implementing Department should engage horticulture experts either from State Agricultural University or any research institute;
- ◆ There is a need to increase intensity of work on components such as Post Harvest Management, training on cultivation practices, collectivisation of farmers, creating operational farmers' collectives, which are in demand from farmers;
- ◆ Mechanism should be derived for linking farmers with institutional buyers, exporters, processing and value adding units, organised/mainstream markets, as this aspect has not been totally covered in the first year of implementation of the scheme.
- ◆ At the State level, mechanism for monitoring along with MIS should be developed by the State Implementing Agency to supervise the progress of the scheme on a regular interval basis.

Chapter 4

Goa

Project Area and Stakeholders

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

VIUC Scheme in Goa

VIUC in the State of Goa is being implemented across two districts in the State since 2011-12. The Directorate of Agriculture, Government of Goa has been appointed as the Nodal agency for implementing the project in the State and Assistant Director, Agriculture is the Nodal officer looking after the scheme. At the District level, Zonal Officers are the Nodal Officer looking after the implementation of the scheme.

Baseline Survey

To identify major vegetable production districts and clusters, an independent agency, carried out the baseline survey in Goa. Baseline Survey highlighted the existing supply chain and other bottlenecks and also identified the vegetable growing clusters within the district. During the interaction with the Nodal Agency, 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 North Goa and South Goa. Major vegetable clusters around these two districts, ranging from 35-50 km, are supplying vegetables to their respective urban clusters including Panaji and Margao.

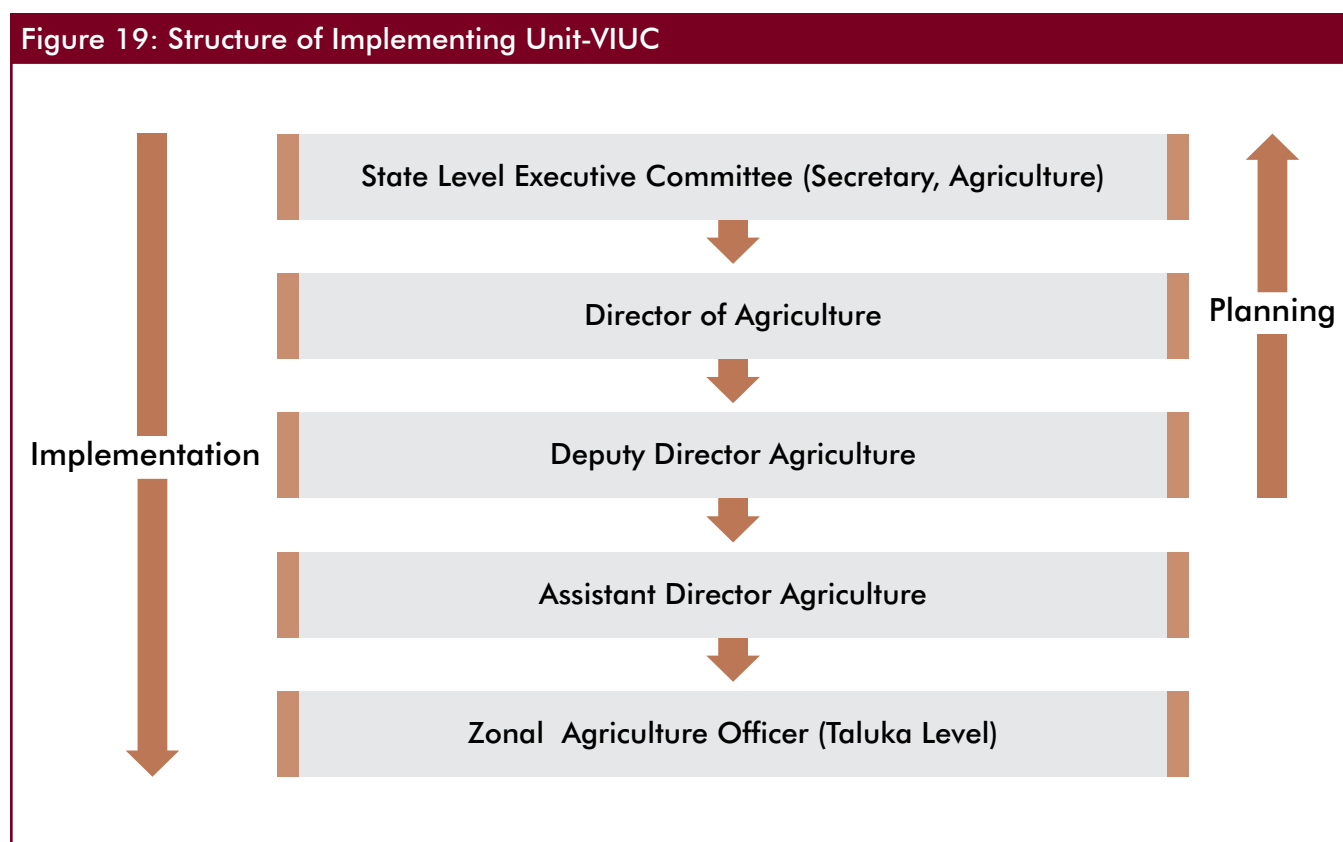
Implementing Partners of VIUC in Goa

The Directorate of Agriculture, Government of Goa has been appointed as the Nodal agency for implementing the project in the State and Assistant Director, Agriculture is the Nodal officer looking after the scheme. At the District level, Zonal Officers are the Nodal Officer looking after the implementation of the scheme.

Table 5: Stakeholders and their Coverage Area

Role	Name of Organization	Districts covered under VIUC Scheme
Nodal Agency	Directorate of Agriculture, Government of Goa	North Goa and South Goa
Resource Institution	Indian Grameen Services	North Goa and South Goa

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



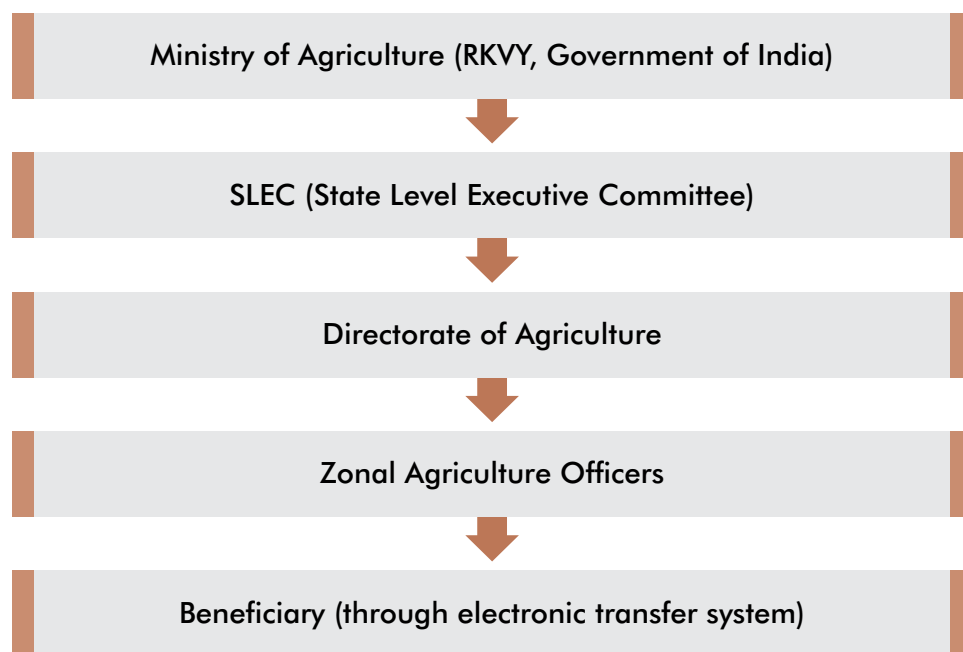
Planning and Implementation of Activities: The planning of the project activities takes place at the State level, where Assistant Director Agriculture finalises the State plan. From Directorate of Agriculture, State plan is submitted to the State Level Executive Committee (SLEC) chaired by the Secretary, Agriculture which is the final authority for approval of the plan for implementation. Approved State Plan is finally submitted to RKVY Cell (Directorate of Agriculture) for approval and sanction of funds.

Flow of Funds

The flow of fund is depicted in the figure below:

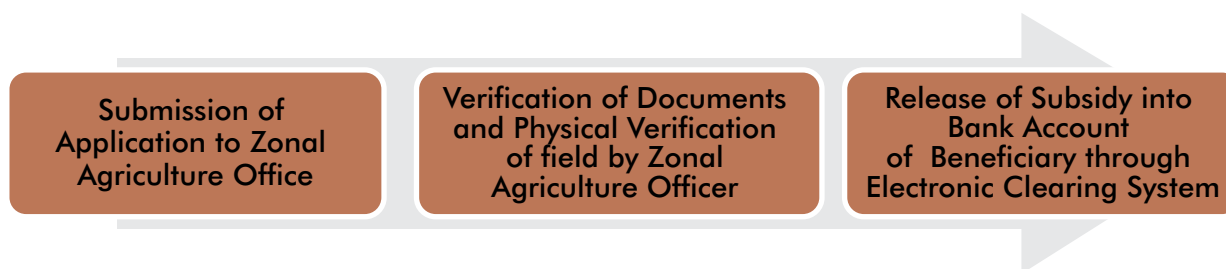
Budget Outlay and Expenditure (2011-12): The total budget outlay approved for the State for the year 2011-12 was Rs. 350.00 lakhs. Approximately five percent of the total budget has been kept for administration purpose.

Figure 20: Flow of Fund



Release of Subsidy to Beneficiary

Figure 21: Release of Subsidy



The applications for subsidy are received through Zonal Agriculture Officer. Once the applications are received and scrutinised by physical verification, then it is forwarded to the Head Office. Fund flow takes place from the Head Quarters directly to the farmers' bank account through the electronic transfer system.

Resource Institutions

For the mobilization of farmers' and promotion of Farmers' Interest Groups (FIGs) and Farmers' Producers' Organisations (FPOs), Indian Grameen Services (IGS) has been appointed by SFAC. Targets of RI in terms of farmers' mobilisation, FIG & FPO formation as well as current achievements are given below:

Table 6 (i): Current Status of FIG and FPO Formation

Particulars	IGS	
	Target	Achievement (registered)
FPO	2	---
FIG	116	116
Total farmers	1750	1750

Source: Secondary information from RI

Table 6 (ii): Coverage of Farmers and Participation in Capacity-building

Particulars	Units	
Districts		2
Clusters	Nos	8
Total Farmers	Nos	1750
Break-up of total Farmers		
Marginal (< 1 Ha)	Nos	1750
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	94
Farmer	Nos	69
% of members regularly participating in meetings		
FPOs	%	--
FIGs	%	90
Farmer	%	80
Capacity-Building for FIGs/FPOs		
FIG members oriented/trained & aware on VIUC	Nos	1550
Group leaders oriented/trained on FIG/FPO concept and management	Nos	82
FIG/FPO members oriented/trained on Account Keeping in VIUC	Nos	116
FIG members trained on some or other best practices (for production, value addition and marketing) under VIUC	Nos	196
FIG members jointly procuring inputs		363
Bank Account Opened (Status)		
FPOs	Nos	---
FIGs	Nos	116
Total Saving	Rs. Lacs	20.00

Source: Secondary information from RI

Performance of the Scheme

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

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

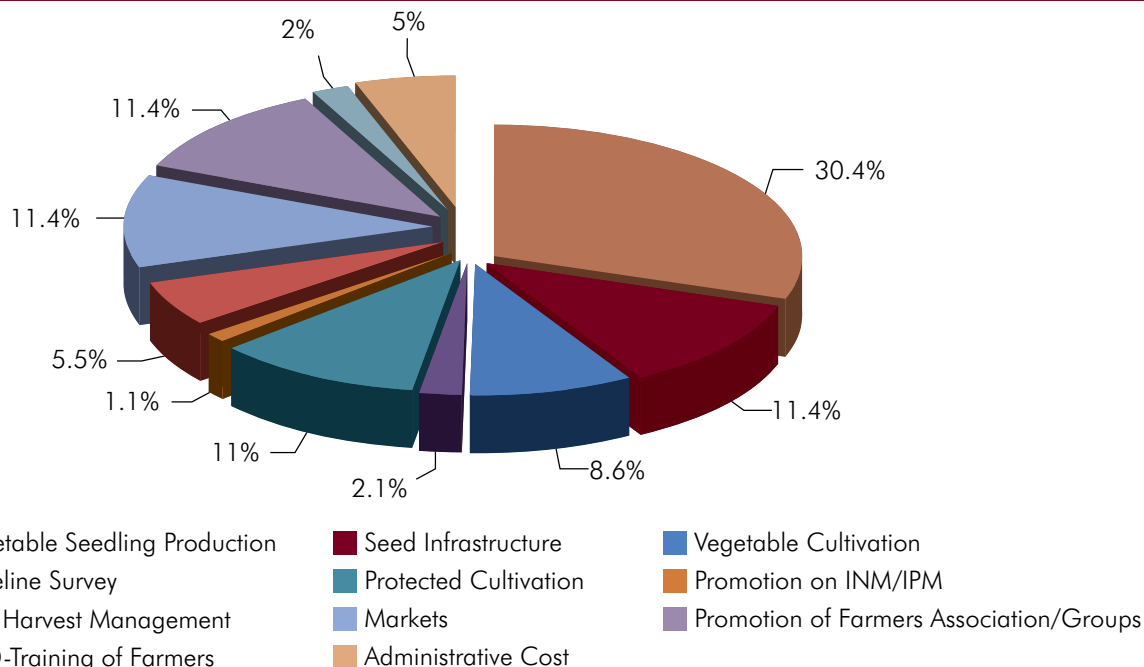


Proposed and Approved Action Plan

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. 350.00 lakhs. The share of all the components is illustrated in Figure 6 below.

Figure 23: Approved Action Plan for Goa (2011-12)

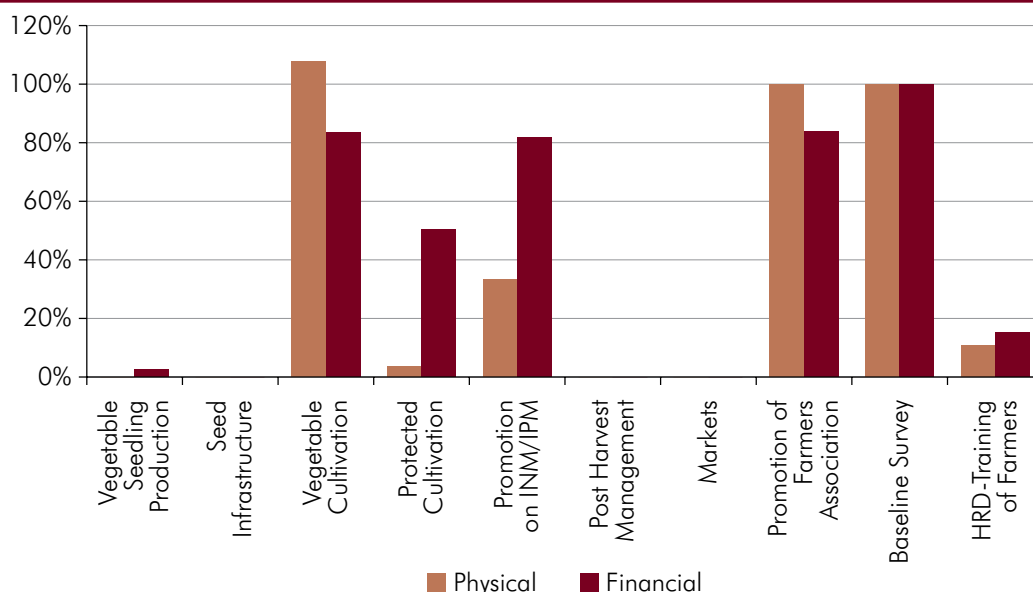


Source: Department of Horticulture, Goa

Of the total approved financial outlay of Rs. 350.00 lakhs, maximum fund has been allocated for the component of vegetable seedling production (30%). Equal amount of fund has been allocated to seed infrastructure, market development and promotion of farmers’ association i.e. 11.4%. This is followed by protected cultivation (11.1%),

vegetable cultivation (8.6%), and post harvest management (5.5%). Small fund has been allocated for HRD training of farmers and promotion of IPM/INM. Approximately 5% of fund has been kept for administrative purpose. As it is evident, higher funds have been allocated for vegetable seedling production.

Figure 24: Physical and Financial Achievement of VIUC in Goa in the Year 2011-12 (percentage)



Detailed component-wise Physical targets & Financial outlay for the year 2011-12 is given in Annex- I. The present status of financial achievement of different components can be

delineated from the following bar graph, in which physical and financial achievements are noticeably evident.

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

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

Table 7: Component-wise physical and financial targets and achievements

Component	Physical Performance	Financial Performance
Vegetable Seedling Production	0.40 percent achievement As per the approved plan, there was 5 ha area to be covered for vegetable seedling production, of which only 0.02 ha area has been covered.	3 percent achievement Financial allocation for seed production was Rs. 106.50 lakhs, of which only Rs. 3.175 lakh has been utilized.
Seed Infrastructure	No achievement As per the approved plan, physical target under this component was to establish one seed infrastructure unit, of which no unit has been created.	No achievement Financial allocation for establishment of seed infrastructure was Rs. 40.00 lakh, of which no fund has been utilized.
Vegetable Cultivation	100 percent achievement Physical target under this component was to cover 120 ha area, of which entire area has been covered.	55 percent achievement Financial allocation under this component was Rs. 30.00 lakhs, of which Rs. 16.47 lakhs has been utilized.
Protected Cultivation	4 percent achievement Physical target under this component was to cover 1.5 ha area under naturally ventilated structure, of which merely 0.06 ha area has been covered.	50 percent achievement Financial allocation under this component was Rs. 38.00 lakhs, of which Rs. 19.40 lakhs has been utilized.
Promotion of INM/IPM	42 percent achievement Physical target under this component was to cover 120 ha area for promotion of INM/IPM techniques, of which only 50 ha area has been covered.	82 percent achievement Financial allocation under this component was Rs. 3.80 lakhs, of which approximately Rs. 3.13 lakhs has been utilized.
Post Harvest Management	No achievement Physical target under this component was establishment of eight units of post harvest management infrastructure, of which no any infrastructure has been created.	No achievement Financial allocation under this component was Rs. 19.20 lakhs, of which no fund has been utilized.
Market Infrastructure	No achievement Physical target under this component was establishment of 45 units of marketing infrastructure, of which no unit has been established.	No achievement Financial allocation under this component was Rs. 40.00 lakhs, of which no fund has been utilized.
Promotion of Farmers Association/Groups	100 percent achievement Physical target under this component was to form 40 farmers group, of which 40 farmers groups have been formed.	84 percent achievement Financial allocation under this component was Rs. 40.00 lakhs, of which Rs. 33.58 lakh has been utilized.

Component	Physical Performance	Financial Performance
Training of Farmers within State	11 percent achievement Physical target under this component was to provide training to 800 farmers, of which training has been provided to 90 farmers.	16 percent achievement Financial allocation for this component was Rs. 7.00 lakhs, of which, Rs. 1.08 lakhs has been utilized.
Baseline Survey	100 percent achievement Financial allocation for baseline survey was Rs. 7.50 lakhs, of which entire fund has been utilized.	
Administrative Cost	No achievement Financial allocation for this component was Rs. 17.50 lakhs, of which no fund has been utilized.	

Out of the total fund of Rs. 350.00 lakhs, total expenditure is of Rs. 84.35 lakhs i.e. 24 percent of the total financial target has been achieved.

Summary

- ◆ As per the proposed action plan, total financial outlay for the year 2011-12 was Rs. 350.00 lakhs. Maximum fund has been allocated for vegetable seedling production.
- ◆ Total utilization of the fund till date is Rs. 84.35 lakhs, which is 24 percent of the total target.
- ◆ This shows that physical and financial performance of the State is very poor because hardly 30 percent of the funds have not even been utilized till date.
- ◆ Regarding seed infrastructure, post harvest management and marketing infrastructure neither physical nor financial progress has been made.

Situational Analysis of the Scheme

This section 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.

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 different clusters of North and South Goa 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 0.25-0.50 acre. All the farmers of the area belong to marginal farmers' category. Only marginal and small farmers have been covered under the scheme as beneficiary. This is fulfilling the criteria of consummate development of small and marginal farmers under the VIUC programme.

Irrigated Land: Out of the total cultivable area, 100 percent area has been irrigated. Majority of the farmers use canal and open well as a major source of irrigation. Of the total cultivable area, no area has been covered under protected cultivation.



Fig 25: Open Well for Irrigation

Seed Used: Almost 85 percent of the surveyed farmers are using hybrid seeds. Some farmers are using local varieties of red chilli and white onion. All the farmers of the surveyed areas are procuring seeds from Government Department.

- ◆ Farmers have been highly satisfied from the quality of the inputs provided by the State Department of Agriculture.
- ◆ With the distribution of planting material under the scheme, total cost of cultivation has also been reduced.
- ◆ Although, some farmers are using local variety of white onion and chilli but majority of the farmers are using hybrid seed, it can be associated with the adoption of modern package of practices, which is possible due to the timely training provided by Resource Institution and State Government Department.
- ◆ All the farmers are procuring the seeds collectively, it shows that the concept of group approach has perceived among the farmers, since they are benefitted by this approach, therefore, they are carrying out the activities collectively.

Input Procurement: All the farmers of surveyed areas are procuring inputs like seeds, fertilizers and pesticides, packaging materials collectively from the Government Department. For other facilities also, like credit & finance, irrigation, etc they are following group approach. Resource Institution IGS is working very effectively in the area as one of the most important attribute of the scheme i.e. group formation and activities is being fulfilled. This has helped to achieve prosperity among farmers.

Adoption of Integrated Pest Management: Only 50 percent of the farmers of the surveyed cluster are adopting integrated pest management techniques and 50 percent are carrying out organic farming. Inputs for IPM and organic farming are procured both from Government agencies.

Adoption of On-farm Management Practice: None of the farmers of the surveyed areas are adopting on-farm management practices like drip irrigation, sprinkler irrigation, plastic mulching and shade net house. As per the baseline survey report, it has been observed that there is much scope for adoption of such practices but no such

improvement has been observed in this context. The Department of Agriculture should work for convergence of VIUC scheme with other ongoing Government schemes for holistic benefit of the farmers.



Fig 26: Packaging in Plastic Bags

Post Harvest Losses and Value Addition: As per the data of surveyed farmers, the extent of post harvest losses of major crops like beans, chilli, okra, bottle gourd, brinjal etc has reduced to 5% which was earlier varying from 15-30 % in baseline survey report. This indicates that the crop loss has now been reduced marginally. The component of post harvest management of vegetables has improved among the farmers by the training and packaging facilities provided by State Horticulture Corporation and Resource Institution. These farmers are not carrying out any kind of value addition activity at field level.

Packaging of Produce: Almost all the farmers are carrying their produce to the market in plastic bags, which is being provided by the State Horticulture Corporation at a subsidized price of Rs. 5/- per bag. A single bag can carry up to 40 kg of the produce. This is a one time investment and no recurring cost is involved as they are being recycled.

Sale of Produce: Almost all of the surveyed farmers are selling 50 percent of their produce to Goa State Horticultural Corporation Ltd (GSHCL) and the balance are being sold to Local mandi and wholesale market up to a distance of more than 10 km.

- ◆ The produce like clusters beans, green chilli, okra, bottle gourd, brinjal and long beans are being sold through GSHCL. Other vegetables like red chilli, sweet corn, onion, carrot, amaranthus, spinach, cucumber, sweet potato, musk melon, and ridge gourd are sold to Local Mandi and wholesale market.
- ◆ Almost all the farmers are carrying their produce in public transport vehicles. In some clusters, GSHCL has established its procurement centre; farmers of North Goa cluster carry their produce in this collection centre. GSHCL sends the vehicle for collection of produce from these collection centres. Other farmers are selling the produce to wholesale traders.
- ◆ From GSHCL, farmers are getting payment on credit basis and the payment is transferred in the farmers account within 15 days time. The farmers who sell the produce to wholesale traders get their price on spot cash basis.
- ◆ GSHCL provides fixed price for produce while wholesale traders fix on negotiation basis.
- ◆ Major problems that the farmers are facing is dependency on middlemen and delay in payment for the balance produce not procured through GSHCL.



Fig 27: GSHCL Kiosk

Marketing Linkages: Proper marketing linkages have not been developed but farmers are carrying out direct marketing with GSHCL in both North and South Goa cluster. This was already in existence in the State prior to the implementation of VIUC scheme. A total of 600 kiosks are spread all over Goa for buying the vegetables at rational

prices. Although there was provision of developing marketing and post harvest infrastructure in the Action Plan of the State but no such structure has been developed. The marketing component has improved only in perspective of bulk supply of produce from group formation which was earlier very low.

Government Support & Incentives: Around 100 percent of the farmers of the surveyed areas are aware about Government support and activity and a major source of Information access is Resource institutions and private companies working in the area. This is a significant achievement as all the farmers of the area are now aware about different Government support and schemes. All of the farmers are beneficiaries of Government support and schemes.

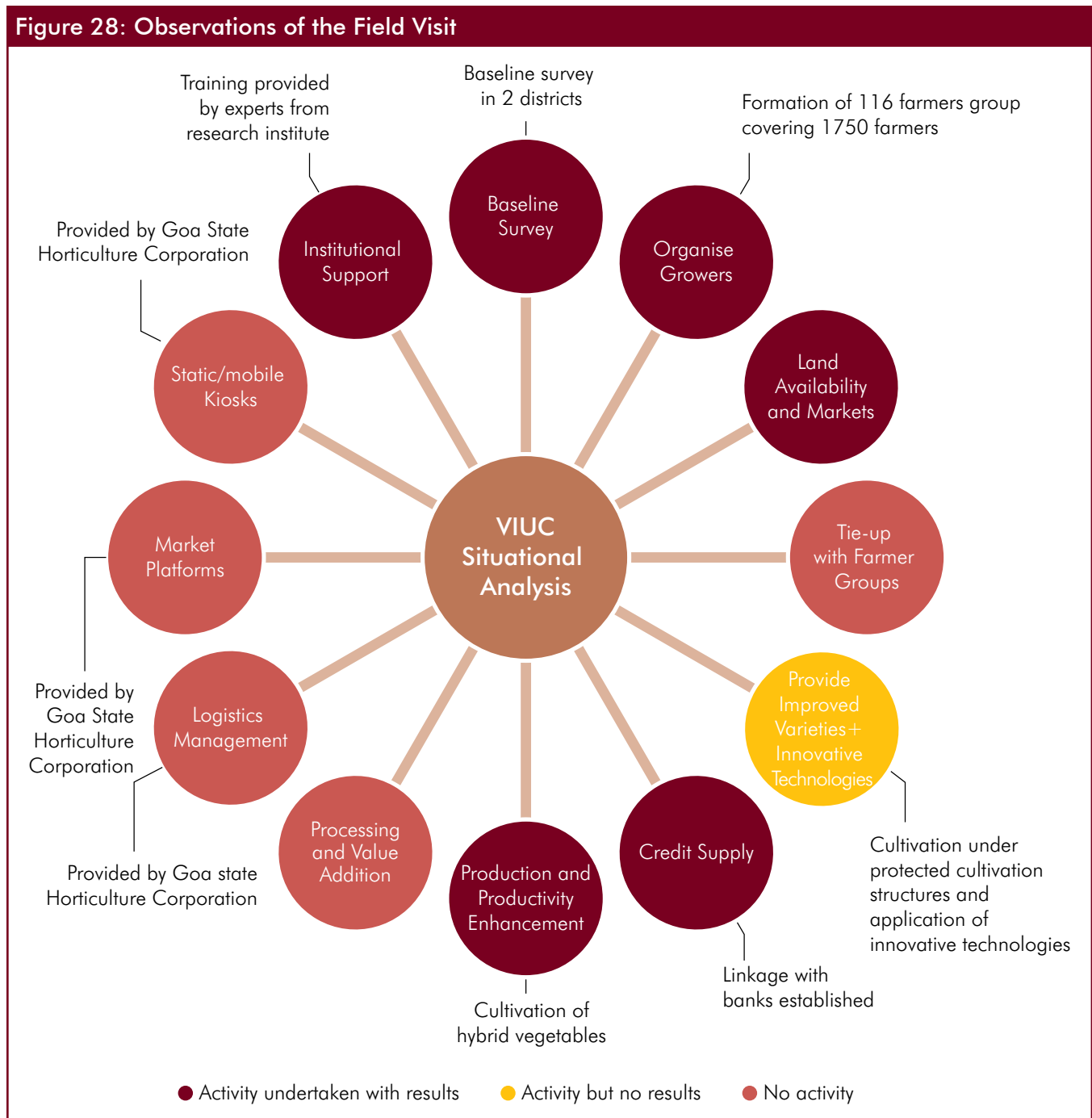
Awareness about VIUC Scheme: All the farmers of surveyed areas mentioned that they are aware about VIUC scheme and its objectives, but these are not very clear to them. As per the farmers, major objective of the scheme is to form the Farmers' Producers' Organization (FPO) and sell the vegetables to GSHCL. All of the farmers participated in Farmers' Group formation and, during training component almost all the surveyed farmers received subsidy in the form of inputs from different components of this scheme.

Training and Training-need Assessment: All of the farmers have been provided different kind of training and capacity-building by Resource Institutions, Government officials and experts from ICAR Research Complex. The training is being provided on group activities, joint purchasing of inputs and joint marketing of produce, cultivation aspects. However, there is intense need of providing proper training on farm planning and management as majority of the farmers are still carrying out traditional cultivation practices and mixed cropping without proper plan.

Overall, from primary survey, it is emerging that the performance of Resource Institution and Department of Horticulture is satisfactory in terms of motivation of farmers for formation of FPOs, providing inputs for production and marketing facilities by Goa State Horticulture Corporation. In spite of these efforts, there is a need to augment infrastructure facilities, marketing component and provision of on-farm management practices.

Observations of the Field Visit

In Goa, the project is being implemented by the Directorate of Agriculture, with active support from Resource Institution and Goa State Horticulture Corporation Limited.



Detailed Observations of Field Visit

Since Goa is a small State, therefore, small clusters have been formed based on the potentiality in

vegetable cultivation. These clusters have been well connected with road network; hence, there is a good transport facility, which is a very important criterion for marketing of vegetables from the potential cluster.

- ◆ A total of 116 farmer groups have been formed covering both North and South Goa. Most of the small and marginal farmers have been covered under the scheme, because Goa is a coastal area and operational holding size is very small for vegetable cultivation. These groups have majority of female members, which is also creating the employment opportunity for female workforce.
- ◆ Farmer groups are working actively for proper administration and management of the group. Share collection is in process and a separate committee has been established on various issues.



Fig 29: Sati Devi FIG, North Goa

- ◆ Group leaders have been selected democratically and regular FIG meetings have been organized. They have clarity and understanding about the objectives of the scheme.
- ◆ From interaction with Resource institutions and farmers, it was observed that the Resource persons are doing their work efficiently in terms of collectivization and linkage establishment with stakeholders. Group approach is clearly noticeable in the context of input procurement and marketing of the vegetables. Farmers themselves have been encouraged for carrying out group activity. A group of farmers have bought power tiller for common use. This is a confirmation of the collective efforts of the farmers.
- ◆ Although the training and exposure visits has been organized by Resource Institution

and Department of Agriculture on a monthly basis on the aspects of cultivation practices and collectivization but still there is need of more orientation of the farmers for applying modern package of practices on their field. The farmer groups have been tied-up with ICAR and KVK for on-farm solution of the problems and more than 80 percent of the farmers have started using hybrid seeds instead of local seeds but, they do not have efficient planning and management for vegetable cultivation. They are growing vegetables randomly without selection of particular field for produce. Most of the farmers have done multi-mixed cropping of different vegetables. For successful and sustainable management of farms, planning is essential keeping the soil, environmental and other local constraints in mind. For this, regular training is essential on these aspects.



Fig 30: Training on Seed Treatment



Fig 31: Training on Vermicompost Production

- ◆ Department is performing well in terms of supply of good quality inputs for production and integrated pest and nutrient management. If we analyse the performance of the Department up to this very time from the initiation of the scheme, it is not very satisfactory as even the 30 percent of the target have not been achieved till date and eventually, less numbers of the targeted farmers have been benefitted from the programme.
- ◆ Among the infrastructure creation component, protected cultivation structures, post harvest management and marketing infrastructures were targeted but only one polyhouse has been constructed. In post harvest management and marketing, these structures have not been established.
- ◆ Regarding the development of marketing tie-ups and linkages, till now there is no concrete achievement, although farmers are carrying out direct marketing with Goa State Horticulture Corporation with the active support from resource institutions but this was in existence from a very long time in the State before the implementation of VIUC scheme.
- ◆ For management and monitoring of the system, there is no separate MIS but Deputy Director Horticulture and Director Agriculture are monitoring the progress of the scheme.

Challenges/Issues

The various challenges faced by the State in the implementation of VIUC in Goa are as under:

- ◆ **Limited Land Area:** The land area availability per farmer is very limited, which is about 0.25-0.5 acres per farmer. The farmers also do not have the clear title of their land, as these were transferred or leased to them during the Portuguese regime.
- ◆ **Aggregation of Inputs/Produce:** At the time of undertaking this assignment, very limited aggregation of farm inputs and selling by farmers had taken place.
- ◆ **Linkages with Institutional and Mainstream Markets:** At the time of undertaking this assignment, the FIGs had established linkages only with Goa State Horticulture Corporation Limited for purchase of select farm produce. A majority of the farm produce is sold by farmers directly in mandis.

Summary

- ◆ The impact of collective activities is clearly visible in terms of collective procurement of inputs and marketing of outputs.
- ◆ Department is providing quality inputs to the beneficiary members and farmers are highly satisfied with the inputs.
- ◆ Perception of modern package of practices is only in terms of use of hybrid seeds, farmers knowledge about off season vegetable production and farm planning and management is almost insignificant.
- ◆ Marketing linkages established with GSHCL is for some specific types of vegetables, other vegetables are sold by farmers in nearby mandis.

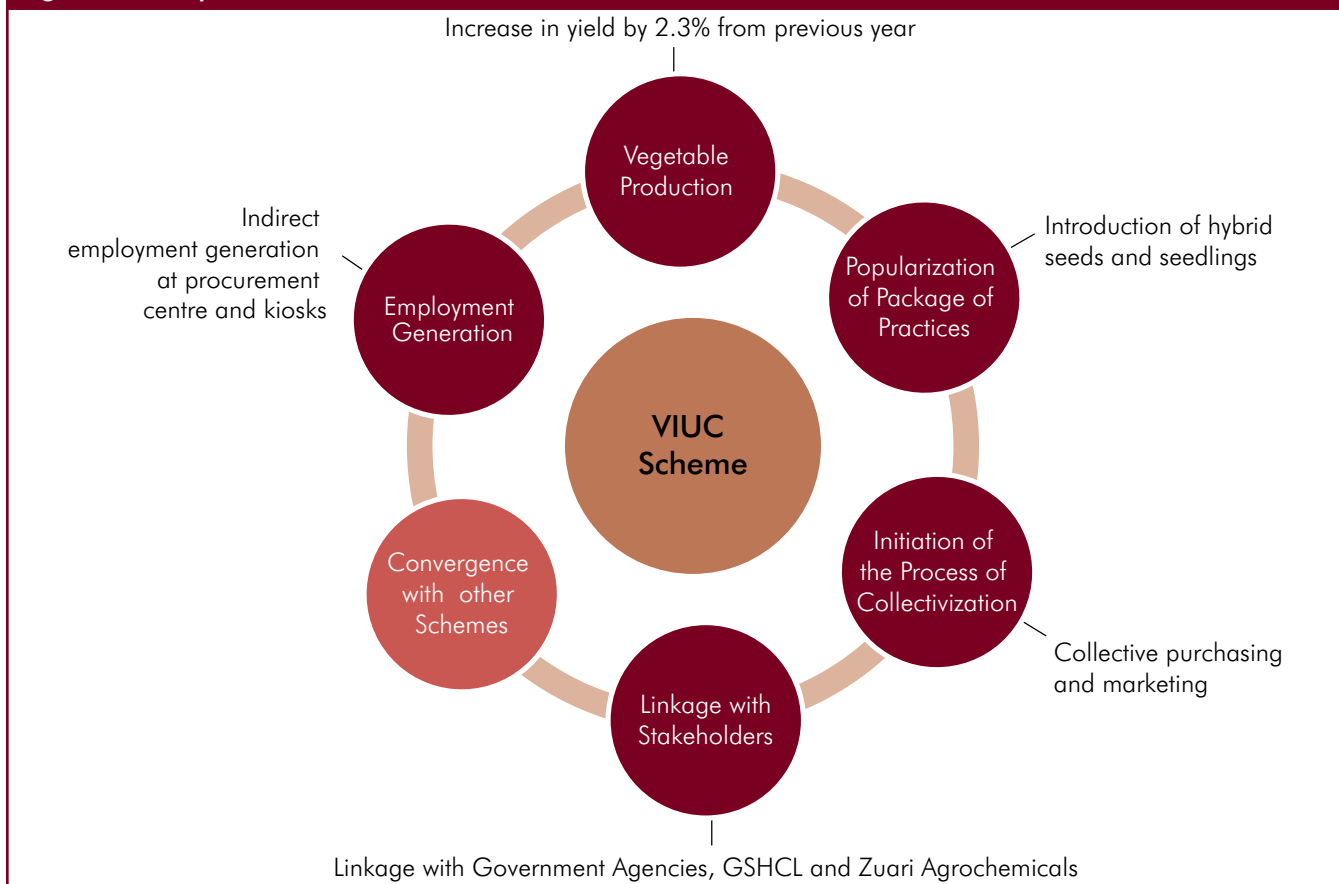
Impact of the VIUC

This section investigates the impact of VIUC on broader areas relating to increased production of vegetables, availability of quality inputs, linkages for procurement and marketing, savings 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 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.

The following figure outlines the direct impact of the initiative in terms of the following six components.

Figure 32: Impact of the Scheme

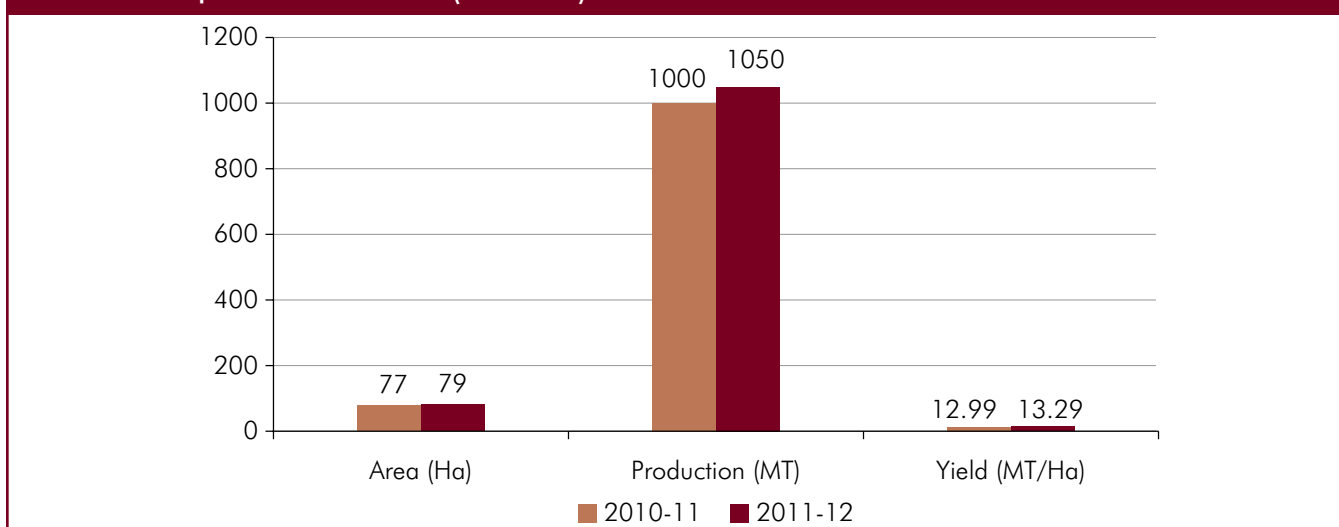


Vegetable Production

As per the secondary data provided by Resource Institution on vegetable production in baseline

and scheme implementation year, marginal increase has been observed in area, production and productivity.

Figure 33: Area, Production and Yield of Vegetables in Baseline Year (2010-11) and Scheme Implementation Year (2011-12) in Goa



From the above graph, it has been found that area under the vegetables increased slightly by 2.6 percent from 77 ha to 79 ha but production increased by 5 percent (1000 MT to 1050 MT). A marginal increase in yield has also been observed. This increase in yield can be linked with the divergence of farmers from local seeds to hybrid seeds, distribution of quality planting material and other inputs from the Department. But there is lack of adoption of modern farm management practices. Farmers are still carrying out multi-mixed cropping of vegetables without proper planning and management. This poses difficulties in proper control and maintenance of the farms. In addition to this, some crops have antagonistic effect on others if they are grown in close proximity with each other; such consequences are quite common in mixed cropping of vegetables.

Quality Inputs

The department of Agriculture has distributed inputs like seeds, seedlings, bio-fertilizers, bio-pesticides, lures and insect traps to the beneficiary farmers under integrated pest and management component. Almost 70 percent of the farmers have been covered under this input distribution. Crop loss through insect and pest attack has reduced considerably by the use of IPM and INM inputs distributed under the scheme. In addition to this, quality planting material i.e. seedling grown in trays in polyhouse on the Government farms and bio-fertilizers have also been distributed. Use of seedlings and bio-fertilizers resulted in increase in the production and yield of the vegetables. Distribution of quality inputs not only increased the production by enriching the soil fertility and reduced pest attack, but also reduced the total cost of production by availing the inputs provided by the Department.



Fig 34: Multi-Mixed Cropping of Vegetables



Fig 36: Results from Inputs provided by State Department



Fig 35: Training of FIG Leaders

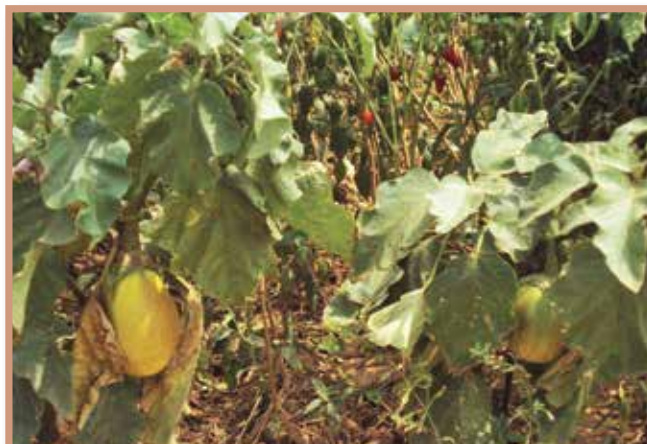


Fig 37: Results from Inputs provided by State Department

Observing the benefits of quality inputs, farmers are beginning to adopt use of using such inputs on their own for further production. This will ensure the supply of quality vegetables in the major consumption centres.

Popularization of Modern Package of Practices and Protected Production Technology

Agriculture is the mainstay of the rural economy of Goa but it is dominated by the traditional practices of vegetable cultivation. The department is making efforts to make the farmers move



Fig 38: Exposure Visit at KVK

towards modern package of practices. In Action Plan of 2011-12, there was provision of covering 1.5 ha with protected cultivation structures but very small area has been covered under this, therefore, its impact cannot be analysed. Though training has been provided by Resource Institutions and Department for creating awareness regarding modern package of practices but very little improvement has been observed only in the use of planting material. Other aspects of modern package of practices are still untouched which needs to be covered with special emphasis. The farmers have been tied-up with the ICAR Research Complex and KVK for knowledge acquisition; they should realize the availability of these experts at farm level.

Initiation of the Process of Collectivization

From the primary survey and secondary data obtained from resource institutions, it has been observed that, the concept of collectivization has been initiated in the State. A total of 1750 farmers have been mobilized into 116 farmers' groups, which will soon be registered as two Farmers' Producers' Organizations. Around 20-22 percent of the farmers have started joint procurement of inputs and marketing of the produce.



Fig 39: Meeting of FIG leaders with GSHCL

- ◆ One of the FIG named Sati Devi FIG, consists mainly of female members who have jointly purchased a power tiller, after being encouraged by realizing the benefits of group activity.
- ◆ As per the baseline survey report, group approach was completely absent in the State. All farmers were selling their produce on the roadside, but now, they have started selling their produce in groups to GSHCL.
- ◆ Earlier only 5 percent of the farmers were selling their produce to GSHCL, this percentage has been increasing steadily and the practice of selling the produce on road side has been significantly reducing.
- ◆ The farmers are getting about 20 percent more price of the produce from GSHCL than the prevailing market price; therefore, they are not willing to sell their produce to other traders or retail agencies.

The joint selling has also reduced the pressure of selling produce on road side alongwith daily hassle with middlemen and traders for price negotiation.

Linkage with Stakeholders

Efforts have been made by Resource Institutions and Department officials for linking Government Agencies, banks, retail outlets, financial institutions and other Research Institutes to make access of financial and other services possible for farmers for input as well as output marketing.



Fig 40: Capacity-building on Market Linkage

- ◆ Farmers have been linked with Department of Agriculture for their input requirement of seeds and planting materials.
- ◆ For other inputs, buyer and seller meetings have been organized. Regarding fertilizers requirement, Resource Institutions is trying to establish linkage with Zuari Agrochemicals and in the upcoming Kharif season, approximately 5 MT of fertilizers will be purchased jointly.

For output selling, farmers are not willing to sell their produce to any other aggregator or retail outlets because GSHCL is providing them very lucrative prices. Therefore, linkage will be further established for input requirement.



Fig 41: GSHCL Collection Centre

- ◆ GSHCL has its own collection centres at different clusters for collection of produce and 600 retail kiosks for sale of produce.
- ◆ Farmers sell their produce at the prefixed rate to GSHCL; they have installed weighing scale for weighing the produce at procurement centre. Money is transferred to the farmers' account within 15 days.

For fulfilling the credit requirement, all the 116 FIGs have their bank accounts opened and they have saved around Rs. 20.00 lakhs in their account. They also provide loans ranging from Rs. 3000 to Rs. 2.00 lakhs to each other on low interest rates.



Fig 42: Sale from GSHCL Kiosk

Convergence of Schemes

As per the field visit and interaction with farmers, convergence of VIUC with other schemes has not been observed.

Employment Generation

Direct and indirect employment has been generated by the scheme in the State. At collection centres and kiosks nearly 2500 people has been provided indirect employment in marketing of the produce.

Overall, the impact of the scheme is visible in terms of collective activities and marketing of the produce, but the traditional practice of vegetable cultivation is still predominant in the State, which needs to be given more emphasis.

Recommendations

In Goa, VIUC has started to gain momentum in terms of selling of produce through the State horticultural corporation operated mobile vans/kiosks and popularisation of high yielding seed varieties and better production practices. However, it has not been able to significantly impact other areas of improving vegetable productivity, vegetable value chain such as primary value addition at the farm level, market linkages with institutions and organised/mainstream markets and collectivisation of input procurement. Given the development in area of production, the impact of the scheme can be made manifold, if interventions are made in other areas also.

Some of the recommendations, based on analysis of data and observation during field visit are as below:

- ◆ Component of Training and capacity-building of farmers needs to be strengthened; this should also include exposure visits of farmers to production facilities as well as existing large FPOs. Training is required on modern package of practices for vegetable production, protected cultivation as well as on functioning of FIGs/farmers' cooperatives and FPOs;
- ◆ The staff of the implementing agency (SHM and Directorate of Horticulture) and RI should undertake exposure visits for gaining knowledge on modern processing techniques and technologies being implemented. This will provide the necessary impetus for them to motivate farmers' groups.
- ◆ Cross pollination of practices and ideas from other similar States like Kerala can help improve the effectiveness of the initiative. For example, homestead and terrace kitchen gardens as practiced in Kerala, can be implemented in Goa. This will help the State attain self-sufficiency in vegetables and fruits and also spread the package of practices.
- ◆ There is a need to increase the intensity of work on components such as Post Harvest Management, training on cultivation practices, collectivisation of farmers, creating operational farmers' collectives, which are in demand from farmers;
- ◆ Mechanism should be derived for linking farmers with institutional buyers, exporters, processing and value adding units, organised/mainstream markets, as this aspect has been partially covered in the first year of implementation of the scheme.
- ◆ At the State level, mechanism for monitoring along with MIS should be developed by the State Implementing Agency to supervise the progress of the scheme on a regular interval basis.

Chapter 5

Karnataka

Project Area and Stakeholders

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

VIUC Scheme in Karnataka

VIUC in the State of Karnataka is being implemented across five districts in the State since 2011-12. The directorate of Horticulture, Government of Karnataka has been appointed as the Nodal agency for implementing the project in the State and Joint Director, Horticulture is the Nodal Officer looking after the scheme. At the District level, Deputy Director Horticulture (DDH) is the Nodal Officer looking after the implementation of the scheme.

Baseline Survey

To identify major vegetable production districts and clusters, an independent agency, carried out the baseline survey in Karnataka. Baseline Survey highlighted the existing supply chain and other bottlenecks and also identified the vegetable growing clusters within the district. During the interaction with the Nodal Agency, 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.

Ramnagar and Kolar. Major vegetable clusters around these five districts, ranging from 20-30 km, are supplying vegetables to respective urban clusters including Bangalore.

Implementing Partners of VIUC in Karnataka

The directorate of Horticulture, Government of Karnataka has been appointed as the Nodal agency for implementing the project in the State and RKVY Cell under Directorate of Agriculture is looking after the overall implementation of the scheme. At District level, Deputy Director Horticulture (DDH) looks after the overall implementation of the scheme.

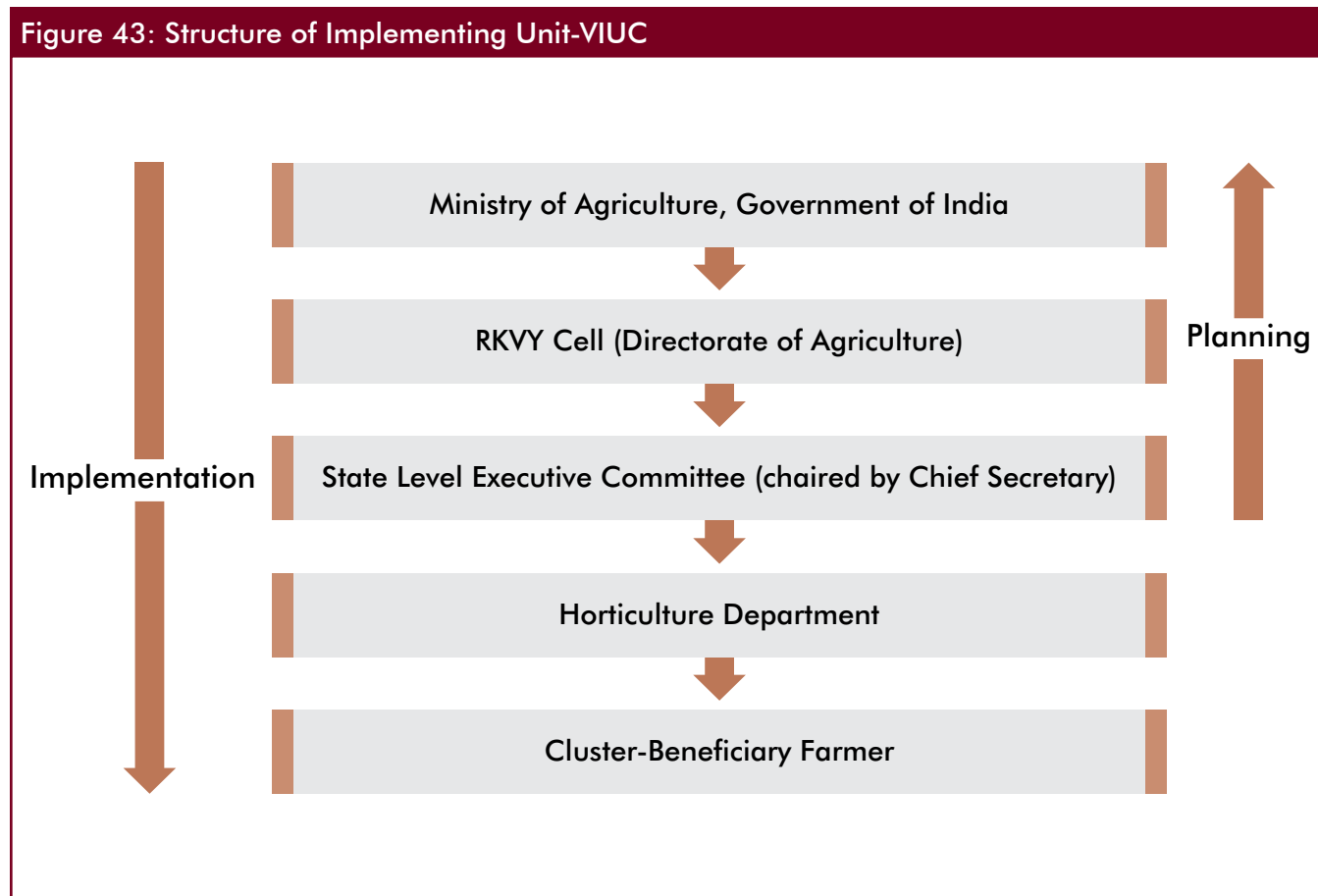
State/Districts/Clusters

The scheme is being implemented in five districts of Bangalore Rural, Bangalore Urban, Chikballapur,

Table 8: Stakeholders and their Coverage Area

Role	Name of Organization	Districts Covered under VIUC Scheme
Nodal Agency	Directorate of Horticulture, Government of Karnataka	Bangalore Rural, Bangalore Urban, Chikballapur, Ramnagar and Kolar

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



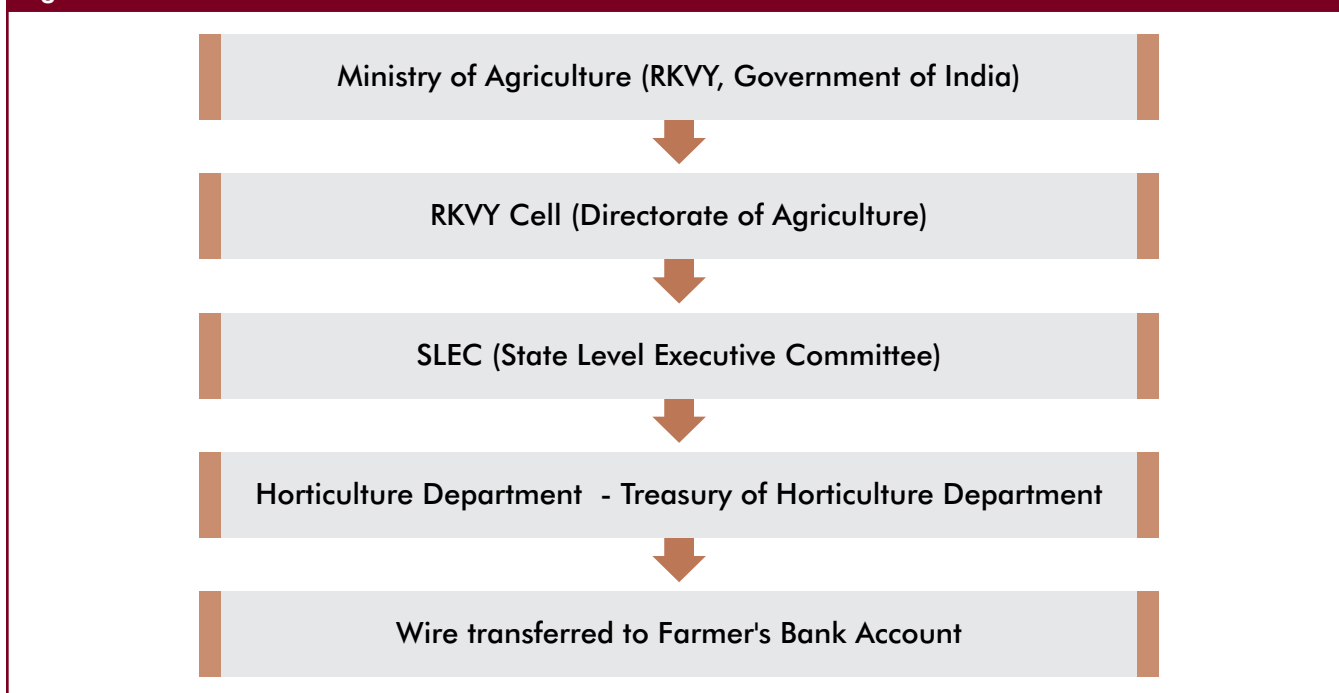
Planning and Implementation of Activities: The planning of the project activities takes place at the Cluster level, which is then consolidated at the State level. At the State level, Directorate of Horticulture finalises the State plan. From Directorate of Horticulture, State plan is submitted to the State Level Executive Committee (SLEC) chaired by the Chief Secretary, which is the final authority for approval of the plan for implementation. Approved State Plan is finally submitted to RKVY Cell (Directorate of Agriculture) for approval and sanction of funds.

Flow of Funds

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. 1700.00 lakhs. Approximately 1.3 percent of the total budget has been kept for administration purpose.

Figure 44: Flow of Funds



Release of Subsidy to Beneficiary

Figure 45: Release of Subsidy



The applications for subsidy are received through Deputy Director, Horticulture. Once the applications are received and scrutinised, the fund flow takes place from the Head Quarters directly to the farmers' bank account through wire transfer.

The mobilization of farmers and promotion of Farmers' Interest Groups (FIGs) and Farmers' Producers' Organisations (FPOs) is being undertaken by the State Horticulture Department which is the Nodal Agency for the Scheme at the State level.

Under the initiative, 46 Farmers' Associations have been formed which have been registered under

Society Act 1960. These 46 farmers groups have covered around 3173 farmers.

Performance of the Scheme

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

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

Figure 46: Performance of the Scheme



Proposed and Approved Action Plan

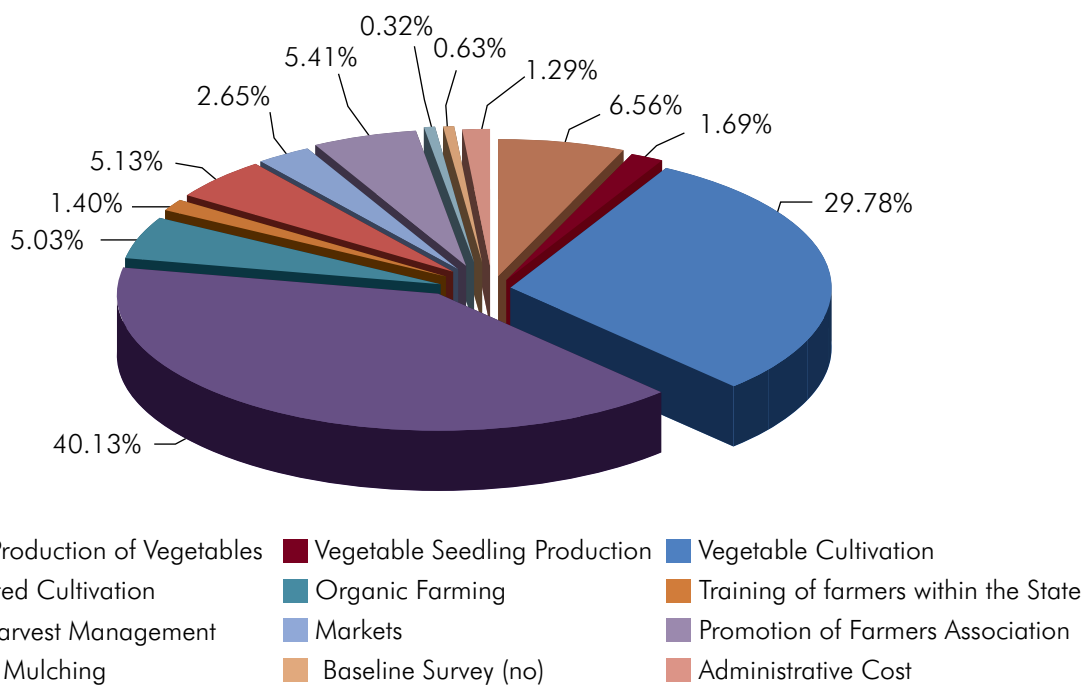
As per the proposed action plan for the year 2011-12, the Department proposed to take up almost all the activities/components for the implementation of VIUC with the total financial outlay of Rs. 1700.00 lakhs. The share of all the components is illustrated in Figure 6 below.

Of the total approved financial outlay of Rs. 1700.00 lakhs, maximum fund has been allocated for the component of protected cultivation (40.13%) followed by vegetable cultivation

(29.78%), seed production (6.56%), promotion of farmers' association (5.41%) and organic farming (5.03%). Funds have also been allocated for other components. As it is evident, higher funds have been allocated for promoting protected cultivation.

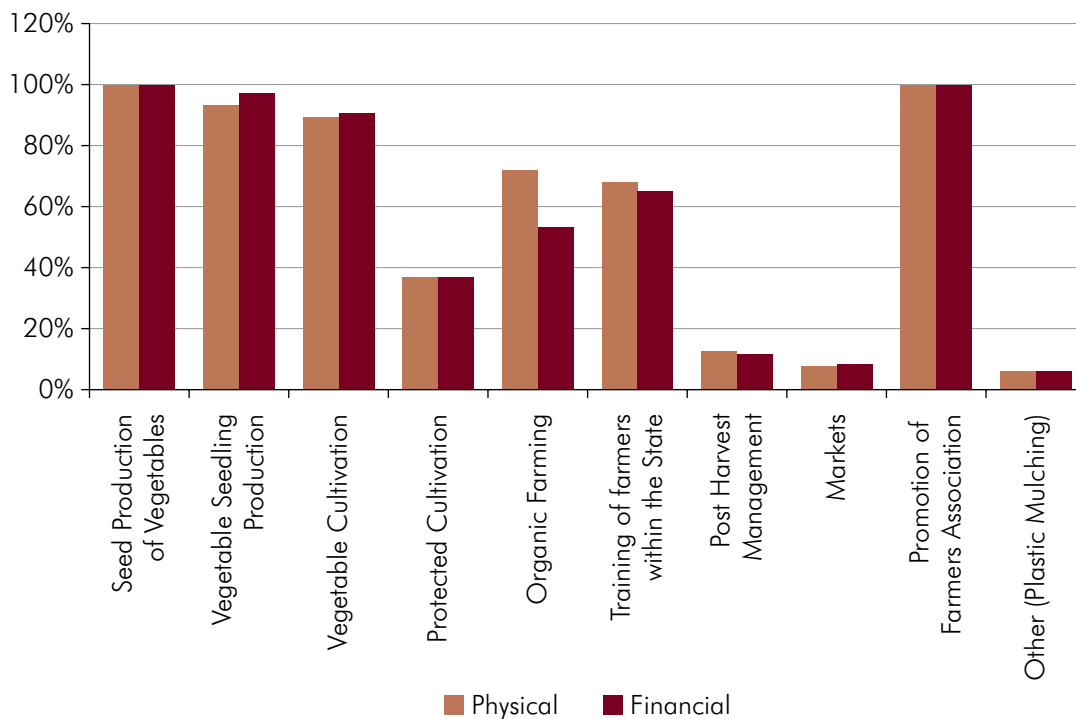
Detailed component-wise Physical targets & Financial outlay for the year 2011-12 is given in Annex- I. The present status of financial achievement of different components can be delineated from the following bar graph, in which physical and financial achievements are noticeably evident.

Figure 47: Approved Action Plan (2011-12) for Karnataka



Source: Department of Horticulture, Karnataka

Figure 48: Physical & Financial Achievements of VIUC in Karnataka (year 2011-12) (in percentage)



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

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

Table 9: Component-wise physical and financial targets and achievements

Component	Physical Performance	Financial Performance
Seed Production of Vegetables	<p>100 percent achievement</p> <p>As per the approved plan, there was 16 ha area to be covered for seed production of vegetables, of which whole area has been covered.</p>	<p>100 percent achievement</p> <p>Financial allocation for seed production was Rs. 111.50 lakhs, of which the entire fund has been utilized.</p>
Vegetable Cultivation	<p>89 percent achievement</p> <p>As per the approved plan, 671.46 ha area was approved for expansion of open pollinated and 1051.47 ha hybrid vegetable cultivation, of which 628.05 ha area has been covered under open pollinated vegetable cultivation and 897.84 ha under hybrid cultivation. In case of open pollinated cultivation, there has been 94 percent physical achievement and for hybrid cultivation there has been 85 percent achievement of physical target.</p>	<p>91 percent achievement</p> <p>The financial allocation for vegetable cultivation was Rs. 506.21 lakhs. For open pollinated vegetable cultivation, financial allocation was Rs. 151.02 lakh, of which Rs. 144.04 lakhs has been utilized. For hybrid vegetables cultivation, there was allocation of Rs. 355.19 lakhs, of which Rs. 304.97 lakhs has been utilized. Financial achievement for open pollinated and hybrid cultivation are 95.38 and 85.86 percent respectively.</p>
Vegetable Seedling Production	<p>94 percent achievement</p> <p>For vegetable seedling production, physical target to cover 0.64 sq m area, of which 0.60 sq m has been covered.</p>	<p>94 percent achievement</p> <p>Financial allocation for this component was Rs. 28.78 lakhs, of which Rs. 28.05 lakhs has been utilized.</p>
Protected Cultivation	<p>37.42 percent achievement</p> <p>Physical allocation for different components of protected cultivation are as under:</p> <p>iii Naturally ventilated system: Physical target for establishment of tubular structure was 39.95 sq m area, of which 10.02 sq m area has been covered and physical achievement is 71.83 percent.</p> <p>iv Wooden structure: Physical target for establishment of wooden structure was 0.27 sq m, of which no area has been covered; therefore, physical achievement is zero percent.</p> <p>v Shade-net house (Tubular structure): Physical target for establishment of tubular structure was to cover 1.22 sq m area, of which, 0.95 sq m area has been covered. Physical achievement is 78 percent.</p> <p>vi Granite structure: Physical target was to cover 0.41 sq m area, of which no area has been covered. Physical achievement is zero percent.</p>	<p>37.40 percent achievement</p> <p>Financial allocation for different components are as under:</p> <p>iii Naturally ventilated system: Financial allocation for this component was Rs. 642.49 lakhs, of which Rs. 458.86 lakhs has been utilized. Financial achievement is 71.42 percent.</p> <p>iv Wooden structure: Financial allocation for this component was 7.06 lakhs, which has not been utilized, therefore, financial achievement is zero percent.</p> <p>v Shade-net house (Tubular structure): Financial allocation for this component was Rs. 24.30 lakhs, of which Rs. 19.00 lakhs has been utilized. Financial achievement is 78.2 percent.</p> <p>vi Granite structure: Financial allocation for this component was Rs. 8.30 lakhs, of which none of the fund has been utilized. Financial achievement is zero percent.</p>

Component	Physical Performance	Financial Performance
Organic Farming	<p>73 percent achievement</p> <p>Adoption of organic farming: For adoption of organic farming, there was target to cover 120 ha area, of which around 44 ha area has been covered. Therefore, physical achievement is 37 percent.</p> <p>Organic certification: For organic certification, there was target to cover 3 ha area, of which entire area has been covered, and physical achievement is 100 percent.</p> <p>Vermicompost units/other units for input production: Physical target for this component was establishment of 254 units, of which 206 units have been established. Therefore, physical achievement for this component was 81.3 percent.</p>	<p>53 percent achievement</p> <p>Adoption of organic farming: Financial allocation for this component was Rs. 4.80 lakhs, of which Rs. 1.99 lakhs has been utilized, therefore, financial achievement is 41.46 percent.</p> <p>Organic certification: For organic certification, there was financial allocation of Rs. 4.50 lakhs, of which Rs. 1.69 lakhs has been utilized and financial achievement is 38 percent.</p> <p>Vermicompost units/other units for input production: Financial allocation for this component was Rs. 76.20 lakhs, of which Rs. 61.70 lakhs has been utilized and financial achievement is 81 percent.</p>
Training of Farmers within State	<p>68 percent achievement</p> <p>The physical target for training of farmers was 5216, of which training to 3542 farmers have been provided.</p>	<p>65 percent achievement</p> <p>Financial allocation for this component was Rs. 23.85 lakhs, of which, Rs. 15.62 lakhs has been utilized.</p>
Post Harvest Management	<p>12.86 percent achievement</p> <p>The physical target for post harvest management was under the following components:</p> <p>Pack house- As per the approved action plan, there was physical target of establishing 35 pack houses, of which 18 pack houses have been established. Physical achievement is 51.43 percent.</p> <p>Insulated van- Physical target was distribution of two insulated vans of which no van has been distributed, therefore physical achievement is zero percent.</p> <p>Low cost onion storage structure- Physical target for this component was establishment of two onion storage structures, of which no structure has been established. Therefore, physical achievement is zero percent.</p> <p>Plastic crates- Under this component, there was target of distribution of 7219 plastic crates, of which no crates have been distributed. Therefore, physical achievement is zero percent.</p>	<p>11.98 percent achievement</p> <p>Financial allocation for all these different components of post harvest management are as follows:</p> <p>Pack house- Financial allocation for pack house was Rs. 51.36 lakhs, of which Rs. 24.62 lakhs has been utilized. Therefore, financial achievement is 47.94 percent.</p> <p>Insulated van- Financial allocation for insulated van was Rs. 6.40 lakhs, of which no fund has been utilized. Therefore, financial achievement is zero percent.</p> <p>Low cost onion storage- Financial allocation for this component was Rs. 1.00 lakhs, of which, no fund has been utilized. Therefore, financial achievement is zero percent.</p> <p>Plastic crates- Financial allocation for this component was Rs. 28.40 lakhs, of which no fund has been utilized. Therefore, financial achievement is zero percent.</p>
Market Infrastructure	<p>8.33 achievement</p> <p>The physical target for market infrastructure was under the following components:</p>	<p>8.82 achievement</p> <p>Financial allocation for market infrastructure was under the following components:</p>

Component	Physical Performance	Financial Performance
	<p>Collection centre- Physical target under this component was establishment of six collection centres of which only one has been established and physical achievement is 17 percent.</p> <p>Motorized vending cart- Physical target under this component was distribution of 47 vending carts, of which none has been distributed. Therefore, physical achievement is zero percent.</p>	<p>Collection centre- Financial allocation under this component was Rs. 21.25 lakhs, of which only Rs.3.75 lakhs has been utilized; therefore, financial achievement is 17.65 percent.</p> <p>Motorized vending cart- Financial allocation for this component was Rs. 23.50 lakhs, which has been utilized; therefore, financial achievement is zero percent.</p>
Promotion of Farmers Association/Groups	<p>100 percent achievement</p> <p>Physical target was to form 46 farmers group, of which 46 groups have been established.</p>	<p>100 percent achievement</p> <p>The financial allocation for this component was Rs. 92 lakhs, of which total fund has been utilized.</p>
Plastic Mulching (Other component)	<p>33 percent achievement</p> <p>Physical target under this component was distribution of plastic mulching in 54.99 ha area, of which the same has been covered in 18.19 ha.</p>	<p>13 percent achievement</p> <p>Financial allocation for this component was Rs. 5.50 lakhs, of which Rs. 0.72 lakhs has been utilized.</p>
Baseline Survey	<p>100 percent achievement</p> <p>Financial allocation for baseline survey was Rs. 10.72 lakhs, of which entire fund has been utilized.</p>	
Administrative Cost	<p>47 percent achievement</p> <p>Financial allocation for this component was Rs. 21.90 lakhs, of which Rs. 10.24 lakhs has been utilized.</p>	

Out of the total fund of Rs. 1700.00 lakhs, total expenditure is of Rs. 1289.47 lakhs i.e. 76 percent of the total financial target has been achieved.

Summary

- ◆ As per the proposed action plan, total financial outlay for the year 2011-12 was Rs. 1700.00 lakhs. Maximum fund has been allocated for protected cultivation component followed by vegetable cultivation; small allocations have been made for other components.
- ◆ For the components of protected cultivation, post harvest management and market infrastructure, physical and financial achievement is very low.
- ◆ Total utilization of the fund till date is Rs. 1289.47 lakhs, which is 76 percent of the total target.

Situational Analysis of the Scheme

This section 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.

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 45 farmer members (FIGs) were surveyed in different clusters of Bangalore Urban and

Bangalore Rural 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 1.5 ha. All the farmers of the area belong to small farmers' category. Only small farmers have been covered under the scheme as beneficiary. None of the medium and large farmers have been covered under the scheme in the surveyed area.

Irrigated Land: Out of the total cultivable area, 100 percent area has been irrigated. Majority of the farmers use tubewell and lift irrigation as a major source of irrigation. Of the total cultivable area, only 2 percent area is under protected cultivation.

Seed Used: Almost 100 percent of the surveyed farmers are using hybrid seeds. Of which around 50% of the farmers are procuring these seeds from local input supplier, Government agencies and Government nurseries while 50 percent procure from private agencies. 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 started.

Input Procurement: All the farmers of surveyed area are procuring inputs like seeds, fertilizers and pesticides individually from local input suppliers, State agriculture universities, cooperatives and other Government and private agencies. For seeds, there is no collective procurement by any FIG or member farmers, but for other inputs like fertilizers, pesticides, packaging materials, credit facilities, irrigation facilities and other agriculture equipments, around 50 percent of the farmers are following collective approach.

Adoption of Integrated Pest Management: Almost 100 percent of the farmers of the surveyed cluster are adopting integrated pest management techniques and only 40 percent of the farmers are adopting organic farming techniques. Inputs for IPM and organic farming are procured both from Government as well as private agencies. With reference to the baseline survey report, it has been observed that the adoption of organic farming has improved among farmers. Earlier, the farmers of the surveyed clusters were not undertaking organic farming but now its adoption has improved among farmers. The main issues highlighted by

the farmers is lack of proper marketing channel for organic vegetables which needs to be developed.



Fig 49: Sorting and Grading of Tomato

Adoption of On-farm Management Practice: All the farmers of the surveyed areas are adopting on-farm management practices like drip irrigation, sprinkler irrigation, plastic mulching and shade net house. For learning about these technologies, all the farmers approach State Horticulture Department, agriculture Universities and local research institutes. As per the baseline survey report, it has been observed that earlier the adoption of on-farm management practices was only among 1 percent farmers which have increased remarkably.

Post Harvest Losses and Value Addition: As per the data of surveyed farmers, the extent of post harvest losses of major crops like tomato, capsicum, cauliflower, cabbage, pole beans, ridge gourd, cucumber, bottle gourd, bitter gourd, varies from 10-12%, which was earlier 30-40%. This indicates that the crop loss has now been reduced by 60%. It indicates that the component of post harvest management of vegetables has improved among farmers by different training sessions provided by the Department of Horticulture. Only 50 percent of the farmers are carrying out value addition at field level by sorting and grading. Value addition at field level results in improved shelf life and better quality of the produce.

Marketing of Produce: Almost all the farmers are carrying their produce to markets in different type of packages like, plastic bags, plastic crates, gunny bags, corrugated box depending upon the produce. But mostly plastic crates are used, only four percent farmers use wooden box for packaging of tomato. Average cost incurred on packaging in

plastic crates is approximately Rs. 1200-1500/- per quintal of the produce. These crates are available at subsidized rates (50%) from the Department of Horticulture. This is a one-time investment and no recurring cost is involved in these crates.



Fig 50: Packaging in Plastic Crates

Almost 50 percent of the surveyed farmers are selling their produce to Reliance and Safal indirectly and others are carrying their produce to Local Mandi and wholesale market which is at a distance of more than 10 km. Approximately 75 percent of farmers are carrying their produce individually in public transport vehicles and are selling to commission agents or wholesale traders or village traders. Farmers are getting payment on spot cash and credit basis on fixed price as well as negotiation with traders. Major issues Stated by the farmers are high transportation cost, lack of cold storage facilities and dependency of middlemen for sale of produce.

Lack of storage facilities compels the farmers to sell all the produce in a single delivery. Availability of large volumes of produce lowers down the price in market. In addition to this, influence of middlemen is also very high due to individual selling approach. This suggests that the collective approach for marketing is lacking in the State, which needs to be strengthened.

Among the marketing infrastructure component, there is a cold storage unit in one cluster, which is easily accessible but not used by the farmers. In addition to this, primary processing facility and pack houses are also available. These facilities help the farmers in realising better quality, shelf life, better price and improved bargaining capacity of the farmers.

Marketing Linkages: Marketing linkages have been proposed to develop with K.R.Market, HOPCOM, Reliance and Safal in Kagalahalli

village cluster and Madivala and Hosur market in Harohalli cluster. Major aggregators are Green Nature Fresh and M.S. Nature Fresh. Presently, all of the farmers are undertaking direct marketing. Marketing component has not seen much improvement in the State.

Government Support & Incentives: Around 100 percent of the farmers of the surveyed areas are aware about Government support and activity. Major source of information access for farmers is Government officials, newspapers/radio and private companies working in the area. This is a significant achievement as all the farmers of the area are now aware about different Government support and schemes. All of the farmers are beneficiaries of Government support and schemes from National Horticulture Mission, National Microirrigation Mission and other supported programmes.

Awareness about VIUC Scheme: All the farmers of surveyed area mentioned that they are aware about VIUC scheme and its objectives, but these are not very clear to them. As per the farmers, major objective of the scheme is to increase the vegetable production as they do not have any understanding regarding organised, institutional and retail marketing of the produce. All of the farmers participated in different components of the scheme like in Farmers' Group formation, protected cultivation, INM/IPM, training, post harvest management infrastructure and marketing component. Most of the farmers received subsidy from different components of the scheme. There is no resource institution working in the area, Department of Horticulture is implementing VIUC in the State.

Training and Training-need Assessment: All of the farmers have been provided different kind of training and capacity-building by Government officials and Experts from State Agriculture Universities and IIHR Bangalore with average 30 participants at State and 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.

Overall, from primary survey, it is emerging that the performance of the Department of Horticulture is satisfactory in terms of motivation of farmers for formation of FPOs, providing infrastructure and

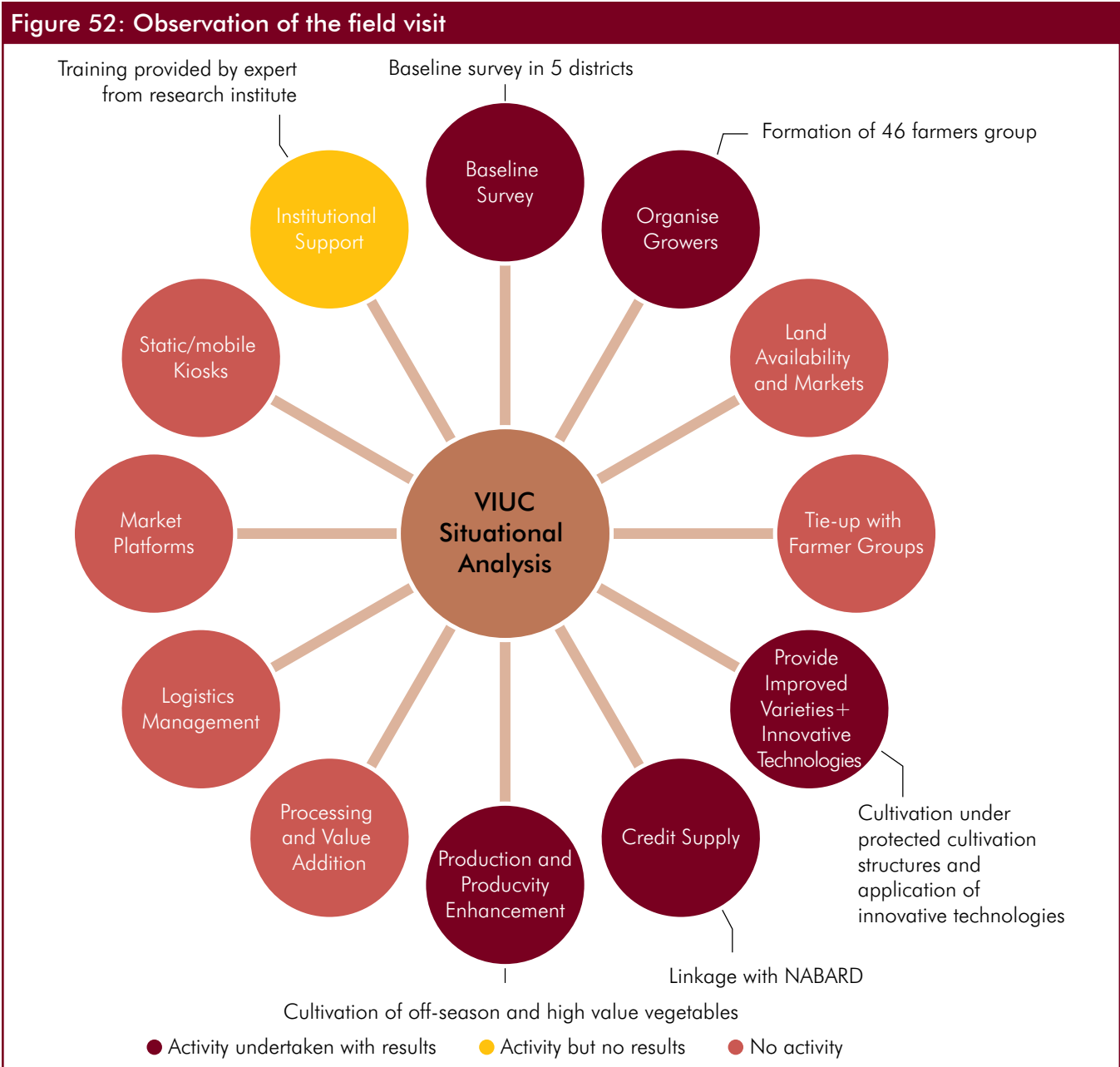


Fig 51: Training Programme

marketing facilities and inputs for production. In spite of these efforts, there is a need to augment infrastructure facilities, marketing component and subsidy on seeds, fertilizers and drip irrigation.

Observations of the Field Visit

In Karnataka, the project is being implemented by the Directorate of Horticulture, without any assistance of Resource Institution. Therefore field officials of directorate are responsible for implementing all the components including formation of cluster Associations.



Detailed Observations of Field Visit

Cluster Approach

In Karnataka, for the purpose of promotion of vegetable cultivation and supporting these farmers through various other components of the scheme, well defined contiguous clusters have been formed. In a village selected for the initiative, one Cluster Association has been formed.

Clusters of existing vegetable producing villages as well as of new villages have been formed. Impact of cluster approach is clearly visible and can be observed while discussing with the farmers, as farmers mention that they are adopting various technology (e.g. protected cultivation, plastic mulching, drip irrigation) and other package of practices along with post harvest management forms like sorting, grading in plastic crates. The efforts of officials at District level are highly appreciable in convincing farmers for adopting some of the new techniques.

Mobilization of Farmers and Group Formation

Farmers have been mobilised for getting benefits of various component of the schemes such as agri-input supply, installation of protected cultivation structure, etc. however mobilisation has not been done for collectively marketing their produce. Cluster Associations have been formed at the

village level by the Government officials. Some of these associations formed by the department follow book keeping, maintain accounts and any other records of activities similar to that of FIG. As the field officials of implementing agency are not fully aware of concept of formation of FPOs, no initiative has yet been taken in this regard.

As the other components of the scheme have been implemented in clusters and farmers have seen the success in terms of increased yield and income, they are highly motivated and forward looking. At this juncture, if assistance is provided to train them on concept of FPO/FPC and support in terms of hand holding, there is a potential to form successful FPOs in almost all the clusters in the five districts covered under the initiative.

Training and Capacity-building

Capacity-building and training programmes for package of practices on different aspects of vegetable cultivation, protected cultivation, improved technology and organic farming have been organised by the Nodal Department with the help of State Agriculture University, IIHR and by engaging individual experts.

Disbursement of Subsidy

In Karnataka, during the year 2011-12, only selected components of vegetable production, protected cultivation and select PHM activities



Fig 53: Training Programme on Different Aspects of Cultivation

had been taken up by the State Nodal Agency i.e. Directorate of Horticulture.

Functioning and Coordination of Resource Institution

The State Government of Karnataka has not engaged any Resource Institution for farmers' mobilisation and FPO formation. However, now as FIGs have been formed and market linkages need to be established, it has been observed that some agency should be involved to coordinate the work of registration of FPO, training farmers on aspects of FPO operation, business plan preparation and facilitating linkages, specifically market linkages. State Nodal Agency can adopt a different approach, where any agency engaged for this work may not have same responsibility as were assigned in other States. The Directorate of Horticulture has invited applications from interested agencies through Expression of Interest. Unfortunately the budget allocated for engaging these agencies did not match the deliverables expected from them. Therefore, the Directorate has increased the budget for this engagement from Rs. 15 Lakhs to Rs. 1 Crore and will re-invite bids from interested organisations.

Functioning of Cluster Associations

As it has been discussed above, the Cluster Associations formed by the department are registered under Societies Act. These are formed by groups of farmers from the same village. Few members are trained on aspects of organisation of Cluster Associations; though not formal, there is some form of record keeping or saving activities by these groups. Except a few groups, most of them are not taking up any collective activities of procurement or marketing.

Infrastructure Creation

During the financial year 2011-12, State Action Plan had only infrastructure component of protected cultivation. For these structures also, it was restricted to create poly-houses and pucca collection centres. Approximately 38 percent of physical targets have been completed by the State. The poly-houses have been created, as per specified standards, in terms of structure, design of poly-house and effectiveness.

Some pucca collection centres have been constructed but were non-operational at the time of undertaking this assignment.

Marketing of Produce

Currently neither any linkages for marketing have been established nor has any marketing infrastructure been created under the initiative. As the marketing component was not covered under the first and second phase of the project in the year 2011-12, no initiative has been taken by the implementing agency. All the District level officials, wherever visits were made, have raised the concern for including market facilitation and marketing infrastructure in the project.

HRD Training to Project Management unit

HRD training to the project management units have not been conducted under the scheme for any kind of orientation, objectives of the scheme and on scheme implementation.

Challenges/Issues

As it has been discussed above, only limited numbers of components of the scheme were taken up in Karnataka and there is no engagement of any resource institution. Therefore, from the perspective of achievement of physical and financial targets of the scheme, no challenges have been faced by the officials implementing the scheme at the field level, except in some cases it was difficult to convince farmers for adopting new practice. However, if it is seen from a holistic point of view, there are a few issues, which are discussed as under:

- ◆ Although the officials from the Directorate of Horticulture have put in their best efforts in promoting the scheme, however, their lack of understanding of various aspects of value chain such as value addition, primary processing, market facilitation and collectivisation is limiting the impact of the initiative.
- ◆ Inclusion of only selected components of the scheme in State Action Plan is restricting District level officials in providing other required service and infrastructure support to the farmers for better value realisation for their produces.
- ◆ Some components of the initiative have remain untouched in the first year of implementation,

such as creation of marketing infrastructure like pack houses, collection centres, static/mobile kiosks; logistics management like mobile vans, refrigerated vans; processing and value addition like primary sorting, grading of produce; and establishment of market linkages with institutions and organised sector like retailers chains, exporters, etc.

- ◆ The farmers have been able to come together in the form of Cluster Associations, but have been unable to actualise their efforts in terms of collective input procurement or selling of produce. In order to achieve this goal, the implementing agency needs to orient themselves and thereafter the farmers regarding the benefits of collectivisation.

Summary

- ◆ As per the situational analysis of the scheme, though the State is performing well in terms of expansion of area and increase in vegetable production by adopting modern package of practices, but the most important component of the scheme which is marketing has not been given any consideration.
- ◆ In addition to this, farmers are finding the scheme lucrative but they are not carrying out

any collective activity and the group approach is totally absent.

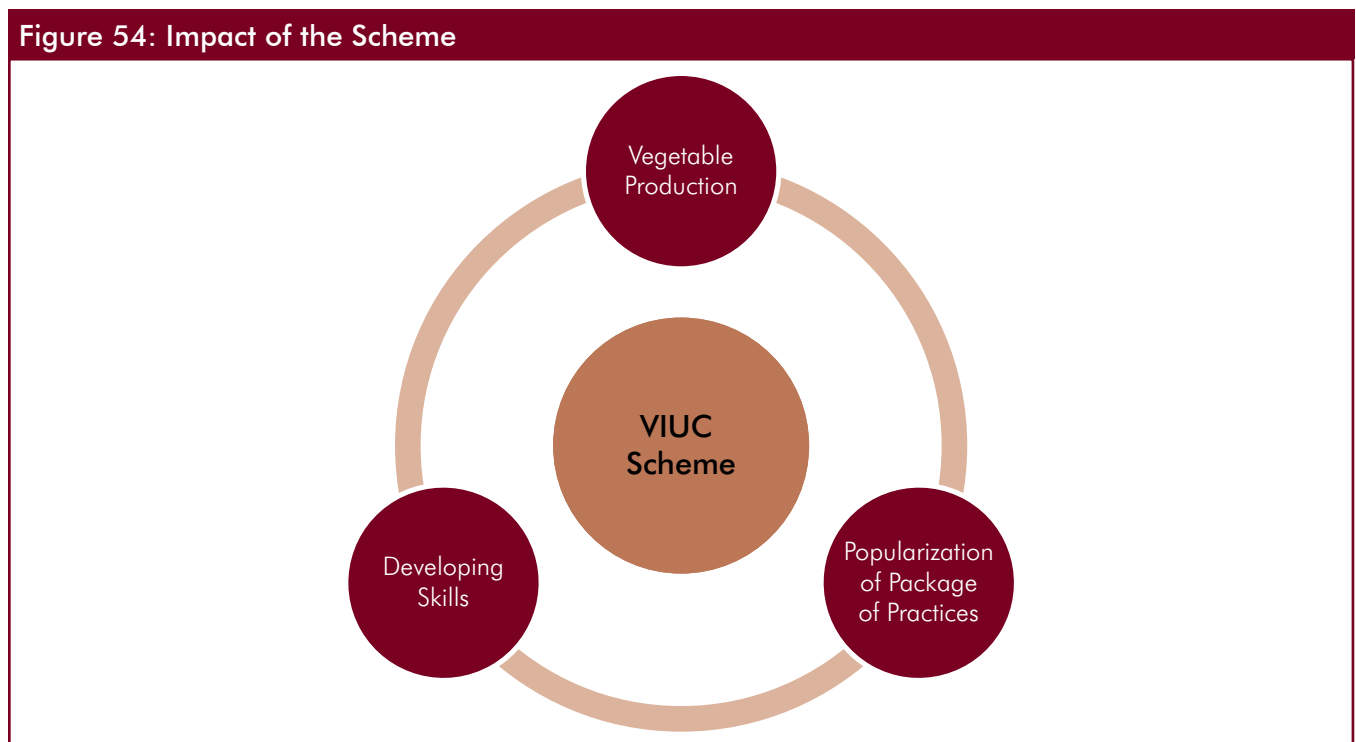
- ◆ As the Department itself is not very clear about the objectives of the scheme, therefore, all the components have not been totally covered for full fledged development of farmers.

Impact of the VIUC

This section investigates the impact of VIUC on broader areas relating to increased production of vegetables, availability of quality inputs, linkages for procurement and marketing, savings 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 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.

The following figure outlines the direct impact of the initiative in terms of the following four components.



Vegetable Production

Table 10: Average Yield and Production of Vegetable in VIUC Implemented Clusters

Vegetables	Average yield	Annual Prontons	Percent
Tomato	15.2	53900	48.39
Beans	8.27	13800	12.42
Cabbage	12.2	10700	9.61
Potato	13.01	7600	6.91
Cauliflower	11.17	6200	5.58
Brinjal	11.28	3300	2.96
Green chilli	9.47	2100	1.86
Cucumber	10.31	1900	1.74
Leafy vegetables	7.21	1700	1.54
Capsicum	8.03	1500	1.37
Beat root	10.11	1500	1.36
Ridge gourd	7.76	1100	1.03
Carrot	9.28	960	0.87
Knol khol	11.77	900	0.84
Bitter gourd	8.4	700	0.67
Okra	6.87	600	0.57
Onion	9.95	600	0.55
Bottlegourd	12.44	470	0.43
Cowpea	20	300	0.28
Long bean	8	250	0.23
Field bean	6.58	240	0.22
Baby corn	6.75	230	0.21
Radish	7.63	170	0.16
Chowchow	15	100	0.09
Clusterbean	8	90	0.08
Ashgourd	10	40	0.04
Total	10.1	111000	100

The project cluster has been estimated to produce about 1.1 lakh MT of vegetable annually and this represents around 15 percent of the demand of urban cluster in Bangalore city. Thus, the size of output coming from these clusters is significant vis-a-vis the consumption demand of urban cluster. This indicates that the farmers have become highly progressive in terms of vegetable production and this impact can be correlated with the inputs and training provided on different aspects of cultivation.

Quality Inputs

As from the primary survey and field observations, it has been analysed that the perception of farmers for the use of quality inputs has improved. All the farmers of the surveyed areas are using hybrid seeds and this is an indication of the divergence of the farmers towards modern package of practices. Although, area and production data of the vegetables has not been provided by the nodal agency but as per

the field visit, quality of the fruits was observed to be very good. The farmers are carrying out large scale cultivation of hybrid vegetables. The fruit size of capsicum has been observed to be approximately 150 g which has a very high market value. In addition to this, they are also growing special vegetables like red cabbage, green lettuce, red lettuce, broccoli, zucchini, cherry tomato, etc and are getting premium prices for these vegetables.



Fig 55: Cultivation of cabbage

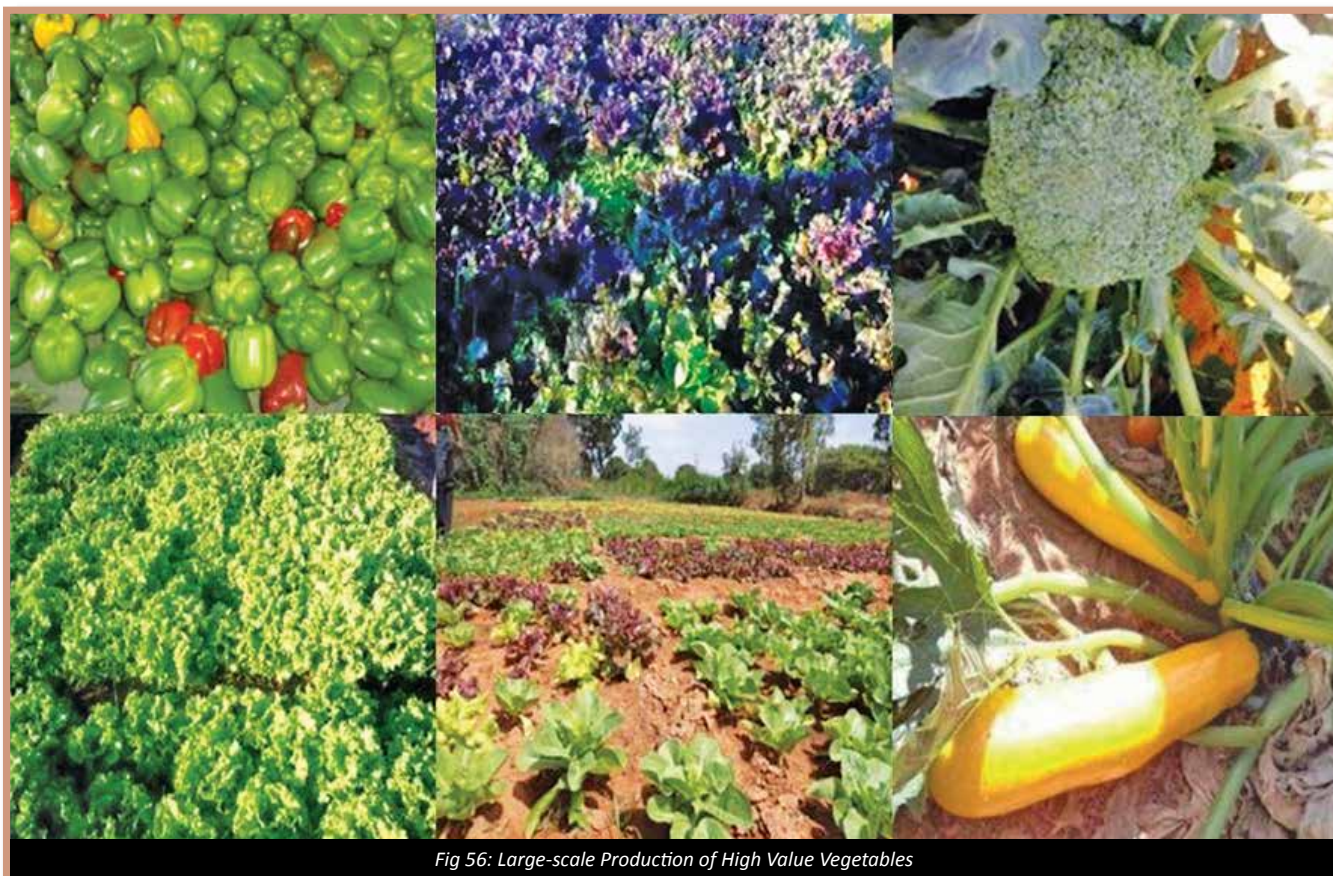


Fig 56: Large-scale Production of High Value Vegetables

Popularization Of Modern Package Of Practices And Protected Production Technology

The Department of Horticulture has promoted modern package of practices and protected cultivation of vegetables (promotion of green house and shade net house) very aggressively. Experts from IIHR (Indian Institute of Horticulture Research), UAS Dharwad, UHS, GKVK and other

NGOs provide training to the farmers on Good Agricultural Practices (GAP), organic farming, post harvest management and marketing. From nursery raising up to harvesting of the vegetable, farmers have adopted innovative package of practices. They are using mulching papers, GI wire staking, drip irrigation and other protected cultivation structures for tomato, brinjal, cucumber, capsicum, gourds, etc. The beneficiaries of these structures are the FIG members themselves and they have been highly benefitted from this initiative.



Figure 57: Nursery for quality seedling production



Figure 58: Application of Mulching

Initiation of the Process of Collectivization

As the concepts of collectivisation and group activity are not clear even amongst the Department, there is lack of understanding of the concept at the ground level. As of now, group activity has started among farmers neither for input procurement nor for marketing.

Creation of Infrastructure

Among infrastructure creation, poly-house, shade net house, pack house and collection centres have been established. Though farmers have perceived the benefits of protected cultivation structures, but the use of pack house and collection centre was not visible. Farmers of the area are very progressive in terms of the production of vegetables but the concept of marketing is highly deficient in the

State and they have not realised the availability of these structures.



Figure 59: Pack House and Collection Centre

Linkage with Stakeholders

At the time of undertaking this assignment, no formal linkages have been established for input procurement and output marketing. Regarding input procurement, no linkage has been established, neither the proposal are made, although to facilitate the credit supply to farmers, discussions are held with NABARD. For marketing of the produce, discussion is in process for engaging six aggregators in different production clusters.



Fig 60: Meeting with NABARD

Although there is an 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

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

Recommendations

In Karnataka, the VIUC has made a good impact in terms of improving vegetable productivity and popularisation of high yielding seed varieties and better production practices including protected cultivation. However, it has not been able to impact other areas of vegetable value chain such as primary value addition at the farm level, market linkages, collectivisation of input procurement and output marketing as well as formation of farmers' producers' organisations. Given the development in areas of production, the impact of the scheme can be made manifold, if interventions are made in other areas also.

Some of the recommendations, based on analysis of data and observation during field visit are as below:

- ◆ Component of Training and capacity-building of farmers needs to be strengthened; this should also include exposure visits of farmers to production facilities as well as existing Cluster Associations. Training is required on modern package of practices for vegetable production, protected cultivation as well as on functioning of collectives;
- ◆ In order to sustain the infrastructure created for Protected Cultivation of vegetables under the initiative, implementing Department should engage horticulture experts either from State Agricultural University or any research institute;
- ◆ As only limited components were taken up during the year 2011-12, there is a need to include other components such as inclusion of Post Harvest Management and Market infrastructure, which are in demand from farmers;
- ◆ Staff at the district level is overburdened with work, therefore, there is a need to provide support at field level in terms of additional staff for data entry, MIS and field supervision. Project management fund should compulsorily have provision for contractual staff at the district level as well as provision for movement/local travel of field staff;
- ◆ The staff engaged in implementation is not well versed with various components of the initiative such as organising farmers' collectives, record keeping, functioning of Cluster Associations, collectivisation and marketing. Due to this, farmers' collectives formed in Karnataka have very informal structure and there is loose binding amongst member farmers and marketing linkages have not been established. Moreover, the Department and implementing staff need more clarity on importance of farmers' collectives in the entire development process.
- ◆ Therefore, either a consultant has to be appointed in the Department for organising the FIGs & FPOs or the department should engage an agency for this as well as for establishing linkages with other stakeholders' in value chain such as banks, service providers and aggregators, etc.
- ◆ Although the Department has invited applications from interested Project Coordinating Agency through detailed terms of reference, very few applicants have approached the Department for this assignment.
- ◆ These applicants informed the Department that the budget allocated for this assignment was not sufficient. Therefore, the Department should realign its strategy to engage an agency for this assignment.
- ◆ Mechanism should be derived for linking farmers to the market, as this aspect has totally been neglected in the first year of implementation of the scheme.
- ◆ Although some of the districts have taken initiative for convergence of various Government initiatives, strategy should be framed at the State level based on synergy amongst different schemes of the department, to derive optimum results from the initiative.
- ◆ At the State level, mechanism for monitoring along with MIS should be developed by the State Implementing Agency to supervise the progress of the scheme on a regular interval basis.

Chapter 6

Kerala

Project Area and Stakeholders

This section describes the implementation structure and functioning of the project's components at different levels and the major stakeholders involved in the scheme's implementation.

VIUC Initiative in Kerala

VIUC in the State of Kerala is being implemented in the State capital: Thiruvananthapuram, having a population of 33, 07, 284 since 2011-12. The State Horticulture Mission, Government of Kerala has been appointed as the Nodal agency for implementing the project in the State and RKVY Cell under Directorate of Agriculture (Department of Agriculture) looks after the overall implementation of the scheme. At the district level, Deputy Director Horticulture (DDH) is the Nodal Officer looking after the implementation of the scheme. In 2012-13, Ernakulam and Kozhikode have been added for the implementation of VIUC in Kerala.

Baseline Survey

To identify major vegetable production districts and clusters, an independent agency, carried out the baseline survey in Kerala. Baseline survey highlighted the existing supply chain and other bottlenecks and also identified the vegetable growing clusters within the district. During the interaction with the Nodal Agency, 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

In 2011-12 the initiative was being implemented in one district - Thiruvananthapuram. In 2012-13, two more districts were introduced in the initiative

Ernakulam and Kozhikode. Major vegetable clusters around Thiruvananthapuram, Ernakulam and Kozhikode ranging from 30-50 km, are supplying vegetables to respective urban clusters.

Implementing Partners of VIUC in Kerala

The State Horticulture Mission, Government of Kerala has been appointed as the Nodal agency for implementing the project in the State and RKVY Cell under Directorate of Agriculture is looking after the overall implementation of the scheme. At District level, Deputy Director Horticulture (DDH) looks after the overall implementation of the scheme. During 2011-12, Thiruvananthapuram was divided into 148 clusters, with one Horticulture

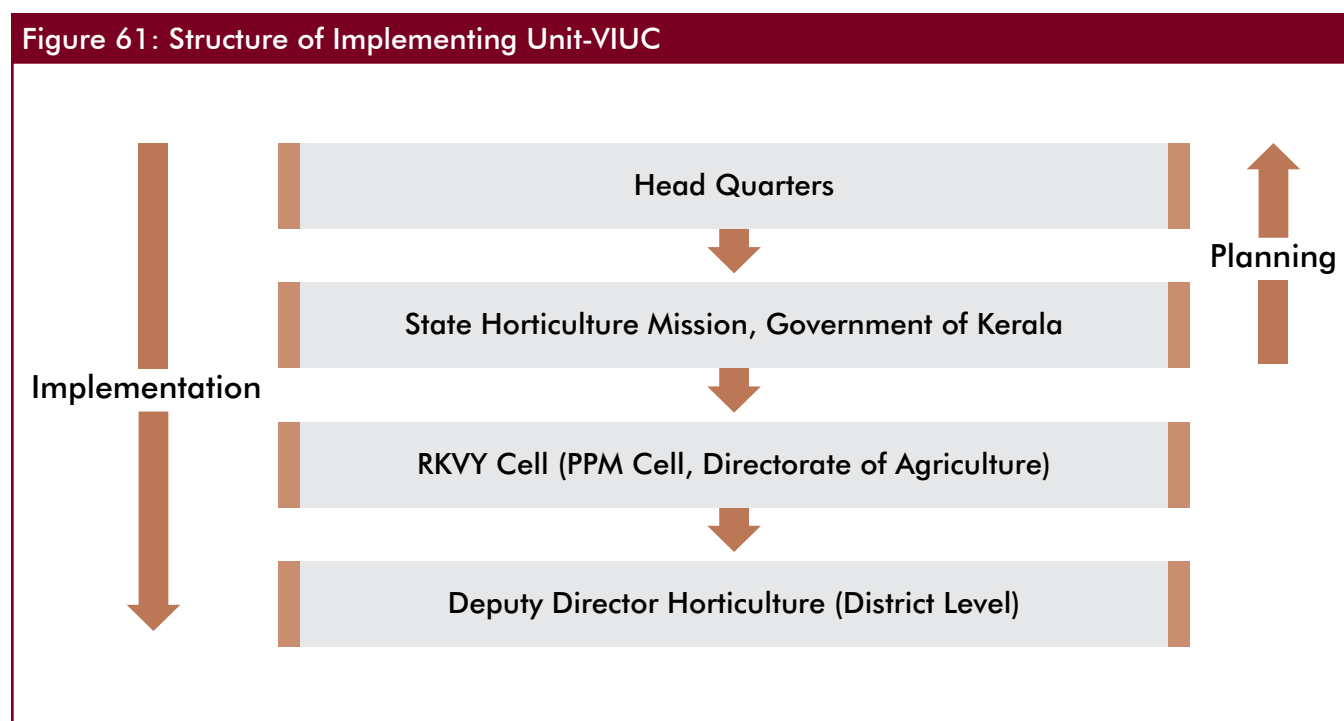
Officer looking after 9 clusters. The reason for this was that the officials were not familiar with the guidelines when the initiative was initiated in the State. However, in year 2012-13, when the initiative

was extended to two more districts of Ernakulam and Kozhikode, the total number of clusters in the State was reduced to 50.

Table 11: Stakeholders and their Coverage Area

Role	Name of Organization	Districts Covered under VIUC Scheme (2011-12)
Baseline Survey	The Nielsen Company	Thiruvananthapuram
Nodal Agency	State Horticulture Mission, Government of Kerala	Thiruvananthapuram

Detailed Implementation Structure, has been depicted in the following figure:



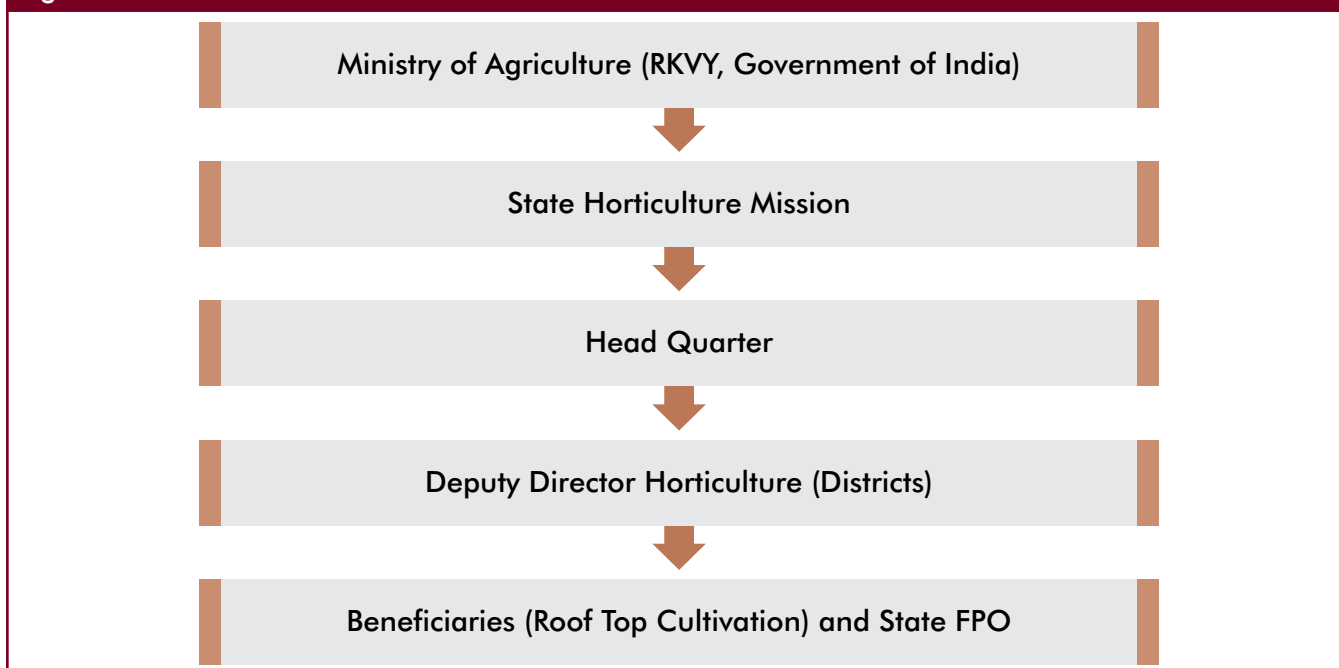
Planning and Implementation of Activities: The planning of the project activities takes place at the State level where State Horticulture Mission prepares the State plan. From State Horticulture Mission, State plan is submitted to the State Level Sanction Committee (SLSC) which is the final authority for approval of plan for implementation. Approved State Plan is finally submitted to the 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 below:

Budget Outlay and Expenditure (2011-12): The total budget outlay approved for the State for the year 2011-12 was Rs. 1071.64 lakhs. There is no separate provision of budget for administration purpose.

Figure 62: Flow of Fund



Release of Subsidy to Beneficiary

Figure 63: Release of Subsidy



The applications for subsidy are received through various channels, the most common of which are: through the registered FPOs – VFPCCK and Sanghamaitri; through Deputy Director Horticulture and direct application by beneficiaries. Once the applications are received and scrutinised, the fund flow takes place from the Head Quarters to the same channel through which the application was received.

The mobilization of farmers and promotion of Farmers' Interest Groups (FIGs) and Farmers' Producers' Organisations (FPOs) is being undertaken by the State Horticulture Department

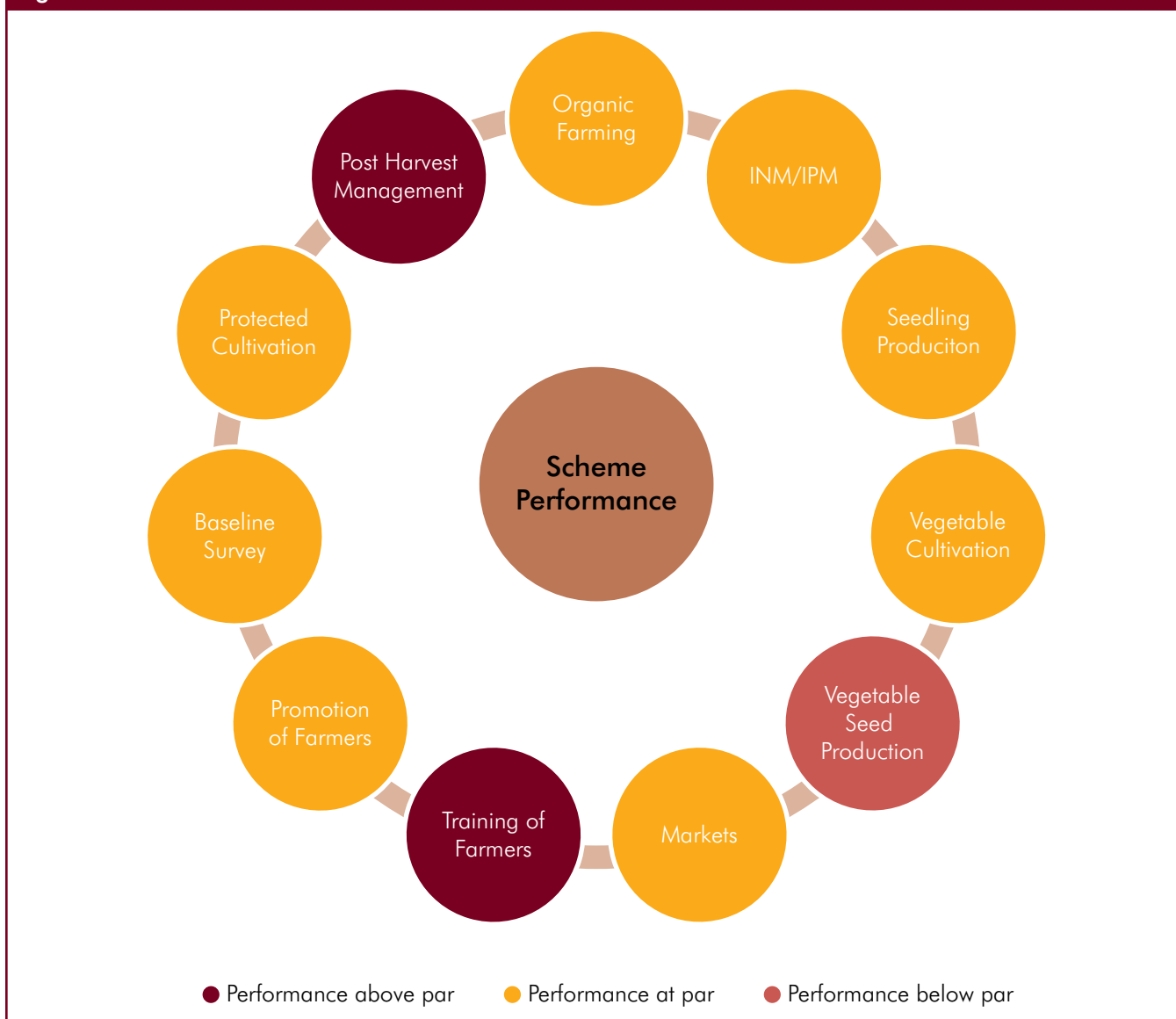
which is the Nodal Agency for the scheme at the State level.

Performance of the Scheme

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

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

Figure 64: Performance of the Scheme



Proposed and Approved Action Plan

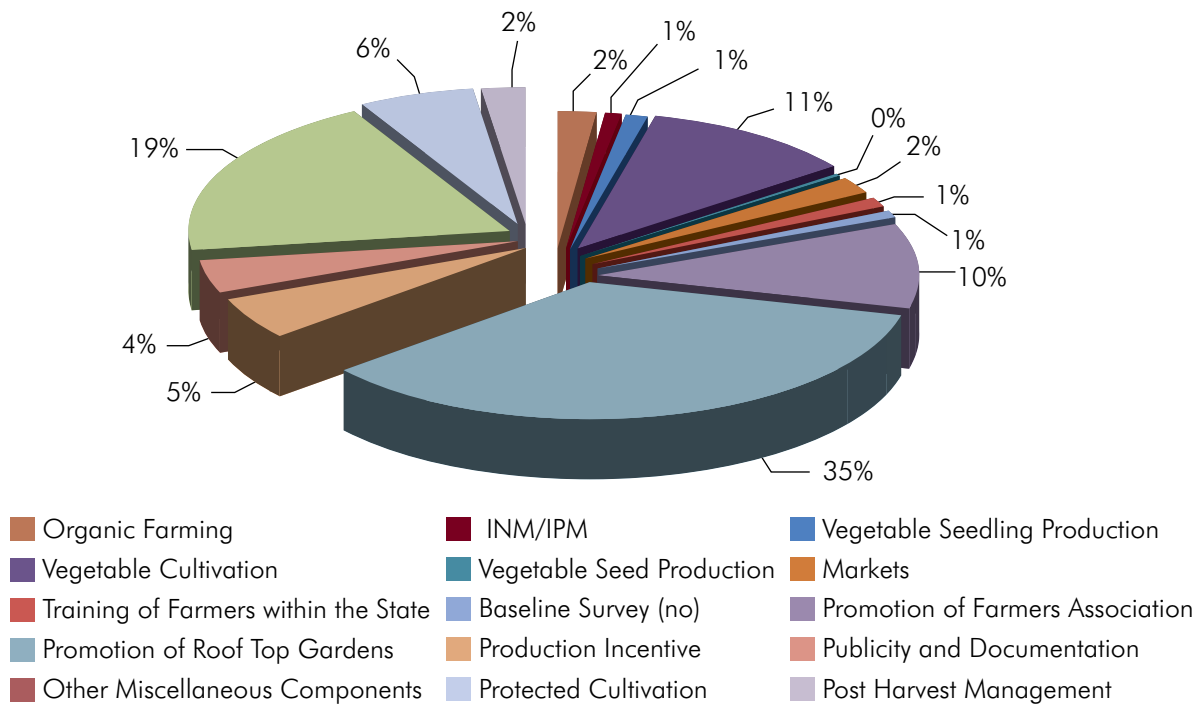
As per the proposed action plan for the year 2011-12, the Department proposed to take up almost all the activities/components for the implementation of VIUC with the total financial outlay of Rs. 1071.64 lakhs. The share of all the components is illustrated in Figure 65 below.

Of the total approved financial outlay of Rs. 1071.64.00 lakhs, maximum fund has been allocated for the component of promotion of roof top garden (35%) followed by other miscellaneous

components (19%), vegetable cultivation (11%), promotion of farmers' association (10%) and protected cultivation (6%). Small funds have been allocated for other components. The allocation of fund is very appropriate and almost all the components have been covered.

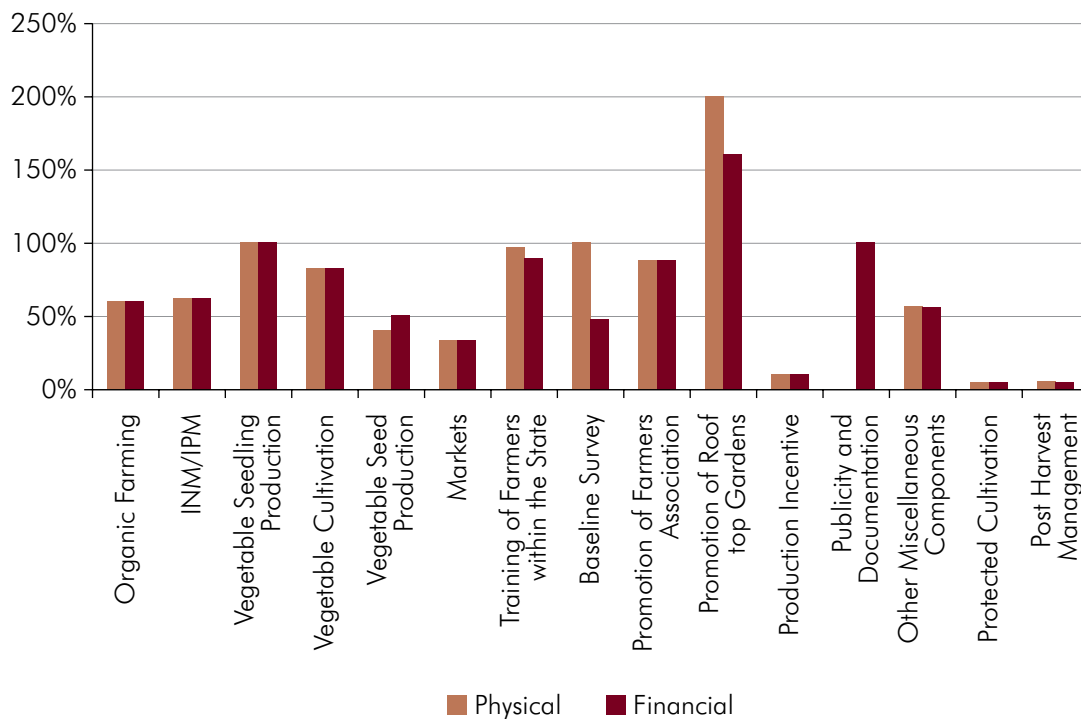
Detailed component-wise Physical targets & Financial outlay for the year 2011-12 is given in Annex- I. Although, the present status of financial achievement of different components can be delineated from the following bar graph, in which physical and financial achievement are noticeably evident.

Figure 65: Approved Action Plan for Kerala 2011-12



Source: Department of Horticulture, Kerala

Figure 64: Physical and Financial Achievement for VIUC in Kerala



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

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

Table 12: Component-wise physical and financial targets and achievements

Component	Physical Performance	Financial Performance
Vegetable Seed Production	40 percent achievement Physical target under this component was to cover 5 ha area under vegetable seed production, of which 2 ha area has been covered.	50 percent achievement Financial allocation under this component was Rs. 2 lakhs, of which Rs. 1 lakh has been utilized.
Vegetable Seedling Production	100 percent achievement Physical target under this component was distribution of 60,000 seedlings, of which 60,000 seedlings have been distributed.	100 percent achievement Financial allocation under this component was Rs. 9 lakhs, of which entire fund has been utilized.
Vegetable Cultivation	82 percent achievement As per the approved plan, 500 ha area was approved for expansion under open pollinated vegetables, of which 423.28 ha has been covered and physical achievement is 84.66 percent. Under hybrid vegetable cultivation, 20 ha area was targeted of which 16 ha area has been covered and achievement is 80 percent.	82 percent achievement The financial allocation for vegetable cultivation under open pollinated vegetables was Rs. 112.50 lakhs of which Rs. 95.24 lakhs has been utilized and financial achievement is 84.66 percent. Under hybrid vegetables, financial allocation was Rs. 4.5 lakhs, of which Rs. 3 lakhs has been covered and achievement is 80 percent.
Protected Cultivation	5 percent achievement Physical allocation for different components of protected cultivation are as under: vii Naturally ventilated system– a Tubular structure- Physical target for establishment of naturally ventilated tubular structure was 10,000 sq m area, of which 1000 sq m area has been covered and physical achievement is 10 percent. b Wooden structure- Physical target for establishment of naturally ventilated wooden structure was 1000 sq m area, of which none of the area has been covered and physical achievement is zero percent. c Bamboo structure- Physical target for establishment of naturally ventilated bamboo structure was 1000 sq m area, of which none of the area has been covered and physical achievement is zero percent. viii Rain shelter- a Rain shelter GI structure- Physical target for establishment of rain shelter GI structure was to cover 10 sq m area, of which 2 sq m area has been covered.	5 percent achievement Financial allocation for different components are as under: i Naturally ventilated system– a Tubular structure- Financial allocation under this component was Rs. 46.75 lakhs of which Rs. 4.675 lakhs has been utilized and financial achievement is 10 percent. b Wooden structure- Financial allocation under this component was Rs. 2.58 lakhs of which none of the funds has been utilized and financial achievement is zero percent. c Bamboo structure- Financial allocation under this component was Rs. 1.88 lakhs of which none of the funds has been utilized and financial achievement is zero percent. ii Rain shelter- a Rain shelter GI structure- Financial allocation under this component was Rs. 2 lakhs of which Rs. 0.40 lakhs has been utilized and financial achievement is 20 percent.

Component	Physical Performance	Financial Performance
	<p>Physical achievement is 20 percent.</p> <p>b Rain shelter wooden structure- Physical target for establishment of rain shelter wooden structure was to cover 10 sq m area, of which none of the area has been covered. Physical achievement is Zero percent.</p> <p>ix Cost of planting material/inputs for protected cultivation- Physical target under this component was to cover 12000 sq m area, of which none of the area has been covered and achievement is zero percent.</p>	<p>b Rain shelter wooden structure- Financial allocation under this component was Rs. 2 lakhs of which none of the fund has been utilized and financial achievement is zero percent</p> <p>iii Cost of planting material/inputs for protected cultivation- Financial allocation under this component was Rs. 12.6 lakhs of which none of the fund has been utilized and achievement is zero percent.</p>
Organic Farming	<p>60 percent achievement</p> <p>Vermicompost units/other units for input production- Physical target for this component was establishment of 60 units, of which 36 units have been established.</p>	<p>60 percent achievement</p> <p>Vermicompost units/other units for input production- Financial allocation for this component was Rs. 18 lakhs, of which Rs. 10.8 lakhs has been utilized.</p>
Promotion of INM/IPM	<p>63 percent achievement</p> <p>Physical target under this component was promotion of INM/IPM in 1000 ha area, of which 630 ha has been covered.</p>	<p>63 percent achievement</p> <p>Financial allocation for this component was Rs. 10 lakhs, of which Rs. 6.3 lakhs has been utilized.</p>
Post Harvest Management	<p>6 percent achievement</p> <p>The physical target for post harvest management was under the following components:</p> <p>ix Plastic crates- As per the approved action plan, there was physical target of distribution of 100 crates, of which 18 crates have been distributed. Physical achievement is 18 percent.</p> <p>x Sorting, grading, packaging unit- Physical target was establishment of one unit, of which none of the units have been established; therefore physical achievement is zero percent.</p> <p>xi Value addition and cut vegetables- Physical target was establishment of one unit, of which none of the units have been established; therefore, physical achievement is zero percent.</p>	<p>5 percent achievement</p> <p>Financial allocation for all these different components of post harvest management are as follows:</p> <p>ix Plastic crates- Financial allocation for pack house was Rs. 10 lakhs, of which Rs. 1.42 lakhs has been utilized. Therefore, financial achievement is 14.2 percent.</p> <p>x Sorting, grading, packaging unit- Financial allocation for this component was Rs. 2.00 lakhs, of which none of the fund has been utilized. Therefore, financial achievement is zero percent.</p> <p>xi Value addition and cut vegetables- Financial allocation for this component was Rs. 7.5 lakhs, of which, none of the fund has been utilized. Therefore, financial achievement is zero percent.</p>
Market Infrastructure	<p>33 achievement</p> <p>The physical target for market infrastructure was under the following components:</p> <p>vi Retail shops/outlets- Physical target under this component was establishment of 1 retail shop/outlet, of which none of the outlets have been established, physical achievement is zero percent.</p>	<p>33 achievement</p> <p>Financial allocation for market infrastructure was under the following components:</p> <p>vi Retail shops/outlets- Financial allocation under this component was Rs. 4.00 lakhs, of which none of the fund has been utilized; therefore, financial achievement is zero percent.</p>

Component	Physical Performance	Financial Performance
	<p>vii Motorized vending cart- Physical target under this component was distribution of 10 vending carts, of which 10 vending carts have been distributed. Therefore, physical achievement is 100 percent.</p> <p>viii Static/mobile vending carts- Physical target under this component was distribution of 15 vending carts, of which none of the vending carts have been distributed. Therefore, physical achievement is zero percent.</p>	<p>vii Motorized vending cart- Financial allocation under this component was Rs. 10 lakhs, of which entire fund has been utilized; therefore, financial achievement is 100 percent.</p> <p>viii Static/mobile vending carts- Financial allocation for this component was Rs. 2.25 lakhs, of which none of the fund has been utilized; therefore, financial achievement is zero percent.</p>
Promotion of Farmers Association/ Groups	<p>88 percent achievement Physical target was to form 500 farmers group, of which 441 groups have been established.</p>	<p>88 percent achievement The financial allocation for this component was Rs. 112.5 lakhs, of which Rs. 99.25 lakhs has been utilized.</p>
Training of Farmers	<p>97 percent achievement Physical target under this component was to organise 130 trainings, of which 126 trainings have been organized.</p>	<p>89 percent achievement Financial allocation for this component was Rs. 9.5 lakhs, of which Rs. 8.4922 lakhs has been utilized.</p>
Promotion of Roof-Top Garden	<p>201 percent achievement Physical target under this component was to cover 15000 units, of which 30195 units have been covered.</p>	<p>161 percent achievement Financial allocation for this component was Rs. 375 lakhs, of which Rs. 603.9 lakhs has been utilized.</p>
Production Incentive	<p>10 percent achievement Physical target under this component was to cover 5000 units, of which 500 units have been covered.</p>	<p>10 percent achievement Financial allocation for this component was Rs. 50 lakhs, of which Rs. 5.00 lakhs has been utilized.</p>
Publicity and Documentation	No physical target set	<p>100 percent achievement Financial allocation for this component was Rs. 46 lakhs, of which entire fund has been utilized.</p>
Other Miscellaneous Components	<p>57 percent achievement In this case, physical target has been set for various components, of which the total physical achievement is 57 percent.</p>	<p>56 percent achievement Financial allocation for this component was Rs. 204.08 lakhs, of which Rs. 158.67 lakhs has been utilized.</p>
Baseline Survey	<p>100 percent achievement Financial allocation for baseline survey was Rs. 15 lakhs, but the survey was completed in Rs. 7.2128 lakhs as this was the lowest bid amount for the survey.</p>	

Out of the total fund of Rs. 1071.64 lakhs, total expenditure is of Rs. 1070.93 lakhs i.e. Approximately 100 percent of the total financial target has been achieved.

Summary

- ◆ As per the proposed action plan, total financial outlay for the year 2011-12 was Rs. 1071.64 lakhs.
- ◆ Maximum fund has been allocated for promotion of roof top garden, followed by miscellaneous components and vegetables cultivation; smaller quantum of funds has also been allocated for other components.
- ◆ In case of promotion of roof top garden there has been over achievement in both physical and financial target as observed from field visit that the cultivable land area is very less due to coastal region.
- ◆ Total utilization of the fund is Rs. 1070.93 lakhs, which is approximately 100 percent of the total target.

Situational Analysis of the Scheme

This section 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.

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 different clusters of Kerala. 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 0.73 ha. Almost 95 percent farmers of the area belong to marginal farmers' category and 5 percent are small farmers. Since the cultivable land holding is very less due to coastal regions therefore, most of the marginal and small farmers have been covered under the scheme as

beneficiaries. Medium and large farmers have not been covered under the initiative in the surveyed areas.

Irrigated Land: Out of the total cultivable area of 30 ha, more than 75 percent of the cultivable area is irrigated. Almost 63 percent of the farmers use canals as a major source of irrigation and others are using channel irrigation system. Of the total cultivable area, none is under protected cultivation.

Seed Used: Almost 100 percent of the surveyed farmers are using open pollinated/non hybrid seeds. Of which 53 percent of the farmers are producing these seeds on their own and 43 percent are procuring them from Government Departments. Very few farmers are procuring from local input suppliers. Use of open pollinated seeds indicates that the perception of farmers for modern package of practices has not percolated much as they are still using local seeds. As of now, collective procurement of seed has not started because only 10 percent of the farmers are procuring the seeds collectively.

Input Procurement: More than 70 percent of the farmers of surveyed areas are procuring the inputs like seeds, fertilizers and pesticides, irrigation equipment from private agencies and very few farmers are procuring these inputs from Government agencies. All the farmers are procuring these inputs individually, only 10 percent of the farmers are undertaking collective procurement for inputs of packaging and irrigation facilities.

Adoption of Integrated Pest Management: Almost 100 percent of the farmers of the surveyed cluster are adopting integrated pest and nutrient management techniques on more than 70 percent of the area. Earlier in the baseline year, adoption of IPM techniques was limited only up to 10 percent of the farmers which has improved significantly. None of the farmers are adopting organic farming techniques. More than 70 percent of the farmers are procuring inputs for IPM/INM from private agencies and others from Government agencies.

Adoption of On-farm Management Practice: None of the farmers of the surveyed areas are adopting farm management practices like drip irrigation, plastic mulching and shade net house, etc.

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

losses of major crops like bitter gourd, coccinea, snake gourd, etc is given in the table below:

Table 13: Post Harvest Loss in Different Vegetable Crops

S.No.	Crop	Post harvest loss (%)
1.	Amaranthus	1
2.	Bitter gourd	2
3.	Snake gourd	3
4	Coccinea	1
5	Cowpea	2
6	Cucumber	1

As per the baseline survey report, earlier the post harvest loss of the produce was up to 15 percent which has been reduced to 3 percent in the surveyed cluster. It indicates that the concept of post harvest management of vegetables has improved among farmers by different training sessions provided by Vegetables and Fruits Promotion Council Keralam (VFPCCK) and the Department of Horticulture. Only 50 percent of the farmers are carrying out value addition at field level by sorting and grading. Value addition at field level results in improved shelf life and better quality of the produce.

Marketing of Produce: Farmers use different types of packaging depending upon the type of produce. Around 30 percent of the farmers use loose packaging while others use plastic bags, gunny bags and plastic crates. Average cost incurred on packaging material is Rs. 14/- per quintal.

- ◆ Almost 100 percent of the surveyed farmers are selling their produce to farm gate or village level market upto a distance of 2 km.
- ◆ Almost all the farmers are carrying their produce individually in own transport vehicles, of which 48 percent are selling to HORTICORP and 40 percent to wholesale traders and others are selling to retailers and exporters.
- ◆ Farmers are receiving payment on cash and credit basis on auctioning produce by farmers at cluster mini mandis.
- ◆ Major problem that the farmers are facing are high transportation costs and far away markets. Even though the proceeds from auction sale is received late, the receipt is assured by VFPCCK as it operates these cluster mandis and has a robust MIS to track buyers, sellers, quantity and rate at each auction.

◆ **Marketing Infrastructure:** Among the marketing infrastructure component, collection and auction centre (cluster mini mandis) have been created by VFPCCK, which is easily accessible to farmers and help them in realising better quality, better price and improved bargaining capacity.

Marketing Linkages: Market linkages has been developed with FIG Swarsya Krashka Samiti and the aggregator HORTICROP in the surveyed area. These farmers are carrying out daily supply of approximately 70-80 quintals of vegetables like bitter gourd, coccinea, cowpea, snake gourd, amaranthus, etc. Farmers are selling daily average trading volume worth Rs. 5000 per quintal and are realizing better price than the wholesale market price.

Government Support & Incentives: Around 100 percent of the farmers of the surveyed areas are aware about Government support and activity and a major source of information access is Government officials, NGOs and fellow farmers. This is a significant achievement as earlier only 45 percent of the farmers were aware about these schemes and participation was 50 percent. All of the farmers are beneficiaries of Government support and schemes like National Horticulture Mission, State Government programmes and other Government supported programmes.

Awareness about VIUC Scheme: Almost all farmers of the surveyed areas are aware about VIUC scheme and its objectives. As per the farmers, the major objective of the scheme is to increase production and productivity of vegetable crops through improved and scientific methods of cultivation, promoting new technologies, farmer's empowerment and employment generation.

- ◆ All of the surveyed farmers participated in vegetable cultivation components of the scheme and also received subsidy under the component.
- ◆ There is no resource institution working in the area but Vegetable and Fruit Promotion Council Keralam (VFPCCK) – a State Government operated company, registered under section 25 of Companies Act is working for promotion of vegetable production and marketing in Kerala through Self Help Groups.
- ◆ VFPCCK is conducting regular training and meetings of farmers in which State Department Officials also participates.
- ◆ Potential FIG members have been selected on shared basis and they have clarity about FPO concepts.
- ◆ Bank accounts of all the FIG members has been opened and all the farmers are provided with KCC however, in the baseline year only 10 percent of the farmers were provided with KCC.
- ◆ Regular buyer and seller meetings and meetings with service providers have been organized.
- ◆ Approximately 52 percent of the farmers are carrying out joint procurement of inputs.

Training and Training-need Assessment: All of the farmers have been provided different kinds of training and capacity-building skills by VFPCCK and State Horticulture Department on aspects of cultivation, product quality improvement and joint marketing of the produce.

Overall, from primary survey, it is emerging that the farmers have been benefitted in terms of increase in productivity, ease in availability of inputs and increase in marketing facilities. Though the post harvest loss has been reduced but no significant change has been observed in value addition of the produce.

Observations from Field Visit

In Kerala, the project is being implemented by the State Horticulture Mission under the aegis of Directorate of Horticulture, without assistance of any Resource Institution. Therefore, field officials of directorate are responsible for implementing all the components including formation of FIGs in Figure 67 below.

Detailed Observations of Field Visit

Cluster Approach

In Kerala, for the purpose of promotion of vegetable cultivation and supporting these farmers through various other components of the scheme, well defined clusters have been formed. One FIG (Cluster Association) has been formed in one village, which was selected for the initiative.



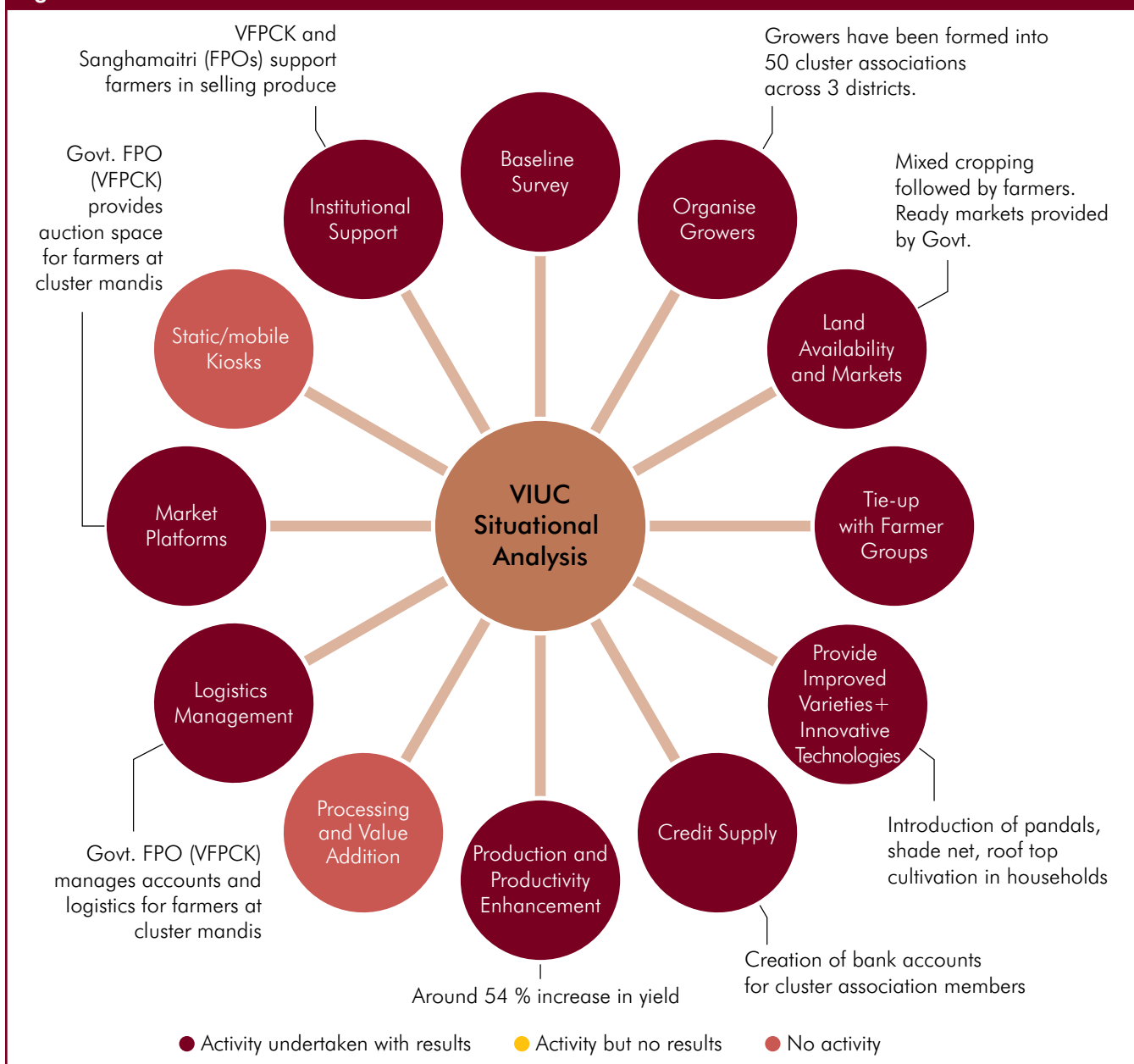
Fig 68: VFPCCK Seedling Unit

Clusters of existing vegetable producing villages as well as of new villages have been formed. Impact of cluster approach is clearly visible and can be observed while discussing with the farmers, as farmers mention that they are adopting various package of practices along with post harvest management forms like sorting, grading. The efforts of officials at district level are highly appreciable in convincing farmers for adopting some of the new techniques.



Fig 69: VFPCCK Seedling Unit

Figure 67: Observation of the Field Visit



Mobilization of Farmers and Group Formation

Farmers have been mobilised for receiving benefits of various component of the schemes such as agri-input supply, installation of protected cultivation structure, etc. However, mobilisation has not been done for collective marketing of their produce. Farmers' Interest Groups (FIGs) in the form of Cluster Associations have been formed at the village level by the Government officials. Some of the FIGs formed by the department follow book keeping, maintain accounts and any other records of activities of FIG. Field

officials of implementing agency are fully aware of the concept of formation of FPOs. One new FPO, Sanghamaitri, has been created recently. The primary FPO in the state is a Government promoted organisation – Vegetable and Fruit Promotion Council of Keralam (VFPC), which was incorporated under section 25 of Companies Act 1956. This FPO was formed in January 2001 and more than 50% of shares of the organisation are held by farmer groups.

As the other components of the scheme have been implemented in clusters and farmers have

seen the success in terms of increased yield and income, they are highly motivated and forward looking. At this juncture, if assistance is provided to train them on concept of FPO/FPC and support in terms of hand holding, there is a potential to form successful FPOs in almost all the clusters in three districts covered under the initiative.



Fig 70: VFPCCK Outlets for Agri-input



Fig 71: Meeting with FIG Members

Training and Capacity-building

Capacity-building and training programmes for package of practices on different aspects of vegetable cultivation, protected cultivation, improved technology and organic farming have been organised by the Nodal Department with the help of State Agriculture University and by engaging individual experts.

Disbursement of Subsidy

In Kerala, during the year 2011-12, only selected components of vegetable production, HRD training, promotion of farmers' groups,

Vermicompost unit, and select PHM activities had been taken up by the State Nodal Agency i.e. State Horticulture Mission. Some innovative ideas have been implemented by the state in terms of Roof top cultivation, where they have spent more than the allocated amount.

Functioning and Coordination of Resource Institution

State has not engaged any Resource Institution for farmers' mobilisation and FPO formation. However, now as FIGs have been formed market linkages with organised buyers need to be established. At present the State Government is involved in coordinating the work of FIGs, training farmers on aspects of operation, future planning and facilitating linkages, specifically market linkages. In Kerala, VFPCCK and Sanghamaitri (FPOs) are bridging the gap of linking the farmers with markets through decentralised mini cluster mandis. VFPCCK also provides technical training and inputs to farmers.

Functioning of FIGs

As it has been discussed above, the farmer groups formed by the State Government have been formed as Cluster Associations. These are formal groups of farmers from the same village. Members have basic training on aspects of organisation of farmers groups; there is record keeping of saving activities by these groups. Except a few, these groups are not taking up any collective activities of procurement or marketing.

Infrastructure Creation

During the financial year 2011-12, State Action Plan had minimally or not utilised amounts for protected cultivation, rain shelters, seed production in private sector, value addition, mobile carts, retail shops, capacity-building, mobile agro clinic and technologies for precision farming and drip irrigation.

Seedling units have been set up at some of the VFPCCK owned and operated cluster mini mandis. These units are being managed by the Farmers' Cluster Association and sell seedlings to the farmers.



Fig 72: Cluster Mini Mandi in Thiruvananthapuram (VFPCCK managed)



Fig 74: Auction in Progress at Cluster Mini Mandi in Ernakulum

Marketing of Produce

In Kerala, cluster mini mandis, have been established prior to this initiative and are currently active. Farmers directly auction their produce to prospective buyers at these mandis, at least twice a week.



Fig 73: Cluster Mini Mandi in Ernakulum (VFPCCK managed)

In addition to this platform, neither any linkage for marketing has been established under the initiative. All the district level officials, wherever visits were made, have raised the concern for including market facilitation with organised buyers outside the state, including exporters.

HRD training to Project Management Unit

Training for the farmers has been conducted under the scheme for orientation, objectives of the scheme and on initiative implementation. The

component on Capacity-building has been left untouched. About 14% has been utilised on the study tour of officers involved in implementing the initiative.

Challenges/Issues

As it has been discussed above, most of the components of the initiative were taken up in Kerala and there is no engagement of any resource institution. Therefore, from the perspective of achievement of physical and financial targets of the scheme, few but important challenges have been faced by the officials implementing the scheme at the field level, except in some cases it was difficult to convince farmers for adopting new practice. However, if it is seen from a holistic point of view, there are many issues; some of these have been discussed as under:

- ◆ Although the officials from the SHM and Directorate of Horticulture have put in their best efforts in promoting the initiative, however, limited lack of exposure regarding various aspects of value chain such as value addition, primary processing and market facilitation is limiting the impact of the initiative;
- ◆ Most of the farmers in the coastal areas own less than 0.25 acres and therefore, take land on lease to grow vegetables. In the case of these farmers, the benefit accrued to them is minimal, which is a result of marginal land holdings. This results in negligible impact of the initiative on them.

- ◆ Although the budget for the state, under this initiative, includes propagation of new techniques including protected cultivation, work on this is yet to commence.
- ◆ Although the farmers have ready access to the cluster mini mandis, owned by VFPCCK, the state Government has not been able to link the farmers with the segment of organised retail and mainstream institutional buyers. Most of these buyers operate from Karnataka, Andhra Pradesh and Tamil Nadu.
- ◆ Formal linkages with established market players and organised mainstream markets need to be established.

Impact of VIUC

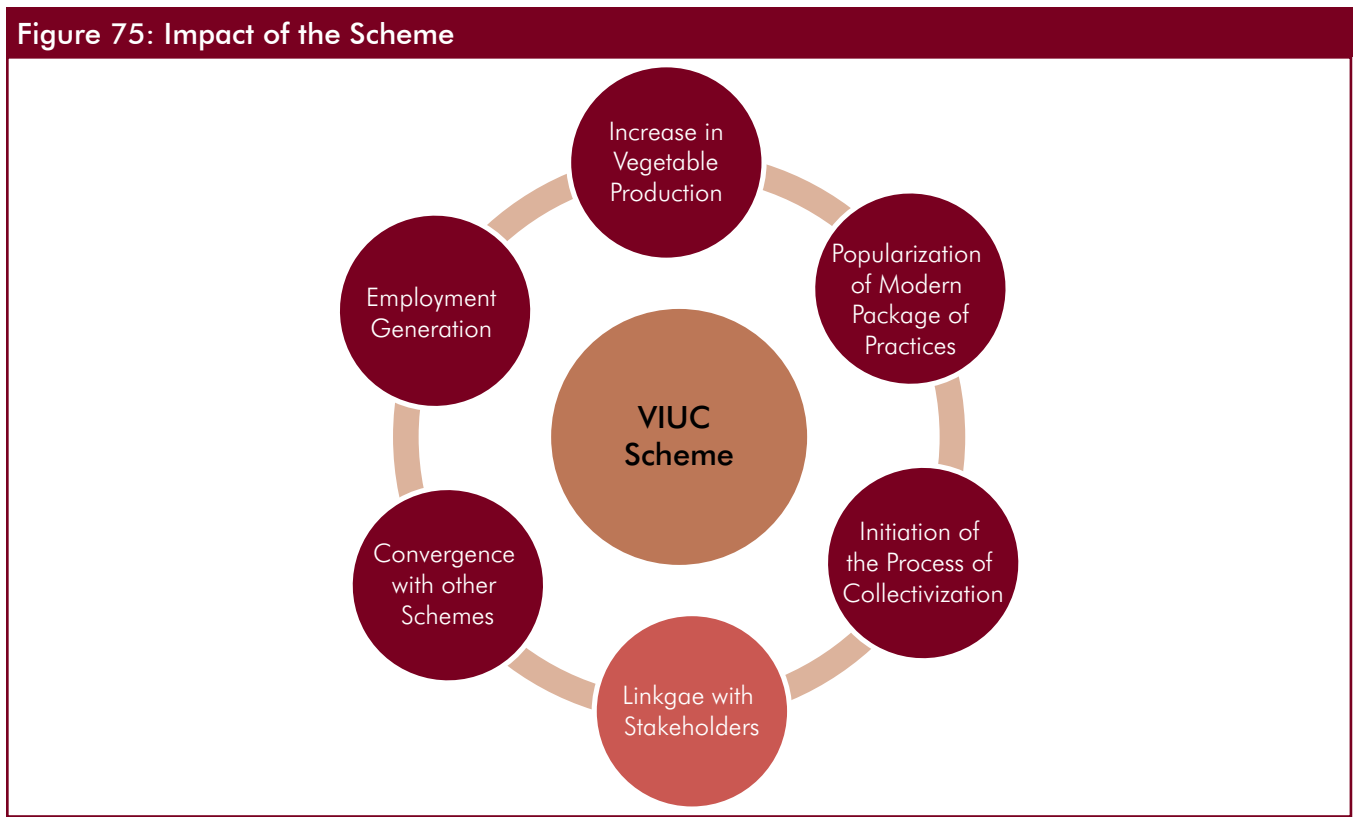
This section investigates the impact of VIUC on broader areas relating to increased production of vegetables, availability of quality inputs, linkages for procurement and marketing, savings and improvement in socio-economic status of farmers and employment generation induced by the initiative.

VIUC has been framed to cover all the segments of vegetable supply right from farmers' field up to 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.

The following figure outlines the direct impact of the initiative in terms of the following four components.

Summary

- ◆ At the ground level, extensive work is going on in the state, especially under the components of vegetable cultivation.
- ◆ Due to lack of land area, innovative method of engaging in roof top cultivation has proved very effective in bridging the demand-supply gap.
- ◆ The FPOs, VFPCCK and Sanghmaitri are helping the farmers in carrying out vegetable cultivation as well as marketing.



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

Vegetable Production

As per the primary survey data, total area and production of vegetables in the surveyed clusters under both open pollinated and hybrid cultivation have increased marginally, the yield increased by

about 54% (from 107 q/ha to 165 q/ha). 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.

Figure 76: Area under Vegetables in Surveyed Clusters in Baseline Year and Current Year

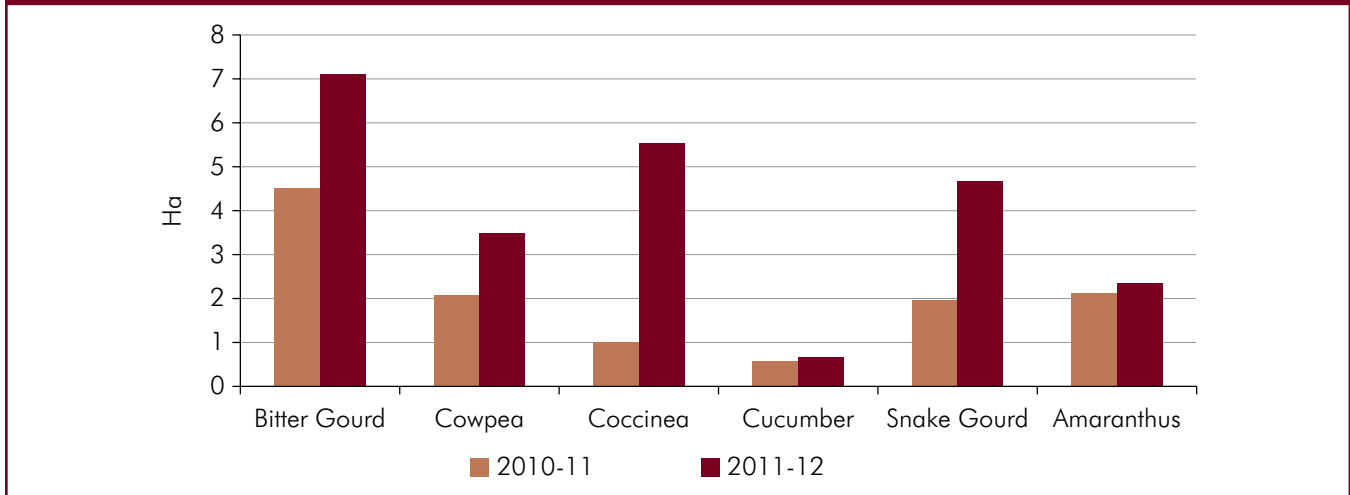
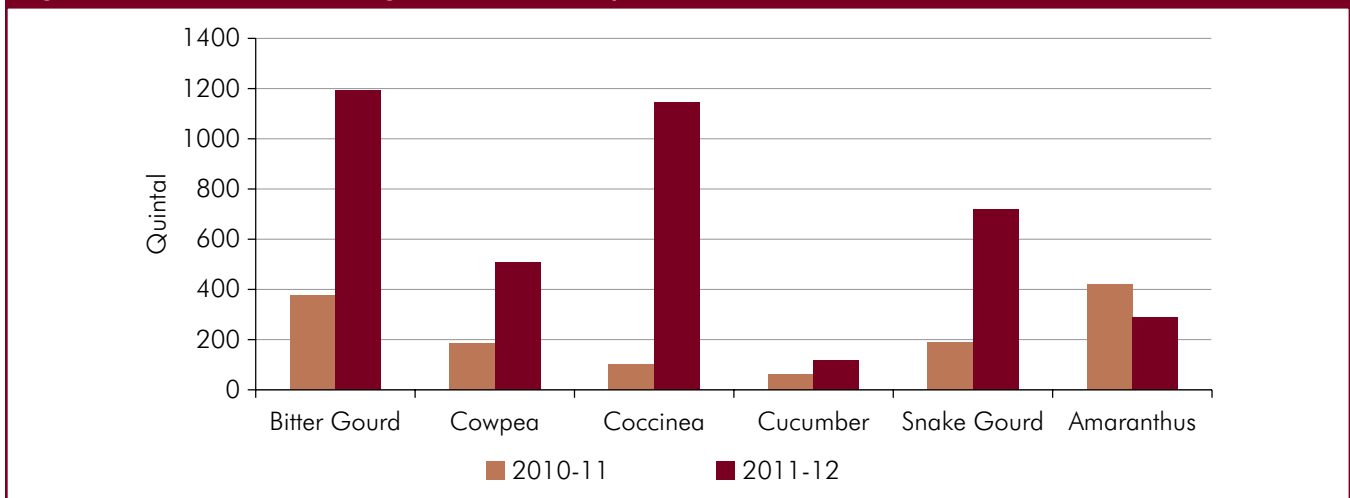


Figure 77: Production of Vegetables in Surveyed Clusters in Baseline Year And Current Year



From the above figures, it is evident that both area and production has witnessed an increasing trend. Production of vegetables not only increased in terms of field production but also roof top garden, terrace cultivation and other different components. In the state, farmers mostly carry out mixed cropping of vegetables. Package of practices has improved by the training provided by the Department, VFPCCK officials and experts from research institutes.

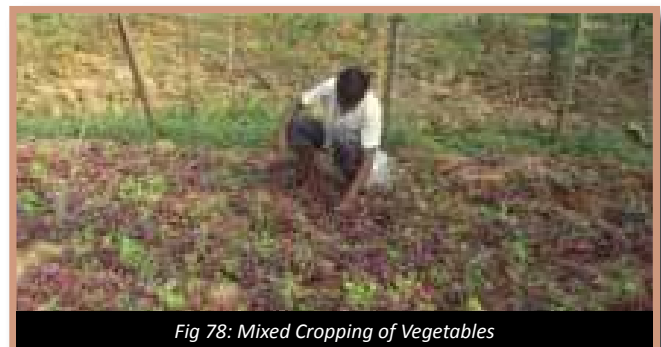


Fig 78: Mixed Cropping of Vegetables

Quality Inputs

As per interaction with Department officials, availability of good quality inputs i.e. seeds and fertilizers have improved. Seed production and seedling component has also been included in the scheme for supplying of quality planting material. With continuous training sessions on the 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. 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.



Popularization of Modern Package of Practices

The component of modern package of practices was not very much popular among the farmers in the state. Farmers in Kerala are not willing to use improved/hybrid seeds. In addition to this, being a coastal area, land holding of all the farmers is very small. To alleviate this problem, the Department included the components of roof top gardens, terrace cultivation, kitchen homestead garden and other interventions for increasing the vegetable production. Good production has been obtained from roof top cultivation and households are able to meet their own demand of vegetables.



In addition to this, protected cultivation of vegetables is yet to commence.

Initiation of the Process of Collectivization

The collectivisation of farmers has been initiated and FIGs have been formed in all clusters. The formation of FPOs in the state started in 2001 with VFPCCK. Sanghamaitri was formed recently, under the initiative. Both FPOs have majority shareholding from farmers.

Linkage with Stakeholders

As discussed and observed during a state visit, the linkage of the FPOs with other stakeholders is yet to commence, especially with market players in the organised sector and linking farmers and their produce with mainstream markets.

Convergence with other Schemes

As the initiative is being undertaken by SHM of the state, convergence of other schemes along with the VIUC initiative is natural. On many occasions, the components of VIUC initiative are complimented by components from other schemes.

Summary

- ◆ Although the areas under vegetable production has increased marginally, and productivity has increased by about 54% (from 107 q/ha to 165 q/ha).
- ◆ Production of vegetables increased in terms of field production and also through innovative approaches like roof top garden, terrace cultivation and other different components.
- ◆ Effective production has been obtained from roof top cultivation and households are able to meet their own demand of vegetables.
- ◆ FIGs have been formed in all clusters. Two FPOs have been formed in the state, VFPCCK in 2001 and Sanghamaitri was formed recently. Both FPOs have a majority shareholding from farmers.
- ◆ Other schemes of RKVY programme have not been converged with VIUC scheme.

Recommendations

In Kerala, the VIUC has made a good impact in terms of improving vegetable productivity and popularisation of high yielding seed varieties and better production practices. However, it has not been able to impact other areas of vegetable value chain such as primary value addition at the farm level, market linkages with institutions and organised/mainstream markets and collectivisation of input procurement. Given the development in area of production, the impact of the scheme can be made manifold, if interventions are made in other areas also.

Some of the recommendations, based on analysis of data and observation during field visit are as below:

- ◆ Component of Training and capacity-building of farmers needs to be strengthened; this should also include exposure visits of farmers

to production facilities as well as existing FPOs. Training is required on modern package of practices for vegetable production, protected cultivation as well as on functioning of FIGs and FPOs.

- ◆ The staff of the implementing agency (SHM and Directorate of Horticulture) should undertake exposure visits for gaining knowledge on modern processing techniques and technologies being implemented in other parts of the country. This will provide the necessary impetus for them to motivate farmers' groups.
- ◆ In order to sustain the infrastructure created for Protected Cultivation for vegetables under the initiative, the implementing Department should engage horticulture experts either from State Agricultural University or any research institute. This has to be customised as per needs of the state as requisites of Kerala would be different from other states.
- ◆ As only limited components were taken up during the year 2011-12, there is a need to include other components such as inclusion of Post Harvest Management and Market infrastructure namely mobile vans/carts, which are in demand from farmers;
- ◆ Mechanism should be derived for linking farmers with institutional buyers, exporters, processing and value adding units, organised/mainstream markets, as this aspect has totally been left out in the first year of implementation of the scheme.
- ◆ Linkages can be established between FPOs of different states. This will help them barter specific produce of their respective states between themselves, help them fulfil their demand and introduce varieties of vegetables in their respective states.
- ◆ The state should introduce the concept of value addition for vegetables. This can increase the shelf life of the vegetables and also realise a higher value for the farmer. Example, bitter gourd can be used to make pickles, juice (for diabetics), etc.
- ◆ At the State level, mechanism for monitoring along with MIS should be developed by the State Implementing Agency to supervise the progress of the scheme on a regular interval basis.

Chapter 7

Manipur

Project Area and Stakeholders

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

VIUC Scheme in Manipur

VIUC in the state of Manipur is being implemented in the state capital, Imphal, having a population of 264,986 and is in progress since 2011-12. The Department of Horticulture and Soil Conservation, Government of Manipur has been appointed as the Nodal agency for implementing the project in the State and Additional Director of Horticulture (Department of Horticulture and Soil Conservation) is the Nodal Officer to look after the overall implementation of all the components envisaged in the planned scheme.

Baseline Survey

To identify major vegetable production districts and clusters of contiguous villages engaged in growing significant volumes of vegetables, an independent agency, carried out the baseline survey in Manipur. 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 Institute, it was observed that areas/cluster villages, which were identified under the baseline survey, not all the clusters have been taken up for the purpose of implementation of the scheme. For example, in place of Ukhrul cluster which was identified and selected in the base line survey, Thoubal cluster has been taken up for implementation of the scheme.

State/Districts/Clusters

The scheme implemented in four districts of Manipur i.e; Bishnupur, Thoubal, Imphal East and Imphal West are the major vegetable clusters around Imphal, ranging from 20-40 km, are supplying vegetables to target urban cluster i.e. Imphal, which is in the range of 20 to 40 kms of the main market centre.

Implementing Partners of VIUC In Manipur

In Manipur, State Department of Horticulture and Soil Conservation has been assigned the task of overall implementation of the VIUC scheme. Additional Director Horticulture (ADH) is the designated Nodal Officer for the implementation

of the initiative at the State level. At District level, District Horticulture Officer (DHO) is the Nodal Officer. For implementation of VIUC scheme in the State, staffs from State, District and Block level officials are involved.

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

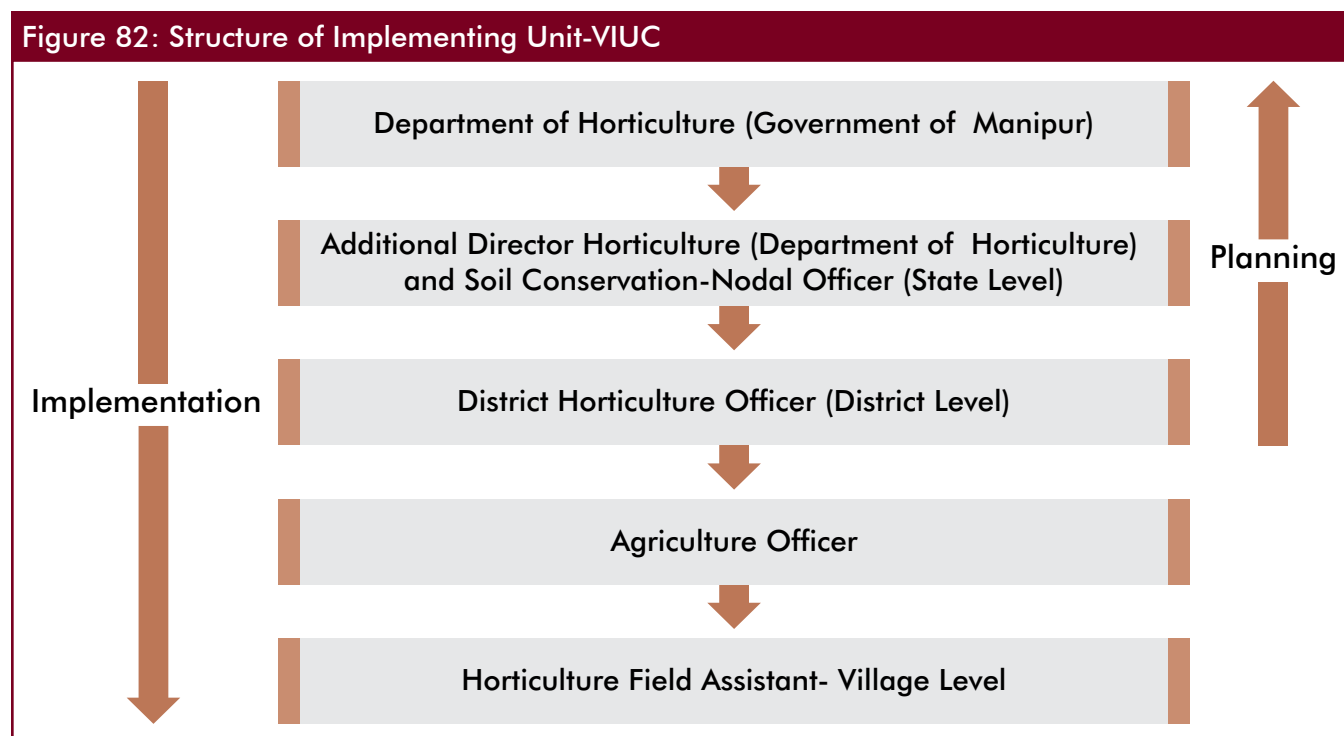
developing market linkages, Resource Institution (RI)-Indian Grameen Services (IGS) has been appointed by SFAC in the State covering different vegetable production clusters in Imphal.

Apart from RI other stakeholders, their role and area of coverage has been summarised in the following table:

Table 13: Stakeholders Role and Coverage in the Project Area

Role	Name of Organization	Districts Covered under VIUC Scheme
Baseline Survey	The Nielsen Company	Bishnupur, Imphal West, Imphal East and Ukhrul
Nodal Agency	Additional Director Horticulture, Department of Horticulture and Soil Conservation, Government of Manipur (DHO- Nodal Officer at District Level)	Imphal
Resource Institution	IGS	Bishnupur, Thoubal, Imphal East and Imphal West

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



Planning and Implementation of Activities: The planning of the project activities is initiated at the District level, where the District Horticulture Officer

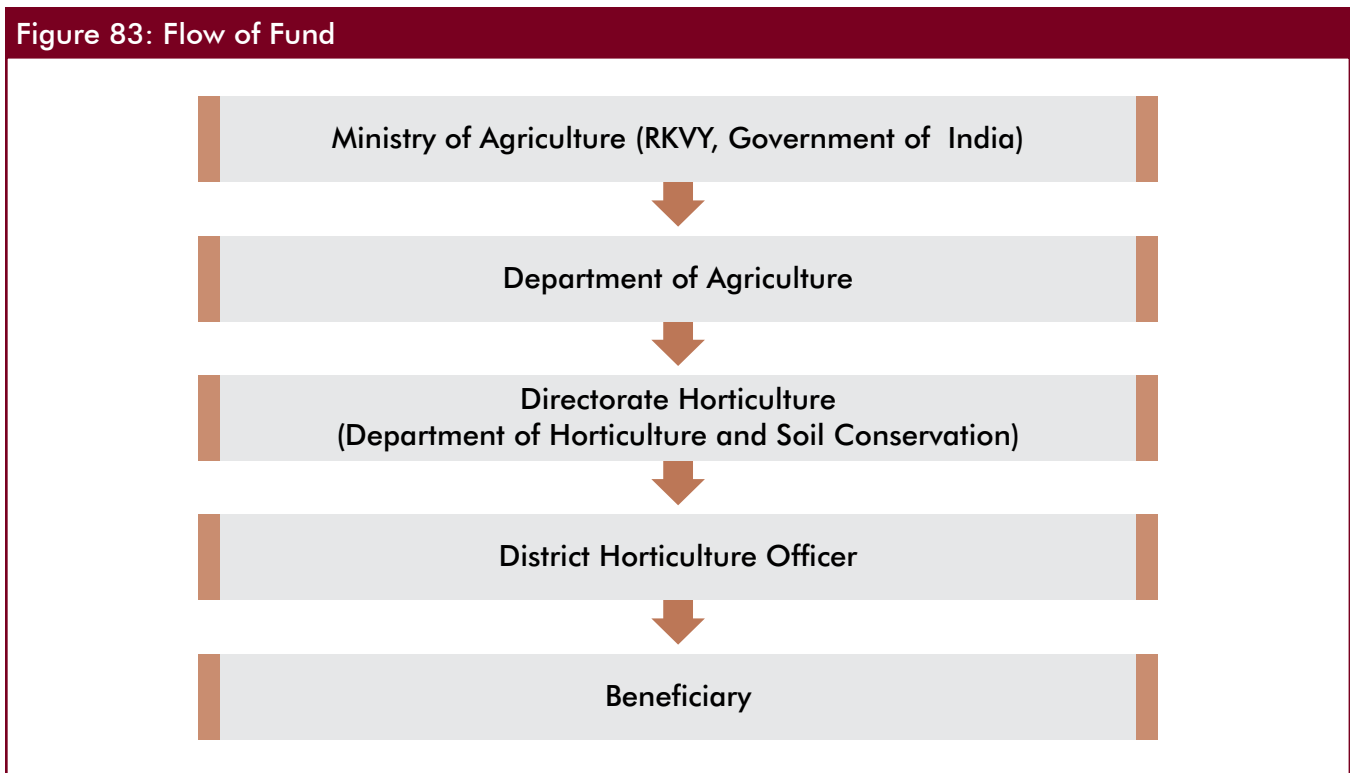
(DHO) prepares the Draft District Plan and submits it to the District Level Planning Committee (DPC) for consideration and approval. After approval

from DPC, the plan is submitted to Additional Director Horticulture (State Level) for consolidation and preparation of the State plan. From Additional Director Horticulture, State plan is submitted to the State Level Sanction Committee (SLSC) which is the final authority for consideration of the proposed plan for approval and implementation. Approved

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

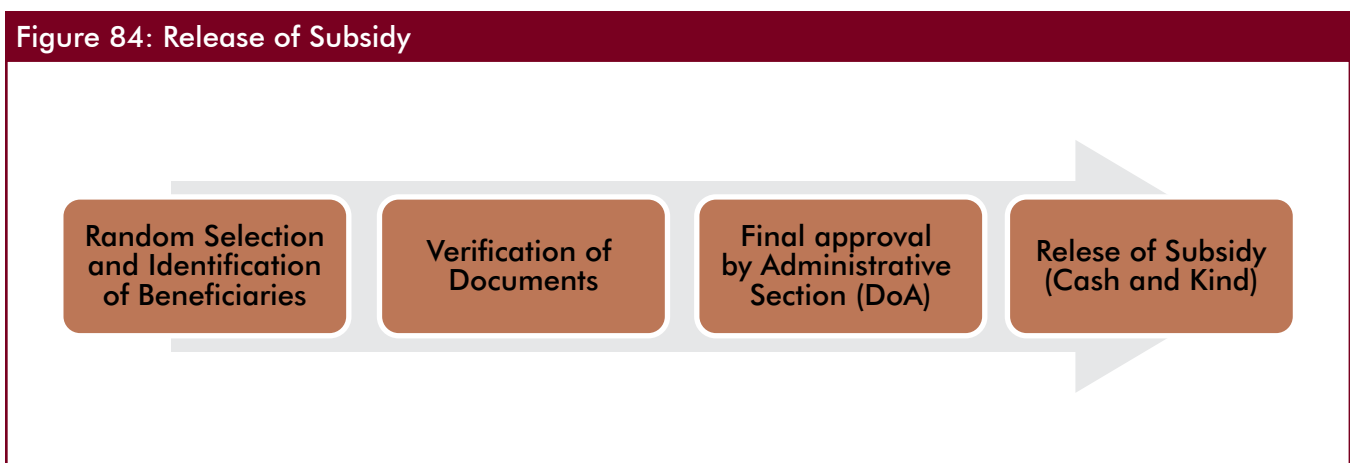
Flow of Funds

The flow of fund is depicted in the figure below



Budget Outlay and Expenditure (2011-12): The total budget outlay approved for the State for the year 2011-12 was Rs. 350.00lakh.

Release of Subsidy to Beneficiary



Resource Institution

For contacting and mobilization of prospective farmers and promotion of Farmers' Interest Groups (FIGs), Farmers' Producers' Organisations (FPOs), an Institution, Indian Grameen Services (IGS) has

been appointed for all four districts by SFAC. Targets of this RI in terms of contacting farmers in main production belts and their mobilisation, FIGs & FPOs formation as well as achievements during the year under review are given below:

Table 14: Current status of FIGs and FPOs formation

Particulars	IGS	
	Target	Achievement (registered)
FPO	2	2
FIG	84	84
Total farmers	1750	1750

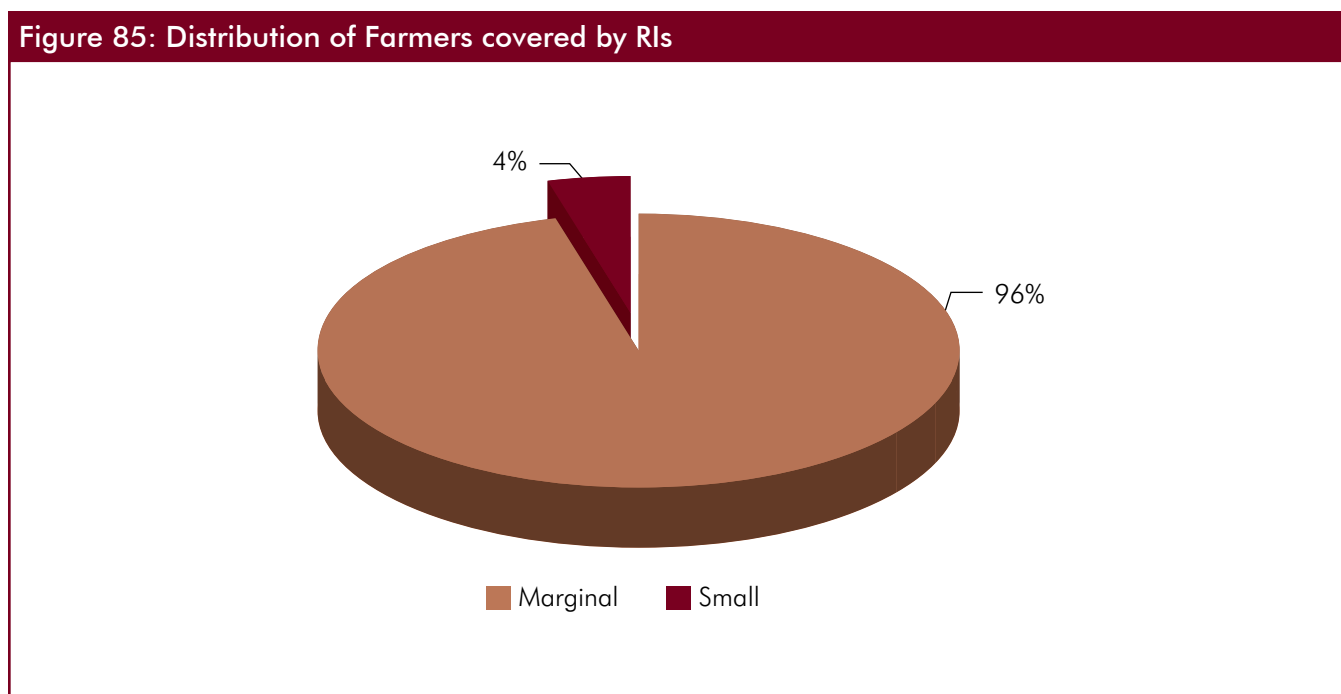
Source: Secondary information from RI

Table 15: Coverage of Farmers and Participation in Capacity-building

Particulars	Unit	Total
		IGS
Districts		4
Clusters	Nos	
Total Farmers	Nos	1750
Break-up of total farmers		
Marginal (< 1 Ha)	Nos	1664
Small and semi-medium farmer (1-4 Ha)	Nos	66
Medium Farmers (4-10 Ha)	Nos	---
Large Farmers (> 10Ha)	Nos	---
Meetings Conducted		
FPOs	Nos	21
FIGs	Nos	95
% of members regularly participating in meetings		
FPOs	%	58
FIGs	%	77
Farmers	%	70
Capacity-Building for FIGs/FPOs		
FIG members oriented/trained & aware on NVI scheme	Nos	87
Group leaders oriented/trained on FIG/FPO concept and management	Nos	95

Particulars	Unit	Total
		IGS
FIG/FPO members oriented /trained on Account Keeping in NVI scheme	Nos	76 FIG
FIG members trained on some or other best practices (for production, value addition and marketing) under NVI scheme	Nos	103
Bank Account Opened (Status)		
FPOs	Nos	1
FPOS (Share Collection)		Rs. 60,000
FIGs	Nos	68
Total Saving	Lacs	Rs. 2.20

Source: Secondary information from RI



As Manipur is situated in a hilly terrain, farm lands are mostly fragmented and scattered, therefore, all the farmers belong to small and marginal categories. Coverage of small and marginal farmers under the scheme is meeting the objective of the scheme. This will not only help in better realization of different components planned under the scheme but will also help in social and financial upliftment of small and marginal farmers in the project area and State as a whole.

Performance of VIUC

This section investigates the overall effectiveness and success of the VIUC scheme in terms of physical and financial achievements made during the year under review.

Member Farmers have been directly benefited from the following nine components of the scheme. The performance of these components is illustrated in the following figure.

Figure 86: 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 approved financial allocation of Rs. 350.00 lakh. The share of all the components is illustrated in Figure 87 below.

Of the total approved financial outlay of Rs. 350 lakh for the year 2011-12, 35% fund was allocated for vegetable cultivation, followed by 31% for protected cultivation, 11% for market infrastructure, 10% for promotion of farmers' association and 5% for post-harvest

management. Small was also allocated for other components.

Detailed component-wise Physical targets & Financial outlay for the year 2011-12 is given in Annex- I. The present status of financial achievements of different components can be depicted from the following bar graph, in which targets and achievements are noticeably evident.

the following components have been delineated in Figure 8 (A) are Protected cultivation and Vegetable cultivation and other components which are depicted in figure 8(B) are Market infrastructure, Promotion of INM/IPM, Baseline survey, HRD training, Mission Management and Post Harvest Management.

Figure 87: Approved Action Plan

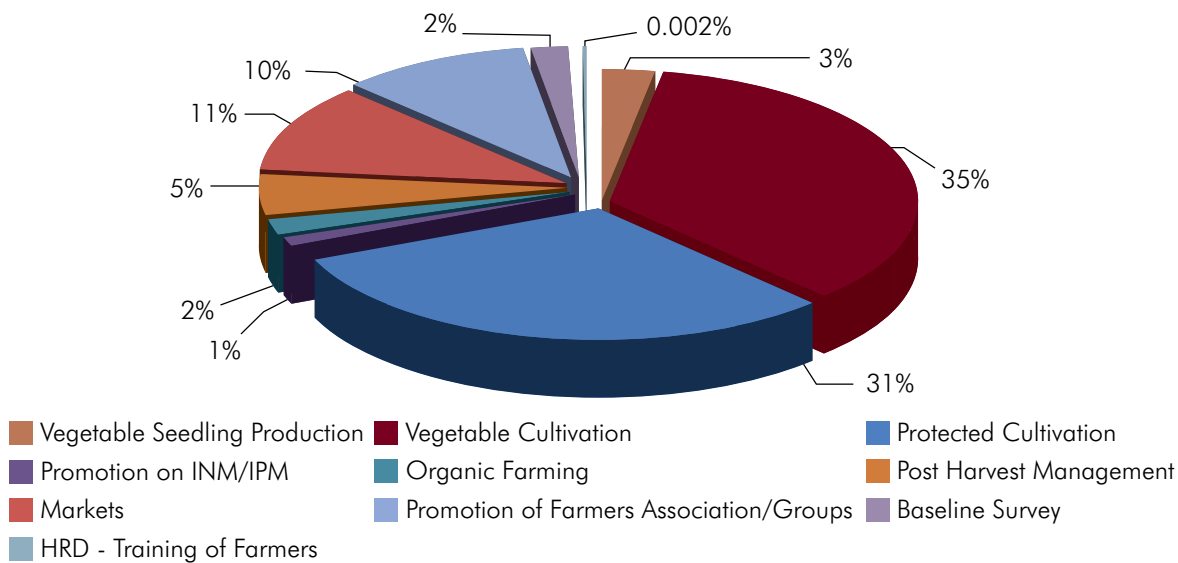


Figure 88 (a): Financial Target V/s Achievements, 2011-12

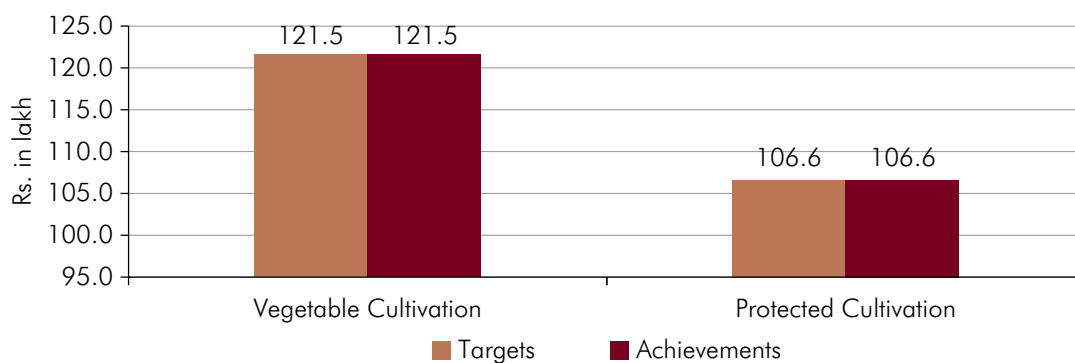
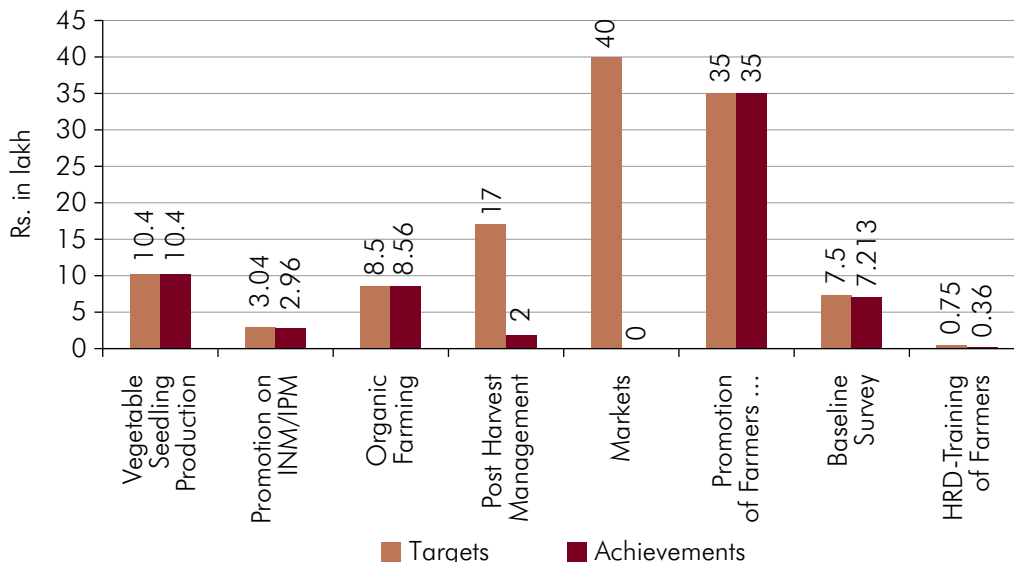


Figure 88 (b): Financial Target V/s Achievements, 2011-12



Component-Wise Physical and Financial Targets and their Achievements During 2011-12

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

Table 16: Component-wise physical and financial targets and achievements

Component	Physical Performance	Financial Performance
Vegetable Cultivation	<p>100 percent achievement</p> <p>The physical target for expansion of vegetable cultivation was to cover 90 ha and 300 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 Rs. 122 lakh, of which whole fund has been utilized.</p>
Protected Cultivation	<p>99.7 percent achievement</p> <p>The physical target for protected cultivation was under the following components:</p> <p>Shade net house</p> <p>Tubular structure- Physical target for this component was to establish structure in 12400 sqm area, of which 12360 sqm areas has been covered. (Around 3120 sq m in Imphal west, 3000 sqm in Imphal East, 3120 sqm Thoubal and 3120 sqm in Bishnupur have been covered.</p>	<p>100 percent achievement</p> <p>Financial allocation of protected cultivation was under the following components:</p> <p>Shade net house</p> <p>Tubular structure- Financial allocation for this component was Rs106.59 lakh, of which Rs. 106.59 lakhs has been utilized.</p>
Promotion of IPM	<p>97 percent achievement</p> <p>Physical target for promotion of IPM was to cover 305 ha area, of which 296 ha area has been covered.</p>	<p>97.1 percent achievement</p> <p>Financial allocation for this component was Rs. 3.047 lakh, of which Rs. 2.96 lakh has been utilized.</p>
Organic Farming	<p>100 percent achievement</p> <p>Allocation for organic farming was under the following components-</p> <p>Permanent structure of vermibed- Physical target for this component was establishment of 20 units</p> <p>HDPE vermibed (12'*4'*2')- Physical target was to create 50 units of vermibed, of which total has been established.</p>	<p>100 percent achievement</p> <p>Financial allocation for the following components are as follows:</p> <p>Permanent structure of vermibed- Financial allocation for this component was Rs. 6 lakh, of which total fund has been utilized.</p> <p>HDPE vermibed (12'*4'*2')- Financial allocation for this component is Rs. 2.56, of which total fund has been achieved.</p>
Post Harvest Management	<p>90.9 percent achievement</p> <p>Physical target for post harvest management is under the following components:</p> <p>Pack house -</p> <p>Physical target was to establish 10 pack houses, of which no work has been done.</p> <p>ii zero energy cool chamber- Physical target was to establish 100 zero energy cool chambers, of which total 100 structures have been created. Twenty five zero Energy cool chamber has been installed in each four districts.</p>	<p>11.8 percent achievement</p> <p>Financial allocation for this component was Rs. 15 lakh for pack house and Rs. 2 lakh for zero energy cool chamber, of which only Rs. 2 lakhs have been utilized for zero energy cool chambers.</p>

Component	Physical Performance	Financial Performance
Market infrastructure	No achievement Physical target for this component was establishment of ten collection centres, of which no work has been done.	No achievement Financial allocation for this component was Rs. 40 lakh which is under utilized.
Promotion of Farmers Association/ Groups	100 percent achievement Physical target for this component was to associate around 1750 farmers into groups, of which, total 1750 farmers has been associated into groups.	100 percent achievement Financial allocation for this component was Rs. 35.00 lakh, of which total fund has been utilized.
HRD Training of Farmers	100 percent achievement Physical target was to conduct training of 100 farmers, of which, same has been covered.	100 percent achievement Financial allocation for this component was Rs. 0.75 lakh, of which total fund has been utilized.
Baseline Survey	100 percent achievement Physical target for this component was to cover four districts for baseline survey.	100 percent achievement Financial allocation for this component was Rs. 7.5 lakh, of which Rs. 7.213 lakhs has been utilized.

Source: Progress report of VIUC Manipur

Out of the total fund of Rs. 350 lakhs received during 2011-12, total expenditure has been Rs. 294.97 lakhs i.e. 84.1 percent of the total financial target has been achieved.

Summary

- ◆ As per the proposed Action Plan, total financial outlay for the year 2011-12 was Rs. 350.00 lakh.
- ◆ About 35 percent fund has been allocated for vegetable cultivation.
- ◆ Total utilization of the fund during the year has been, Rs. 294.97 lakh, which is 84.1 percent of the total target.
- ◆ No efforts have been made for development of Market infrastructure component under the scheme.
- ◆ Overall fund estimates and approved allocations for different components under the plan developed for the State is low and do not justify because of prevalent high cost of materials in the State.

Situational Analysis of VIUC in Manipur

This section illustrates the situational analysis of

VIUC in Manipur. It is an analysis of the scheme being implemented in the State and condition of the farmer beneficiaries after implementation of the initiative, identification of the major issues related with the components and analysis of key stakeholders, who arrange and provide materials and other related services for smooth execution of the scheme. Situational analysis has been derived with the help of primary survey, secondary information observations and discussions with the farmer members in different clusters of the select districts during the team's 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 clusters in both Bishnupur and Imphal West districts. Major highlights of the survey have been discussed in the following section:

Land Holding: Average operational holding size of the surveyed farmer's area is around 0.70 ha.

- ◆ All the farmers belong to small and marginal category (44 percent small farmers and 56 percent marginal farmers).
- ◆ As Manipur is a hilly state, mostly small and scattered patches of land have been found and; therefore, operational farm land holding size is small.
- ◆ Vegetable cultivation seems to be a remunerative enterprise in the project area of the State.

Irrigated Land: Out of the total cultivable area, as reported by surveyed farmers, only 57 percent area is under irrigation. Forty three percentage of cultivable land is unirrigated and totally depends upon extent of rain during the cultivation season.

- ◆ Most of the farmers use flood irrigation and the sources of irrigation are canal as well as

tube wells, in addition some farmers use River Lift Irrigation (RLI) system.

- ◆ Based on primary survey and secondary data sources, it can be concluded that irrigation systems need adequate funds and execution of well-planned irrigation network to serve most of the vegetable growing farmers in the project area.

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). Detail comparison of current and base year cost of production has been mentioned in Impact Assessment in this section. Average production cost mentioned by the surveyed farmers is as illustrated in the Table below. The detailed calculations have been given in ANNEX- II

Table 17: Average Cost of Cultivation

S.No	Crop	Average total cost of cultivation(Rs./Ha)
1.	Cabbage	34880
2.	French Beans	32740
3.	Chilli	36945
4.	Cucumber	30242.5
5.	Tomato	30602.5
6.	Melon	25070
7.	Cauliflower	50295

Source: Primary Survey

Seed Used: Almost all the surveyed farmers are using hybrid seeds.

- ◆ About half of the seeds are arranged and procured from Government Agencies and rest from local Dealers/Retailers seed suppliers and some use their own produced seeds.
- ◆ As per baseline survey, awareness level of the farmers in the state is slightly low, hybrid seeds by more than half of the farmers surveyed areas visited, indicates the increase

in penetration of the use of good quality inputs and new interventions.

Adoption of On-farm Management Practices and Organic Farming:

- ◆ From field observation by the team, it was found that many farmers are engaged in seedling production of vegetable in polyhouse. Raw material for the polyhouse has been procured from the Government.

- ◆ Presently farmers prefer high bed and row sowing of vegetable mainly in cucurbits. Initially, however, it was observed that most of the farmers were using seed broadcasting method for vegetables. Farmers are cultivating some of the vegetables on high bed and rows which is an appreciable intervention of the scheme.
- ◆ Some of the farmers are practicing organic farming and these farmers have been provided with the HDPE vermi-compost bed from the Department under the scheme. 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. Very few farmers have been reported to be using, plastic crates for harvesting and marketing of their produce.

Mode of Transportation: Almost all farmers of the surveyed area, market their produce individually and using their own vehicles in the nearby markets which are normally at a distance of 10-20 km.

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 markets and wholesale their produce through Commission Agents in the market.

- ◆ More than 70 percent of the produce is sold within 1-2 km radius and rest upto 20 km to Imphal market for better price of produce. Major mode of payment (around 80 percent) is by spot cash and rest by credit.
- ◆ Method of fixing the price is by negotiation, normally services of the middleman is used.
- ◆ Major challenge in the marketing of the produce is poor marketing infrastructure, transportation facilities and higher cost of market commission charged by the Commission Agents.

Marketing Infrastructure Facilities: No marketing facility or infrastructure has been established, so far. Unorganized market system and lack of any

collection centre is making the system inefficient for marketing and is a big challenge for farmers. Here farmers are not getting a better platform for sale of their produce. They have to travel 15 to 20 Km to Imphal mandi and incur heavy transportation cost.

Government Support & Incentives: All respondent farmers were aware of Government support and activities under the scheme.

- ◆ Major source of information are RI and local Government Officials working in different clusters in the project area.

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

- ◆ According to them, major objective of the scheme is to increase vegetable production by adopting technical and scientifically good package of practices for vegetable production.
- ◆ Major benefits they are availing from the scheme are saving on input cost (seeds and organic manures), subsidy provided by the Government for procuring the same.

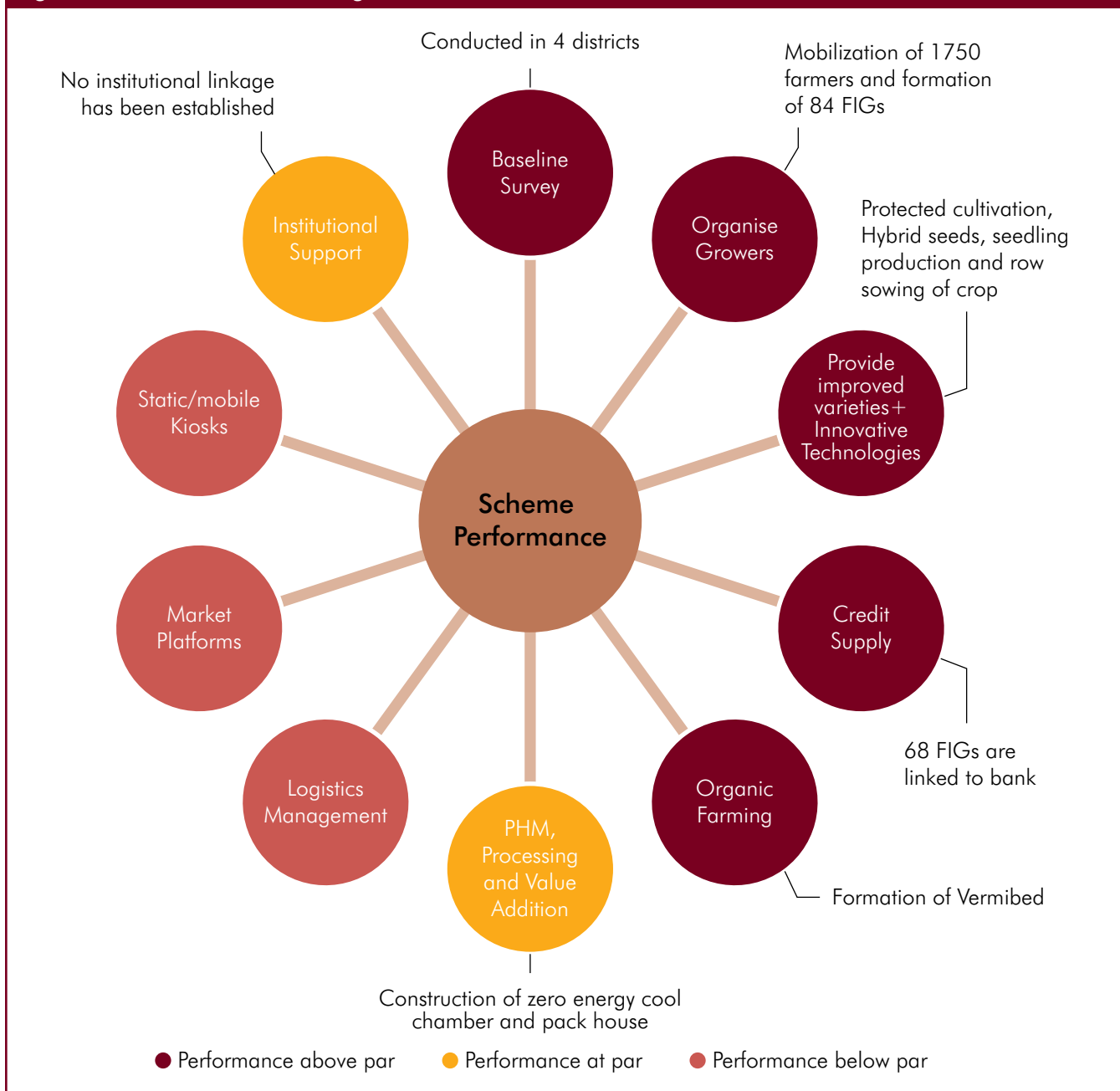
Training and Training-need Assessment: Training to FIGs and FPOs has been provided by RI on various subjects like account keeping, capacity-building and solution to field problems. Around 70% member farmers always show their presence in regular meeting. In addition to this, every month 20-25 farmers are being imparted with training from SAU and ICAR under a tie-up of Department of Horticulture and Soil Conservation with SAU /ICAR.

Observations from Field Visit

As per the data received from the State Nodal Agency, 84.1 percent of the total budget has been utilized during the year. Major observations reported during field visit are as follows:

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 89: Observations during the Field Visit



Detailed observations of the team’s field visit in Manipur State’s Project Area

Contacting Farmers and their Mobilization for Group Organisation

By contacting farmers and organising group meetings, 84 FIGs have been formed. Group meetings and trainings have been organized at grassroot level on monthly intervals for awareness generation. Crop production aspects, collective assembling and pooling of different crops, bulk

procurement of farm inputs and marketing and other group activities such as maintaining account books and record keeping, training on modern package of practices has been regularly discussed. Implementing agency officials regularly participate in cluster meetings. Around 70 percent farmers are being benefitted and participation has been on the increase in group activities.

Training and Capacity-building

Training and capacity-building programmes has been conducted. The agenda and purpose of such programmes is need based depending upon the local scenario and farmer's requirement.

Major training programme has been based on package of practices, marketing of produce, post-harvest management, value addition activities, internal management and functioning of FIGs.



Figure 90: Training Conducted Under VIUC

- ◆ Training and capacity-building programme have been provided by livelihood resource persons of resource institution and SAU/IACR professionals in coordination with the State Department.
- ◆ Approximately 70 percent of the FIG members have been participating in such programmes and around 80 percent group leaders of FIGs have been trained on FIG management aspect.

Disbursement of Farming Inputs and Subsidy

The coverage percentage of farmers for providing subsidy is not satisfactory as distribution of farming inputs has been done for 60-65 percent of FIG members in the form of improved or hybrid seeds, permanent vermibed and HDPE vermibed structure. It has also been observed that there is a problem with the timely supply of seeds during or before on set of vegetable sowing season, even for some time, as informed by the farmers during discussions, seeds have been provided to farmers at almost end of vegetable growing season. On further discussion and clarification from District

Officials, the team was informed that there was a problem in the timely of fund flow to Districts which created hurdle in timely distribution of input subsidy to the farmers.

Functioning and Coordination of Resource Institution

Resource institution has sufficient and adequate understanding about the scheme and their work is satisfactory. They have been working dynamically on awareness generation, farmer's mobilization, group formation, establishing input and output linkages. However, lack of communication, transport facility, timely fund flow and insufficient manpower has been the major bottlenecks in the scheme's implementation.

Functioning of FIGs/FPOs

Potential FIG members have been selected based on mutually shared interest which is covering 1750 farmers. Almost all FIGs are highly motivated and well guided by District Officials and RI. Some of the FIGs have initiated group farming which may act as an encouragement for other FIGs, too.

Two FPOs have been registered, one at Thoubal district with name "Thoubal District Farmers' Producers' Organization" under the Manipur Registration Act and other at Bishnupur district "Bishnupur District Vegetable Producing Co-operative Society Ltd." under Co-operative society, Moirang, both FPOs have membership of around 900 farmers.



Figure 91: FPO Inauguration in Bishnupur

Infrastructure Creation: Infrastructure creation is one of the important components of the scheme to support the farmers for post-harvest management and market activity. As per the progress report Zero Energy Cool chamber under post-harvest management of vegetables, has been established in the four districts selected under the project area, but the physical presence of these structures during field visit of the team was not been observed.

Under market infrastructure, collection centres were to be established which has not been done and therefore, there is no achievement on this component of the scheme.

Challenges/Issues

The scheme is progressing slowly however, in the right direction but being a hilly terrain with inefficient transport facility, there are some major challenges which have been retarding the progress of the programmes under the scheme.

Marketing Infrastructure

No marketing infrastructure has been created or established under this component of the planned scheme. Farmers have been marketing their produce individually. Although, some farmers have been jointly transporting their produce to Imphal market for better price but the expenditure incurred supersedes the returns. There has not been any effort or relief in transport facility by the Government. There is absence of aggregation centres, pack house and retail outlets in the project area. Farmers have been marketing their produce to local traders through middlemen at distress prices due to non-availability of proper marketing channel and competition in the markets.

Fund Allocation for Training

It has been reported by concerned resource institution that fund has not been adequately allocated for conducting training and exposure visits. Therefore, it has become difficult to conduct training on different aspects of crop production, post-harvest management, marketing and administration and financial management of FIG/FPO.

Share Capital

Due to poor economic background and lack of other means of earnings by the vegetable growing farmers, in general, share capital of Rs. 1000 for each member is too expensive for participating and becoming a permanent member of the FIG/FPO. RI needs to work on this, by developing a system of monthly saving at the FIG level and thereafter, FIGs contributing in the Share Capital of FPOs. Major part of the fund with the FPO has also come from non-members, such as contribution by local politicians, etc. which will not be a sustainable means of finance for survival of FPOs.

MIS and Monitoring of the Scheme

Although, a lot of activities are happening on the ground, there is a big lapse on the part of the Nodal Department in terms of capturing the progress and monitoring of the scheme. At the State level, there is neither system/method for tracking the progress of the scheme at field nor any MIS for capturing the required information.

Summary

- ◆ Major vegetable clusters have been selected on the basis of the availability of land, connectivity to road and ease of operations as the state is a hilly terrain.
- ◆ Implementing agency officials regularly participate in cluster meetings. Farmers are being benefitted and participation has been increasing in group activity.
- ◆ Disbursement of inputs has been done in the form of seeds to approximately 60-65% FIG members only.
- ◆ Transport and inefficient manpower are important problems in monitoring of the scheme among resource institutions.
- ◆ Insufficient allocation and untimely flow of funds are lowering the progress of the scheme.
- ◆ Farmers are facing problem in opening of back account as bank is not cooperating well.

Impact of the Scheme

This section investigates the impact of the VIUC

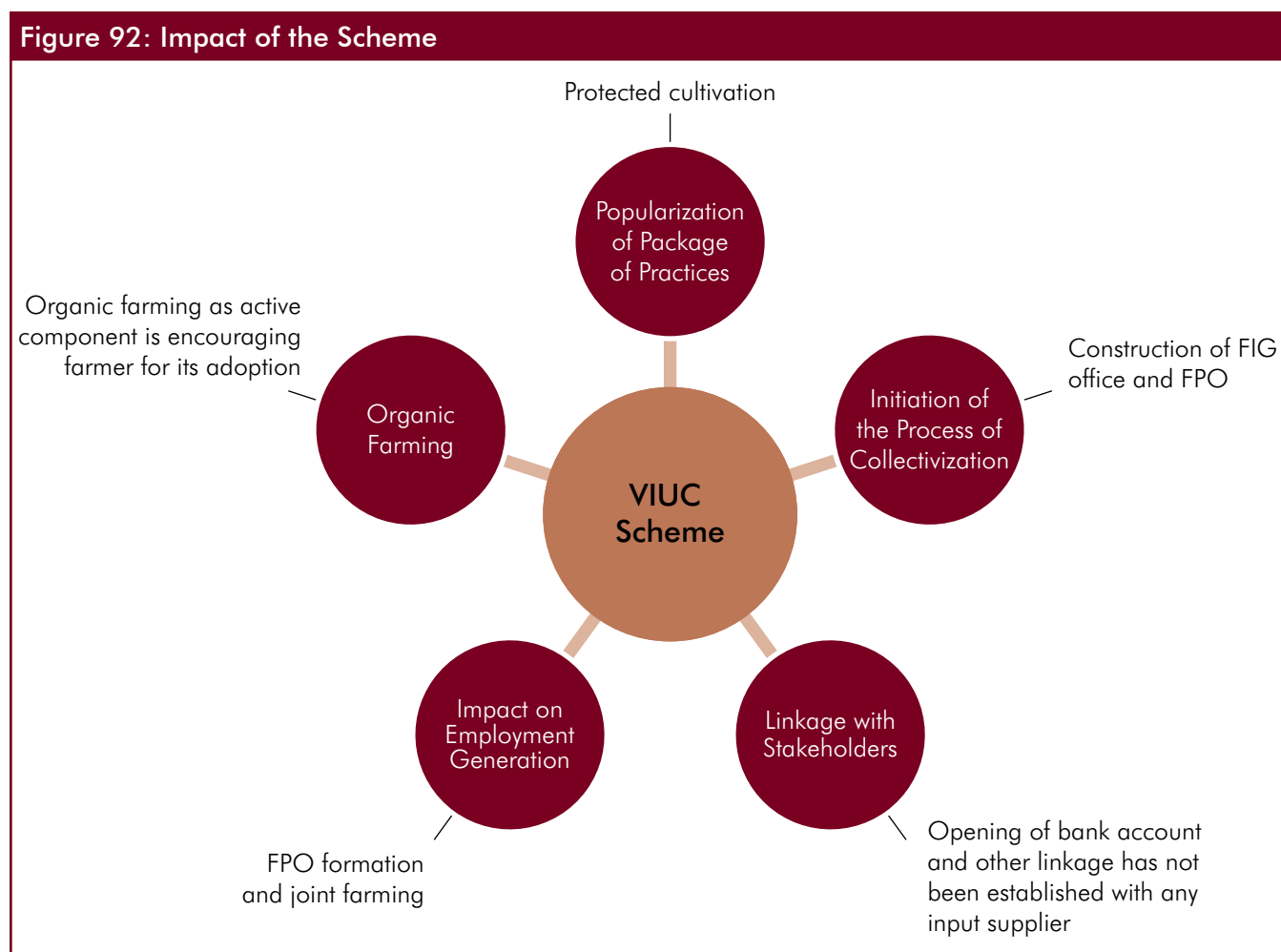
scheme and its major components on broader areas relating to procurement of quality inputs, linkages developed for procurement and marketing, saving and improvement in socio-economic status of farmers and employment generation induced by the initiative.

VIUC has been framed to cover all the segments of vegetable supply chain 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 continued and sustainable marketing infrastructure and linkages. For the purpose of assessing impact of VIUC, the results of performance and situational analysis alongwith general awareness of the different components of the scheme have been assimilated.

Impact of VIUC Scheme in Manipur State

The following figure outlines the direct impact of the scheme in terms of the following five components.



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

Quality Inputs

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

system in respect of adoption of hybrid seeds, protected cultivation, off season vegetable production. For vegetable production, seeds, permanent vermibed and HDPE vermibed have been distributed among farmers. Such type of

input use has increased the confidence and faith of the farmers in the project area and increase in vegetable production to a substantial level.



Figure 93: Large area covered under Cucurbit Crop Cultivation

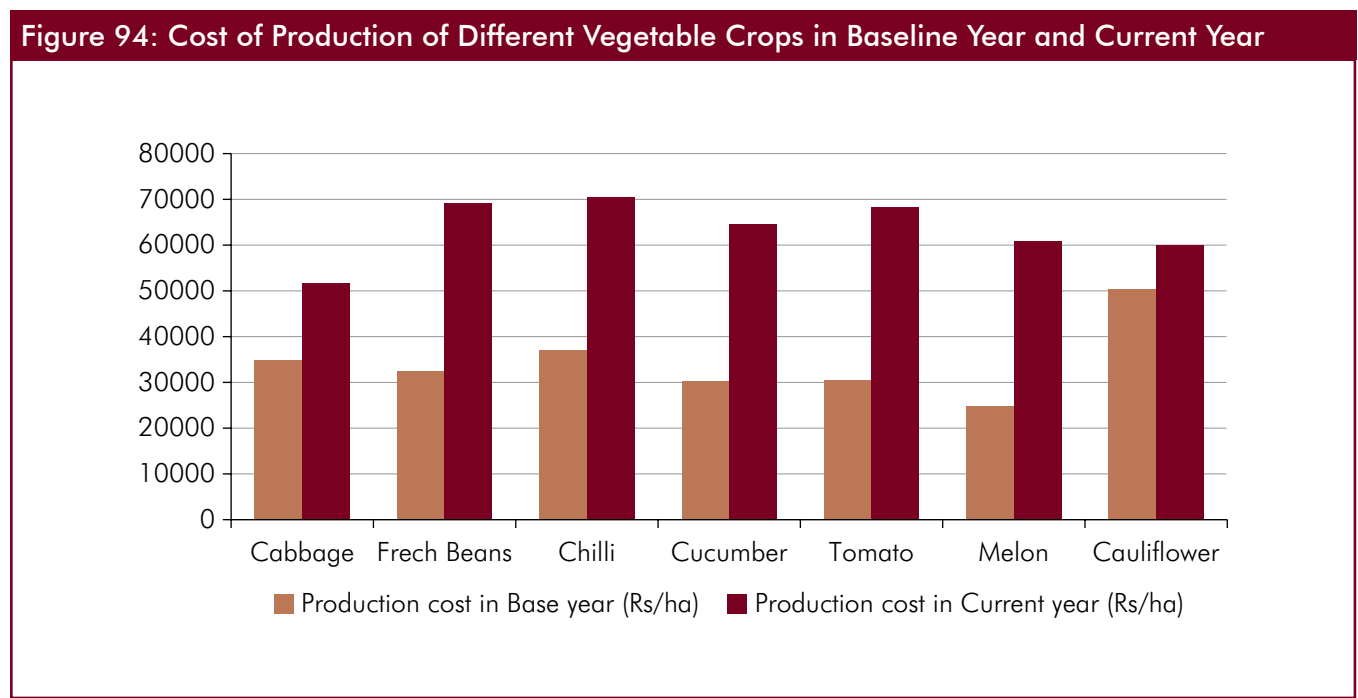
Most of the farmers have been using hybrid seeds. Gradually local seeds have been replaced by hybrid seeds after realizing its quality and performance. This indicates that farmers have become aware of the use of hybrid seeds and other package of practices. State and District Officials' alongwith RI have been putting tremendous efforts for

motivation of FIG members for improvement in quality productivity of vegetables per unit area. Although timely availability of farming inputs from the Department is a major issue in Manipur due to delay in fund release, some times it is made available at the end of sowing period which has no means to supply it and is useless. Approximately 60-65 percent farmers have been covered for input distribution which needs further expansion in terms of coverage of farmers.

Production Cost

During the primary 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. It has been observed that cost of production has not reduced in spite of the coverage of 60-65 percent farmers under distribution of inputs. Although, inputs like seeds, vermicompost and some other inputs have been provided to farmers but due to lack of employment labour wages is quite high and 70-80 percent of the production cost is incurred on labour charges for land preparation and harvesting of vegetables.

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



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. During field visits, it has been observed that farmers are opting for the off season vegetable production of cabbage, tomato, cucumber, melons and other crops. Along with that farmers are also engaged in seedling production of vegetables in poly house. These vegetables have a high demand in the market due to consumer's preference.

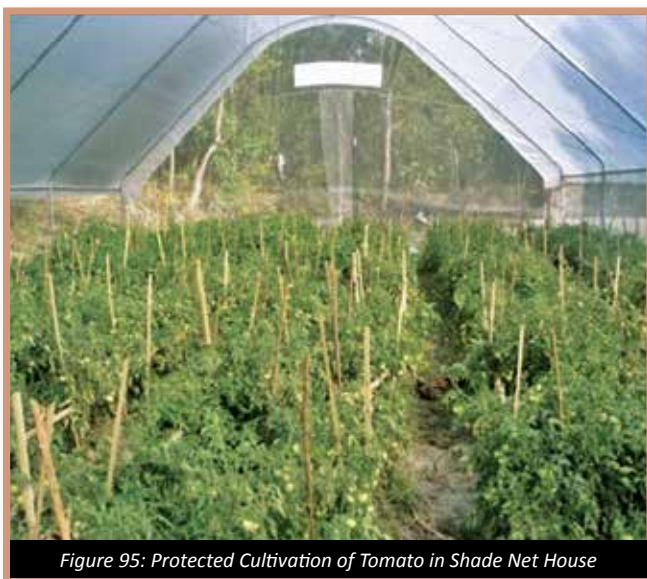


Figure 95: Protected Cultivation of Tomato in Shade Net House

Therefore, farmers have been encouraged to carry out protected cultivation. These vegetables fetch better price in the market. Since the farmers in the State have been marketing their produce to Imphal and other nearby markets, so to get remunerative prices, most of the farmers have been encouraged for off season vegetable production under shade net/poly house.

Initiation of Process of Collectivization

Resource Institutions has mobilised 1750 farmers under the scheme which has been federated into

84 FIGs. RI has successfully registered two FPO in two districts, Thoubal and Bishnupur.

Collective farming is at a budding stage in Manipur as very few farmers are engaged in collective activities. Some of the FIGs have taken land on lease for practicing collective farming and marketing of produce. This small initiative of these farmers will surely encourage other farmers to understand the benefit of collectivization.



Figure 96: FIG Collective Farm

Linkage with Stakeholders

Establishing linkage between various stakeholders, service providers, microfinancing institutions, banks and research institutes is necessary for the convenient and successful implementation of the scheme. Regarding linkages, out of 84 FIGs, 68 FIGs have their bank accounts opened which is 80% of the total FIG. All the FIGs together have saved more than Rs. 2.2 lakh.

As far as other linkages are concerned such as market and input linkage, it has not been established yet.

Convergence with other Schemes

Presently there has not been any convergence of other RKVY schemes with VIUC. The Department of Horticulture and Soil Conservation is trying to converge Microirrigation Mission with VIUC.

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 surely the scheme is providing new employment opportunity to those who are cultivating vegetables on leased land collectively and engaged in direct or indirect activities of vegetable cultivation. Two FPOs have already been registered which is a welcome step to create employments to many who are linked to it.

Summary

- ◆ It has been observed that cost of production has not reduced in spite of the coverage of 60-65 percent farmers under distribution of inputs. Although, inputs like seeds, vermicompost and some other inputs have been provided to farmers but due to lack of employment labour wages is quite high and 70-80 percent of the production cost is incurred on labour charges for land preparation and harvesting of vegetables.
- ◆ Major percentage of farmers has been encouraged for off season vegetable production in shade net houses.
- ◆ A few FIGs have initiated collective farming of vegetable on leased land.
- ◆ The Department of Horticulture and Soil Conservation has initiated the process and is trying to converge Microirrigation Mission with VIUC.
- ◆ Two registered FPOs will open new opportunities of employment among farmers who are directly or indirectly linked to it.

Recommendations

This section describes the proposed recommendations and suggestions, which are based on secondary and primary research and by the teams visit to Manipur project areas.

During the team visit In Manipur, it has been evident that the VIUC scheme has started gaining momentum through the constant efforts of State and District officials and involved resource institution (RI). Although there are some more components which require more and additional

efforts to ensure the successful initiative of the Scheme entrusted to SFAC.

Recommendations for proper administration of the scheme:

- ◆ Timely and systematically synchronized release of funds is essential for timely execution of the scheme.
- ◆ Provision of budget for training component and exposure visits should be added to it.
- ◆ Allocation of additional funds and manpower engaged for proper monitoring of the scheme.
- ◆ RI and Department of Horticulture need more human resources for better implementation of VIUC as they are facing challenges in account keeping, training and capacity-building.
- ◆ Although resource institution and department are very clear about their objective but they need regular training on capacity-building, on aspect of FPO commercial business sustainability, package of practices and for creation of forward and backward linkages with different stakeholders.
- ◆ Need to hire technical staffs that have good knowledge of computer and IT for better and timely handling of MIS aspects of all the components of the scheme for the State.
- ◆ Provision of transportation allowance for certain and specific period and hiring of vehicles for easy monitoring and implementation by field staff as Manipur is a hilly terrain and transportation is one of the challenges on the way of better implementation.

Recommendation for proper implementation on farmer's perspective:

- ◆ Presently fund is routed through State Exchequer which normally delays the fund transfer to the Department and finally obstructs the supply of seeds and other essential inputs to farmers. This part of the scheme needs serious consideration to ensure time framed and planned execution of the scheme.
- ◆ Allocation of funds to different components should be reviewed and revised according to the cost norms being incurred in the State.
- ◆ Farmers need to impose with more number of quality training on every aspects of FPO , FIG and modern package of practices.

Chapter 8

Tamil Nadu

Project Area and Stakeholders

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

VIUC Scheme in Tamil Nadu

VIUC in the state of Tamil Nadu is being implemented in the state capital: Chennai since 2011-12, having a population of 46.8 Lakhs. Tamil Nadu Horticultural Producers' Co-operative Enterprises Limited (TANHOPE), Government of Tamil Nadu has been appointed as the Nodal agency for implementing the project in the State. Managing Director, TANHOPE is the Nodal officer looking after the scheme at the state level. At the district level, Deputy Director Horticulture (DDH) is the Nodal Officer looking after the implementation of the scheme.

Baseline Survey

To identify major vegetable production districts and clusters, an independent agency, carried out the baseline survey in Tamil Nadu. Baseline Survey highlighted the existing supply chain and other bottlenecks and also identified the vegetable growing clusters within the district. During the interaction with the Nodal Agency, 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 five districts of Kancheepuram, Thiruvallur, Villupuram, Thiruvannamalai and Vellore. Major vegetable clusters around these five districts, ranging from

40-200 km, are supplying vegetables to targeted urban clusters i.e. Chennai.

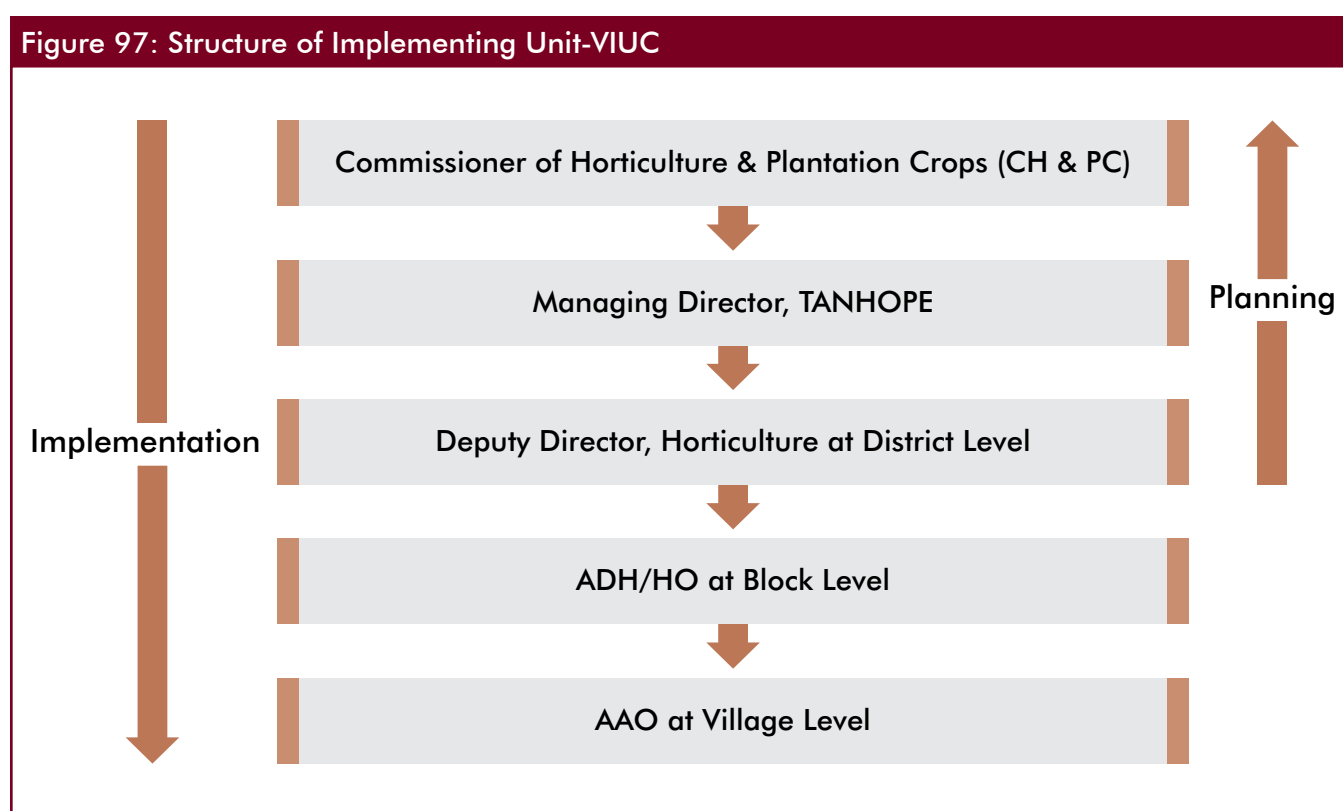
Implementing Partners of VIUC in Tamil Nadu

Tamil Nadu Horticultural Producers' Co-operative Enterprises Limited (TANHOPE), Government of Tamil Nadu has been appointed as the Nodal agency for implementing the project in the State. Managing Director, TANHOPE is the Nodal Officer for overseeing the overall implementation of the scheme in the state. At District level, Deputy Director Horticulture (DDH) oversees the overall implementation of the scheme, while at the Block level, Assistant Director of Horticulture (ADH), oversees the scheme. Under the ADH, Horticulture Officer (HO) oversees the scheme implementation followed by AAO at the village level.

Table 18: Stakeholders and their Coverage Area

Role	Name of Organization	Districts Covered under VIUC Scheme
Baseline Survey	The Neilsen Company	Kancheepuram, Thiruvallur, Villupuram, Thiruvannamalai, Vellore
Nodal Agency	Directorate of Horticulture, Government of Tamil Nadu, TANHOPE	Kancheepuram, Thiruvallur, Villupuram, Thiruvannamalai, Vellore

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



Planning and Implementation of Activities:

The planning of the project activities takes place at the State level, wherein the Managing Director of TANHOPE finalises the State plan. From TANHOPE, State plan is submitted to Commissioner Horticulture and Plantation Crops, who is the final authority for approval of the plan for implementation. Approved State Plan

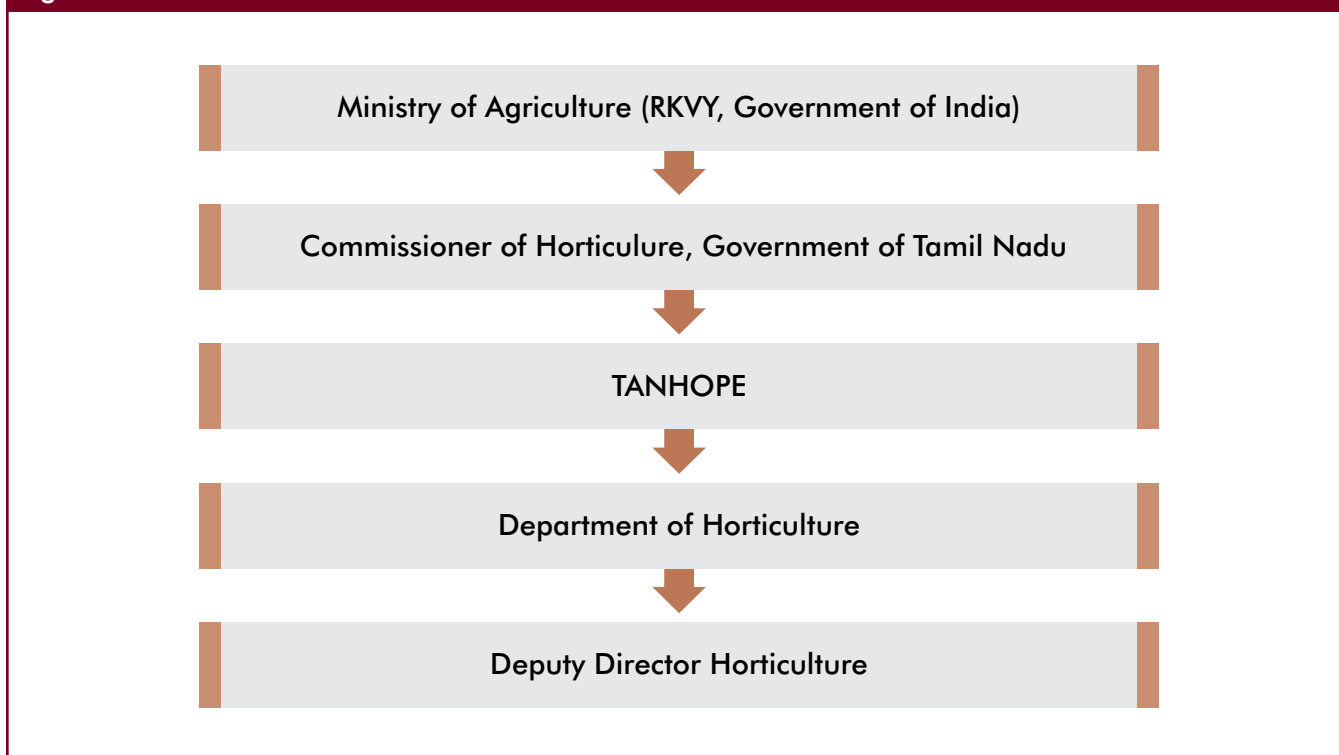
is finally submitted to RKVY Cell (Directorate of Agriculture) for approval and sanction of funds.

Flow of Funds

The flow of fund is depicted in the figure below:

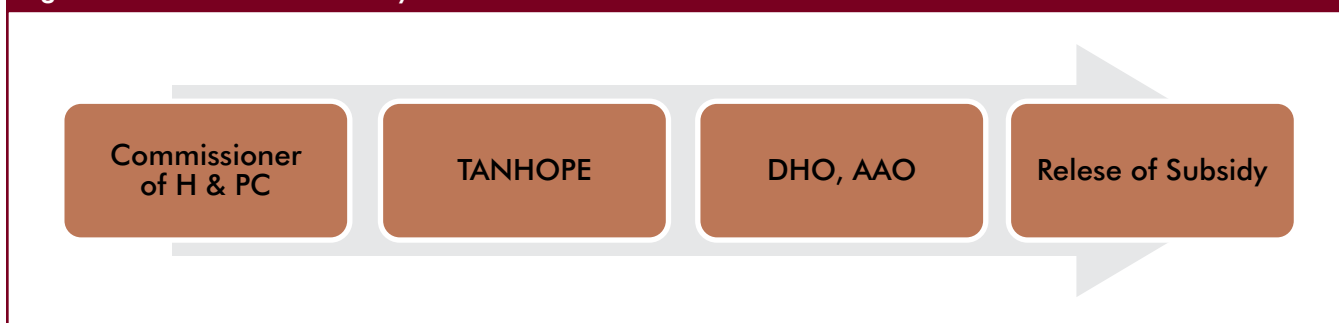
Budget Outlay and Expenditure (2011-12): The total budget outlay approved for the state for the year 2011-12 was Rs. 1700 lakhs.

Figure 98: Flow of Fund



Release of Subsidy to Beneficiary

Figure 99: Release of Subsidy



The applications for subsidy are received through Deputy Director Horticulture and TANHOPE. Once the applications are received and scrutinised, the fund flow takes place from the Directorate, Chennai to the district through which the application was received.

The mobilization of farmers and promotion of Farmers' Interest Groups (FIGs) and Farmers' Producers' Organisations (FPOs) is being undertaken by TANHOPE. In the initial stages, two Resource

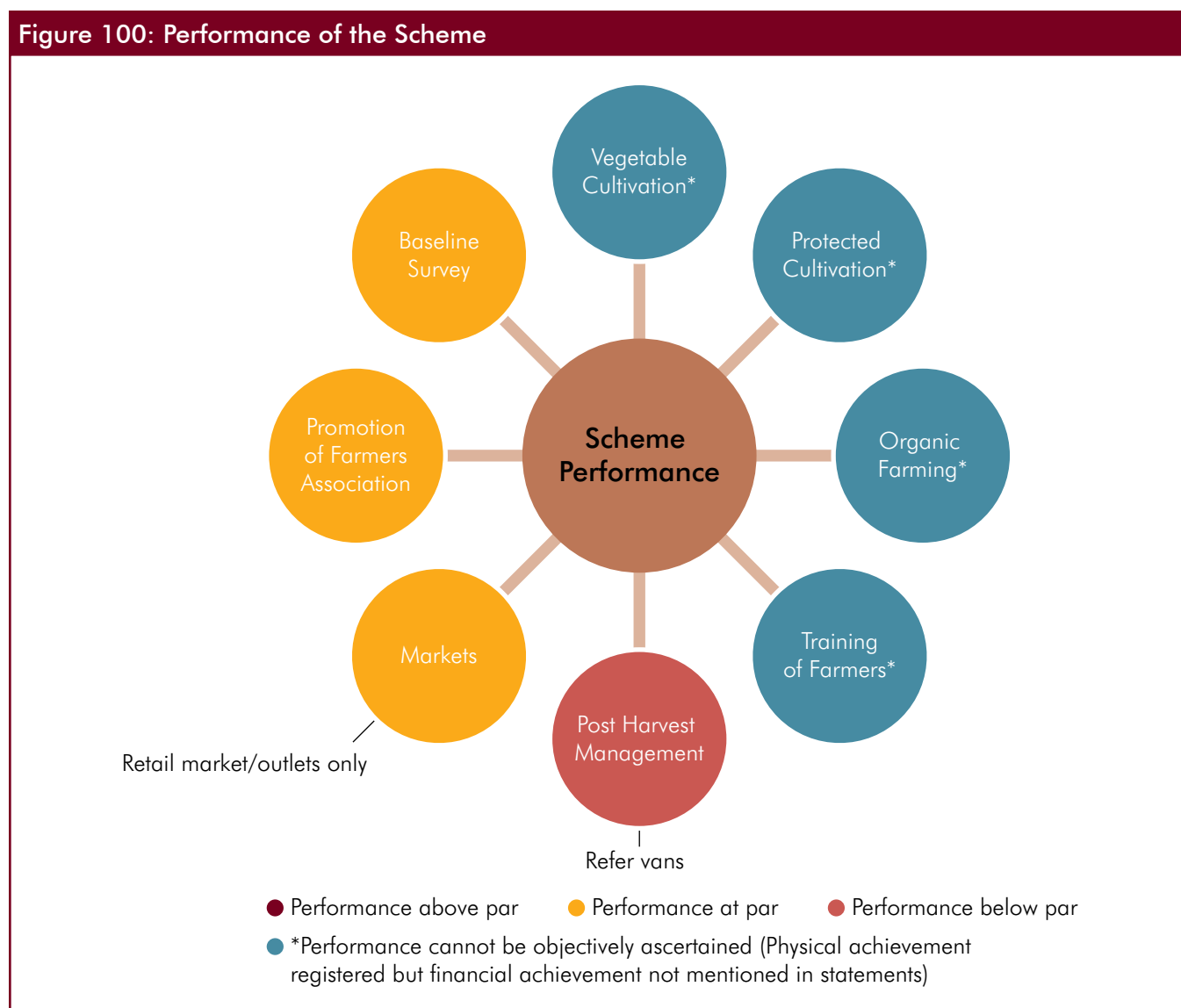
Institutions were involved in the implementation of the initiative in the state. They were – Access Livelihoods Consulting Pvt. Ltd. (ALC) and Vegetable Growers Association of India (VGAI).

Performance of Scheme

This section 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.



Proposed and Approved Action Plan

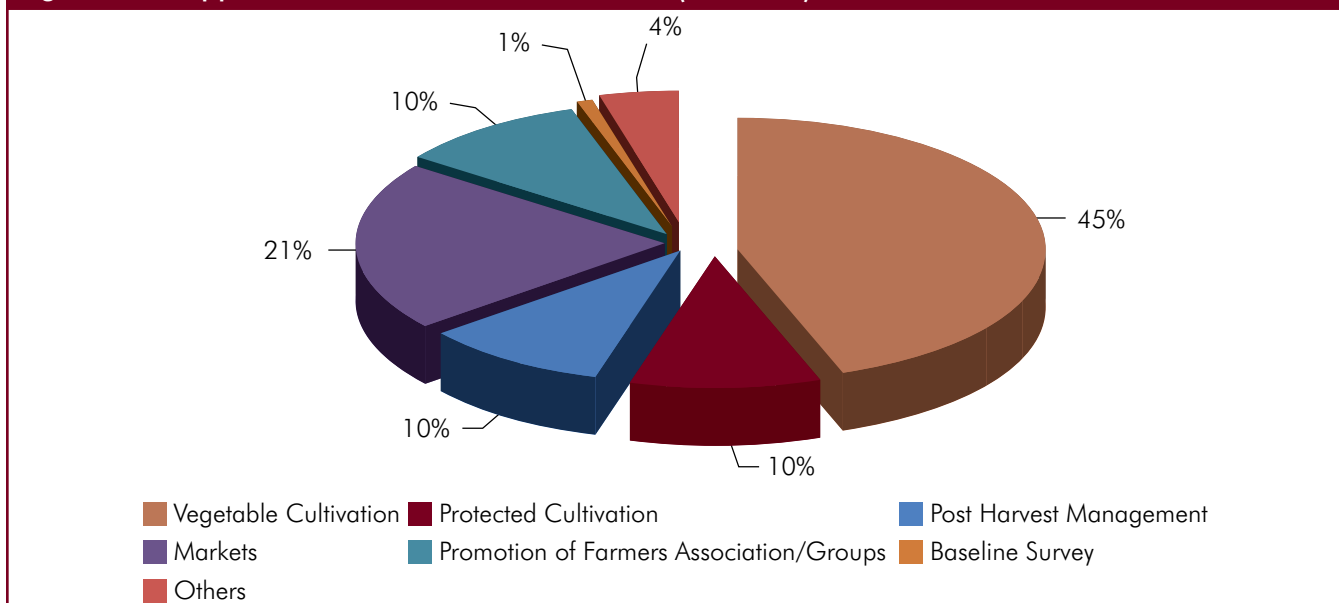
As per the proposed action plan for the year 2011-12, the Department proposed to take up major activities/components for the implementation of VIUC with the total financial outlay of Rs. 1700.00 lakhs. Of this amount, Rs. 536.68 Lakhs were utilised and accounted for in the financial year. In addition to this amount, expenditures of Rs. 996.63 Lakhs, were incurred for some components, but not accounted in financial statements. The balance funds amounting to

Rs. 167.13 Lakhs were unspent. A detailed statement received from the State is enclosed as Annex IV along with this report.

The Directorate of Horticulture and Plantation Crops, Government of Tamil Nadu and TANHOPE have incurred the expenditure in 2011-12, but have not accounted for the entire expenditure in their books and related statements. Therefore, actual achievement of the state under VIUC, for 2011-12, cannot be objectively ascertained.

The share of all the components is illustrated in Figure 101 below.

Figure 101: Approved Action Plan of Tamil Nadu (2011-12)



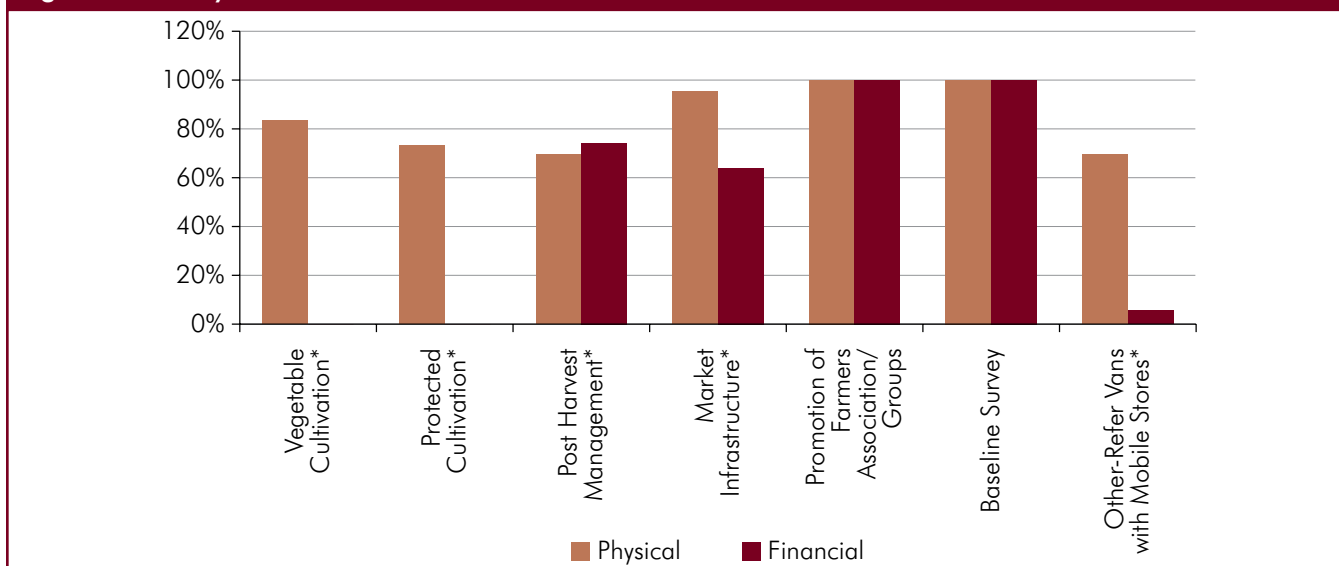
Source: Nodal Agency Tamil Nadu (TANHOPE)

Of the total approved financial outlay of Rs. 1700.00 lakhs, maximum fund has been allocated for the component of vegetable cultivation (45%) followed by market infrastructure (21%). Equal amount of funds have been allocated for post harvest management (10%), promotion of farmers' association (10%) and protected cultivation (10%). Small amount of funds have been allocated for other components (4%) and only 1% of the fund has

been allocated for baseline survey. The allocation of fund is very appropriate and almost all the major components have been covered. Detailed component-wise Physical targets & Financial outlay for the year 2011-12 is given in Annex- I.

The status of financial and physical achievements of different components during the year is given in the following figure;

Figure 102: Physical and Financial Achievement of VIUC in Tamil Nadu



Note: *There are some components against which physical achievement have been attained but financial achievement has not been accounted in financial Statements at the state level. These components are Vegetable Cultivation, Protected Cultivation, Post Harvest Management, Market Infrastructure and Others.

Following components were not allocated in the approved action plan but physical achievement has been attained:

Organic farming: Area under organic cultivation covering 550 ha area is under adoption and

certification but financial achievement has not been registered.

Training of farmers: Five trainings were organized but financial achievement has not been registered.

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

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

Table 19: Component-wise physical and financial targets and achievements

Component	Physical Performance	Financial Performance
Vegetable Cultivation*	84 percent achievement Physical target under this component was to cover 1580 ha area in open field cultivation and 1200 ha under hybrid cultivation, of which 1320 ha has been covered under open field cultivation and 1010 ha has been covered under hybrid cultivation.	No achievement* Financial allocation under this component was Rs. 760.50 lakhs, of which Rs. 637.87 Lakhs have been utilized but not accounted in financial statements.
Protected Cultivation*	74 percent achievement Physical target under this component was to cover 54000 sq m (27000 sq m area in green house and 27000 sq m area in shade net house), of which 39900 sq (21000 sq m area in green house and 18900 sq m area in shade net house) has been covered.	No achievement* Financial allocation under this component was Rs. 168.75 lakhs, of which Rs. 138.25 Lakhs have been utilized but not accounted in financial statements.
Organic Farming	This component was not allocated in the approved action plan. However, area under organic cultivation covering 550 ha area is under adoption and certification, financial achievement has not been registered.	
Training of Farmers	This component was not allocated in the approved action plan. However five trainings were organized and financial achievement has not been registered.	
Post Harvest Management*	70 percent achievement Physical target under this component was to provide 20 refer vans and 28340 plastic crates, of which 20 refer vans and 19838 plastic crates have been provided to farmers.	74 percent achievement* Financial allocation under this component was Rs. 166.51 lakh (Rs 124 lakhs for refer vans and Rs. 42.51 lakhs for plastic crates), of which Rs. 124 lakhs has been utilized for refer vans and have been incorporated in financial statements. Rs. 42.51 Lakhs, allocated for plastic crates for farmers has been utilized but not accounted in financial statements.
Market Infrastructure*	95 percent achievement Physical target under this component was to establish 100 retail outlets and 16 collection centres, of which 100 retail outlets and 10 collection centres have been established.	64 percent achievement* Financial allocation under marketing infrastructure was Rs. 351 Lakhs, of which Rs. 223 lakhs was allocated for retail outlets and Rs. 128 lakhs for collection/aggregation centre. Rs. 223 lakhs has been utilized for establishment of retail markets and has been incorporated in financial statements. Rs. 128 Lakhs, allocated for collection/aggregation centre have been utilized but not accounted in financial statements.

Component	Physical Performance	Financial Performance
Promotion of Farmers Association/ Groups	100 percent achievement Physical target under this component was to form group of 8500 farmers, of which 8500 farmers have been mobilized into groups.	100 percent achievement Financial allocation under this component was Rs. 170 lakhs, of which entire fund has been utilized.
Other Components (Refer vans/ containers cum mobile store including vegetable plastic crates, physical balance for mobile stores)*	70 percent achievement Physical target under this component was to provide 20 refer vans/containers of which 14 units have been provided.	6 percent achievement* Financial allocation under this component was Rs. 68 lakhs, of which Rs. 4.00 lakhs has been utilised and incorporated in financial statements. However, Rs. 50 Lakhs has been utilized but not accounted in financial statements.
Baseline Survey	100 percent achievement Baseline survey has been conducted in the targeted districts, for which targeted Rs. 15.68 lakhs has been fully utilized.	

Note: *Financial achievement not mentioned in books of accounts and related statements

Out of the total fund of Rs. 1700.00 lakhs, total expenditure is of Rs. 536.68 lakhs i.e. 31 percent of the total financial target has been achieved. In addition to this, expenditure of Rs. 996.63 Lakhs has been achieved under the component of vegetable cultivation, protected cultivation. Post Harvest Management, collection centre and other components have not been mentioned in financial statements.

Summary

- ◆ As per the proposed action plan, total financial outlay for the year 2011-12 was Rs. 1700.00 lakh.
- ◆ Maximum fund has been allocated for vegetable cultivation followed by market infrastructure.
- ◆ Physical achievement has been made in all the targeted components but financial achievement has been registered in the component of post harvest management, market infrastructure, promotion of farmers' groups, baseline survey and other components.
- ◆ Total utilization of the funds, incorporated in financial statements, is Rs. 536.68 lakhs, which is 31 percent of the total target. Additionally Rs. 996.63 Lakhs have been utilised for various components but not incorporated in financial statements.

Situational Analysis of the Scheme

This section 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.

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 Kanchipuram and Thiruvellur 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 0.6 ha. Almost 100 percent of the surveyed farmers belong to marginal farmers' category. Only marginal farmers have been covered under the scheme as beneficiary. It also fulfils the criteria for the scheme. None of the medium and large farmer has been covered under the scheme.

Irrigated Land: Out of the total cultivable area of 24 ha, 100 percent area has been irrigated. Major source of irrigation is tubewell and open wells.

Seed Used: Almost 100 percent of the surveyed farmers are using hybrid seeds. Almost all the farmers are procuring seeds from Government agencies and private nurseries. Use of hybrid seeds by 100 percent of the farmers indicates that the perception of farmers for improved package of practices has improved. As of now, collective procurement of seed has not been started.

Input Procurement: All the farmers of surveyed area are procuring the inputs like seeds from SAUs and research institutes and other inputs like fertilizers, pesticides, agronomic equipments, tractors, threshers and credit facility individually from private agencies. There is no collective procurement by any FIG or member farmers. The Department officials working in the area for promotion of FPO activities need to work more aggressively on creating awareness regarding the group activities.

Adoption of Integrated Pest/Nutrient Management: Only 50 percent of the surveyed farmers are adopting integrated nutrient and pest management technologies in 10% of the area and major source of input procurement are Government and private agencies. There is no adoption of organic farming in the surveyed clusters.

Adoption of On-farm Management Practices: Regarding adoption of on-farm management practices, all the farmers are using drip irrigation in 20 percent of the area. Approximately 50 percent of the farmers are using plastic mulching, shade net house and poly-houses in 5 percent of the cultivable area.

Post Harvest Losses and Value Addition: As per the data of surveyed farmers, the extent of post harvest losses varies from 20-30 percent in crops like brinjal, bitter gourd, chilli, watermelon, tomato, cow pea and cluster beans, etc.

As per the baseline survey report, post harvest loss of vegetables was observed to be more than 15 percent. By primary survey report, it was observed that average post harvest loss in all the vegetables varied from 20-30 percent. It indicates that the component of post harvest management

of vegetables has not improved among farmers and there is requirement of providing training on post harvest handling of vegetables. Almost 100 percent of the farmers are performing value addition at field level by sorting and grading. Value addition at field level results in improved shelf life and better quality of the produce.

Marketing of Produce: Almost 100 percent of the farmers are carrying their produce to the market in plastic bags and some farmers are using gunny bags alongwith plastic bags for packaging. Average cost incurred on packaging in plastic bags is Rs. 20/- per quintal and for gunny bags it is approximately Rs. 30 per quintal of produce. Almost 50 percent of the farmers of surveyed area are carrying their produce to wholesale market and 50 percent to farm gate or village level vegetable market up to a distance of 10 km.

Around 50 percent of the farmers are carrying their produce individually in public transport vehicles and are selling to commission agent or aarhtia and others are using different modes of transportation by traders. Farmers are getting payment on credit basis at weekly intervals which is fixed by the traders. Major problem which the farmers are facing is high transportation cost, dependency on middlemen and delay in payment by the traders. Almost all the farmers sell their produce individually to big traders, they suffer a loss of 30 percent, because traders provide cost for only 70 percent of the produce and farmers are compelled to follow this traditional system. In addition to this, the farmers who carry their produce in the vehicle provided by traders pay 10% additional charges as commission to the traders.

Regarding marketing linkages, linkage has been proposed to develop with T. Nagar market in Chennai with R.S.N, A.R.L. and H.N.R Fruits Company for quantity of produce.

Bank Accounts and Savings: FIG members of both the clusters are saving an average of Rs. 100 per month. Farmers of Thiruvellur cluster have been able to save about Rs. 50,000/- till date and have provided loan of Rs. 40,000 to group members.

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 Government officials working in the area. With reference to the baseline survey report, earlier the awareness regarding Government support and subsidy was hardly 30 percent. This is a substantial achievement as all the farmers of the area are now aware about different Government support and schemes. All the farmers are beneficiary of some Government schemes like National Agriculture Development Project, IHDS (Integrated Horticultural Development Programme), MIS (Micro Irrigation Scheme) etc.

Awareness about VIUC scheme: All the farmers of surveyed areas mentioned that they are aware about VIUC scheme and its objectives. The scheme is known by the name of “Peri-Metro Scheme in Tamil Nadu”. According to them, major objective of the scheme is to increase the vegetable production and improve the economic condition of small and marginal farmers. All the farmers participated in FIG formation, INM/IPM and training component of the scheme vegetable cultivation component of the scheme but they have received subsidy in these components of the scheme.

Training and Training-need Assessment: Only 50 percent of the farmers have been provided training and capacity-building by Department Officials with an average of 20 participants for 2 days at District level in Krishnagiri and Osur District on aspects, product quality improvement and value addition activities. From the data of primary survey regarding post harvest loss, it reflects that the trainings organised by Department officials are not very effective and impactful, therefore, losses have not been reduced from baseline year.

Overall, from primary survey, it is emerging that there is marginal increase in production, productivity and availability of inputs. No change has been observed in area under vegetables, price of produce, value addition and marketing activities.

Observations from Field Visit

In Tamil Nadu, the project is being implemented by the Directorate of Horticulture & Plantation

Crops, with support from TANHOPE. There is no involvement of RIs in the state. As per the interaction with Government officials, the following points have emerged.

Detailed Observations of Field Visit

In Tamil Nadu, the initiative is being implemented in five districts namely Thiruvallur, Kancheepuram, Vellore, Thiruvannamalai, and Villupuram.

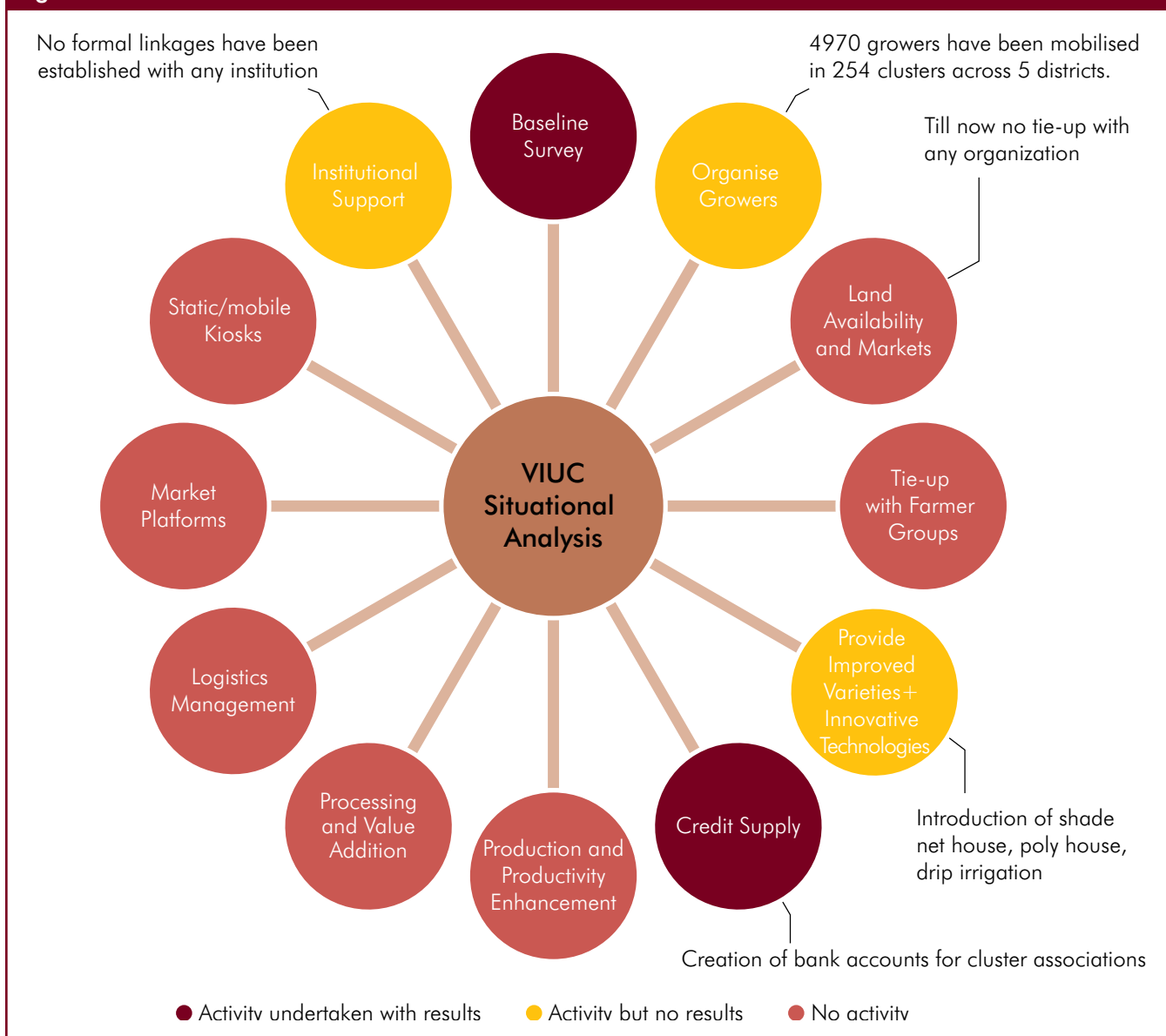
- ◆ A total of 4970 farmers have been mobilised in 254 clusters across these five districts. Small and marginal farmers have been covered under the scheme.
- ◆ Till December 2012, two Resource Institutions were involved in the implementation of the initiative in the state. They were – Access Livelihoods Consulting Pvt. Ltd. (ALC) and Vegetable Growers Association of India (VGAI). Both RIs withdrew their services post their discussion with the State Government.



Fig 104: Seedling Production Unit

- ◆ Group leaders have been selected, but very few farmers have clarity about the objectives of VIUC scheme, so far.
- ◆ There is a need of better orientation of the farmers for applying modern package of practices on their fields. These farmers have been mobilized but the concept of group activities is entirely absent in these clusters.

Figure 103: Observation of the Field Visit



Majority of the farmers are carrying out individual purchasing of inputs as well as selling their produce. This is the main reason for dominance of middlemen and wholesale traders in the area.

- ◆ In the area of infrastructure creation, protected cultivation structures, post harvest management and marketing infrastructure were targeted in the action plan but none of these structures were observed in the surveyed areas during the field visit by team.
- ◆ Regarding the development of market tie-ups and linkages, at the time of undertaking this



Fig 105: Rooftop Seedling Production Unit



Fig 106: Mobile Helpline System for Farmers

assignment there was no visible achievement. Buyer-seller meetings have not been organized for establishing forward and/or backward linkages.

- ◆ A farmer helpline system, developed by TCS, has been implemented on a pilot basis in a few clusters. This helps farmers to record their queries, verbatim. Experts at the helpline centre, revert to these queries within 24 hours. At present these queries are being recorded by TCS staff at select farm clusters.

Challenges/Issues

The progress report provided by the State Government shows progress in all the components. However, after interaction with farmers and field visits, it was observed that there was no significant progress under most of the components being implemented under the scheme.

The various challenges faced by the State in the implementation of VIUC in Tamil Nadu are as under:

- ◆ Although the officials from the Directorate of Horticulture have put in their efforts in promoting the scheme, however, their lack of understanding and initiative on various aspects of value chain such as value addition, primary processing, market facilitation and collectivisation is limiting the impact of the initiative.
- ◆ Work on some components of the initiative have not shown results in the first year of implementation, such as creation of market infrastructure like pack houses, collection

centres, static/mobile kiosks; logistics management like mobile vans, refrigerated vans; retail outlets; open and protected cultivation; processing and value addition like primary sorting, grading of produce; and establishment of market linkages with institutions and organised sector like retails chains, processors and exporters, etc.

- ◆ Some of the farmers have been able to come together, but have been unable to convert their efforts in terms of collective farm inputs procurement or selling of produce. In order to achieve this objective, the implementing agency needs to orient and understand themselves first and thereafter the farmers could be imparted the knowledge regarding the benefits of collectivisation and other components under the scheme.

- **Aggregation of Inputs/Produce:** At the time of undertaking this assignment, very limited aggregation of farm inputs and collective selling by farmers had taken place.

- **Linkages with Institutional and Mainstream Markets:** At the time of undertaking this assignment, the FIGs had not established any linkages for sale of farm produce. The farm produce is sold individually by the farmers directly in mandis or local markets.

- ◆ At the time of undertaking this assignment, the implementing agency at the state level did not have a robust MIS in place. This affects flow of information and therefore, hampers effective decision-making. Regular and punctual progress reporting about activities being undertaken under each and every component under the scheme should be consistently carried out and delays should not be accepted by the Implementing Agency/SFAC.

Summary

- ◆ The action plan and progress report provided by the Nodal Agency is showing physical and financial achievement of all the targeted components, but the field observations are portraying completely different situation in the project area visited by the team in the State.

- ◆ Although Farmers' Producers' Organization has been registered, group activity by the farmers is hardly visible; very few farmers have clarity about the objectives of the scheme.
- ◆ Protected cultivation structure and other infrastructure have been established but its impact is not noticeable on the ground.

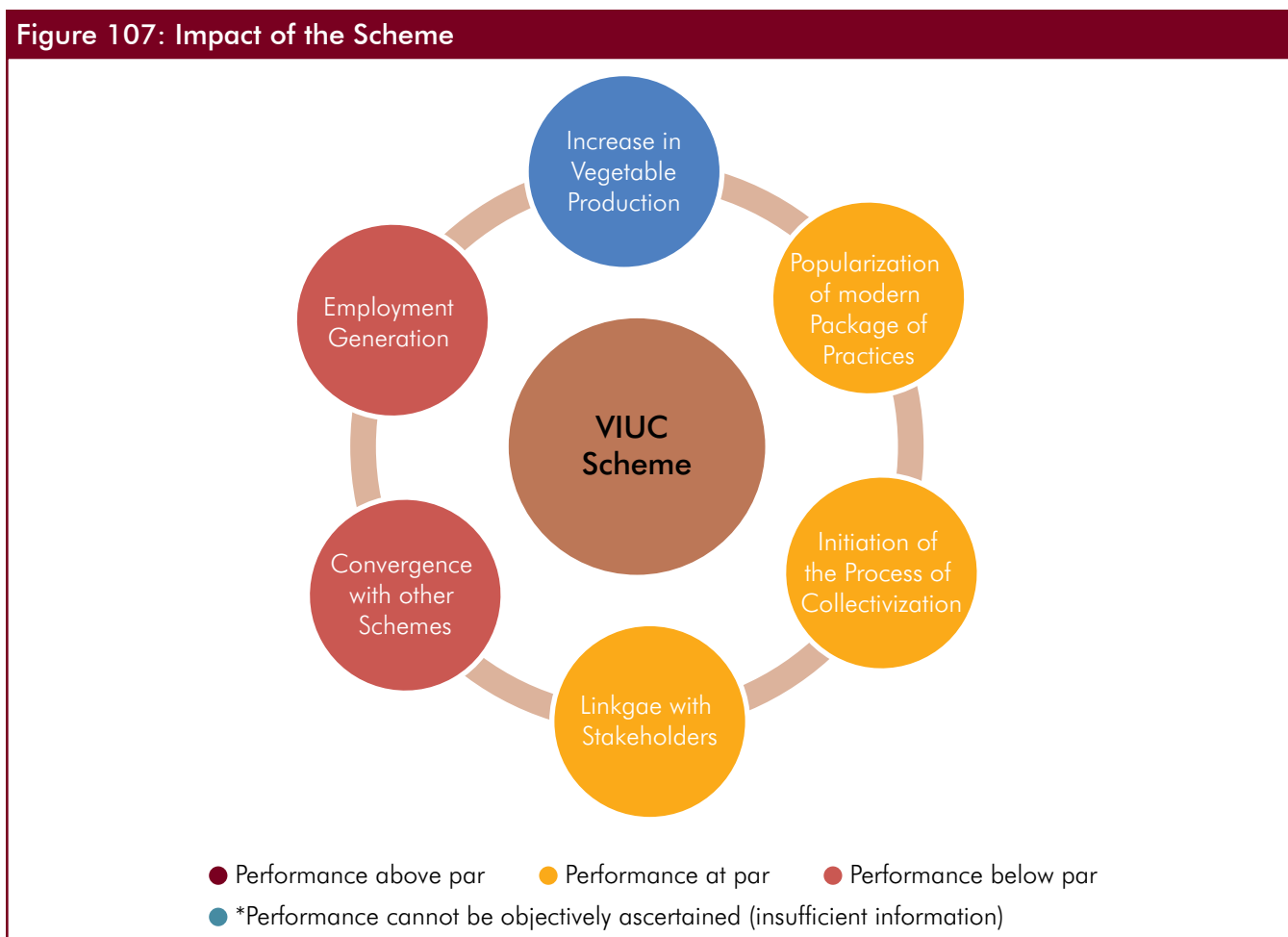
VIUC has been framed to cover all the segments of vegetable supply right from farmers' field up to retailing of vegetables with major emphasis on training of farmers on good production practices, post harvest management, value addition along with ensuring availability of quality inputs, creation of marketing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

Impact of VIUC in Tamil Nadu

This section investigates the impact of VIUC on broader areas relating to increased production of vegetables, availability of quality inputs, linkages for procurement and marketing, savings and improvement in socio-economic status of farmers and employment generation induced by the initiative.

Impact of VIUC

The following figure outlines the direct impact of the initiative in terms of the following six components.



Vegetable Production

The Directorate of Horticulture and Plantation Crops, Government of Tamil Nadu and TANHOPE

have not been able to share any information regarding vegetable production and area under VIUC in 2011-12. Therefore, actual impact of vegetable production, are a and productivity

in the state under VIUC, for 2011-12, cannot be objectively ascertained.

Popularization of Modern Package of Practices

As per the progress report provided by the State, almost 40000 sq m area has been covered under protected cultivation but its impact was not visible in the area. Farmers are still carrying out age old traditional practices of cultivation. As per the baseline survey report, innovative cultivation technologies are mostly confined to some progressive and large farmers. Therefore, it appears that there is no impact of such activities on small and marginal farmers, who are the major target beneficiaries of the scheme.

Initiation of the Process of Collectivization

A total of 4970 farmers have been mobilized in 254 clusters across 5 districts. One State Government promoted FPO – CHPCL (Chennai Horticulture Producers Company Limited) has been registered in November 2012. Very few farmers have started joint procurement of inputs and output selling. Process of collectivization is visible only in terms of the mobilisation of farmer groups, but the objective of this group is not clearly understood by farmers. The impact of this initiative on collectivization activity is almost negligible.

Linkage with Stakeholders

For facilitating the availability of various inputs and services from pre harvest to post harvest management and marketing of produce, it is necessary to establish linkages with Government Agencies, banks, retail outlets, financial institutions and other Research Institutes. In this perspective, the Nodal Agency has worked towards linking farmers with banks for availing credit and financial services. Efforts are being made by for establishing linkages for input procurement and selling of produce. The FPO – CHPCL, has identified 135 prospective sites for setting up retail outlets across the state. A model retail outlet is operational inside the Secretariat at Chennai.

Convergence with other Schemes

Convergence of VIUC with other schemes in the project area of the State was not observed during the visit to the state.

Impact on Employment Generation

There was no noticeable or visible improvement on any activity resulting in additional employment generation in the project area of the State.

Overall, the impact of the scheme cannot be objectively ascertained. Even the interaction with farmers and field visits revealed that there was no significant progress in any of the components under the scheme.

Recommendations

In Tamil Nadu, VIUC is yet to gain momentum in terms of retailing of produce through mobile vans/kiosks and popularisation of high yielding seed varieties and better or improved production practices. The State has not been able to significantly impact other areas like vegetable productivity per unit area, improvement in quality, primary value addition at the farm level, market linkages with institutions and organised/mainstream markets and collectivisation of farm inputs procurement.

Some of the recommendations, based on analysis of data and observation during field visit are as below:

- ◆ Component of Training and capacity-building of farmers needs to be strengthened; this should also include exposure visits of farmers to production facilities as well as existing commercially successful vegetable handling FPOs. Training is required on modern package of practices for vegetable production, protected cultivation as well as on functioning of FIGs/ farmers' cooperatives and FPOs.
- ◆ It is seriously suggested that the staff of the Implementing Agency should initially be thoroughly oriented about the implementation process and importance of the activities under

each of the component under the scheme. All the staff involved in the implementation process of different components should also undertake exposure visits for gaining knowledge on modern production, processing techniques and technologies for improved production and marketing of vegetables. This may provide encouragement and the necessary impetus for them to motivate farmers' groups, further.

- ◆ Cross pollination of practices and ideas from other states like Kerala, Karnataka and Goa can help improve the effectiveness of the initiative in Tamil Nadu. For example, homestead and terrace kitchen gardens as practiced in Kerala, protected cultivation techniques practiced by Karnataka, retail selling approach by Goa, etc. can be implemented in the state.
- ◆ There is a need to increase focus on components such as Pre & Post Harvest Management, training in improved vegetable cultivation

practices, collective production and marketing of produces by the farmers, establishing collection centres, pack houses, on farm sorting/grading as per requirement of the consumers, collective use of packaging material and transport are some of the major initiatives that need to be introduced to improve the efficiency in the production and marketing chain in vegetable sector in the State.

- ◆ Mechanism should be developed for linking vegetable growing farmers with institutional buyers, exporters, processing and value adding units, organised/mainstream markets, as these aspects have been hardly covered in the first year of implementation of the scheme.
- ◆ At the State level, mechanism for monitoring along with proper MIS should be developed by the State Implementing Agency to supervise the progress of the scheme on a regular interval basis.

Annexes: I

Andhra Pradesh

(a) Physical & Financial Outlay of the Scheme for Year 2011-12:

S. No.	Item	Units	Physical	
			Target	Achievement
1	Vegetable Cultivation			
	(ii) Hybrid veg.	Ha.	486.00	472.50
2	Protected Cultivation			
	(i) Green House Structure			
	(a) Naturally ventilated system	Sq.M	67.50	68.25
	(b) Shade Net House	Sq.M	108.00	108.00
	(c) Shade net for nursery raising	Sq.M	---	42.00
3	Organic Farming			
	(i) Adoption of organic Farming	Ha.	6.00	6.00
	(ii) Organic Certification	Ha.	4.75	4.50
	(iii) Vermicompost Units	Units	7.50	7.50
4	Post Harvest Management			
	Pack House	Nos.	112.50	112.50
	Cold storage units	Nos.	33.75	33.75
	Low cost onion storage	Nos.	1.00	1.00
	Pusa Zero energy Cool Chamber	Nos.	1.50	1.50
5	Markets			
	Retail markets	Nos.	60.00	60.00
	Collection/aggregation centre	Nos.	300.00	300.00
	Motorized vending cart	Nos.	37.50	37.50
6	Promotion of farmers Association	Nos.	300.00	300.00
7	HRD Training of farmers	Nos.	45.00	45.00
8	Baseline Survey	Nos.	15.00	15.00
9	Administrative cost+ other components		114	85.00
	Total		1,700.00	1700.00

(b) Physical Target and Achievement:

S. No.	Item	Units	Physical	
			Target	Achievement
1	Vegetable Cultivation			
	(ii) Hybrid veg.	Ha.	1,440.00	1,400.00
2	Protected Cultivation			
	(i) Green House Structure			
	(a) Naturally ventilated system	Sq.M	165.00	175.00
	(b) Shade Net House	Sq.M	36,000.00	36,000.00
	(c) Shade net for nursery raising	Sq.M	----	0.40
3	Organic Farming			
	(i) Adoption of organic Farming	Ha.	150.00	150.00
	(ii) Organic Certification	Ha.	150.00	150.00
	(iii) Vermicompost Units	Units	150.00	150.00
4	Post Harvest Management			
	Pack House	Nos.	75.00	75.00
	Cold storage units	Nos.	4,500.00	4,500.00
	Low cost onion storage	Nos.	2.00	2.00
	Pusa Zero energy Cool Chamber	Nos.	75.00	75.00
5	Markets			
	Retail markets	Nos.	15.00	15.00
	Collection/aggregation centre	Nos.	75.00	75.00
	Motorized vending cart	Nos.	75.00	75.00
6	Promotion of farmers Association	Nos.	150.00	150.00
7	HRD Training of farmers	Nos.	1,500.00	1,500.00
8	Baseline Survey	Nos.	1.00	1.00

Financial Targets & Achievement of VIUC during 2011-12:

S. No.	Item	Units	Physical	
			Target	Achievement
1	Vegetable Cultivation			
	(ii) Hybrid veg.	Ha.	486.00	472.50
2	Protected Cultivation			
	(i) Green House Structure			
	(a) Naturally ventilated system	Sq.M	67.50	68.25
	(b) Shade Net House	Sq.M	108.00	108.00
	(c) Shade net for nursery raising	Sq.M	---	42.00
3	Organic Farming			
	(i) Adoption of organic Farming	Ha.	6.00	6.00
	(ii) Organic Certification	Ha.	4.75	4.50
	(iii) Vermicompost Units	Units	7.50	7.50
4	Post Harvest Management			
	Pack House	Nos.	112.50	112.50

S. No.	Item	Units	Physical	
			Target	Achievement
	Cold storage units	Nos.	33.75	33.75
	Low cost onion storage	Nos.	1.00	1.00
	Pusa Zero energy Cool Chamber	Nos.	1.50	1.50
5	Markets			
	Retail markets	Nos.	60.00	60.00
	Collection/aggregation centre	Nos.	300.00	300.00
	Motorized vending cart	Nos.	37.50	37.50
6	Promotion of farmers Association	Nos.	300.00	300.00
7	HRD Training of farmers	Nos.	45.00	45.00
8	Baseline Survey	Nos.	15.00	15.00
9	Administrative cost+ other components		114	85.00
	Total		1,700.00	1700.00

Area and Production of Vegetables in Primary Survey in 2010-11 and 2011-12

Crop	2010-11		2011-12	
	Area (ha)	Yield (ton/ha)	Area (ha)	Yield (ton/ha)
Bitter gourd	12.9*	42.5	12.9*	75
Bottle gourd		105		175
Ridge gourd		17.5		50
Snake gourd		37.5		125
Ladies finger	17.1*	65	17.1*	75
Tomato		77.5		87.5
Chillies		25		25
Cabbage		50		50
Brinjal		41		45
Capsicum		25		25
Coccinia		175		175
Custard apple	2.1	80	2.1	13.125
Cucumber	1.4	40	1.4	8.75
Greens (spinach + fenugreek)	0.28	4	0.28	1.75
Drum sticks	0.28	4	0.28	1.75

Area and Production of Vegetables in Primary Survey in 2010-11 and 2011-12

S. No.	Vegetable Crops	Land Preparation (Rs/ha)	Seed Used (Rs/ha)	Fertilizer and FYM Used (Rs/ha)	Plant protection chemicals used (Rs/ha)	Irrigation (Rs/ha)	Labour (Rs/ha)	Any Other (Specify) (Rs/ha)	Total (Rs/ha)
1	Bitter gourd	8750	8750	25000	3750	3375	21875		71500
2	Bottle gourd	8750	8750	25000	3750	3375	21875		71500
3	Ridge gourd	10000	10000	25000		3000	18750		66750

S. No.	Vegetable Crops	Land Preparation (Rs/ha)	Seed Used (Rs/ha)	Fertilizer and FYM Used (Rs/ha)	Plant protection chemicals used (Rs/ha)	Irrigation (Rs/ha)	Labour (Rs/ha)	Any Other (Specify) (Rs/ha)	Total (Rs/ha)
4	Snake gourd	8750	8750	25000	1875	3375	21875		69625
5	Okra	9375	8125	13750	1875	3375	21875		58375
6	Chilli	11250	8750	13750		3000	18750		55500
7	Tomato	9375	8125	13750	3750	3375	21875		60250
8	Cabbage	11250	8750	13750		3000	18750		55500
9	Brinjal	9375	8125	13750	3750	3375	21875		60250
10	Capsicum	11250	8750	13750		3000	18750		55500
11	Coccinea	10000	11250	25000		3000	18750		68000
12	Custard apple	7500	7500	13750	3750	3750	25000		61250
13	Cucumber	7500	7500	13750	3750	3750	25000		61250
14	Greens	7500	7500	13750	3750	3750	25000		61250
15	Drumsticks	7500	7500	13750	3750	3750	25000		61250

List of Beneficiaries of Pandalis under RKVY

S. No	Name of the Farmer	Father's Husband Name	Village	Mandal	Sy No	Cast	Category	Area in Ac	Subsidy Amount
	RKVY								
1	Veera Reddy	Bal Readdy	Majeedpur	Shmeerpet	52	Oc	SF	1.00	60000
2	B Yadagiri	Achaiah	Narayanpur	Shmeerpet	102	Bc	SF	1.00	60000
3	P Mallama	Late Gopa	Yakatopura	Shmeerpet	74/52	Bc	SF	1.00	60000
4	Lendamma	Mallah	Yakatpura	Shmeerpet	74/9	Bc	SF	1.00	60000
5	Ch. Malla Reddy	China Malla Reddy	Ponnal	Shmeerpet	114	Oc	SF	1.00	60000
6	Y Venkatesh	Shankaraiah	Adraspally	Shmeerpet	282	Bc	SF	1.00	60000
7	M Kirshan	Narshimha	Adraspally	Shmeerpet	323.B	Bc	SF	1.00	60000
8	Y Shekar	Kistraah	Adraspally	Shmeerpet	286	Bc	SF	1.00	60000
9	Y Balamani	Y Sanjeeva	Adraspally	Shmeerpet	316	Bc	MF	1.00	60000
10	Ch Anjamma	Malfa Reddy	Babaguda	Shmeerpet	452	Oc	SF	1.00	60000
11	Ch Kavita	Krishna Reddy	Shameerpet	Shmeerpet	453/a	Oc	MF	0.50	30000
12	Satyanarayan	Narayana	Ponnal	Shmeerpet	138/a	Bc	MF	0.75	45000
13	Krishna	Narayana	Ponnal	Shmeerpet	138/a	Bc	MF	0.75	45000
14	S Chandra	Sambjah	Adraspally	Shmeerpet	219	Bc	MF	1.00	60000
15	Ch Snkanth Reddy	Pratap Reddy	Babaguda	Shmeerpet	385/B	Oc	MF	0.35	54000
16	M Pushpalatha	Ramulu	Ponnal	Shmeerpet	101/A	Bc	MF	1.00	60000
17	B Ram Reddy	Rajain	Deveryamjal	Shmeerpet	415	Oc	MF	0.39	58000
18	B Chandra Shekan Reddy	Ram Reddy	Deveryamjal	Shmeerpet	183	Oc	MF	0.34	51000

S. No	Name of the Farmer	Father's Husband Name	Village	Mandal	Sy No	Cast	Category	Area in Ac	Subsidy Amount
19	B Nagi Reddy	Ram Reddy	Deveryamjal	Shmeerpeta	183	Oc	MF	0.33	49500
20	Y Shivamma	Y Mahesh	Adraspally	Shmeerpeta	286	Bc	SF	1.00	60000
21	S Narsimhulu	Sambaiah	Adraspally	Shmeerpeta	219	Bc	SF	1.00	60000
22	K peddi Raju	Narsimulu	Adraspally	Shmeerpeta	212	Bc	MF	1.00	60000
				Total				18.42	1232500

S. No	Name of the Farmer	Father's Husband Name	Village	Mandal	Sy No	Cast	Category	Area in Ac	Subsidy Amount in Rs
Special Veg Programme Pandals									
1	Y. Krishna	Pochaiah	Adraspally	Shameetpet	278	BC	BF	1.00	60000
2	S.Raji Reddy	Narsa reddy	Babaguda	Shameetpet	680	OC	MF	1.00	60000
3	S kista Reddy	Muthyam reddy	Babaguda	Shameetpet	335	OC	SF	1.00	60000
4	B Narsalah	Anjaiah	Adraspally	Shameetpet	79	BC	SF	1.00	60000
5	N Sathaiah	Laxmajah	Adraspally	Shameetpet	234	BC	SF	1.00	60000
6	P Madhusudan Reddy	Ramkrishan Raju	Babaguda	Shameetpet	690	OC	MF	1.00	60000
7	M.V. Subbaraju	Ramkrishan Raju	Bommarasipeta	Shameetpet	428	OC	SF	1.00	60000
8	M shiva Rana Raju	Ramkrishan Raju	Bommarasipeta	Shameetpet	443	OC	BF	1.00	60000
9	M.H.V.G Krisnam Raju	Ramkrishan Raju	Bommarasipeta	Shameetpet	443	OC	BF	1.00	60000
10	S china Rammulu	Sattaiah	Adraspally	Shameetpet	205	BC	MF	1.00	60000
11	Shive Reddy	Narshima Reddy	Adraspally	Shameetpet	248/b	OC	SF	1.00	60000
12	T Kistamma	Yadaih	Yakuthpura	Shameetpet	77/e	BC	SF	1.00	60000
13	P Shobha	Narayana Reddy	Bommarasipeta	Shameetpet	436	OC	MF	1.00	60000
14	K.V Ramana Reddy	Thirupati Reddy	Bommarasipeta	Shameetpet	363	OC	BF	1.00	60000
15	K Laxma Rao	Venkateshwar Rao	Keshwapur	Shameetpet	198	OC	BF	1.00	60000
16	G Mahendere Reddy	Narishma Reddy	Turapally	Shameetpet	65	OC	BF	1.00	60000
17	N Sudharkar Reddy	Laxma Reddy	Dabilpur	Shameetpet	715	OC	SF	1.00	60000
18	P Agam Reddy	Yella Reddy	Babaguda	Shameetpet	330	OC	SF	1.00	60000

S. No	Name of the Farmer	Father's Husband Name	Village	Mandal	Sy No	Cast	Category	Area in Ac	Subsidy Amount in Rs
19	S Sudhakar Reddy	Narsa Reddy	Babaguda	Shameetpet	334	OC	SF	1.00	60000
20	S Narsa Reddy	Ram Reddy	Babaguda	Shameetpet	331	OC	BF	1.00	60000
21	G Vishah	Ravinder Reddy	Turapally	Shameetpet	93	OC	BF	1.00	60000
22	S. Sandeep Reddy	Vidyanand	Anantharam	Shameetpet	228	OC	BF	1.00	60000
23	S Narayana Reddy	Narsa Reddy	Anantharam	Shameetpet	228	OC	BF	1.00	60000
24	G Mall Reddy	Narasimha Reddy	Anantharam	Shameetpet	209	OC	BF	1.00	60000
25	Y Naveen Kumar	Shankaraiah	Adarpally	Shameetpet	282	BC	MF	1.00	60000
26	D Sudarsan Reddy	Gopal Reddy	Babaguda	Shameetpet	324	OC	MF	1.00	60000
27	Y Laxmajah	Anjaiah	Adarpally	Shameetpet	245	BC	SF	1.00	60000
28	D Bharathi	Balwanth Reddy	Adarpally	Shameetpet	198	OC	BF	1.00	60000
				Total				28.00	1680000

List of Beneficiaries under Trellies

S. No	Name of the farmer	Father's/ Husband Name	Village	Mandal	Caste	Category	Sy.No	Amount
1	C.Mutyalu	Mallah	Muduchintaipally	Shameerpet	SC	MF	263/6	3750
2	Kistaiah	Lingaiah	Muduchintaipally	Shameerpet	SC	MF	264	3750
3	j.Pochaiah	Lingaiah	Muduchintaipally	Shameerpet	SC	SF	263/3	7500
4	J. Ramulu	Lingaiah	Muduchintaipally	Shameerpet	SC	SF	263/3	7500
5	T Venugopal	Yeswanth	Muduchintaipally	Shameerpet	BC	SF	246	7500
				Total			4.00	30000

List of Beneficiaries under Vending VanList of Beneficiaries under Shade Net House

S. No	Of the Farmer & Moblie No.	Village/Mandal	Name of the Society	Amount
1	A Narsimha Reddy	Shameerpet (V) & (M)	Sri Lakshmi Vegetable Growers co-op Society Ltd.	200000
			Total	200000

Annexes: II

Goa

Physical & Financial Outlay of the Scheme for year 2011-12:

S. No.	Item	Units	Target	
			Physical	Financial (Rs in lakh)
1	Vegetable Seedling Production	Ha.	5	106.50
2	Seed Infrastructure (for handling, processing, packing, storage etc. of seed of horticulture crops)	Nos.	1	40.00
3	Vegetable Cultivation	Ha.	120	30.00
	- Open field	Ha.		
	- Hybrid veg.	Ha.		
4	Protected Cultivation		1.5	38.50
	(a) Green House Structure- Naturally ventilated system	Ha		
	(b) Cost of planting material and other inputs of high value vegetables grown in green house/poly house shade net house	Sq.M		
5	Promotion on INM/IPM	Ha.	120	3.80
6	Post Harvest Management	Nos.	8	19.20
7	Markets	Nos.	45	40.00
8	Promotion of farmers Association/Groups of 15-20 farmers/20 ha and tie up with financial Institution and aggregators	Nos.	40	40.00
9	Baseline Survey (no)	Nos.	1	7.50
10	HRD - Training of Farmers (no) @ Rs. 1500/per farmer for 2 days	Nos.	800	7.00
11	Administrative Cost			17.50
	Total			350.00

Physical Target and Achievement:

S. No.	Item	Units	Physical	
			Target	Achievement
1	Vegetable Seedling Production	Ha.	5	0.02 (50,000 trays)
2	Seed Infrastructure (for handling, processing, packing, storage etc. of seed of horticulture crops)	Nos.	1	
3	Vegetable Cultivation	Ha.	120	120
	- Open field	Ha.		
	- Hybrid veg.	Ha.		
4	Protected Cultivation		1.5	0.06
	(a) Green House Structure- Naturally ventilated system	Ha		
	(b) Cost of planting material and other inputs of high value vegetables grown in green house/poly house shade net house	Sq.M		
5	Promotion on INM/IPM	Ha.	120	40
6	Post Harvest Management	Nos.	8	
7	Markets	Nos.	45	
8	Promotion of farmers Association/Groups of 15-20 farmers/20 ha and tie up with financial Institution and aggregators	Nos.	40	40
9	Baseline Survey (no)	Nos.	1	1
10	HRD - Training of Farmers (no) @ Rs. 1500/per farmer for 2 days	Nos.	800	90

S. No.	Item	Units	Financial (Rs in lakh)	
			Target	Achievement
1	Vegetable Seedling Production	Ha.	106.50	3.18
2	Seed Infrastructure (for handling, processing, packing, storage etc. of seed of horticulture crops)	Nos.	40.00	
3	Vegetable Cultivation	Ha.	30.00	16.47
	- Open field	Ha.		
	- Hybrid veg.	Ha.		
4	Protected Cultivation		38.50	19.40
	(a) Green House Structure- Naturally ventilated system	Ha		
	(b) Cost of planting material and other inputs of high value vegetables grown in green house/poly house shade net house	Sq.M		
5	Promotion on INM/IPM	Ha.	3.80	3.13
6	Post Harvest Management	Nos.	19.20	
7	Markets	Nos.	40.00	
8	Promotion of farmers Association/Groups of 15-20 farmers/20 ha and tie up with financial Institution and aggregators	Nos.	40.00	33.59

S. No.	Item	Units	Financial (Rs in lakh)	
			Target	Achievement
9	Baseline Survey (no)	Nos.	7.50	7.50
10	HRD - Training of Farmers (no) @ Rs. 1500/per farmer for 2 days	Nos.	7.00	1.08
11	Administrative Cost		17.50	
	Total		350.00	84.35

A. Beneficiary list 1:

Subsidy under "Area Coverage with open pollinated and Hybrid varieties of vegetable" under Rashtriya Krishi Vikas Yojana (RKVY) scheme 2012-13

S No	Name of beneficiary	Address	Area (Ha)
1	Angelina Pacheco	Almeidawado, Parra	0.02
2	Maria Victoria Lobo	Almeidawado, Parra	0.1
3	Rusaria Raymond Pacheco	Almeidawado, Parra	0.05
4	Urvashi Umesh Gadekar	Almeidawado, Parra	0.02
5	Filomena Pacheco	Almeidawado, Parra	0.02
6	Veronica Jonita M. Pacheco	Almeidawado, Parra	0.05
7	Nancy D'Souza	Almeidawado, Parra	0.05
8	Raquella Rodrigues	Almeidawado, Parra	0.01
9	Rita Quadros	Almeidawado, Parra	0.05
10	Rupali Chandrakant Gadekar	Almeidawado, Parra	0.02
11	Sadguru M. Redkar	Almeidawado, Parra	0.015

B. Beneficiary list 2:

Distribution of the Vegetable seed open pollinated crop watermelon Augusta to individual farmers under National Vegetable Initiative for Urban Cluster - Rashtriya Krishi Vikas Yojana (RKVY) 2012-13

S No	Name of beneficiary	Address	Area (Ha)
1	Laxmi L Volvoikar	Dhanva Thivim	0.04
2	Monica D' souza	Dhanva Thivim	0.04
3	Shradha Gawade	Dhanva Thivim	0.04
4	Rajani Garad	Dhanva Thivim	0.04
5	Vishnu V Tirodkar	Madel	0.04
6	Krishna A Naik	Madel	0.04
7	Ladu Tirodkar	Madel	0.02
8	Ajit Kerkar	Colvale	0.04
9	Sahakuntala Goltekar	Siolim	0.04
10	Shankar R Jadhav	Siolim	0.04
11	Nilangi Salgaonkar	Aassagao	0.02

S No	Name of beneficiary	Address	Area (Ha)
12	Bagirathi Naik	Canca	0.04
13	Sushant U Salgaonkar	Cuchelim	0.04
14	Narendra V Sawant	Canca	0.04
15	Sadanand Pednekar	Parra	0.08
16	Filomena Pacheko	Parra	0.08
17	Gokuldas Banaulikar	Nerul	0.04
18	Aura Fernandes	Parra	0.04
19	Uday Mandrekar	Sangolda	0.04
20	Anjali Kerkar	Saligao	0.04
21	Revati Parsekar	Parra	0.04
22	Nilesh Lingudkar	Guirim	0.02
23	Anthony Fernandes	Parra	0.02
24	Sandra Fernandes	Sangolda	0.02
25	Chandrakant Kambli	Sangolda	0.04
26	Deepashri Kalangutkar	Nerul	0.02
27	Shripad Palyekar	Sangolda	0.02
28	Jerry D Souza	Guirim	0.02
29	Darshana Pednekar	Parra	0.04
30	Sadanand Naik	Nerul	0.02
31	Atmaram Velji	Nerul	0.04
32	Amisha Kalagutkar	Saligao	0.02
33	Ashok Shirodkar	Parra	0.04
34	Ajit Padwal	Saligao	0.04
35	Ambika Sawant	Saligao	0.02
36	Laurdine D'Souza	Calangute	0.04
37	Gautam Xettigar	Pilerne	0.04
38	Poonam Asnodkar	Sangolda	0.04
39	Ganpat Laxman Satelkar	Aldona	0.04
40	Anil Datta Panjekar	Aldona	0.04
41	Kamakshi Parab	Succoor	0.02

C. Beneficiary list 3:

Training & Tours of Farmers

S No	Name of the farmers	Zone
1	Daya Gaonkar	Dharbandora
2	Umethi Gaonkar	Dharbandora
3	Mamata Gaonkar	Dharbandora
4	Anuradha Gaonkar	Dharbandora

S No	Name of the farmers	Zone
5	Anup Varik	Canacona
6	Manoj Pagi	Canacona
7	Ranganath Gawade	Tiswadi
8	Prasad Parab	Hort Corp
9	Sayeesh Gandhi	Dharbandora
10	Sheriff Furtado	Quepem
11	Ashok Velip	Canacona
12	Rajesh Gaonkar	Canacona
13	Milagres Vaz	Canacona
14	Subhash G Velip	Canacona
15	Chimot D Gaonkar	Canacona
16	Kushta N Gaonkar	Canacona
17	Brijesh V Dessai	Canacona
18	Rupesh Velip	Quepem
19	Laxman Gaonkar	Quepem
20	Jorgo P Velip	Quepem
21	Krishna P Gaonkar	Quepem
22	Janu P Velip	Quepem
23	Nilesh G Gaonkar	Quepem
24	Babu P Gaonkar	Quepem
25	Sakhalu P Gaonkar	Quepem
26	Francis Carvalho	Sanguem
27	Fatima Carvalho	Sanguem
28	Consesao Gomes	Sanguem
29	Remet Gomes	Sanguem
30	Juze Pixot	Sanguem
31	Agresh Shirodkar	ZAO Canacona
32	R. S. Joshi	ZAO Mapusa
33	Mandir Gaonkar	Margao
34	Ganga Gaonkar	Margao
35	Antoneth Fernandes	Margao
36	Araru Gaonkar	Margao
37	Saju Gaonkar	Ponda
38	Nutan Gaude	Ponda
39	Rohidas Priolkar	Tiswadi
40	Gajanand Uskaikar	
41	Anand Priolkar	Tiswadi

S No	Name of the farmers	Zone
42	Rama Fondekar	Tiswadi
43	Jesus F Dias	Margao
44	Maria A Cabral	Margao
45	Anju Gaonkar	Margao
46	Prema Gaonkar	Margao
47	Cruz Lopes	Tiswadi
48	Santosh Gaonkar	F S Codar
49	Kameshwari Raikar	Margao
50	Sohan Uskaikar	Pednem
51	Rameshwer Valvoikar	Tiswadi
52	Vithal A Joshi	A O (T), ADA(FT)
53	Seema Gaude	Ponda
54	Nandini Gaude	Ponda
55	Mohandas R Naik	Tiswadi
56	Chandradas R Naik	Tiswadi
57	Gauru B Gaonkar	Margao
58	Vijaya R Gaonkar	Margao
59	Naresh Verenkar	Tiswadi
60	Brhamanand Canconkar	Tiswadi
61	Gajanand Veenkar	Tiswadi
62	Reshmi Atrakar	Ponda
63	Uttam B Sawant	Mandrem
64	Babli H Sawant	Mandrem
65	Rajaram H Sawant	Mandrem
66	Chandrashekhar Kandolkar	Quilter
67	Piadade Fernandes	Khorjuvem
68	Anita Sequera	Khorjuvem
69	Suvarna Kauthankar	Madel
70	Ranjana Naik	Quilter
71	Chandani C Naik	Quilter
72	Shubhalaxmi Dangui	Nachihola
73	Uday Natekar	Surla
74	Joes D' Souza	Nanoda
75	Nilesh Salgaonkar	Ladfe
76	Santosh Gawas	Charavani
77	Devidas Gawas	Charavani
78	Dasharath Gawas	Charavani

S No	Name of the farmers	Zone
79	Pravin Tilve	Virmoda
80	Satyavan Kalshekar	Korgao
81	Tulsidas Sawant	Mandrem
82	Atmaram Sawant	Mandrem
83	Prema Kanta Naik	Quilter
84	Sapna Devidas Fadte	Quilter
85	Suman Naik	Aldona
86	Sampati U Dhargalkar	ZAO Mapusa
87	Vishwanath Gawas	ZAO Sattari
88	Keshav Aroskar	ZAO Bicholim
89	Yeshwant Golatkar	ADA (FT)
90	Sanjay Faterpekar	ZAO Ponda

D. Beneficiary list 4:

Green House Structure

S No	Name of the farmers	Address	Area
1	John Joseph D' Souza	Saligao	0.368

Planting Material

S No	Name of the farmers	Address	Area
1	John Joseph D' Souza	Saligao	0.368

Annexes: III

Karnataka

Physical & 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.	16.00	111.50
2	Vegetable Seedling Production	Sq.M	0.64	28.78
3	Vegetable Cultivation	Ha.		
	Open field	Ha.	671.16	151.02
	(ii) Hybrid veg.	Ha.	1,051.47	355.19
4	Protected Cultivation			
	(i) Green House Structure	Sq.M		
	(a) Naturally ventilated system	Sq.M	13.95	642.49
	(i) Wooden Structure	Sq.M	0.27	7.06
	b) Shade Net House			
	Tubular structure	Sq.M	1.22	24.30
	(ii) Granite structure	Sq.M	0.41	8.30
5	Organic Farming			
	(i) Adoption of Organic Farming	Ha.	120.00	4.80
	(ii) Organic Certification	Ha.	3.00	4.50
	(iii) Vermicompost Units	Units	254.00	76.20
6	Training of farmers within the State		5,216.00	23.85
7	Post Harvest Management			
	(i) Pack house	Nos.	35.00	51.36
	(ii) Insulated Van Transport	Nos.	2.00	6.40
	(iii) Low Cost Onion Storage Structure (25MT)	Nos.	2.00	1.00

S. No.	Item	Units	Target	
			Physical	Financial (Rs in lakh)
	(iv) Others (Plastic crates)	Nos.	7295.00	28.40
8	Markets			
	(i) Collection/aggregation centre	Nos.	6.00	21.25
	(ii). Motorized vending cart	Nos.	47.00	23.85
9	Promotion of farmers Association	Nos.	46.00	92.00
10	Baseline Survey (no)		1.00	10.72
11	Administrative Cost			21.90
12	Others (Plastic mulching)		54.99	5.50
	Total			1,700.00

Physical target and Achievement:

S. No.	Item	Units	Physical	
			Target	Achievement
1	Seed Production of Vegetables	Ha.	16.00	16.00
2	Vegetable Seedling Production	Sq.M	0.64	0.60
3	Vegetable Cultivation	Ha.		
	Open field	Ha.	671.16	628.08
	(ii) Hybrid veg.	Ha.	1,051.47	897.84
4	Protected Cultivation			
	(i) Green House Structure	Sq.M		
	(a) Naturally Ventilated System	Sq.M	13.95	10.02
	(i) Wooden structure	Sq.M	0.27	
	(b) Shade Net House			
	Tubular Structure	Sq.M	1.22	0.95
	(ii) Granite Structure	Sq.M	0.41	
5	Organic Farming			
	(i) Adoption of Organic Farming	Ha.	120.00	44.00
	(ii) Organic Certification	Ha.	3.00	3.00
	(iii) Vermicompost Units	Units	254.00	206.50
6	Training of farmers within the State	No.	5,216.00	3542
7	Post Harvest Management			
	(i) Pack house	Nos.	35.00	18.00
	(ii) Insulated van transport	Nos.	2.00	
	(iii) Low cost onion storage structure(25MT)	Nos.	2.00	

S. No.	Item	Units	Physical	
			Target	Achievement
	(iv)Others (Plastic crates)	Nos.	7295.00	
8	Markets			
	(i) Collection/aggregation centre	Nos.	6.00	1.00
	(ii) Motorized vending cart	Nos.	47.00	
9	Promotion of farmers Association	Nos.	46.00	46.00
10	Baseline Survey (no)		1.00	1.00
11	Administrative Cost			
12	Others (Plastic mulching)		54.99	18.19

Financial Targets & achievement of VIUC during 2011-12:

S. No.	Item	Units	Financial (Rs in lakh)	
			Target	Achievement
1	Seed Production of Vegetables	Ha.	111.50	111.50
2	Vegetable Seedling Production	Sq.M	28.78	28.05
3	Vegetable Cultivation	Ha.		
	Open field	Ha.	151.02	144.04
	(ii) Hybrid veg.	Ha.	355.19	304.97
4	Protected Cultivation			
	(i) Green House Structure	Sq.M		
	(a) Naturally Ventilated System	Sq.M	642.49	458.86
	(i) Wooden structure	Sq.M	7.06	
	(b) Shade Net House			
	Tubular structure	Sq.M	24.30	19.00
	(ii) Granite structure	Sq.M	8.30	
5	Organic Farming			
	(i) Adoption of Organic Farming	Ha.	4.80	1.99
	(ii) Organic Certification	Ha.	4.50	1.69
	(iii) Vermicompost Units	Units	76.20	61.70
6	Training of Farmers within the State	No.	23.85	15.62
7	Post Harvest Management			
	(i) Pack house	Nos.	51.36	24.62
	(ii) Insulated Van Transport	Nos.	6.40	
	(iii) Low Cost Onion Storage Structure (25MT)	Nos.	1.00	
	(iv) Others (Plastic Crates)	Nos.	28.40	

S. No.	Item	Units	Financial (Rs in lakh)	
			Target	Achievement
8	Markets			
	(i) Collection/aggregation centre	Nos.	21.25	3.75
	(ii) Motorized vending cart	Nos.	23.85	
9	Promotion of Farmers Association	Nos.	92.00	92.00
10	Baseline Survey (no)		10.72	10.72
11	Administrative Cost		21.90	10.24
12	Others (Plastic Mulching)		5.50	0.72
	Total		1700.00	1289.47

Cost of Cultivation of different Vegetables:

S. No.	Vegetable Crops	Land Preparation (Rs/ha)	Seed Used (Rs/ha)	Fertilizer and FYM Used (Rs/ha)	Plant protection chemicals used (Rs/ha)	Irrigation (Rs/ha)	Labour (Rs/ha)	Any Other (Specify) (Rs/ha)	Total (Rs/ha)
1	Tomato	25,000	11,500	17,500	16,500	8,500	30,000	75,000	184,000
2	Capsicum	30,000	15,000	40,000	50,000	20,000	35,000	1,90,000	190,000
3	Pole Beans	15,000	10,000	20,000	25,000	10,900	27,500	51,800	160,200
4	Cucumber	20,000	7,350	22,500	17,500	11,400	31,500	44,000	154,250
5	Chilli	35,000	13,000	35,000	28,000	35,000	60,000	2,06,000	206,000
6	Ridge gourd	12,500	16,500	27,500	20,000	8,400	25,000	51,800	161,700
7	Bottle gourd	12,500	16,500	27,500	20,000	8,400	25,000	51,800	161,700
8	Bitter gourd	12,500	16,500	27,500	20,000	8,400	25,000	51,800	161,700
9	Potato	40,000	45,000	40,000	50,000	20,000	25,000	2,20,000	220,000
10	Pumpkin	10,000	5,000	10,000	8,000	10,000	8,000	51,000	102,000
11	Cauliflower	20,000	20,000	40,000	35,000	20,000	20,000	1,55,000	155,000
12	Cabbage	15,000	40,000	40,000	40,000	30,000	20,000	1,85,000	185,000
13	Beet root	20,000	30,000	25,000	15,000	20,000	15,000	1,25,000	125,000
14	Carrot	50,000	40,000	50,000	20,000	25,000	40,000	2,25,000	225,000
15	Snake gourd	10,000	5,000	15,000	15,000	1,800	5,000	51,800	103,600

Beneficiary list 1:

Supprt to Vegetable Iitiative for Urban Clusters 2011-12

District	Taluk	Name of cluster	Name of farmer Producer Organization	No. of Beneficiaries	Total Land Holding (ha)	Area Proposed under vegetable	
Banglore	Anekal	Mayasandra	Mayasandra Gram Panchyatah Vegetable Growers Association	45	44.96	45.5	0.2
		karpur	Karpur Gram Panchyatha Vegetable Growers Association	65	57.21	71.7	0.5
		Chakka sandra	Chokkasandra-Harahatli Gram Panchyath Vegetable Growers Association	30	27.25	34.38	0.2
		Sub total A		140	129.42	151.58	0.9
	Banglore North	Tarahouse	Kempegowda Vegetable Growers Association	72	58.74	40	0.1
		Challahalli	Arkavathl Vegetable Growers Association	61	108.18	42	0.2
		Malla Sandra	Mahatma Gandhi Vegetable Growers Association	132	81.10	50.00	0.20
		Sub total &		265	248.12	132	0.50
	Banglore South	Tataguppe	Thataguppe Vegetable Growers Association	78	52.65	46.00	0.10
		Gangenhalli	Gangenhalli Vegetable Growers Association	50	43.35	46	0.3
		Gonipura	Thataguppe Vegetable Growers Association	126	94.55	48.00	0.10
		Sub total C		254	190.55	140	0.50
		(A+B+C)		659	568.09	423.58	1.90
Banglore (R)	Hoskote	Bettahalli	Bettahalli	71	55.6	40	0.3
		Doddanden halli	Doddanden halli Vegetable Growers Association	62	128.8	45	0.3
		Doddanallol	Doddanallol Vegetable Growers Association	79	145.15	45	0.3
		Sub total D		212	329.55	130	0.9

District	Taluk	Name of cluster	Name of farmer Producer Organization	No. of Beneficiaries	Total Land Holding (ha)	Area Proposed under vegetable	
	Doddabalapura	Dodda tumkuru	Dodd tumkuru Vegetable Growers Association	55	57.20	50	0.3
		Madagandanahalli	Madagandanahalli Vegetable Growers Association	52	33.37	24	0.2
		Honnagatta	Madagandanahalli Vegetable Growers Association	62	47.00	26	0.3
		Rjaghatta	Rjaghatta Vegetable Growers Association	65	43.90	40.00	0.30
		Sub total E		234	181.47	140	1.10
	Devana Halli	Kaggalahalli	Kaggalahalli Vegetable Growers Association	56	45.61	45	0.2
		Darpura	Darpura Vegetable Growers Association	78	48.73	45	0.2
		Bidaluru	Bidaluru Vegetable Growers Association	93	73.77	40	0.2
		Sub total F		227	168.11	130	0.6
	Nelman gala	Kempalinganahalli	Kempalinganahalli Organic Vegetable	78	73.65	50	0.4
		Hasiruvalli	Hasiruvalli Organic Vegetable Growers Society	69	69.00	50	0.4
	2 Total	Sub total G		147	142.65	100	0.8
	2 Total (D+E+F+G)			820	821.78	300	3.40

Beneficiary list 2:

District	Taluk	Name of cluster	Name of farmer Organization FPO	No. of Beneficiaries	Total land Holding (ha)	Area proposed vander vegetable (ha)	
Chickballapur	Sidlagatta	Dhanamitte nahalli	Dhanamittenahalli Vegetable Growers Association	50	55.60	30.6	1
		Tummana halli	Tummanahall Vegetable Growers Association	101	80.22	20	1
		Sub total H		151	135.82	50.6	2

District	Taluk	Name of cluster	Name of farmer Organization FPO	No.of Beneficiaries	Total land Holding (ha)	Area prosed vender vegetable (ha)	
	Chicbal lapur	Bommana halli	Bommanahalli Vegetable Growers Association	36	40.02	32	0.5
		Thippena halli Kanajena halli	Thippenahalli, Kanajenahahalli Vegetable Growers Association	65	52.00	42	0.3
		Kadiridevarahalli	Kadiridevarahalli Vegetable Growers Association	50	53.00	26	0.2
		Sub total 1		131	143.02	100	1
	Chinta mani	Hebbari	Hebbari Vegetable Growers Association	56	40.86	39.86	1
		Kanapalli	Kanapalli Vegetable Growers Association	39	32.97	26.71	1.2
		Jangamasheegehalli	Jangamasheegehalli Vegetable Growers Association	51	30.60	20.7	0
		Sub total j		146	104.43	21.27	2.2
	3 Total (H+1+j)			448	385.27	23.87	5.2
Ramanagar	Rama nagar	Nilyappan doddi	Vinayaka Vegetable Growers Association	70	50.00	30	3
		K. Karenahalli	Maruthi Vegetable Growers Association	63	67.18	59.2	4.2
		Vajarahalli	Hanumatharaya Vegetable Growers Association	56	41.66	36.66	4
		Sub total K		189	158.84	125.86	112
	Channa Patna	Bramnipura	Bramnipura Vegetable Growers Association	53	35.92	29.78	
		Thimma sandro	Basaveshwara Vegetable Growers Association	41	30.08	25.5	
		Sub total L		94	66	55.28	0
	Magadi	Kalya	Sri Basaveshwara Vegetable Growers Association	122	93.02	48.4	
		Srigirpura	Mathru Bhoomi Vegetable Growers Association	80	86.60	40	

District	Taluk	Name of cluster	Name of farmer Organization FPO	No.of Beneficiaries	Total land Holding (ha)	Area prosed vender vegetable (ha)	
		Lakkenhally	Sri Channigaraya Swamy Vegetable Growers Association	76	69.00	50	
		Sub total M		278	248.62	138.4	
		4 Total (K+L+M)		561	473.46	319.54	
Kalar	Kalar	Arahalli	Sri Samanatheswara Selegarara Sangha	53	61.70	39	
		Harati	Sri Chowdeshwari Thatagarike Belegaarana Sangha	56	79.49	39	
		Vittappana halli	Marikamba Thatagarike Belegaarana Sangha	93	92.55	42	
		Sub Total N		202	233.74	120	
	Malur	Masti	Sri Venugopal Thatagarike Belegaarana Sangha	56	142.00	37.3	
		Lakkur	Nisagra Thatagarike Belegaarana Sangha	89	180.00	83	
		Kasaba	Raithmiththa Thatagarike Belegaarana Sangha	70	128.27	72	
		Sub total O		215	450.27	212.3	
	Mulbagal	Byrasandra	Byraveshraju Thatagarike Belegaarana Sangha	114	125.00	91	
		Pambahalli	Sri Varadaraju Swamy Thatagarike Belegaarana Sangha	89	112.00	97	
		C. Hosahalli	Gangamma Thatagarike Belegaarana Sangha	65	95.00	60	
		Sub total		268	332.00	248	0
		5 Total (N+O+P)		685	1016.00	580.3	0
		Grand Total(1+2+3+4+5)		3173	3264.61	2055.29	2330

Annexes: IV

Kerala

Physical & Financial Outlay and Achievement of the Scheme during 2011-12:

S. No.	Item	Units	Target	
			Physical	Financial (Rs in lakh)
1	Vegetable Seed Production	Ha.	5	2.0000
2	Vegetable Seedling Production	No.	60000	9.0000
3	Vegetable Cultivation	Ha.		
	(i) Open field	Ha.	500.00	112.5000
	(ii) Hybrid veg.	Ha.	20.00	4.5000
4	Protected Cultivation			
	(a) Naturally ventilated system			
	(i) Tubular structure	Sq.M	10000	46.7500
	(ii) Wooden structure	Sq.M	1000	2.5800
	(iii) Bamboo structure		1000	1.8800
	(b) Rain shelter			
	(i) Rain shelter GI Structure	Sq.M	10	2.0000
	(ii) Rain shelter Wooden Structure	Sq.M	10	2.0000
	© Cost of Planting Materials and other inputs for protected Cultivation	Sq.M	12000	12.6000
5	Organic Farming			
	(i) Vermicompost Units	Units	60.00	18.0000
6	Promotion of INM/IPM	Ha.	1000	10.0000
7	Training of farmers within the State	No.	130.00	9.5000
8	Post Harvest Management			
	(i) PHM structure for groups plastic crates poly films/ means to increase shelf life	Units	100	10.0000
	(ii) Sorting, grading, packing	Units	1	2.0000
	(iii) Value addition and cut vegetables	Units	1	7.5000

S. No.	Item	Units	Target	
			Physical	Financial (Rs in lakh)
9	Markets			
	(i) Retail shops/outlets	Nos.	1	4.0000
	(ii) Motorised vending carts	Nos.	10	10.0000
	(iii) Static/mobile vending carts	Nos.	15	2.2500
10	Promotion of farmers Association	Nos.	500.00	112.5000
11	Baseline Survey (no)	Nos.	1.00	15.0000
12	Promotion of Roof top Gardens	Nos.	15000	375.0000
13	Production Incentive	Nos.	5000	50.0000
14	Publicity and documentation	Nos.		46.0000
15	Other miscellaneous components			
	(i) School Vegetable Garden	Nos.	30	1.5000
	(ii) Infrastructure facilities for cultivation wells and pumpsets with accessories,tools,implements	Nos.	30	4.5000
	(iii) Promotion of Roof top Gardens at Ernakulam	Nos.	0	0.0000
	(iv) Kitchen homestead Gardening	Nos.	2500	5.6250
	(v) Tools/Implements for kitchen Homestead Gardening	Nos.	2500	18.7500
	(vi) Infrastructure Support for Open Cultivation/Farmer Groups	Nos.	200	12.0000
	(vii) Mobile Agro Clinic	Nos.	1	6.0000
	(viii) HRD Training for Mushroom cultivation (25 group)	Nos.	25	1.2500
	((ix) Development of alternate flow regulate system for precision farming	Nos.		12.5000
	(x) Seed Vending unit	Nos.	3	7.5000
	(xi) Demonstration of Technologies PC Tubular	Nos.	2000	18.7000
	(xii) Demonstration of Technologies PC Wooden	Nos.	2000	10.3000
	(xiii) Demonstration of Technologies PC Bamboo	Nos.	2000	7.5000
	(xiv) Demonstration of Technologies Off Season Cultivation	Nos.	5	1.5000
	(xv) Demonstration of Technologies Hybrid Varieties	Nos.	2	0.9000
	(xvi) Award for Best Farmer	Nos.	1	0.0500
	(xvii) Award for Best Group	Nos.	1	0.1000
	(xviii) Award for Best Roof top Garden	Nos.	1	0.0500
	(xix) Demonstration at Kowdiar Palace	Nos.		4.0000
	(xx) Mushroom cultivation	Nos.	250	28.1250
	(xxi) Capacity building	Nos.	7	35.0000
	(xxii) Study Tour of officers	Nos.	3	27.7300
	(xxiii) Demonstration of technologies drip irrigation	Nos.	1	0.5000
	Total			1,071.6400

Physical Target and Achievement:

S. No.	Item	Units	Physical	
			Target	Achievement
1	Vegetable Seed Production	Ha.	2	2
2	Vegetable Seedling Production	No.	60000	60000
3	Vegetable Cultivation	Ha.		
	(i) Open field	Ha.	423.28	423.28
	(ii) Hybrid veg.	Ha.	16	16
4	Protected Cultivation			
	(a) Naturally ventilated system			
	(i) Tubular structure	Sq.M	1000	1000
	(ii) Wooden structure	Sq.M	0	0
	(iii) Bamboo structure		0	0
	(b) Rain shelter			
	(i) Rain shelter GI Structure	Sq.M	2	2
	(ii) Rain shelter Wooden Structure	Sq.M	0	0
	© Cost of Planting Materials and other inputs for protected Cultivation	Sq.M	0	0
5	Organic Farming			
	(i) Vermicompost Units	Units	36	36
6	Promotion of INM/IPM	Ha.	630	630
7	Training of farmers within the State	No.	126.00	126.00
8	Post Harvest Management			
	(i) PHM structure for groups plastic crates poly films/ means to increase shelf life	Units	18	18
	(ii) Sorting, grading, packing	Units	0	0
	(iii) Value addition and cut vegetables	Units	0	0
9	Markets			
	(i) Retail shops/outlets	Nos.	0	0
	(ii) Motorised vending carts	Nos.	10	10
	(iii) Static/mobile vending carts	Nos.	0	0
10	Promotion of farmers Association	Nos.	441	441
11	Baseline Survey (no)	Nos.	1	1
12	Promotion of Roof top Gardens	Nos.	30195	30195
13	Production Incentive	Nos.	500	500
14	Publicity and documentation	Nos.		
15	Other miscellaneous components			
	(i) School Vegetable Garden	Nos.	18	18
	(ii) Infrastructure facilities for cultivation wells and pumpsets with accessories,tools,implements	Nos.	7	7
	(iii) Promotion of Roof top Gardens at Ernakulam	Nos.	3125	3125

S. No.	Item	Units	Physical	
			Target	Achievement
	(iv) Kitchen homestead Gardening	Nos.	2500	2500
	(v) Tools/Implements for kitchen Homestead Gardening	Nos.	2500	2500
	(vi) Infrastructure Support For Open Cultivation/Farmer Groups	Nos.	200	200
	(vii) Mobile Agro Clinic	Nos.	0	0
	(viii) HRD Training for Mushroom cultivation (25 group)	Nos.	15	15
	(ix) Development of alternate flow regulate system for precision farming	Nos.		
	(x) Seed Vending unit	Nos.	3	3
	(xi) Demonstration of Technologies PC Tubular	Nos.	1000	1000
	(xii) Demonstration of Technologies PC Wooden	Nos.	2000	2000
	(xiii) Demonstration of Technologies PC Bamboo	Nos.	1000	1000
	(xiv) Demonstration of Technologies Off Season Cultivation	Nos.	5	5
	(xv) Demonstration of Technologies Hybrid Varieties	Nos.	2	2
	(xvi) Award for Best Farmer	Nos.	0	0
	(xvii) Award for Best Group	Nos.	0	0
	(xviii) Award for Best Roof top Garden	Nos.	0	0
	(xix) Demonstration at Kowdiar Palace	Nos.		
	(xx) Mushroom cultivation	Nos.	250	250
	(xxi) Capacity building	Nos.	0	0
	(xxii) Study Tour of officers	Nos.	3	3
	(xxiii) Demonstration of technologies drip irrigation	Nos.	0	0

Financial Targets & Achievement of VIUC during 2011-12:

S. No.	Item	Units	Financial (Rs in lakh)	
			Target	Achievement
1	Vegetable Seed Production	Ha.	2.0000	1.0000
2	Vegetable Seedling Production	No.	9.0000	9.0000
3	Vegetable Cultivation	Ha.		
	(i) Open field	Ha.	112.5000	95.2400
	(ii) Hybrid veg.	Ha.	4.5000	3.6000
4	Protected Cultivation			
	(a) Naturally ventilated system			
	(i) Tubular structure	Sq.M	46.7500	4.6750
	(ii) Wooden structure	Sq.M	2.5800	0.0000
	(iii) Bamboo structure	Sq.M	1.8800	0.0000
	(b) Rain shelter			
	(i) Rain shelter GI Structure	Sq.M	2.0000	0.4000
	(ii) Rain shelter Wooden Structure	Sq.M	2.0000	0.0000
	© Cost of Planting Materials and other inputs for protected Cultivation	Sq.M	12.6000	0.0000

S. No.	Item	Units	Financial (Rs in lakh)	
			Target	Achievement
5	Organic Farming			
	(i) Vermicompost Units	Units	18.0000	10.8000
6	Promotion of INM/IPM	Ha.	10.0000	6.3
7	Training of farmers within the State	No.	9.5000	8.4922
8	Post Harvest Management			
	(i) PHM structure for groups plastic crates poly films/ means to increase shelf life	Units	10.0000	1.4200
	(ii) Sorting, grading, packing	Units	2.0000	0.0000
	(iii) Value addition and cut vegetables	Units	7.5000	0.0000
9	Markets			
	(i) Retail shops/outlets	Nos.	4.0000	0.0000
	(ii) Motorised vending carts	Nos.	10.0000	10.0000
	(iii) Static/mobile vending carts	Nos.	2.2500	0.0000
10	Promotion of farmers Association	Nos.	112.5000	99.2250
11	Baseline Survey (no)	Nos.	15.0000	7.2128
12	Promotion of Roof top Gardens	Nos.	375.0000	603.9000
13	Production Incentive	Nos.	50.0000	5.0000
14	Publicity and documentation	Nos.	46.0000	46.0000
15	Other miscellaneous components			
	(i) School Vegetable Garden	Nos.	1.5000	0.9000
	(ii) Infrastructure facilities for cultivation wells and pumpsets with accessories,tools,implements	Nos.	4.5000	1.0500
	(iii) Promotion of Roof top Gardens at Ernakulam	Nos.	0.0000	50.0000
	(iv) Kitchen homestead Gardening	Nos.	5.6250	5.6250
	(v) Tools/Implements for kitchen Homestead Gardening	Nos.	18.7500	18.7500
	(vi) Infrastructure support for Open cultivation/farmer groups	Nos.	12.0000	12.0000
	(vii) Mobile Agro Clinic	Nos.	6.0000	0.0000
	(viii) HRD Training for Mushroom cultivation (25 group)	Nos.	1.2500	0.9750
	(ix) Development of alternate flow regulate system for precision farming	Nos.	12.5000	0.0000
	(x) Seed Vending unit	Nos.	7.5000	7.5000
	(xi) Demonstration of Technologies PC Tubular	Nos.	18.7000	9.3500
	(xii) Demonstration of Technologies PC Wooden	Nos.	10.3000	10.3000
	(xiii) Demonstration of Technologies PC Bamboo	Nos.	7.5000	3.7500
	(xiv) Demonstration of Technologies Off Season Cultivation	Nos.	1.5000	1.5000
	(xv) Demonstration of Technologies Hybrid Varieties	Nos.	0.9000	0.9000
	(xvi) Award for Best Farmer	Nos.	0.0500	0.0000
	(xvii) Award for Best Group	Nos.	0.1000	0.0000
	(xviii) Award for Best Roof top Garden	Nos.	0.0500	0.0000
	(xix) Demonstration at Kowdiar Palace	Nos.	4.0000	4.0000
	(xx) Mushroom cultivation	Nos.	28.1250	28.1250

S. No.	Item	Units	Financial (Rs in lakh)	
			Target	Achievement
	(xxi) Capacity building	Nos.	35.0000	0.0000
	(xxii) Study Tour of officers	Nos.	27.7300	3.9500
	(xxiii) Demonstration of technologies drip irrigation	Nos.	0.5000	0.0000
	Total		1,071.6400	1070.9399

Area and Production of Vegetables in surveyed area in Baseline year (2010-11) and current year (2011-12):

Vegetable crops	2010-11			2011-12		
	Area (Ha)	Production (Quintal)	Yield (Quintal/Ha.)	Area (Ha)	Production (Quintal)	Yield (Quintal/Ha.)
Bitter gourd	4.54	376.82	83	7.14	1192.38	167
Cow pea	2.1	184.8	88	3.5	504	144
Coccinea	1.05	102.9	98	5.56	1145.36	206
Cucumber	0.6	60	100	0.72	115.2	160
Snake gourd	2	190	95	4.68	716.04	153
Amaranthus	2.16	419.04	194	2.36	285.56	121
Total	12.45	1333.56	107.1133	23.96	3958.54	165.2145

Cost of Cultivation of different Vegetables:

S. No.	Vegetable Crops	Land Preparation (Rs/ha)	Seed Used (Rs/ha)	Fertilizer and FYM Used (Rs/ha)	Plant protection chemicals used (Rs/ha)	Irrigation (Rs/ha)	Labour (Rs/ha)	Any Other (Specify) (Rs/ha)	Total (Rs/ha)
1.	Bitter gourd	65000	900	15000	1500	8400	12000	4500	107300
2.	Cow pea	56250	1275	12750	1350	1750	9250	6500	89125
3.	Coccinia	60000	1500	12000	1000	2500	12000	6000	95000
4.	Cucumber	25000	600	6000	800	8000	3000	8000	51400
5.	Snake Gourd	70000	1100	15000	1500	12000	12000	4000	115600
6.	Amaranthus	20500	575	5000	525	5400	2250	3500	37750

Annexes: V

Manipur

Physical & Financial Outlay and Achievement of the Scheme during 2011-12:

VIUC Progress in Manipur 2011-2012						
S. No.	Item	Units	Target		Achievement	
			Physical	Financial	Physical	Financial
1	Seed production					
2	Vegetable Seedling Production	Sq.M	2000	10.4	2000	10.4
3	Vegetable Cultivation	Ha				
	- Open field	Ha.	90	20.25	92	20.7
	- Hybrid veg.		300	101.25	298.673	100.8
4	Protected Cultivation					
	(a) Shade Net House					
	(i) Tubular structure	Sq.M	12400	106.59	12360	106.59
5	Promotion on INM/IPM	Ha	305	3.047	296	2.96
6	Organic Farming					
	(i) Permanent Structure of Vermibed(30'*8'*2.5')	No.	20	6	20	6
	(ii) HDPE vermibed(12'*4'*2')	No.	50	2.56	50	2.56
7	Post Harvest Management					
	1. Pack house	Nos.	10	15	0	0
	2. Pusa Zero energy cool chamber (100 kg)	Nos.	100	2	100	2
8	Markets					
	3. Collection/aggregation centre at production cluster @ Rs. 8 lakh/unit	Nos.	10	40	0	0

VIUC Progress in Manipur 2011-2012						
S. No.	Item	Units	Target		Achievement	
			Physical	Financial	Physical	Financial
9	(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)		84	35	84	35
	(b) Baseline Survey (no)		1	7.5	1	7.213
10	HRD - Training		100	0.75	100	0.75
11	Administrative Cost					
	Total			350.29		294.97

Cost of production of major crops mentioned by farmers

Crop	Land preparation (Rs/ha)	Seeds (Rs/ha)	Fertilizer (Rs/ha)	Plant protection chemicals (Rs/ha)	Irrigation (Rs/ha)	Labour (Rs/ha)	Total (Rs/ha)
Cabbage	15000	1500	3375	1875	5000	25000	51750
Fench beans	15000	18750	3750	1875	5000	25000	69375
Chilli	15000	15000	3750	1875	5000	30000	70625
Cucumber	15000	9000	3750	1875	5000	30000	64625
Tomato	15000	12500	3750	1875	5000	30000	68125
Melon	15000	3375	5625	1875	5000	30000	60875
Cauliflower	15000	4375	3750	1875	5000	30000	60000

Annexes: VI

Tamil Nadu

Physical & financial outlays and Achievement of the Scheme for year 2011-12:

S. No.	Item	Units	Target	
			Physical	Financial
1.	Vegetable Cultivation	Ha		
	(a) Open field	Ha.	1580	355.5
	(b) Hybrid veg.	Ha.	1200	405
2.	Protected Cultivation			
	(a) Green House Structure	Sq.M	27000	87.75
	(b) Shade Net House	Sq.M	27000	81
3.	Post Harvest Management			
	(a) Refer vans/containers	Nos.	20	124
	(b) Others- Plastic Crates for farmers	Nos.	28340	42.51
4.	Markets			
	(a) Retail Markets/outlets (environmentally controlled)	Nos.	100	223
	(b) Collection/aggregation centre at production cluster @ Rs. 8 lakh/unit	Nos.	16	128
5.	Promotion of farmers Association/Groups	Nos.	8500	170
6.	Baseline Survey	Nos.		15.68
7.	Others- Refer Vans with mobile stores+ others		20	68
	Total			1700.44

Physical Target and Achievement of the Scheme for year 2011-12:

S. No.	Item	Units	Physical	
			Target	Achievement
1.	Vegetable Cultivation	Ha		
	(a) Open field	Ha.	1580	1320
	(b) Hybrid veg.	Ha.	1200	1010

S. No.	Item	Units	Physical	
			Target	Achievement
2.	Protected Cultivation			
	(a) Green House Structure	Sq.M	27000	21000
	(b) Shade Net House	Sq.M	27000	18900
3.	Organic Farming			
	(a) Adoption of organic Farming	Ha.		500
	(b) Organic Certification	No.		50
4.	Training of farmers within the State			5
5.	Post Harvest Management			
	(a) Refer vans/containers	Nos.	20	20
	(b) Others- Plastic Crates for farmers	Nos.	28340	19838
6.	Markets			
	(a) Retail Markets/outlets (environmentally controlled)	Nos.	100	100
	(b) Collection/aggregation centre at production cluster @ Rs. 8 lakh/unit	Nos.	16	10
7.	Promotion of farmers Association/Groups	Nos.	8500	8500
8.	Baseline Survey	Nos.	1	1
9.	Others- Refer Vans with mobile stores+ others		20	14

Financial Targets & Achievement of VIUC during 2011-12

S. No.	Item	Units	Financial (Rs in lakh)	
			Target	Achievement
1.	Vegetable Cultivation	Ha		
	(a) Open field	Ha.	355.5	
	(b) Hybrid veg.	Ha.	405	
2.	Protected Cultivation			
	(a) Green House Structure	Sq.M	87.75	
	(b) Shade Net House	Sq.M	81	
3.	Organic Farming			
	(a) Adoption of organic Farming	Ha.		
	(b) Organic Certification	No.		
4.	Training of farmers within the State			
5.	Post Harvest Management			
	(a) Refer vans/containers	Nos.	124	124
	(b) Others- Plastic Crates for farmers	Nos.	42.51	
6.	Markets			
	(a) Retail Markets/outlets (environmentally controlled)	Nos.	223	223

S. No.	Item	Units	Financial (Rs in lakh)	
			Target	Achievement
	(b) Collection/aggregation centre at production cluster @ Rs. 8 lakh/unit	Nos.	128	
7.	Promotion of farmers Association/Groups	Nos.	170	170
8.	Baseline Survey	Nos.	15.68	15.68
9.	Others- Refer Vans with mobile stores+ others		68	4
	Total		1700.44	5368.68

Area, Production & Productivity of Vegetables:

Vegetable crops	2010-11		2011-12	
	Area (Ha)	Production (MT)	Area (Ha)	Production (MT)
Bitter gourd	26	40	26	40
Brinjal	4	NA	4	NA
Jasmine				
Chilly				
Water melon				
Tomato				
Cow peas	4	10	4	10
Cluster beans	4	12	4	12
Total	38	62	38	62

Cost of Production of Major Crops as Informed by Farmers:

Sl. No.	Vegetable Crops	Land Preparation (Rs/ha)	Seed Used (Rs/ha)	Fertilizer and FYM Used (Rs/ha)	Plant protection chemicals used (Rs/ha)	Irrigation (Rs/ha)	Labour (Rs/ha)	Any Other (Specify) (Rs/ha)	Total (Rs/ha)
1	Brinjal	5850	11875	11500	16250	19325	13125		77925
2	Chilly	6375	5312.5	10625	12750	21250	14875		71187.5
3	water melon	5625	4687.5	9375	11250	18750	13125		62812.5
4	Bitter gourd	6750	15625	13750	20000	22250	15000	25000	118375
5	Bhindi	7500	6250	12500	15000	25000	17500		83750
6	Tomato	7500	6250	12500	15000	25000	17500		83750
7	Ridge gourd	7500	6250	12500	15000	25000	17500		83750
8	Greens (saag)	7500	6250	12500	15000	25000	17500		83750
9	musk melon	4800	4000	8000	9600	16000	11200		53600
10	cowpea	6000	25000	15000	12500	19500	12500		90500
11	cluster bean	6000	25000	15000	12500	19500	12500		90500

Physical and Financial Progress Statement under VIUC, Tamil Nadu, 2011-12

S. No	Components	Unit	Target		Achivement		Physically Completed bill Settled	Physically to be completed
			Physical	Finance	Physical	Finance		
1	Open cultivation							
3	Vegetables Cultivation in open conction	Ha.	1580	355.5	1320		297	58.5
b	Vegetables Cultivation in Hybrid	Ha.	1200	405	1010		340.87	64.13
11	Protected Cultivation							
a	Vegetables Cultivation in poly house	Sq.mt	27000	87.75	21000		68.25	19.5
b	Vegetable Cultivation in sance net	Sq.mt	27000	81	18900		70	11
111	Post Harvest Mangement							
8	Vegetable Plastic Crates for farmers	Nos.	28340	42.51	19838		42.51	
	Collection/ Aggregation Centre at producer cluster (Cost includes construction of aggregation centre with all necessary accessories like heavy duty balance, palastic crates for handling etc.	Nos.	16	128	10			
v	Refer Vans			0	10	96		
V-a	Efer Vans	Nos.	10	96	10	28		
V-b	Efer Vans	Nos.	10	28	10	223		
Vi	Retail Outlets	Nos.	100	223	100			
	Construction of retail outlet	Nos.	100	200	100			
	Vegetable Plastic Crates for retail outles	Nos.	100	20	100			
	Balance for retail outles		100	3	100			
	Refer Vans/ Containers cum Moble Store Including Vegetable Plastic Creates and physical balance for mobile stores	Nos.	20	68	14	4	50	14

S. No	Components	Unit	Target		Achivement		Physically Completed bill Settled	Physically to be completed
			Physical	Finance	Physical	Finance		
V11	10% of total allocation formation and related works till linking them to the value chain	Nos.	8500	170	8500	170		
	Financial requirement to be provided for SFAC for conducting Baseline Survey Including service tax at 10.3%	L.S		15.68		15.68		
	Total			1700.44		536.68	996.63	167.13



**SMALL FARMERS' AGRIBUSINESS CONSORTIUM
(Department of Agriculture & Cooperation)**

NCUI Auditorium Building, 5th Floor, 3 Siri Institutional Area
August Kranti Marg, Hauz Khas, New Delhi - 110016

Tel: 91-11-26862365, 26966017 | **Fax:** 91-11-26862367

Email: sfac@nic.in | **Web:** www.sfacindia.com