PERFORMANCE EFFECTIVENESS OF STATE HORTICULTURE MISSION- KERALA: A CASE STUDY

by

CHINCHU.V.S

(2009-11-126)

THESIS

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VELLAYANI, THIRUVANANTHAPURAM – 695 522

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Dedicated to....

My beloved....

Achan and Amma

DECLARATION

I, hereby declare that this thesis entitled "**Performance effectiveness of State Horticulture Mission-Kerala: A case study**" is bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any other University or Society.

Vellayani,

Date: 06/08/2011

CHINCHU.V.S

(2009-11-126)

Dr.V.B. Padmanabhan,

Professor,

Department of Agricultural Extension,

College of Agriculture, Vellayani,

Kerala Agricultural University,

Vellanikkara, Thrissur, Kerala.

Date: 06-08-2011

CERTIFICATE

Certified that this thesis entitled "**Performance effectiveness of State Horticulture Mission-Kerala: A case study**" is a record of research work done independently by **Mr. Chinchu.V.S (2009-11-126)** under my guidance and supervision and that it has not part of previously formed the basis for the award of any degree, fellowship or associateship to him.

Vellayani

Dr.V.B. Padmanabhan,

Chairman,
Advisory Committee

CERTIFICATE

We the undersigned members of the advisory committee of **Mr. Chinchu.V.S (2009-11-126)** a candidate for the degree of **Master of Science in Agriculture** agree that this thesis entitled **"Performance effectiveness of State Horticulture Mission- Kerala: A case study"** may be submitted by **Mr. Chinchu.V.S (2009-11-126)**, in partial fulfillment of the requirement for the degree.

06/08/2011

Dr. V.B. Padmanabhan (Chairman)

Professor,

Department of Agricultural Extension,

College of Agriculture, Vellayani,

Thiruvananthapuram -695 522.

07/8/11

Dr. R. Prakash

Professor & Head,

Department of Agricultural Extension,

College of Agriculture, Vellayani,

Thiruvananthapuram -695 522.

6/8/11

Dr. S. Mothilal Nehru

Associate Director of Extension (Southern region),

College of Agriculture, Vellayani,

Thiruvananthapuram -695 522.

06/09/2011

Dr.Vijayaraghava Kumar

Professor and Head, Department of Agricultural Statistics,

College of Agriculture, Vellayani,

Thiruvananthapuram -695 522

06/08/2011

Dr. S. Shilaja

Professor,

Department of Agricultural Extension,

College of Agriculture, Vellayani,

Thiruvananthapuram -695 522.

External Examiner who evaluated the thesis:

Dr. M. Anantaraman
Principal Scientist
CTCRI,
Trivandrum

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CHINCHU. V. S

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ABBREVIATIONS

@	:	At the rate of
%	:	Per cent
g	:	gram
Anon.	:	Anonymous
CD (p=0.05)	:	Critical difference at 5% probability level
et al.	:	And others
Fig.	:	Figure
g	:	gram
Sl No.	:	Serial Number
ha	:	Hectare
hrs	:	Hours
m	:	Metre
mm	:	Millimetre
Rs. ha^{-1}	:	Rupees per hectare
NS	:	Not Significant
/	:	Other wise or per
cm^2	:	Centimeter square
kg	:	Kilogram
m ha	:	Million hectares
m^2	:	Per square meter
mt	:	Million tonnes
MT	:	Metric Tonnes

No.	:	Number
NHM	:	National Horticulture Mission
SHM-K	:	State Horticulture Mission- Kerala
GAP	:	Good Agricultural Practices
INM	:	Integrated Nutrient Management
IPM	:	Integrated Pest Management
KAU	:	Kerala Agricultural University
VFPCK	:	Vegetable and Fruit Promotion Council- Keralam
SHG	:	Self Help Groups
HP	:	Horse Power
HRD	:	Human Resource Development
PTD	:	Participatory Technology Development
VLWS	:	Village Level Workers
MGNREGP	:	Mahatma Gandhi National Rural Employment Guarantee Programme
BPL	:	Below Poverty Line
T and V	:	Training and Visit
IVDP	:	Intensive Vegetable Development Programme
LSADP	:	Logos State Agricultural Development Project
IT	:	Information Technology
OPI	:	Officer Participation Index
FPI	:	Farmer Participation Index
BSI	:	Beneficiary Satisfaction Index

1. INTRODUCTION

The main horticultural products namely fruits and vegetables are called as protective food. About 85.33% of the gross cultivated land area of Kerala is being under horticultural crops including fruit crops, vegetables, plantation crops and spices. (Government of Kerala, 2010). But only around 25% of the requirement of fruits and vegetables of Kerala is being produced within the state. The rest is being imported from the neighbouring states namely Tamil Nadu and Karnataka. With a mission of end to end holistic development of horticulture sector of the state covering fruits, plantation crops, vegetables, spices, flowers, aromatic and medicinal plants and mushroom, State Horticulture Mission- Kerala is functioning in the state.

State Horticulture Mission- Kerala is an organization functioning in the state under the Department of Agriculture, Government of Kerala since November 2005 for the implementation of National Horticulture Mission programme, a centrally sponsored scheme. (Govt. of Kerala, 2009). It is the state level implementing organ of the Government of India programme called National Horticulture Mission (NHM).

The National Horticulture Mission (NHM) was launched during the year 2005-06 to provide a thrust to the development of horticulture sector in the country. It was expected that the adoption of an integrated approach covering production, post-harvest management, processing and marketing would help to attain the objectives of enhanced production, improved nutrition and increased returns to the farmers. The scheme is operated in all states and union territories except north-eastern states including Sikkim, Himachal Pradesh, Jammu and Kashmir and Uttarakhand, for which a separate technology mission for integrated development of horticulture exists. NHM is a centrally sponsored scheme in which Government of India contributes 85% and 15% is met by the state government (Government of India, 2010).

During the implementation of the mission, it was realized that some additional components need to be introduced to achieve the objective of holistic growth of the horticulture sector. Accordingly, some new components such as high density plantation, mushroom cultivation, horticulture mechanization and (Good Agricultural Practices) certification have been included in the mission. Cost norms and pattern of assistance for post-harvest management and marketing related components have been revised liberally so as to incentivize more investment in these critical areas.

The main objectives of State Horticulture Mission are:

a) Provide holistic growth of horticulture sector through area based regionally differentiated strategies, which include research, technology promotion, extension, post-harvest management, processing and marketing, in consonance with comparative advantage of each state or region and its diverse agro-climatic features.
b) Enhance horticulture production, improve nutritional security and income support to farm households.
c) Establish convergence and synergy among on-going and plan programmes for horticulture development.
d) Promote, develop and disseminate technologies for horticulture development through seamless blending of traditional wisdom and modern scientific knowledge.
e) Create employment generation opportunities for skilled and unskilled persons, especially unemployed youth.

1.1 OBJECTIVES OF THE STUDY

The present study is undertaken with the specific objective of studying the performance effectiveness of State Horticulture Mission-Kerala in terms of achievement of physical and financial targets, stakeholder participation and

beneficiary satisfaction and to identify the constraints and formulate a strategy for increasing the effectiveness of the programme.

1.2 SCOPE OF THE STUDY

Performance assessment of State Horticulture Mission- Kerala is imperative so as to know how far the intended objectives are achieved. The present study will critically analyze the performance of State Horticulture Mission- Kerala and the result of this study will help State Horticulture Mission-Kerala to re-orient their work in the areas of under-achievement, if needed, for the betterment of the horticulture sector of Kerala and thus bring prosperity to farmers, entrepreneurs and the general public. Viewed in this backdrop, the study on performance effectiveness of State Horticulture Mission-Kerala is much relevant and timely.

1.3 LIMITATIONS OF THE STUDY

As the study formed part of the master's degree programme, time, infrastructure, finance and other resources at the disposal of the researcher were limited. In a study of this nature, one cannot hope for a comprehensive and exhaustive analysis. However, careful and rigorous procedures have been adopted to carry out the study as objectively as possible.

1.4 SCOPE FOR FUTURE WORK

The present study is undertaken in Thiruvananathapuram district alone. Similar studies pertaining to the State Horticulture Mission- Kerala can be done in rest of the 13 districts also. A larger study, taking samples from each panchayat area of the state, can also be done in future.

1.5 ORGANIZATION OF THE THESIS

The thesis is presented in five chapters. The first chapter of 'introduction' highlights the problems, objectives, scope and limitations of the study. The second chapter 'theoretical orientation' deals with the definitions, concepts and literature related with the study. The third chapter 'methodology' encompasses the details on selection of study area, sampling, procedures for data collection and statistical tools used. In the fourth chapter, the results of the study in relation to the objectives with interpretation of findings and their discussion are presented. The fifth chapter summarizes the study highlighting the salient findings.

2. THEORETICAL ORIENTATION

This chapter aims at developing a theoretical framework on the concept of "performance effectiveness" of the programme. This has been furnished on the basis of definitions, ideas and concepts. Each topic presented in the chapter is associated with the available research findings either directly or indirectly. This helps to give a proper orientation to the study and also to place the problem on a theoretical perspective. This also assists in evaluating one's own research efforts by comparing them with the related effort of others.

The review has been presented under the following heads:

2.1 State Horticulture Mission-Kerala

2.2 Concepts of performance effectiveness

2.2.1 Achievement of physical and financial targets

2.2.2 Extent of stakeholder participation

2.2.3 Extent of beneficiary satisfaction

2.3 Profile characteristics of stakeholders

2.4 Constraints perceived by the stakeholders

2.1 STATE HORTICULTURE MISSION-KERALA

State Horticulture Mission- Kerala is an organization functioning in the state under the Department of Agriculture, Government of Kerala since November 2005 for the implementation of National Horticulture Mission Programme in the state. (Govt. of Kerala, 2009) It started its functioning by registering as a society on 13th October 2005.

The scheme envisages end to end development of the horticulture sector from production to marketing. (Govt. of Kerala ,2006)

The main objective of the mission is end-to-end holistic development of the horticulture sector covering fruits, plantation crops, vegetables, spices, flowers, aromatic and medicinal plants and mushroom. The programme is implemented in two clusters, namely, cluster I and cluster II. The cluster I consists of the districts Thiruvananthapuram, Alappuzha , Idukki, Eranakulam, Kottayam, Pathanamthitta and Kollam. The cluster II consists of the districts Malappuram, Kozhikode, Wayanad, Kannur, Kasargode, Thrissur , and Palakkad.

Kerala has a tremendous scope for the development of the aforesaid sectors because of the availability of congenial climate and wide genetic diversity for many of the horticultural crops. For tapping these resources, State Horticulture Mission-Kerala have devised a number of schemes like production and distribution of quality planting materials, vegetable seed production, seed infrastructure, establishment of new garden, rejuvenation of senile plantations, creation of water resources, promotion of INM/IPM, organic farming, vermi-composting, mushroom production unit, protected cultivation, pollination support through bee keeping, post-harvest management and human resource development.

The vision of State Horticulture Mission- Kerala is of ensuring livelihood security of farming community in Kerala and its mission is the end to end holistic development of horticulture sector covering fruits, plantation crops, vegetables, spices, flowers, aromatic and medicinal plants and mushroom.

Highlights of SHM-Kerala Initiatives

The schemes implemented under State Horticulture Mission-Kerala programme are farmer friendly, location specific and need based, hence reflected on the livelihood security of the farming community.

Crops Covered Under SHM-Kerala Schemes

Flower crops like orchid and anthurium, fruits like pineapple, banana, gooseberry , mango, vegetables like amaranthus, bhindi, bittergourd, brinjal, chilly, cowpea, cucurbits, pumpkin, snakegourd, spices like ginger, nutmeg, pepper, turmeric, plantation crops like cashew and cocoa are all included under SHM-Kerala schemes. Medicinal and Aromatic plants like eucalyptus, kacholam, lemongrass, palmarosa, vetiver, *chethikoduveli, neelamarai, chengazhinirkizhangu, kasthurimanjal and chittaratha* are also included.

2.2 CONCEPTS OF PERFORMANCE EFFECTIVENESS

Hitt *et.al.* (1983) stated that effectiveness refers to how well an organization reaches its objectives over a period of time.

Reddin (1987) observed that effectiveness is multidimensional and it is the extent to which managers achieve the output requirements of their position. He further stated that it is output, not input.

Gosh *et al.* (1988) gave the measuring of effectiveness as the extent to which an action or activity achieves its stated purpose.

According to Arora (1993) the success of any developmental measures is determined by the effectiveness of the administration system.

Medley and Shannon (1994) pointed out that the teacher performance effectiveness can be arrived through observational schedules, rating scale and student achievement test.

Babykumari *et.al.* (1998) defined .performance as the pragmatic results that the organization is able to measure objectively.

Rao (2004) stated that performance is a result of both ability and effort. A highly capable individual may need to put in only marginal effort to give high performance, whereas another individual with low ability may need to put in a lot of effort to produce even an average level of output.

Bella (2006) in her study on performance effectiveness of teachers, defined performance effectiveness of the teacher as the degree to which a teacher does right things in a creative way to achieve the intended and desired results through optimum utilization of resources in teaching, research and extension education.

2.2.1 Achievement of Physical and Financial Targets

A target is an objective or result aimed at. (Wheeler and McCracken, 2007).

2.2.2 Extent of Stakeholder Participation

The term "Stakeholder" was first used at Stanford Research Institute in 1963 to apply to "those groups without whose support the organizations would cease to exist." Since that time, the word has taken on a broader meaning and is used to also include all people, communities and organizations affected by specific activities or initiatives of business, government or non-governmental organizations.(http://www.ehow.com).

French (1960) referred participation as a process in which two or more parties influence each other in making certain plans, policies and decisions.

According to Soyal (1966) participation refers to the convergent action by which the citizens take part in the accomplishments of administrative services without belonging to the governing or managing body.

Acoording to Davis (1969) participation is a mental and emotional involvement of a person in a group situation which encourages him to contribute to goals and shares responsibility in them.

According to Nandal (1972) participation of the people in the planning process at different stages of decision making, decision implementation and evaluation is needed for the success of planning.

Baetiz (1975) observed that participation in development means how community members can be assured the opportunity to contributing in the creation of communities' goods and services.

Deepali (1979) reported that there was positive relationship between knowledge of rural women in farm practices and their degree of participation in agricultural operations.

Pearse and Stiefel (1979) referred participation as an organized effort to increase control over resources and regulative institutions in a given social situation as the part of groups and movement of those hither to executed from such control.

Jayavelu (1980) found that lack of knowledge about the economies of the development programme might result in the non-participation of the people in it.

According to Mishra (1984) participation means direct involvement of people and not involvement through representatives.

According to Saiyadain (1988) participation refers to sharing in an appropriate way the decision making power with subordinates.

In the opinion of Mishra (1994) the term participation has three connotations. Participation means co-operation, taking part in something, the mere presence, even silent presence of individuals or representatives of an organization at different levels. According to him participation can be direct or indirect, passive or active and it is one of the important techniques to achieve the desired goal.

Government of Kerala (1996) reported that only through decentralization of power we could ensure the participation of people in various developmental activities.

Veluswamy and Manoharan (1998) found that majority of the beneficiaries participated in all activities of NGO. Situation survey was the activity in which more participation was found, followed by selecting problems for action and analyzing the situation, problem assessment and prioritizing problems were the activities seen in fourth and fifth respectively.

Suthan (2003) in his study analysis of farmer's participation in the Participatory Technology Development (PTD), he found that 64 per cent of the farmers had high level of extent of participation in PTD and correlation analysis showed that extent of participation in PTD was positively and significantly related with social participation and need satisfaction.

2.2.3 Extent of Beneficiary Satisfaction

Shaw (1971) opined that groups that fail to satisfy the needs of individual group members usually disintegrate.

Holder (1984) considered job satisfaction as a positive response towards the job as a whole.

Sherin (1997) found that due to increased training the members become more knowledgeable about the ways and means to achieve group goals and hence an increased need satisfaction was seen.

Datar (2007) in his study revealed that there was dissatisfaction about the measurement practices which were not clear.

2.3 PROFILE CHARACTERISTICS OF STAKEHOLDERS

2.3.1 Age

Gnanadeepa (1991) found a positive and significant relationship between age and knowledge.

Thomas (2000) reported that the age had positive and significant relationship with the knowledge of farmers.

2.3.2 Sex

Heggade (1982) opined that the women's involvement in economic decision making was a vital means by which their economic dependency and social inequality could be removed.

Natarajan and Thenmozhy (1991) reported that women possessed entrepreneurial skills to start an enterprise.

Singh (1993) concluded that the factors impinging on entrepreneurial manifestation of women are no different from those of men.

Seema (1997) found that the male agricultural graduates had high level of attitude than female agricultural graduates towards self confidence, self esteem and management orientation.

2.3.3 Educational Status

Cherian (1984) found a positive and significant relationship between educational status and awarenesss.

Viju (1985) stated that the education level of farmers was seen influencing their knowledge level and their attitude towards farming which in turn influenced their adoption level.

Mary *et al.* (1994) found out a positive and significant relationship between educational status and attitude.

Adhiguru *et al.* (1996) reported that the educational status of farmers had a positive and significant relationship with the utilization of farm subsidies.

Manju (1997) found a positive and highly significant relationship between educational status and knowledge.

Kuruvilla and Jacob (2007) found that low education levels correlate with poverty leading to common mental disorders among people.

2.3.4 Rural/urban Background

Saijonkar and Patel (1970) opined that rural/urban background of VLWS of Kaira district, Gujarat influenced their job effectiveness.

Reddy and Reddy (1977) found that the urban contact of farmers did not have significant relationship with the attitude of farmers towards the crop loan system.

Mani and Knight (1981) in a study on attitude towards regulated market found no relationship between rural/urban background and attitude.

Siddaramaiah and Gowda (1987) reported that rural-urban background of extension guides in Karnataka had a highly significant relationship with their job performance.

Kalavathy (1989) reported that rural-urban background of agricultural graduates working in the Department of Agriculture, Kerala had no relationship with their performance in the job.

Lenin and Veerabhadriah (1997) found that there was no relationship between the rural-urban background of extension personnel and their attitude towards broad-based extension.

Rambalu (2000) opined that the rural-urban background had a positive relation with the knowledge level of Agricultural Extension Officers.

Sawant *et al.* (2000) reported that there was a significant relationship between the rural-urban background and the attitude of Higher Secondary School students towards the agriculture course.

2.3.5 Annual Income

Rajendran (1981) reported that the income from crops formed the major source of income of the farm households and it formed about 82 per cent of the gross income of the families.

Badagaonkar (1989) found a positive relationship between annual income and management orientation of farmers.

Unnikrishnan (1994) defined the income of an agricultural labourer as the total earnings and receipts of the household for the past one year from agriculture, wages, livestock, pensions, salaries, grants and other social contributions.

Vijayanand and Jithendran. (2008). in their study reported that MGNREGP has suddenly increased purchasing power of poor and there is visible local economic

development and also lays foundation of livelihood security through hundred days wage employment.

Ramesh and Krishnakumar, (2009). opined that MGNREGP has became a beacon of light in empowerment of rural women and contributed substantially for the increased living and economic condition by generating employment and also providing equal wages to both male and female workers.

Dalapati (2010) reported that MGNREGP increased the income of the beneficiary households.

Mehta (2010) found that the participant women were contributing 11 per cent additional income over the non-participant women to their household by way of getting MGNREGP employment.

Yadav and Gargh (2010) in their study on socio-economic conditions of MGNREGP reported that 59 per cent of workers surveyed belonged to BPL family.

2.3.6 Family Type

Geetha (2007) reported significant positive correlation between family size of farmers and their risk preference.

2.3.7 Job Experience

Tripathi and Kunzru (2000) found a positive and significant relationship between job experience and attitude.

Vijayalayam (2001) found no significant relationship between job experience and awareness while Preetha (1997) found a positive and significant relationship between job experience and knowledge.

2.3.8 Information Source

Cherian (1984) reported that the relationship between the exposure to information source and level of awareness of contact and other farmers about T and V system was found to be positive and significant.

2.3.9 Innovativeness

Schumpeter (1934) postulates an entrepreneur as an innovator. According to him, psychologically entrepreneurs are not solely motivated by profit. Schumpeterian innovation is a creative response to a situation.

Christopher (1969) listed out innovativeness as a distinctive character of entrepreneurs.

Rao and Mehta (1978) indicated innovativeness as one of the attributes of the entrepreneurs. According to them, defining characteristics of entrepreneurship in doing new things or doing things that are already being done in a new way.

De (1986) opined that innovative orientation, entrepreneurship and socio-economic status significantly contribute to farmer's progressiveness.

Rao and Alagendhi (1989) in his appraisal of relative performance of entrepreneurs highlighted innovative ability as one of the entrepreneurial traits.

2.3.10 Exposure to Internet and Information Technology

Sajeevchandran (1989) found out a positive and significant relationship between exposure to internet and information technology with awareness while Saini and Singh (1996) found out a similar relationship between exposure to internet and information technology and knowledge.

Conversely, Murugesan and Nanjayan (1996) concluded that the relationship between exposure to internet and information technology and attitude is non-significant.

2.3. 10 Adoption

Momi and Sohal (1975) found that cost was least important factor in the adoption of the innovation.

Nehru *et al.* (1988) stated that 64 percent of lab to land beneficiary farmers adopted the recommended dose of nitrogen and 72 percent adopted the recommended dose of potash for vegetable cultivation.

Manjusha (1999) reported that there was no relationship between age and extent of adoption of recommended practices by the farmers in bitter gourd cultivation.

Sreedaya (2000) reported no relationship of age with the extent of adoption of recommended practices among vegetable growers of both Intensive Vegetable Development Programme (IVDP) and Vegetable and Fruit Promotion Council Keralam (VFPCK).

Santhosh and Narwade (2001) opined that though improved varieties are adopted by farmers, other components like integrated nutrient management and integrated pest management are not given due consideration by the farmers due to lack of awareness and knowledge.

2.4 CONSTRAINTS PERCEIVED BY THE STAKEHOLDERS

Pandya and Trivedi (1988) defined constraints as "those items of difficulties or problems faced by individuals in the adoption of technology".

Asiabaka and Bamisile (1991) while assessing the performance level of agricultural extension agents in Logos State Agricultural Development project found that lack of transportation, lack of incentives and ultimately distribution of inputs to farmers, lack of office space, problem of payment of travelling allowance, lack of promotions were the major constraints influencing their performance level.

Nelson (1992) reported that lack of clerical support in office work was the most important constraint perceived by Agricultural officers in the effective functioning of Kishibhavan followed by lack of conveyance facilities, lack of funds to meet traveling expenses and lack of office facilities in that order.

Singh and Sharma (1998) found illiteracy to be rampant among the farm women in both hills and plains. The women are mostly involved in repetitive and monotonous operations.

Thomas (1998) observed that inadequate financial assistance, non-availability of quality planting material, political interference and inadequate training were the major problems in implementing wasteland development programme.

3. METHODOLOGY

This chapter describes the research methods and techniques adopted in conducting the present research study. The various aspects are furnished in this chapter under the following subheadings.

3.1 Locale of the study

3.2 Selection of respondents

3.3 Design of the study

3.4 Variables selected for studying performance effectiveness of State Horticulture Mission-Kerala.

3.5 Operationalisation and measurement of variables

3.6 Tools and techniques of data collection

3.7 Statistical tools used

3.8 Conceptual framework of the study

3.1 LOCALE OF THE STUDY

State Horticulture Mission-Kerala was started in the year 2005. Initially the programme was there only in the 11 districts of the state out of the total number of 14 districts. In the other three districts namely, Kollam, Pattanamthitta and Kottayam, the programme was started later. One out of the 11 districts in which the programme was implemented since 2005 was selected based on the maximum number of programmes in operation in the district.

The programmes considered for the selection of the district were small nursery, model nursery, rehabilitation of existing tissue culture labs, vegetable seed production, establishment of new gardens/ area expansion, rejuvenation/ productivity

enhancement, creation of water resources, protected cultivation, promotion of INM/IPM, organic farming and certification, vermi-composting, plant health clinic, disease forecasting unit, leaf tissue lab, bio-control lab, pollination support through beekeeping, seed infrastructure, precision farming, human resource development, integrated mushroom production units for spawn and compost production and horticulture mechanization, as shown in the Table 1.

Table 1: Number of State Horticulture Mission-Kerala programmes in the 11 districts

District	**Number of programmes**
Thiruvananthapuram	19
Alappuzha	15
Idukki	15
Eranakulam	16
Thrissur	15
Palakkad	17
Malappuram	14
Kozhikode	13
Wayanad	13
Kannur	14
Kasargode	12

In accordance with the largest number of programmes in operation, Thiruvananthapuram district was selected as "the case" in this study (Fig. 1). Other considerations favoring the selection of "the case" were:

a) Head quarters of State Horticulture Mission-Kerala is located in the Thiruvananthapuram district.

b) Head quarters of active media partners of State Horticulture Mission-Kerala like Aakashavani and Dooradarshan are located in Thiruvananthapuram district.

c) The venue of the horticulture promotional activities of State Horticulture Mission-Kerala like International Horti-Expo, Mango fest and Honey fest were Thiruvananthapuram district.

d) The location of College of Agriculture, Vellayani, the parent institution of the researcher where more than ten programmes were implemented by State Horticulture Mission-Kerala, is also Thiruvananthapuram district.

Brief description of the district:

Thiruvananthapuram, or Trivandrum, as it was conveniently re-christened by the English, is the southern-most district and Thiruvananthapuram city is the district headquarters as well as the State capital of Kerala. Thiru Anantha Puram, or the city of the Holy Anantha, is named after Ananthan, the cosmic serpent with a thousand heads, on whose coils Lord Mahavishnu reclines. This iconic representation is the chief deity in the Sri Padmanabhaswamy Temple. Thiruvananthapuram, built on seven hills is blessed with a pleasant climate virtually throughout the year and have a very long sea shore as well as biodiversity rich forest areas. Thiruvananthapuram district is situated between north latitudes 8° 17' and 8°

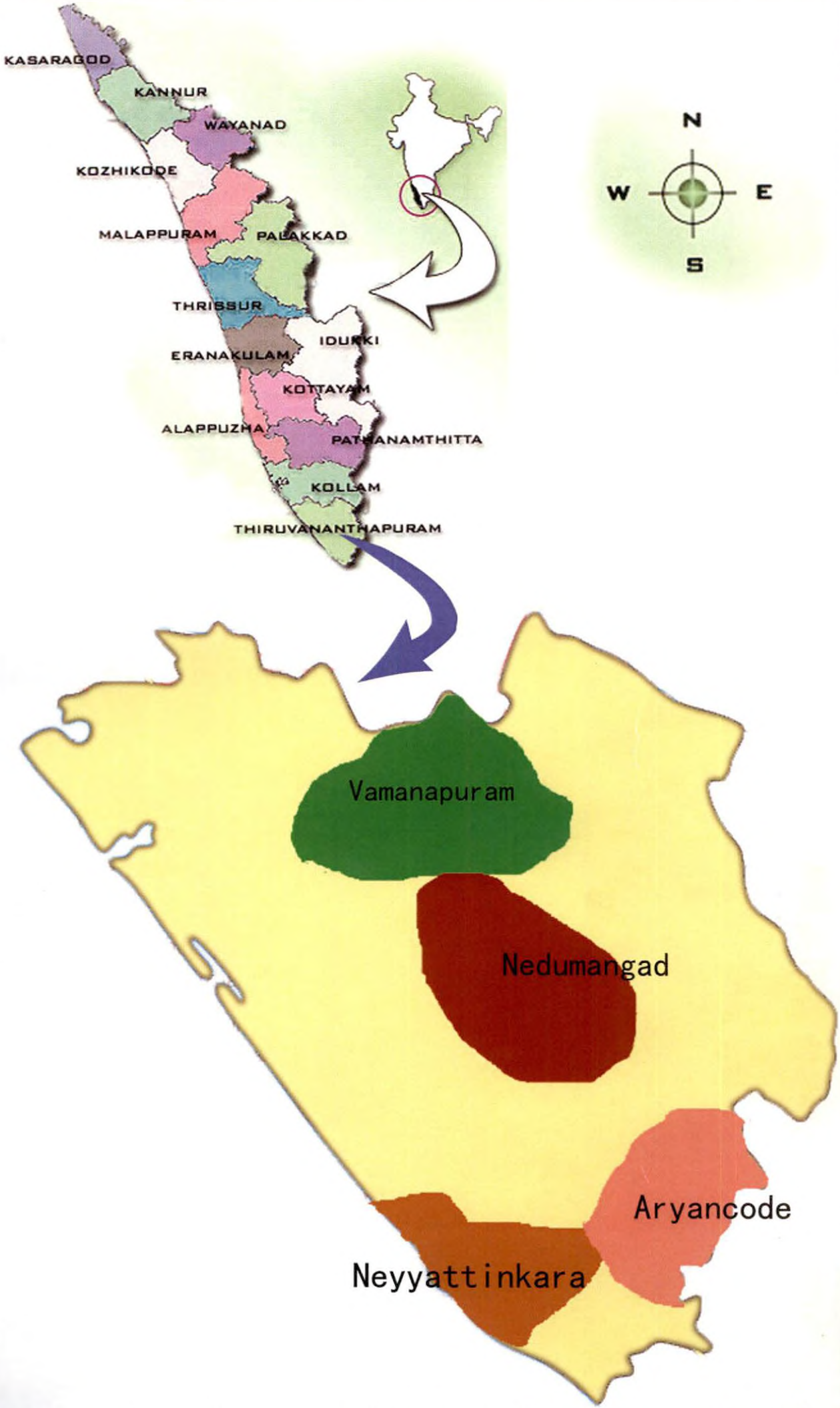


Fig. 1- Location of the study

54' and east longitudes 76° 41' and 77° 17'. The southernmost extremity, 'Parasala', is 56 kms away from Kanyakumari, the "land's end of India". The district stretches along the shores of the Arabian sea for a distance of 78 kms. District boundaries include Thirunalveli district of Tamilnadu in the east, Kanyakumari district of Tamilnadu in the south, Arabian Sea in the west and Kollam district in the north. The total area of the district is 2192 km^2 and it is divided into four taluks namely Thiruvananthapuram, Neyyattinkara, Nedumangad and Chirayinkeezhu which are again sub-divided into 116 villages. The main towns are Thiruvananthapuram city, Neyyattinkara, Nedumangad, Attingal and varkala. As per the 2011 census, the population of the district is 33,07,284.

3.2 SELECTION OF RESPONDENTS

The respondents for the study were selected through multi-stage random sampling procedure.

In Thiruvananthapuram district, there are 12 Assistant Directors of Agriculture. Four of them were randomly selected, namely, Assistant Directors of Aryancode, Nedumangad, Neyyattinkara, and Vamanapuram. All the 31 Agricultural Officers in the Krishibhavans under the jurisdiction of the four Assistant Directors formed the first category of respondents of the study.

From the list of Krishibhavans under each of the four Assistant Directors of Agriculture, one Krishibhavan was selected randomly. Thus four Krishibhavans were selected, namely, Kottukal, Manikkal, Ottasekharamangalam and Panavoor.

From the list of beneficiary farmers of State Horticulture Mission-Kerala in each of the four Krishibhavans, 25 farmers were randomly selected. Thus 100 beneficiary farmers selected, who formed the second category of respondents for the study. Accordingly the total number of respondents for the study was 131.

3.3 DESIGN OF THE STUDY

Case study approach was adopted for the study where a "case" was defined as one district out of the 11 districts in which the State Horticulture Mission programme was implemented since 2005, selected based on the number of programmes in operation in the district.

Case study refers to an in-depth study of one situation or cases which may be one subject, group or event (Goods and Hatt, 1981; Best and Kahn, 1992).

A case study is an intensive investigation of a particular individual or a case; it does not allow interferences of cause and effect and is merely descriptive in nature (Singh,2009).

3.4 VARIABLES SELECTED FOR STUDYING PERFORMANCE EFFECTIVENESS OF STATE HORTICULTURE MISSION-KERALA

Based on the objectives, review of literature, discussions with experts and observations made by the researcher, the following variables were selected for the study. These were independent variables and dependent variables for the study.

The independent variables for implementing officers were

1. Age
2. Sex
3. Education
4. Rural/urban background
5. Job experience
6. Exposure to internet and IT

The independent variables for farmers were

1. Age
2. Sex
3. Education
4. Family type
5. Annual income
6. Experience
7. Information source utilization
8. Farm size
9. Innovativeness
10. Adoption

The dependent variables were

1. Achievement of physical targets
2. Achievement of financial targets
3. Stakeholder participation
4. Beneficiary satisfaction

Other relevant information like total number of beneficiaries of State Horticulture Mission-Kerala under the Krishibhavan area, its gender-wise distribution, details of the schemes availed from State Horticulture Mission-Kerala including their year-wise distribution were also recorded.

3.5 OPERATIONALISATION AND MEASUREMENT OF VARIABLES

3.5.1 Operationalisation and Measurement of Independent Variables

Variables are defined as those attributes of objects or events which can be measured. In other words they are the characteristics or conditions that are manipulated, controlled or observed by the experimenter.

3.5.1.1 Independent Variables Related to Officers

3.5.1.1.1 Age

It referred to the number of calendar years completed by the respondents at the time of interview (Sindhudevi, 1994). This variable was measured by directly asking the respondent the number of years he/she completed at the time of investigation. Then the responses are categorized as below for statistical analysis.

Age	Score
Upto 30 years	1
31-45 years	2
46-55 years	3

3.5.1.1.2 Sex

It is dichotomized variable having only two categories namely 'male' and 'female'. For the purpose of this study, it refers to the male and female beneficiaries in the study area. Quantification of this variable was done at nominal level of measurement. A symbol 'M' was given to male and 'F to female respondents.

Category	Symbol
Male	M
Female	F

3.5.1.1.3 Education

Referred to the highest academic qualification possessed by the officer.

To identify the respondents on this variable, a score of '1' was given for diploma or its equivalent, '2' for bachelor's degree, '3' for master's degree and '4' for doctoral degree.

3.5.1.1.4 Rural/urban background

This was operationalised for the purpose of this study as panchayat area/municipal area/corporation area where the respondent had lived in his/her life and recorded as such.

3.5.1.1.5 Job experience

It referred to the total number of completed years of service as agricultural officer in the state department of agriculture or in other agencies in the related field.

The number of years of experience within the department and outside the department (if any) was recorded separately and summed up to get the job experience score.

3.5.1.1.6 Exposure to internet and IT

It referred to the extent to which the officer is using the support of internet and IT for developing his/ her knowledge and skills for the benefit of his/her profession. The scoring pattern was as follows:

Exposure	Score
Always	4
Frequently	3
Sometimes	2
Never	1

3.5.1.2 Independent Variables Related to Farmers

3.5.1.2.1 Age

It referred to the number of calendar years completed by the respondents at the time of interview (Sindhudevi, 1994). This variable was measured by directly asking the respondent the number of years he/she completed at the time of investigation. Then the responses are categorized as below for statistical analysis.

Category	Age	Score
Young	Upto 40 years	1

Middle aged	41-60 years	2
Old	>60 years	3

3.5.1.2.2 Sex

It is a dichotomized variable having only two categories namely 'male' and 'female'. For the purpose of this study, it referred to the male and female beneficiaries in the study area. Quantification of this variable was done at nominal level of measurement. A symbol 'M' was given to male and 'F to female respondents.

Category	Symbol
Male	M
Female	F

3.5.1.2.3 Education

It referred to the extent of literacy obtained by the respondent at the time of study. The levels of education were measured by using the scale developed by Trivedi (1963) with the slight modification.

Trivedi (1963) developed a scoring system for measuring different levels of education which he had followed in his socio-economic status scale . The scoring system used was as follows.

Category	Score
Illiterate	1
Primary school level	2
Middle school level	3
High school level	4
College level	5

3.5.1.2.4 Family type

In this study family type means single type (nuclear) family or joint type family. The respondents were asked the type of family whether nuclear or joint type family.

Supe and Singh (1968) in their study on dynamics of rational behavior of Indian farmers, single type was given the score as 'one' and joint family score as 'two'. The same procedure was followed in this study.

3.5.1.2.5 Annual Income

It referred to the total earning of all the members of the family of the respondent for a period of one year under study (2009-10). This was obtained by directly asking the respondent the income of his family for one year and scored as follows:

Sl. No.	Income (Rs.)	Score
A	Upto 10,000	1
B	10,001 to 25,000	2
C	25,001 to50,000	3
D	50,001 to 1,00,000	4
E	More than 1,00,000	5

3.5.1.2.6 Experience

Referred to the total number of years the respondent had been engaged in banana/vegetable cultivation. The scoring procedure was:

Sl No.	Experience (years)	Score
A	Upto 5	1
B	6 to 10	2
C	11 to 25	3
D	More than 25	4

3.5.1.2.7 Information source utilization

It was operationally defined as the source/ sources from which the farmer respondent received information related to State Horticulture Mission-Kerala schemes and their relative frequencies.

The procedure followed and used by Prasidha (2006) was used with slight modification.

Sl No.	Sources	Frequency of use		
		Regularly (3)	Occasionally (2)	Never (1)
1.	Television			
2.	Radio			
3.	Krishibhavan			
4.	Newspaper			
5.	Internet			
6.	Other farmers			

3.5.1.2.8 Farm size

Referred to the total area cultivated by the farmer and it was directly obtained from the farmer in cents and categorized as follows:

Area	Score
< 1 acre	1
1-2 acres	2
>2 acres	3

3.5.1.2.9 Innovativeness

It was operationally defined as the interest and desire of persons to seek changes in techniques and introduce such changes in their vocation. A scale developed by Seema (1997) was adopted for measuring the innovativeness. This consisted of five statements of which three were negative. The response were obtained on a five point continuum ranging from strongly agree to strongly disagree with scores of 5,4,3,2 and 1 respectively. The scoring procedure was reversed for negative statements. The scores obtained for all the items were summed up to arrive at the individual score on innovativeness. The possible score ranged from 5 to 25.

3.5.1.2.10 Adoption

In the present study, extent of adoption was measured by using the method followed by Ramachandran (1992) with slight modification. Here, the extent of adoption means the degree to which the farmer respondent had actually adopted certain agricultural practices which ultimately increase his returns. Based on the review of literature and discussions with experts, 21 key agricultural activities related to banana and vegetable cultivation were selected. From that, the important 12 items were selected through judge's relevancy rating. The responses were collected on a three point continuum as full adoption, partial or improper adoption and non-adoption with scores 3, 2 and 1 respectively. The possible score ranged from 12 to 36.

Response	**Score**
Frequently	3
Rarely	2
Never	1

3.5.2 The Dependent Variables

In this present study to measure the performance effectiveness of State Horticulture Mission-Kerala four dependent variables were selected namely achievement of physical targets, achievement of financial targets, stakeholder participation and beneficiary satisfaction.

3.5.2.1 Achievement of Physical Targets

Achievement of physical targets during the study period was measured using the secondary data from State Horticulture Mission-Kerala and percentage analysis was used for the purpose.

3.5.2.2 Achievement of Financial Targets

Achievement of financial targets during the study period was measured using the secondary data from State Horticulture Mission-Kerala and percentage analysis was used for the purpose.

3.5.2.3 Stakeholder Participation

In the study there are two categories of stakeholders, namely, implementing officers of State Horticulture Mission-Kerala schemes and the beneficiary farmers of State Horticulture Mission-Kerala schemes. For measuring their respective level of participation, two separate indices were developed namely Officer Participation Index (OPI) for implementing officers and Farmer Participation Index (FPI) for farmers.

3.5.2.3.1 Officer Participation Index (OPI)

Officer participation is operationally defined as the extent of participation of the officers in the implementation of the schemes of State Horticulture Mission-Kerala. Based on the review of literature and discussions with experts, 18 key activities involved in implementation of the programme were identified. From that, the important 14 items were selected through judge's relevancy rating. The responses were collected on a three point continuum as always, sometimes and never. The possible score can vary from 14 to 42 and the range was 28. The index was then developed using the formula [actual score obtained by the respondent – minimum possible score]/ range.

Response	**Score**
Always	3
Sometimes	2
Never	1

3.5.2.3.2 Farmer Participation Index (FPI)

Farmer participation was operationally defined as the extent of participation of the farmers in the activities related to the effective implementation of various schemes of State Horticulture Mission-Kerala. Based on the review of literature and discussions with experts, eight key-farmer-related activities involved in the effective implementation of the programme were identified. From that, the important five items were selected through judge's relevancy rating. The responses were collected on a three point continuum as always, sometimes and never. The possible score can

vary from 5 to 15 and the range was 10. The index was then developed using the formula [actual score obtained by the respondent – minimum possible score]/ range.

Response	**Score**
Always	3
Sometimes	2
Never	1

3.5.2.4 Beneficiary Satisfaction

Beneficiary satisfaction was operationally defined as the level of satisfaction that the beneficiaries of State Horticulture Mission-Kerala possessed regarding its activities. Based on the review of literature and discussions with experts, ten key elements affecting the satisfaction level of the beneficiaries of State Horticulture Mission-Kerala were identified. From that, the important six items were selected through judge's relevancy rating. The responses were collected on a five point continuum as highly satisfied, satisfied, neutral, dissatisfied and highly dissatisfied. The possible score can vary from 6 to 30 and the range was 24. The beneficiary satisfaction index (BSI) was then developed using the formula [actual score obtained by the respondent – minimum possible score]/ range.

Response	Score
highly satisfied	5
satisfied	4
neutral	3
dissatisfied	2
highly dissatisfied	1

3.5.3 Constraints Experienced by the Stakeholders of State Horticulture Mission-Kerala.

In the present study, constraint is operationalised as difficulties or problems experienced by the stakeholders of State Horticulture Mission-Kerala which hinder the successful implementation of the programme.

Based on the review of literature, interaction with the experts and discussion with implementing officers and beneficiaries of State Horticulture Mission-Kerala in non sampling area, the list of constraints were prepared and presented separately, for implementing officers and beneficiaries (farmers).

3.5.3.1 Constraint Analysis of Implementing Officers

The procedure used for ranking the constraints was as follows:

A total of 11 constraints were listed. The response of each constraint was obtained on a five point continuum namely 'most important' 'important' 'neutral' 'less important' and 'least important'. The scoring was given as

Responses	Scores
Most important	5
Important	4
Neutral	3
Less important	2
Least important	1

For each constraint, the frequency of the response under each category was multiplied with the respective scores and added up to get the total score for that particular constraint. Then the mean scores were worked out and constraints were ranked based on the mean scores in the descending order of importance.

3.5.3.2 Constraint Analysis of Farmers

The procedure used for ranking the constraints was as follows:

A total of eight constraints were listed. The response of each constraint was obtained on a five point continuum namely 'strongly agree' 'agree' 'neutral' 'disagree' and 'strongly disagree'. The scoring was given as

Responses	Scores
Strongly agree	5
Agree	4
Neutral	3
Disagree	2
Strongly disagree	1

For each constraint, the frequency of the response under each category was multiplied with the respective scores and added up to get the total score for that particular constraint. Then the mean scores were worked out and constraints were ranked based on the mean scores in the descending order of importance.

3.6 TOOLS AND TECHNIQUES OF DATA COLLECTION

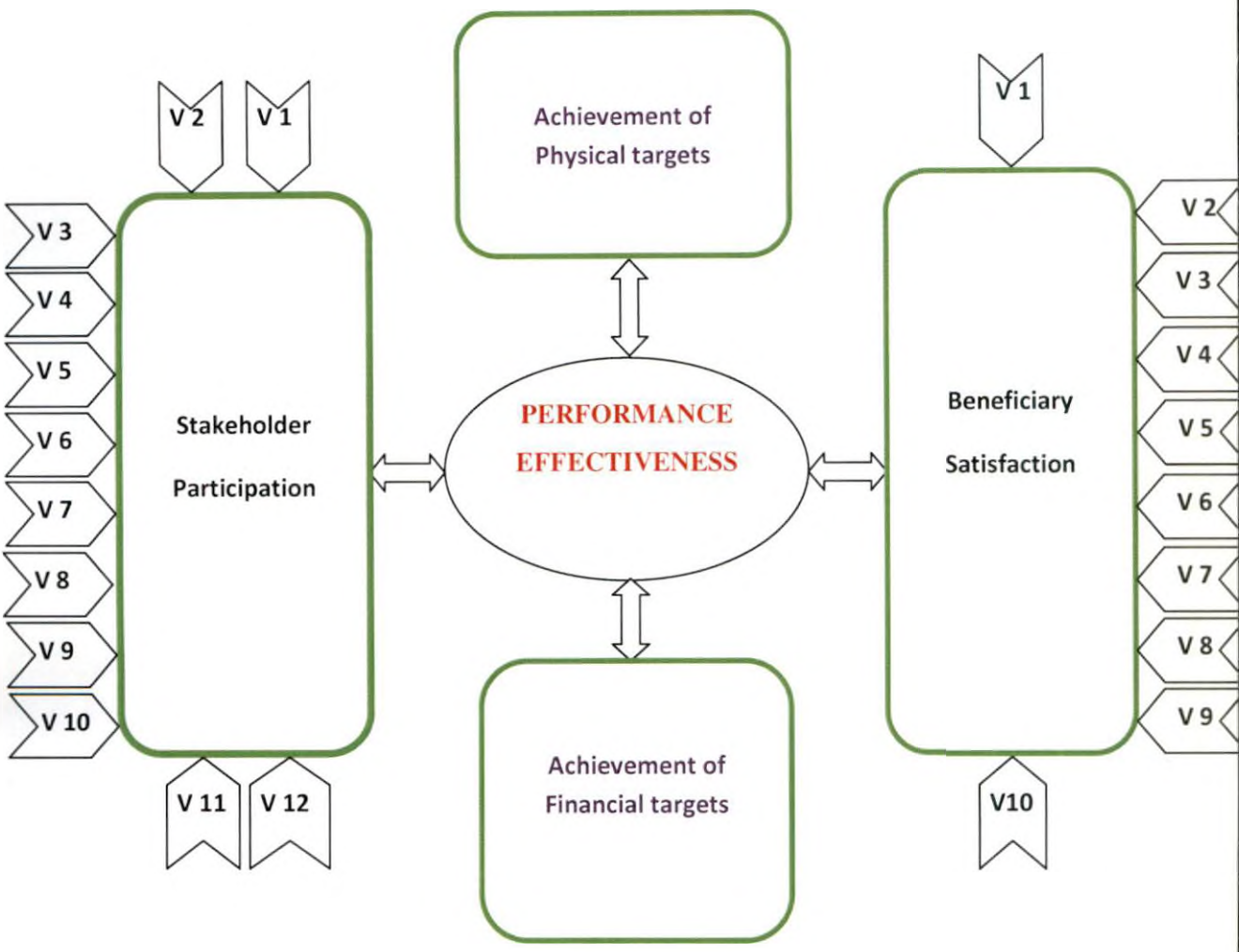
An interview schedule and a questionnaire including all the aspects mentioned above were prepared and were used for collecting the data from the farmers and the officers respectively.

3.7 STATISTICAL TOOLS USED

Averages, percentage analysis and correlation analysis were used in the study for interpreting the data and obtaining meaningful results.

3.8 CONCEPTUAL FRAMEWORK OF THE STUDY

A conceptual model of the study has been framed based on the objectives set forth for the study, the concepts theoretically derived from the review of literature and the factors contributing to performance effectiveness. The conceptual framework of the study is given in the Figure 2.



List of independent variables used

V 1- Age	V 7- Information source utilization
V 2- Sex	V 8- Farm size
V 3- Education	V 9- Innovativeness
V 4- Family type	V 10- Adoption
V 5- Annual Income	V 11- Rural/urban background
V 6- Experience	V 12- Exposure to internet/IT

Figure 2: Conceptual framework of the study

4. RESULTS AND DISCUSSION

The findings of the study along with the discussion are presented in this chapter under the following headings:

4.1 Independent variables related to the implementing officers of State Horticulture Mission-Kerala.

4.2 Independent variables related to the beneficiary farmers of State Horticulture Mission- Kerala.

4.3 Dependent variables in the study.

4.4 Relationship between independent and dependent variables.

4.5 Constraint analysis.

4.6 Other important activities of State Horticulture Mission- Kerala

4.7 Strategy for the improvement of State Horticulture Mission programme.

4.1 Independent variables related to the implementing officers of State Horticulture Mission-Kerala.

4.1.1 Age

The information collected on the age of the 31 implementing officers of State Horticulture Mission-Kerala is presented in the Table 2.

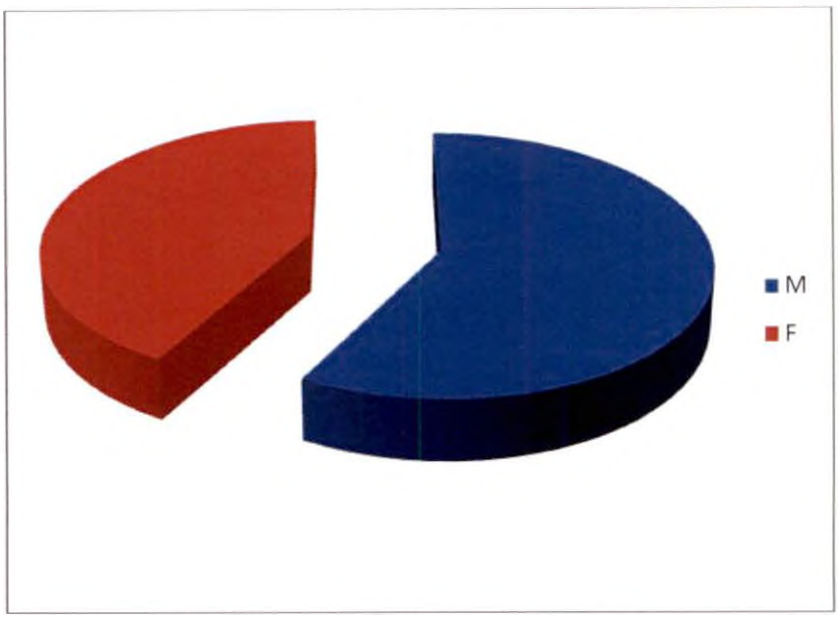


Figure 3: Sex-wise percentage distribution of the implementing officers of SHM- Kerala

Table 2: Age-wise distribution of implementing officers of State Horticulture Mission-Kerala

Age category	Percentage of officers
Up to 30 years	3.2
31-45 years	64.5
46-55 years	32.3

There were three age categories, namely, up to 30 years, 31-45 years and 46-55 years. As high as 64.5% of the implementing officers, that is, 20 numbers were in the age group of 31-45 years followed by the age group of 46-55 years with 32.3% and only 3.2% were in the age group less than 30 years.

4.1.2 Sex

From the study it was revealed that 58.1% of the implementing officers were males and 41.9% were females. This is depicted in the figure 3.

4.1.3 Education

The data collected on the education level of the 31 implementing officers of State Horticulture Mission-Kerala are analyzed and presented in the Table 3.

Table 3: Education-wise distribution of implementing officers of State Horticulture Mission-Kerala

Education level	Percentage of officers
Diploma/equivalent	19.35
Bachelor's degree	32.26
Master's degree	38.71
Doctoral degree	9.68

From the table, it can be seen that the percentage of implementing officers with master's degree is the highest (38.71) followed by those with bachelor's degree (32.26) and those with diploma/equivalent (19.35). The number of officers with doctoral degree was found to be the least (9.68).

4.1.4 Rural/urban background

For studying this variable, the total number of years the implementing officer had lived in each of the panchayat area, municipal area and corporation area were recorded and analyzed. On an average, each of the implementing officers had spent his/her life for 26.19 years in panchayat areas, 3.16 years in municipal areas and 14.84 years in the corporation areas. This clearly shows that majority of the implementing officers had a rural background.

4.1.5 Job experience

The average experience of the implementing officers in their job was 18 years. As much as 54.84% of the officers were having more than 18 years of experience while 45.16% were having less than 18 years of experience.

During their service period, 32.3% of the officers went to other positions as deputation while 67.7% did not go. The deputations were both within the Department of Agriculture as well as outside the department. Average period served by an officer outside the department on deputation was 2.13 years. Only 29% of the officers had served outside the department for more than 2.13 years while the rest (71%) of the officers had served outside the department for less than 2.13 years.

The average period for which an implementing officer had served within the Department of Agriculture was 15.9 years. Majority (51.61%) of the officers had served within the department for a period more than 15.9 years while 48.39% of them had served within the department for a period less than 15.9 years.

4.1.6 Exposure to internet and IT

Exposure to internet and IT is an indication of the implementing officer's earnestness in acquiring information. The frequency of exposure of implementing officers of State Horticulture Mission-Kerala to internet and IT is presented in the table 4.

Table 4: Frequency of exposure of implementing officers of State Horticulture Mission-Kerala to internet and IT

Frequency of exposure	**Percentage of officers**
Frequently	45.17
Sometimes	35.48
Never	19.35

It was surprising to find that nearly 1/5 [19.35%] of the officers never used the support of internet and IT/computer for developing their knowledge and for enhancing the professional skills. As much as 35.48% of them depended

internet/IT/computer occasionally. Nearly half of the implementing officers (45.17%) were frequently using internet/IT/computer for enhancing their professional skills and this is a positive approach.

4.2 Independent variables related to the beneficiary farmers of State Horticulture Mission- Kerala.

4.2.1 Age

The age-wise distribution of beneficiary farmers of State Horticulture Mission-Kerala is given in the Table 5.

Table 5: Age-wise distribution of beneficiary farmers of State Horticulture Mission-Kerala

Age group	Percentage of beneficiary farmers
Less than 40 years	20
41 to 60	67
Above 60 years	13

From the table, it could be deduced that 20% of the beneficiary farmers of State Horticulture Mission- Kerala were of the age group less than 40 years, 67% were from the age group 41 years to 60 years and 13% were above 60 years of age. This finding is in line with the popular notion that the younger generation are not coming to the field of agriculture.

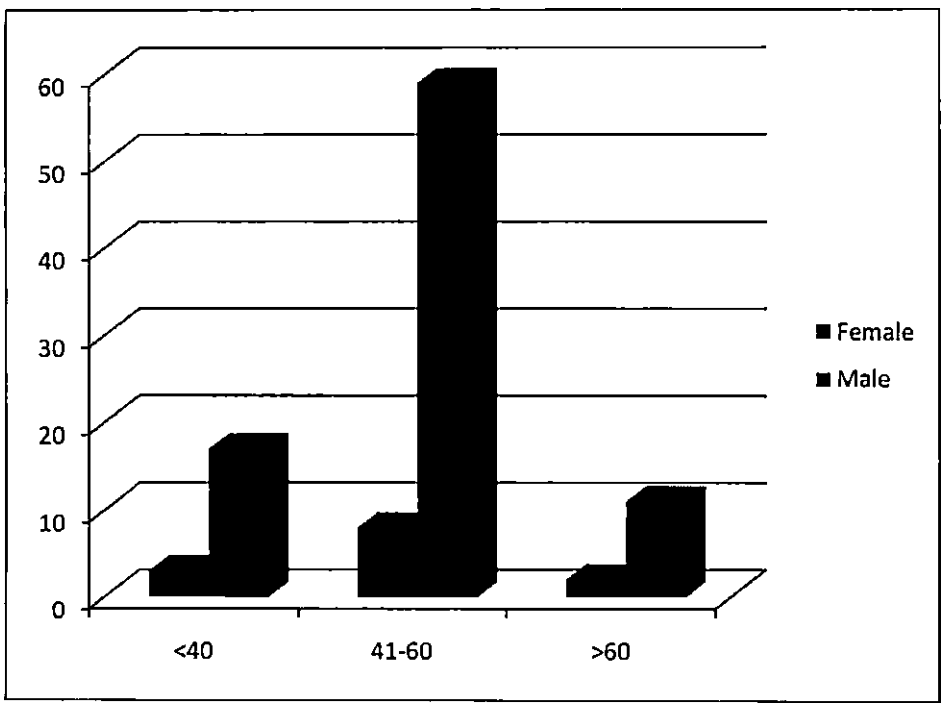


Figure 4: Age-wise (years) and sex-wise distribution of beneficiary farmers of SHM-K in percentage

4.2.2 Sex

The age-wise and sex-wise distribution of beneficiary farmers of State Horticulture Mission-Kerala is presented in the Table 6 and Figure 4.

Table 6: Age-wise and sex-wise distribution of beneficiary farmers of State Horticulture Mission-Kerala

Age group	Female percentage	Male percentage	Total
Up to 40 years	3	17	20
41-60 years	8	59	67
>60 years	2	11	13
Total	13	87	100

Majority of the beneficiaries of State Horticulture Mission- Kerala were males, that is 87% and only 13% of the beneficiaries were females. This may be due to the fact that, generally, majority of the farmers in Kerala are males.

4.2.3 Education

The category-wise distribution of beneficiary farmers of State Horticulture Mission-Kerala based on their education level is presented in the table 7.

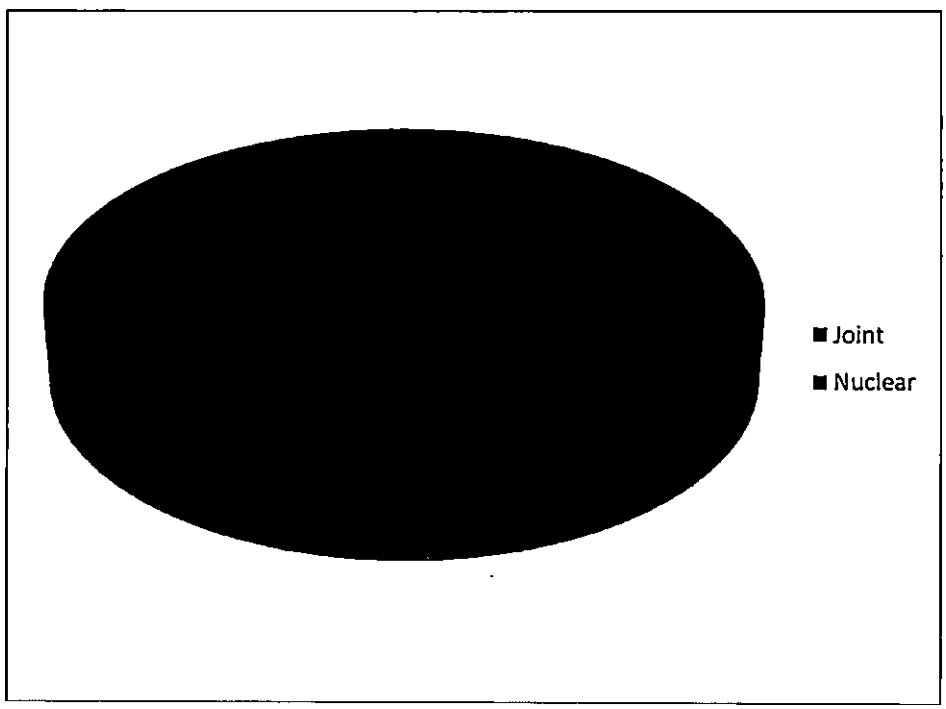


Figure 5: Family type of beneficiary farmers of SHM-K in percentage

Table 7: Education level of beneficiary farmers of State Horticulture Mission-Kerala

Category	Percentage of beneficiary farmers
Illiterate	0
Primary education	31
Secondary education	42
Higher secondary	18
College	9

Among the 100 beneficiary farmers of State Horticulture Mission- Kerala who were interviewed for the study, no one was found to be illiterate, 31% had only primary education, 42% had secondary education, 18% had studied up to higher secondary and only 9% had gone to colleges. Kerala being a state having 100 percent literacy, it is natural that no illiterate could be found among the beneficiary farmers.

4.2.4 Family type

Only around 1/3 of the beneficiary farmers (35%), were having joint families and the rest (65%) were having nuclear families, as seen in the Figure 5.

4.2.5 Annual income

The income level of beneficiary farmers is distributed category-wise in the Table 8.

Table 8: Annual income of beneficiary farmers of State Horticulture Mission-Kerala

Income category	Percentage of beneficiary farmers
Less than Rs. 10,000	0
Rs. 10,001 to Rs. 25,000	7
Rs. 25,001 to Rs. 50,000	39
Rs. 50,001 to Rs.1,00,000	47
More than one lakh rupees	7

Majority (47%) of the beneficiary farmers were from the income group of Rs. 50,001 to Rs.1,00,000. As much as 39% were coming under the income group of Rs. 25,000 to Rs.50,000. Seven percent each of the beneficiaries were from the high income group of more than one lakh rupees per year and low income group of between Rs. 10,000 and Rs. 25,000 per year. None of the beneficiary was having a very low annual income, that is, less than Rs. 10,000 per year.

4.2.6 Experience

The experience of beneficiary farmers of State Horticulture Mission-Kerala in banana/vegetable cultivation is presented in the table 9.

Table 9: Experience of beneficiary farmers of State Horticulture Mission-Kerala in banana/vegetable cultivation

Category	Percentage of beneficiary farmers
Less than five years	13
6- 10 years	23
11- 25 years	41
More than 25 years	23

From the table, it could be found out that only 13% of the respondents were having an experience in banana or vegetable cultivation for five or less than five years. Nearly one-fourth (23%) were having experience between six and ten years. As high as 41% were having experience between 11 and 25 years and 23% were having an experience of more than 25 years. The data reveals that more number of new beneficiary farmers have to be motivated to take up schemes under State Horticulture Mission-Kerala.

4.2.7 Information source utilization on State Horticulture Mission-Kerala schemes.

This variable was used to identify the sources from where the beneficiary farmers are obtaining important information regarding the activities of State Horticulture Mission-Kerala and the relative importance of each of the information sources. The details are presented in the table 10 and depicted in the Figure 6.

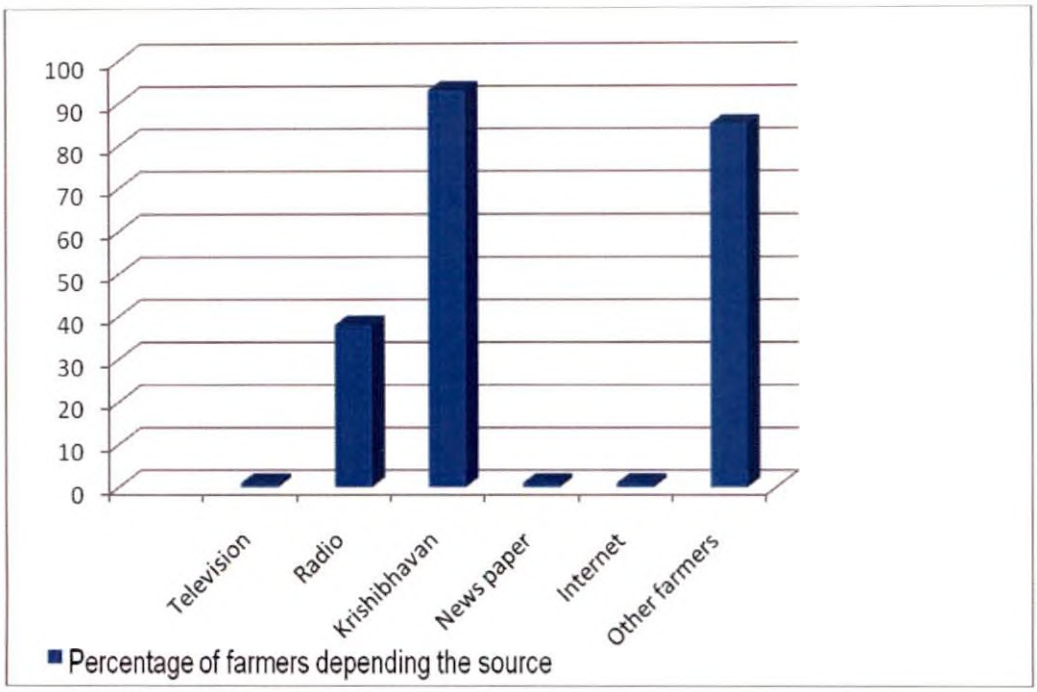


Figure 6: Information source utilization of beneficiary farmers of SHM-K

Table 10: Information source utilization of the beneficiary farmers of State Horticulture Mission-Kerala.

Information source	**Percentage of farmers depending on the source**		
	Often	Occasionally	Never
Television	1	75	24
Radio	38	58	4
Krishibhavan	93	6	1
Newspaper	1	66	33
Internet	1	6	93
Other farmers	85	14	1

From the Table, it could be found that krishibhavan and other farmers are the most important information sources of majority of the farmers followed by the radio. So it would be effective, if State Horticulture Mission-Kerala concentrate on the above mentioned three sources for disseminating relevant information related to it. Sources like television, newspaper and internet were found to be depended only to a lesser extent by the farmers.

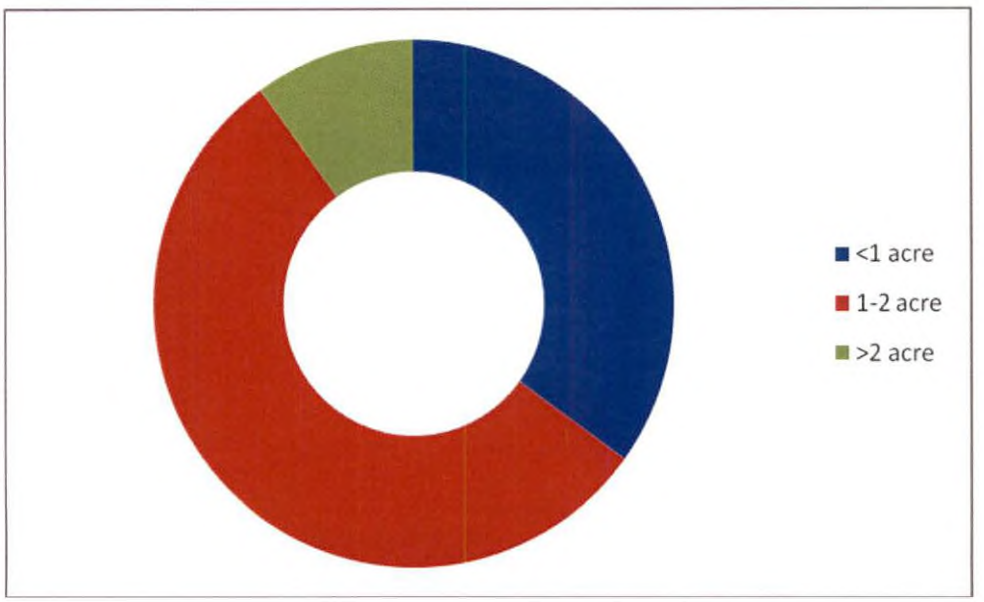


Figure 7: Percentage distribution of beneficiary farmers of SHM-K based on farm size

4.2.8 Farm size

The distribution of beneficiary farmers of State Horticulture Mission-Kerala on the basis of farm size is presented in the Table 11.

Table 11: Farm size of beneficiary farmers of State Horticulture Mission-Kerala

Area	Percentage of farmers
< 1 acre	35
1-2 acres	55
>2 acres	10

The average size of the farms of the beneficiary farmers of State Horticulture Mission-Kerala was found to be 120.56 cents which include both owned land as well as leased in land. In their farms, the farmers are cultivating both horticultural and non-horticultural crops. As much as 35% of farmers were cultivating in an area less than one acre, 55% were cultivating in an area between one and two acres and 10% were cultivating in an area more than two acres. This is well seen in the Figure 7.

4.2.9 Innovativeness

Innovativeness was measured by using a scale of five statements with a maximum score of 25 and a minimum score of 5 and a range of 20. The average score obtained by the respondents was 15.83. Majority (56%) of the respondents were having a score more than the mean score and 44% were having the score less than the mean score.

4.2.10 Adoption

Adoption was measured by using a scale of 12 statements with a maximum score of 36 and a minimum score of 12 and a range of 24. The average score obtained by the respondents was 24.78. As high as 58% of the respondents were having a score more than the mean score and 42% were having the score less than the mean score. Hence it can be deduced that majority of the beneficiary farmers of State Horticulture Mission-Kerala were good adoptors.

4.3 Dependent variables in the study

4.3.1 Achievement of physical targets

Achievement of physical targets during the study period was measured using the secondary data from State Horticulture Mission-Kerala. The State-wise Yearly Cumulative Progress Report of SHM-K (Physical & Financial Targets & Achievement) from 2005-06 to 2009-10 was referred and percentage analysis was used for the purpose.

Table 12: Physical Targets & Achievement of State Horticulture Mission-Kerala

Sl. No.	Component	Physical targets	Physical achievement	Percentage achievement
1	Vegetable seed production (ha)	112	206.56	184.43
2	New garden-fruits (ha)	92209.8	95570.89	103.65
3	New garden-flowers (ha)	30418	27740.73	91.2

4	Rejuvenation (ha)	57516.68	67320.61	117.05
5	Protected cultivation (ha)	667.1	97.58	14.63
6.1	Organic farming (ha)	6039	14525.75	240.53
6.2	Vermi-compost units (No.)	5377	5318	98.9
6.3	Organic certification (projects)	40	23.19	57.98
7	INM/IPM (ha)	17124	14994.74	87.57
8	Labs/units (No.)	27	29	107.41
9	Seed infrastructure (Project)	33	3	9.09
10	HRD (No. of individuals)	8009	9945	124.17
11	Bee units (No.)	60000	44216	73.69
12	Production of P.M (No.)	276	296	107.25
13	Irrigation (No.)	233	189	81.12

The above table shows component-wise physical targets and achievement of State Horticulture Mission-Kerala over a period of five years. It can be deduced from the table that the maximum percentage of physical achievement was in the promotion of organic farming (240.53%) followed by the production of vegetable seeds (184.43%) and human resource development (HRD) (124.17%). This amounts to an average of 2905.15 ha, 41.31 ha and 1989 individuals per year respectively. But it can also be seen that for the development of seed infrastructure, only 9.09% of the

physical target could be achieved, which is pathetic by any standard. Similarly the physical achievement in the case of protected cultivation is also very low (14.63%).

Generally, it can be seen that out of the 15 components subjected to analysis, 11 had an achievement percentage of more than 80% and only four components had an achievement percentage lesser than 80%. This can be considered as an impressive performance of the organization with respect to the achievement of physical targets during the study period.

4.3.2 Achievement of financial targets

Achievement of financial targets during the study period was measured using the secondary data from State Horticulture Mission-Kerala. The State-wise Yearly Cumulative Progress Report of SHM-K (Physical & Financial Targets & Achievement) from 2005-06 to 2009-10 was referred and percentage analysis was used for the purpose.

Table 13: Financial Targets & Achievement of State Horticulture Mission-Kerala

Sl. No.	Component	Financial targets (lakh rupees)	Financial achievement (lakh rupees)	Percentage achievement
1	Production of planting materials	1071.73	877.35	81.86
2	Vegetable seed production	37.23	75.95	204
3	Seed infrastructure	340	322.5	94.85

4	New garden-fruits	5210.09	6325.62	121.4
5	New garden-flowers	2098.78	2350.18	111.98
6	Rejuvenation	7813.59	8373.58	107.17
7	Irrigation	426.8	166.69	39.06
8	Protected cultivation	1402.83	155.76	11.1
9	INM/IPM	672.97	790.93	117.53
10	Organic farming	2268.84	2870.49	126.52
11	HRD	563.52	736.63	130.723
12	Bee units	456	290.14	63.63
13	Mechanization	110.17	95.5	86.64
14	Post harvest	132.34	111.27	84.08
15	Mission management	1169.12	673.76	57.63

The above table shows component-wise financial targets and achievement of State Horticulture Mission-Kerala over a period of five years. It can be inferred from the table that the maximum percentage of financial achievement was in the

production of vegetable seeds (204%) followed by human resource development (130.72%) and organic farming (126.52%). This amounts to an average of 15.19 lakh rupees, 147.33 lakh rupees and 574.10 lakh rupees per year respectively. It is noticeable that the achievement of financial targets is in line with the achievement of physical targets. But it can also be seen that for the development of protected cultivation, only 11.1% of the financial target could be achieved, which is very low. Similarly the financial achievement in the case of irrigation is also low (39.06%).

Generally, it can be seen that out of the 15 components subjected to analysis, 11 had an achievement percentage of more than 80% and only four components had an achievement percentage less than 80%. This can be considered as an impressive performance of the organization with respect to the achievement of financial targets during the study period.

It is worth noting that the performance of State Horticulture Mission-Kerala in the promotion of organic farming is exemplary both physically and financially. The reason behind this may be the fact that the awareness regarding the ill-effects of pesticides like endosulfan and the importance of producing food in a non-chemical way is increasing among the farmers as well as general public. The capacity building of farmers and officers by State Horticulture Mission-Kerala through its human resource development (HRD) activities will certainly bring about a positive impact on the horticulture sector of the state. Quality seed is the first step towards achieving better productivity and the improved and sustained performance of State Horticulture Mission-Kerala in this regard will help to improve the production and productivity of horticultural crops in the state.

4.3.3 Stakeholder participation

There were two categories of stakeholders for the study, namely, implementing officers and beneficiary farmers. For assessing the participation of each of them in the activities of State Horticulture Mission-Kerala, two separate

indices were developed namely Officer Participation Index (OPI) for implementing officers and Farmer Participation Index (FPI) for the beneficiary farmers.

4.3.3.1 Officer participation

For the measurement of officer participation, an index called Officer Participation Index (OPI) was developed specially for this study. For developing the index, on the basis of review of literature and discussions with experts, 18 key activities involved in implementation of the programme were identified. From that, the important 14 items were selected through judge's relevancy rating. The responses were collected on a three point continuum as always, sometimes and never. The possible score ranged from 14 to 42. The index was then developed using the formula [actual score obtained by the respondent – minimum possible score]/ range.

The average score of the 31 implementing officers for the variable officer participation was 0.7512. This high score denotes a high degree of participation on the part of implementing officers in the implementation of the schemes of State Horticulture Mission-Kerala. As much as 48.39% (15 numbers) of implementing officers were above the average score while 51.61% (16 numbers) of implementing officers were below the average score.

According to the implementing officers their high level of participation towards the activities of State Horticulture Mission-Kerala was mainly due to the fact that the auditing procedure was scientific and needless queries would not be put down by the auditors. Comparably higher financial assistance that can be given to the farmers under State Horticulture Mission-Kerala schemes and interest shown by farmers towards State Horticulture Mission-Kerala schemes were also the motivating factors for them towards better participation in the programme.

4.3.3.2 Farmer Participation

For the measurement of farmer participation, an index called Farmer Participation Index (FPI) was developed specially for this study. For developing the index, on the basis of review of literature and discussions with experts, eight key-farmer-related activities involved in the effective implementation of the programme were identified. From that, the important five items were selected through judge's relevancy rating. The responses were collected on a three point continuum as always, sometimes and never. The possible score ranged from 5 to 15. The index was then developed using the formula [actual score obtained by the respondent – minimum possible score]/ range.

The average score of the 100 beneficiary farmers for the variable farmer participation was 0.744. This high score denotes a significant level of participation on the part of the beneficiary farmers in the schemes of State Horticulture Mission-Kerala. As high as 62% of the beneficiary farmers were above the average score while 38% of the beneficiary farmers were below the average score.

4.3.4 Beneficiary satisfaction

For the measurement of beneficiary satisfaction, an index called Beneficiary Satisfaction Index (BSI) was developed specially for this study. For developing the index, on the basis of review of literature and discussions with experts, ten key elements affecting the satisfaction level of the beneficiaries of State Horticulture Mission-Kerala were identified. From that, the important six items were selected through judge's relevancy rating. The responses were collected on a five point continuum as highly satisfied, satisfied, neutral, dissatisfied and highly dissatisfied. The possible score ranges from 6 to 30. The beneficiary satisfaction index (BSI) was then developed using the formula [actual score obtained by the respondent – minimum possible score]/ range.

The average score of the 100 beneficiary farmers for the variable beneficiary satisfaction was 0.589. This high score denotes a good participation in the part of the beneficiary farmers in the schemes of State Horticulture Mission-Kerala. As much as 61% of the beneficiary farmers were above the average score while only 39% of the beneficiary farmers were below the average score.

The relatively higher participation and level of satisfaction of the beneficiaries of State Horticulture Mission-Kerala towards its schemes may be due to the factors of comparably higher and timely financial assistance, simple procedures of obtaining the assistance, timely information about the schemes, funding according to the needs of the farmer and absence of partiality in the selection of beneficiaries.

4.4 Relationship between independent and dependent variables.

4.4.1 For implementing officers

Correlation analysis between independent and dependent variables was carried out after removing the out-lying observations.

Table 14: Correlation analysis between independent and dependent variables related to implementing officers

Sl. No.	**Independent variable**	**Correlation co-efficient** for Officer participation
1.	Age	0.102 NS
2.	Education	-0.168 NS
3.	Job experience	0.129 NS
4.	Use of internet	0.069 NS

On doing the correlation analysis, the correlation coefficient between the independent variable age of the implementing officers and the dependent variable officer participation was 0.102. Hence it can be concluded that there existed no linear relationship between the age and participation of implementing officers in State Horticulture Mission programme.

The correlation coefficient between the independent variable education of the implementing officers and the dependent variable officer participation was -0.168. Therefore it can be concluded that there existed no linear relationship between the education level and participation of implementing officers in State Horticulture Mission programme.

The correlation coefficient between the independent variable use of internet and IT of the implementing officers and the dependent variable officer participation was 0.069. So it can be concluded that there existed no linear relationship between the variable use of internet and IT and participation of implementing officers in State Horticulture Mission programme.

The correlation coefficient between the independent variable job experience of the implementing officers and the dependent variable officer participation was 0.129. Hence it can be concluded that there existed no linear relationship between the job experience and participation of implementing officers in State Horticulture Mission-Kerala programme.

4.4.2 For farmers

The total number of beneficiaries of State Horticulture Mission-Kerala in all the 31 krishibhavan areas covered under the study for the period 2010-11 was 6,099. Of this, 4360 (71.49%) were men and 1739 (28.51%) were women.

Table 15: Correlation analysis between independent and dependent variables related to beneficiary farmers of State Horticulture Mission-Kerala

Sl. No.	Independent variable	Correlation co-efficient for Farmer participation	Correlation co-efficient for Beneficiary satisfaction
1.	Age	0.137 NS	0.083 NS
2.	Education	-0.082 NS	-0.097 NS
3.	Annual income	0.205*	-0.100 NS
4.	Farm size	0.228*	-0.034 NS
5.	Innovativeness	0.514**	-0.084 NS
6.	Adoption	0.489**	0.057 NS

*Significant at 5% level

** Significant at 1% level

On doing the correlation analysis, the correlation coefficient between the independent variable age of beneficiary farmers of State Horticulture Mission-Kerala and the dependent variables farmer participation and beneficiary satisfaction were respectively 0.137 and 0.083. The values of both the correlation coefficients were less than the table values at both 5% level and at 1% level. Hence it can be concluded that there no relationship between the age of beneficiary farmers and their participation in State Horticulture Mission programme-Kerala as well as their satisfaction level towards the programme.

Similarly, the correlation coefficient between the independent variable education level of beneficiary farmers of State Horticulture Mission-Kerala and the dependent variables farmer participation and beneficiary satisfaction were respectively -0.082 and -0.097. The absolute values of both the correlation coefficients are less than the table values at both 5% level and at 1% level. Hence it can be concluded that there existed no linear relationship between the education level of beneficiary farmers and their participation in State Horticulture Mission- Kerala programme as well as their satisfaction level towards the programme.

Conversely, the correlation coefficient between the independent variable annual income of beneficiary farmers of State Horticulture Mission-Kerala and the dependent variables farmer participation and beneficiary satisfaction were respectively 0.205 and -0.100. Therefore it can be concluded that there exists a significant positive relationship between the annual income of beneficiary farmers and their participation in State Horticulture Mission- Kerala programme at 5% level but no relationship exists between the same variables at 1% level. But, since the absolute value of the correlation coefficient between the variables annual income of the beneficiary farmers and beneficiary satisfaction is lesser than the table values at both 5% level and 1% level, it can be concluded that there existed no linear relationship between the annual income of beneficiary farmers and their level of satisfaction in State Horticulture Mission- Kerala programme.

Better participation on the part of better income beneficiaries may be due to the fact that better income means better availability of resources for effective participation.

The correlation coefficient between the independent variable farm size of beneficiary farmers of State Horticulture Mission-Kerala and the dependent variables farmer participation and beneficiary satisfaction were respectively 0.228 and -0.034. Hence it can be concluded that there existed a significant positive relationship

between the farm size of beneficiary farmers and their participation in State Horticulture Mission programme- Kerala at 5% level but no relationship existed between the same variables at 1% level. This positive relationship between farm size and farmer participation may be due to the fact that full time farmers are having more farm area and they will be comparably more inclined towards financial assistance and other activities that can increase their income level.

But, since the absolute value of the correlation coefficient between the variables farm size of the beneficiaries and beneficiary satisfaction is less than the table values at 98 degrees of freedom at both 5% level and 1% level, it can be concluded that there exists no linear relationship between the variable farm size of beneficiary farmers and their level of satisfaction in State Horticulture Mission programme.

The correlation coefficient between the independent variable innovativeness of beneficiary farmers of State Horticulture Mission-Kerala and the dependent variable farmer participation was 0.514. So it can be concluded that there existed a highly significant positive relationship between the innovativeness of beneficiary farmers and their participation in State Horticulture Mission- Kerala programme.

The correlation coefficient between the independent variable innovativeness of beneficiary farmers of State Horticulture Mission-Kerala and the dependent variable beneficiary satisfaction was -0.075. Therefore it can be concluded that there existed no linear relationship between the innovativeness of beneficiary farmers and their level of satisfaction in State Horticulture Mission programme.

The correlation coefficient between the independent variable adoption of improved agricultural practices by the beneficiary farmers of State Horticulture Mission-Kerala and the dependent variable farmer participation was 0.489. As a result it can be concluded that there existed a highly significant positive relationship between the adoption of improved agricultural practices by the beneficiary farmers of

State Horticulture Mission-Kerala and the dependent variable farmer participation in State Horticulture Mission programme.

The reason behind the significant positive relationship between adoption of improved agricultural practices and farmer participation may be due to the fact that better adopters of improved practices were getting better returns and the encouragements got from the better returns made them participate more in activities that may again boost their returns.

The correlation coefficient between the independent variable adoption of improved agricultural practices by the beneficiary farmers of State Horticulture Mission-Kerala and the dependent variable beneficiary satisfaction was 0.057. Hence it can be concluded that there exists no relationship between the adoption of improved agricultural practices by the beneficiary farmers and their level of satisfaction in State Horticulture Mission- Kerala programme.

4.5 Constraint analysis.

The constraints related with the State Horticulture Mission-Kerala programme as experienced by the implementing officers and the beneficiary farmers were analyzed.

4.5.1 Constraints experienced by the implementing officers

The constraints faced by the implementing officers of State Horticulture Mission-Kerala programme are furnished in the Table 16.

Table 16: Constraints faced by the implementing officers of State Horticulture Mission-Kerala.

Constraints	Ranking	Mean value
Marketing of horticultural products are difficult under SHM-K schemes	**1**	4.1
Storage facility for horticultural products are absent under SHM-K schemes	**2**	4.03
Implementation of different schemes on same crop is difficult	**3**	3.94
Funds from SHM-K are not adequate	**4**	3.58
Facility for grievance redressal with respect to SHM-K schemes are absent	**5**	3.58
Difficult to implement SHM-K schemes with current facilities and environment	**6**	2.87
There exist partiality in the allocation of SHM-K funds	**7**	2.65
Guidelines of SHM-K are rigid such that easy implementation is almost impossible	**8**	2.55
Physical and financial targets fixed by SHM-K are unrealistic	**9**	2.26
Procedure for getting funds from SHM-K is hectic	**10**	2.13
Funds from SHM-K are not timely	**11**	1.97

Only five statements were considered as a serious constraint as identified by the implementing officers. Based on the analysis, it could be found that the implementing officers identified marketing of horticultural products at a remunerative price as the most important constraint and State Horticulture Mission-Kerala must

concentrate more on ensuring a remunerative market for its beneficiary farmers as its absence can hamper the whole vision of ensuring livelihood security of farming community in Kerala. For this, State Horticulture Mission-Kerala can either establish its own marketing network in-line to VFPCK markets or collaborate with the existing VFPCK markets.

The second important constraint was absence of storage facility for horticultural products of marginal farmers at local level. Majority of the horticultural products are highly perishable in nature and so the farmers are forced to sell them at a lower price in local markets when the production is slightly higher. This is affecting their returns from the farm. So it would be better if, State Horticulture Mission-Kerala can establish cold storage facilities which can be utilized by small and marginal farmers of the state.

The third constraint identified by the implementing officers was related to the implementation of various schemes from different agencies including State Horticulture Mission-Kerala. There exists duplication in the selection of beneficiaries. This means that the same farmer is obtaining assistance for the same crop in the same piece of land at the same time from different agencies. For example, there is duplication of subsidies given by State Horticulture Mission-Kerala and VFPCK for banana. This duplication actually results in no net increase in area or production but the records may say the opposite.

The fourth constraint identified was referring to the inadequacy of the funding from State Horticulture Mission-Kerala. The amount given to the main crop in each Krishibhavan area was found to be inadequate to cover the entire crop under the Krishibhavan. On the other-side, some targets for crops that cannot be cultivated under the given krishibhavan area due to geographic-socio-economic factors, is also given along with other targets. This situation can be properly dealt with if State

Horticulture Mission-Kerala directly implements its schemes through individual krishibhavans rather than through principal agriculture offices.

The fifth constraint was related to the absence of facility for grievance redressal with respect to State Horticulture Mission-Kerala schemes. At present there exist no direct and immediate facilities for grievance redressal with respect to State Horticulture Mission-Kerala schemes. A toll-free number can serve the purpose.

4.5.2 Constraints experienced by beneficiary farmers

The constraints experienced by the beneficiary farmers regarding the State Horticulture Mission programme are presented in the Table 17.

Table 17: Constraints experienced by the beneficiary farmers of State Horticulture Mission-Kerala.

Constraints	Rank	Mean value
Absence of marketing facilities under SHM-K schemes	1	4.1
Lack of storage facilities for the horticultural products under SHM-K schemes	2	3.98
Low subsidy under SHM-K schemes compared to input costs	3	3.35
SHM-K guidelines are not matching with the existing rental pattern of land	4	2.43
There exists partiality in the selection of beneficiaries of SHM-K schemes	5	2.4
Accessibility to SHM-K schemes is difficult	6	2.12
I am not getting information about SHM-K schemes on time	7	2.07
Availing benefits from SHM-K involves difficult procedures	8	2.04

For the analysis, the mean value of the response of beneficiary farmers for each statement was separately taken and compared. The possible maximum mean value was five and the median mean value was 3. So the given statement is considered as a constraint only if its mean value is 3 or above.

In this study, based on the above mentioned criteria, only three statements were considered as a serious constraint as identified by the beneficiary farmers of State Horticulture Mission-Kerala. It could be found that the beneficiary farmers identified absence of marketing facilities under State Horticulture Mission-Kerala as their most important constraint. It should be noted that the implementing officers were also of the similar opinion. In this context, it would be better if State Horticulture Mission-Kerala concentrates more on ensuring a remunerative market for its beneficiaries at their doorsteps.

Lack of storage facilities for the horticultural products under State Horticulture Mission-Kerala schemes was the second important constraint which is also in tune with the opinion of implementing officers.

Low subsidy under State Horticulture Mission schemes compared to input costs was the third important constraint according to the banana and vegetable farmers. It can be seen that the financial assistance provided from State Horticulture Mission is comparably higher than those from other organizations in the agriculture sector. But still it is only around 15% of the cultivation cost for the aforesaid crops in the study area. In the opinion of majority of the farmers, the financial assistance must be increased to at least 50% of the cultivation cost as it is increasing day by day.

4.6 Other important activities of State Horticulture Mission- Kerala

4.6.1 Publicity

State Horticulture Mission-Kerala conducts seminars, exhibitions, workshops, radio programmes and such other activities for creating awareness among farmers

(A) Mango and honey fest organized by SHM-K

(B) Pavilion of SHM-K at International Horti-expo, New Delhi

Figure 8: Fests and expos

and general public about various aspects in horticultural crop production and their post harvest management. Mango and honey fest held in 2008 (Figure 8(A)), International-Horti expo held in 2010, and National jack fest held in 2011 all at Thiruvananthapuram are some of the well known examples. State Horticulture Mission-Kerala had also participated in various international and national level programmes like International Flora- expo held at New Delhi, India Organic Trade Fair, New Delhi, and International Horti-expo 2009 held at New Delhi (Figure 8(B)). "Nammude Thottam, Nadinte Nettam" and "Madhura Keralam, Haritha Keralam" are the two State Horticulture Mission-Kerala sponsored radio programmes for the promotion of the horticulture sector of the state.

4.6.2 State Horticultural Mission-Kerala for a social cause

Horticultural Therapy is an integrated approach to human development using horticulture with behavioral science. State Horticultural Mission-Kerala has ventured into the rehabilitation of the differentially-abled children utilizing the potential of horticulture as a therapeutic agent. State Horticultural Mission-Kerala lend its helping hand in this regard by spending an amount of 3.5 lakhs through the "horticulture therapy project" at College of Agriculture, Vellayani.

4.6.3 Maintanance of a website

State Horticultural Mission-Kerala is maintaining a website " http://hortnet.kerala.nic.in/ " through which it publishes a huge volume of information like Packages of Practices of various horticultural crops, addresses of SHM-Kerala offices, links to related websites, market prices of various horticultural crops, basic information and vital statistics about the mission.

4.7 Strategy for the improvement of State Horticulture Mission- Kerala programme.

The following are the strategies suggested by the researcher for the improvement of State Horticulture Mission-Kerala programme. These suggestions are based on the responses received from the experts, implementing officers, beneficiary farmers and the observations made by the researcher himself about the programme.

1) Infrastructure development can give long term stability to the agriculture sector. But the individual farmer is more concerned about the recurring expenses related to crop production. So it would be more beneficial for the farmers if State Horticulture Mission- Kerala increase their rate of assistance to 50% for the recurring agricultural expenses.

2) State Horticulture Mission-Kerala must concentrate more on ensuring a remunerative market for its beneficiaries. For this, the organization can either establish its own marketing network in-line to VFPCK markets or can collaborate with the existing VFPCK markets.

3) State Horticulture Mission-Kerala must take efforts to establish cold storage facilities at the main horticulture production centers of the state which can be utilized by small and marginal farmers.

4) State Horticulture Mission-Kerala must establish a greater and direct contact with the farmers of the state. A toll-free number can serve the purpose.

5) Majority of the schemes of State Horticulture Mission-Kerala are for individual farmers. It would be better if the schemes can be implemented on group basis also.

6) The minimum requirement of land area for implementing the schemes of State Horticulture Mission-Kerala must be reduced so that even a person cultivating in five cents of land can be brought under the scheme.

7) There must be provision to provide small units of mushroom and vermi-compost under State Horticulture Mission-Kerala so that even marginal farmers and house wives can be benefitted from the scheme.

8) It would be better if the financial target for the scheme area expansion of banana is increased. This is because the current financial target is found to be inadequate to cover the entire area newly brought under banana cultivation.

9) State Horticulture Mission-Kerala must devise schemes to harness the processing and value addition potential of small and marginal farmers of the state.

10) State Horticultural Mission-Kerala can explore the idea of forming a task force under its belt for catering the horticulture related needs of the people, especially the city dwellers, like establishment of kitchen gardens or vegetable gardens on house terraces.

5. SUMMARY AND CONCLUSION

State Horticulture Mission- Kerala is an organization functioning in the state under the Department of Agriculture, Government of Kerala since November 2005 for the implementation of National Horticulture Mission programme. The organization envisages end to end development of the horticulture sector in the state of Kerala from production to marketing.

The study was undertaken with the specific objective of studying the performance effectiveness of State Horticulture Mission-Kerala in terms of achievement of physical and financial targets, stakeholder participation and beneficiary satisfaction and to identify the constraints and formulate a strategy for increasing effectiveness of the programme.

Case study approach was adopted for the study and the "case" selected based on certain pre-set parameters was Thiruvananthapuram district. For studying the dependent variables of achievement of physical and financial targets, secondary data from State Horticulture Mission-Kerala were used. There were two categories of respondents for the study. As much as 31 numbers of implementing officers of State Horticulture Mission schemes formed the first category of respondents of the study. As high as 100 numbers of beneficiary farmers of State Horticulture Mission-Kerala formed the second category of respondents of the study. Accordingly the total number of respondents for the study was 131. The respondents for the study were selected through multi-stage random sampling procedure.

The dependent variables in the study were achievement of physical targets, achievement of financial targets, stakeholder participation and beneficiary satisfaction. Both the implementing officers of State Horticulture Mission- Kerala and beneficiary farmers of State Horticulture Mission- Kerala are stakeholders of the organization. So Stakeholder Participation was further classified into Officer Participation and Farmer Participation.

The independent variables of implementing officers were age, sex, education, rural/urban background, job experience and exposure to internet and IT and the independent variables for beneficiary farmers were age, sex, education, family type, annual income, experience, information source utilization, farm size, innovativeness and adoption.

The important findings of the study are presented below.

1. Out of the 15 components subjected to analysis for their performance in the achievement of physical targets during the study period, 11 had an achievement percentage of more than 80% and only four components had an achievement percentage less than 80%.
2. Similarly, out of the 15 components subjected to analysis with respect to the achievement of financial targets during the study period, 11 had an achievement percentage of more than 80% and only four components had an achievement percentage lesser than 80%.
3. The average score of the 31 implementing officers for the variable officer participation was 0.7512. This high score denotes an impressive participation on the part of implementing officers in the implementation of the schemes of State Horticulture Mission-Kerala.
4. The average score of the 100 beneficiary farmers for the variable farmer participation was 0.744. This high score denotes a significant level of participation on the part of the beneficiary farmers in the schemes of State Horticulture Mission-Kerala.
5. The average score of the 100 beneficiary farmers for the variable beneficiary satisfaction was 0.5892. This high score denotes a high level of satisfaction from the part of the beneficiary farmers in the schemes of State Horticulture Mission-Kerala.

6. There exists a significant positive relationship between the annual income of beneficiary farmers and their participation in State Horticulture Mission programme.
7. There exists a significant positive relationship between the farm size of beneficiary farmers and their participation in State Horticulture Mission-Kerala programme.
8. The relationship between the independent variable adoption of improved agricultural practices by the beneficiary farmers of State Horticulture Mission-Kerala and the dependent variable farmer participation in State Horticulture Mission programme is significant and positive.
9. There exists a significant positive relationship between the adoption of improved agricultural practices by the beneficiary farmers of State Horticulture Mission-Kerala and the dependent variable farmer participation in State horticulture Mission-Kerala programme.

10. Nearly half of the implementing officers (45.17%) were frequently using internet/IT/computer for the benefit of his/her profession.
11. Most (67%) of the beneficiary farmers of State Horticulture Mission- Kerala were in the age group of 41 to 60 years.
12. As high as 87% of the beneficiary farmers were males while only 13% were females.

13. Krishibhavan (93%) and other farmers (85%) were the most important information sources of majority of the beneficiary farmers of State Horticulture Mission-Kerala.
14. The beneficiary farmers of State Horticulture Mission-Kerala were having an average farm size of 120.56 cents which included both owned land as well as leased in land.

15. More than half (58%) of the beneficiary farmers of State Horticulture Mission-Kerala were innovative in nature and also were good adopters of improved agricultural practices.
16. Difficulty in the marketing of horticultural products under State Horticulture Mission-Kerala schemes followed by absence of proper storage facility for horticultural products under State Horticulture Mission-Kerala schemes were found to be the most important constraints by both implementing officers as well as beneficiary farmers of State Horticulture Mission-Kerala.

SALIENT FINDINGS OF THE STUDY

With regard to the degree of performance effectiveness of State Horticulture Mission-Kerala, the researcher could come to the following conclusions:

1) The achievement of physical and financial targets by State Horticulture Mission-Kerala was impressive.
2) There observed a high degree of participation among both categories of stakeholders of State Horticulture Mission-Kerala, namely, implementing officers and beneficiary farmers.
3) The level of satisfaction of beneficiary farmers of State Horticulture Mission-Kerala was good.

The following are the suggestions on the part of the researcher for the improvement of State Horticulture Mission programme. These suggestions are based on the inputs received from the experts, implementing officers, beneficiary farmer and the observations made by the researcher himself about the programme.

1) Infrastructure development can give long term stability to the agriculture sector. But the individual farmers are more concerned about the recurring expenses related to

crop production. So it would be more beneficial for the farmers if State Horticulture Mission- Kerala increase their rate of assistance to 50% for the recurring agricultural expenses.

2) State Horticulture Mission-Kerala must concentrate more on ensuring a remunerative market for its beneficiaries. For this, the organization can either establish its own marketing network in-line to VFPCK markets or can collaborate with the existing VFPCK markets.

3) State Horticulture Mission-Kerala must take efforts to establish cold storage facilities at the main horticulture production centers of the state which can be utilized by small and marginal farmers.

4) State Horticulture Mission-Kerala must establish a greater and direct contact with the farmers of the state. A toll-free number can serve the purpose.

5) Majority of the schemes of State Horticulture Mission-Kerala are for individual farmers. It would be better if the schemes can be implemented on group basis also.

6) The minimum requirement of land area for implementing the schemes of State Horticulture Mission-Kerala must be reduced so that even a person cultivating in five cents of land can be brought under the scheme.

7) There must be provision to provide small units of mushroom and vermi-compost under State Horticulture Mission-Kerala so that even marginal farmers and house wives can be benefitted from the scheme.

8) It would be better if the financial target for the scheme area expansion of banana is increased. This is because the current financial target is found to be inadequate to cover the entire area newly brought under banana cultivation.

9) State Horticulture Mission-Kerala must devise schemes to harness the processing and value addition potential of small and marginal farmers of the state.

10) State Horticultural Mission-Kerala can explore the idea of forming a task force under its belt for catering the horticulture related needs of the people, especially the city dwellers, like establishment of kitchen gardens or vegetable gardens on house terraces.

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5. *Karshikavarthakal* in Doordarshan
6. Secondary data from Krishibhavans.
7. Secondary data from State Horticulture Mission-Kerala.
8. Secondary data collected from the concerned principal investigators of the 10 projects funded by State Horticulture Mission-Kerala at College of Agriculture, Vellayani.

Appendix-1

Letter to State Horticulture Mission- Kerala

KERALA AGRICULTURAL UNIVERSITY

No.Ext 5/2010

Department of Agrl Extension,
College ofAgriculture, Vellayani.
Dt. 18-08-2010

From,
Dr.V.B.Padmanabhan,
Professor &Major Advisor.

To,
The Director,
State Horticulture Mission-Kerala,
University.P.O,
Thiruvananthapuram.

Sir,

Sub: KAU-COA,Vellayani-Academic-PG Programme- Agrl Extension-Chinchu,V.S (Ad.No. 2009-11-126)-Research work for thesis- Performance effectiveness of State Horticulture Mission-Kerala: A case study-Referance material- request –reg.

Ref: No.R7/62381/10(i) Dt.25/05/2010 of D.R,KAU

As per the reference cited,technical &administrative sanction has been accorded for conducting research work for the thesis of Chinchu,V.S (Ad.No. 2009-11-126) MSc.(Ag) student of this department under my advisorship. A copy of the approved programme of research work is enclosed.

As a prelude to the conduct of the research work for the thesis entitled **"Performance effectiveness of State Horticulture Mission-Kerala: A case study"**, a credit seminar has to be conducted on the topic **"Functioning of State Horticulture Mission-Kerala"**. The student has to refer the literature including the reports of SHM for preparing for the seminar.

In this context, I request that the relevant literature including the reports of the SHM may kindly be made available to the student for reference.

Soliciting your kind cooperation,

Yours faithfully,
Dr.V.B.Padmanabhan.

Appendix-2

List of Krishibhavans under the study

1. Perumpazhuthoor
2. Perumkadavila
3. Kollayil
4. Kunnathukal
5. Ottasekharamangalam
6. Aryancode
7. Vellarada
8. Amboori
9. Kallikadu
10. Kallara
11. Manickal
12. Nanniyode
13. Nellanad
14. Peringammala
15. Pullampara
16. Vamanapuram
17. Pangode

18. Karakulam

19. Aruvikkara

20. Anad

21. Panavoor

22. Vembayam

23. Nedumangad municipality

24. Athiyannoor

25. Kanjiramkulam

26. Karumkulam

27. Kottukal

28. Vizhinjam

29. Venganoor

30. Thiruvallam

31. Neyyattinkara municipality

(A) Pepper nursery funded by SHM-K

(B) Vermi-compost unit funded by SHM-K

Figure 9: Planting material production and vermi-compost unit

Appendix-3

Pattern of assistance under the schemes of State Horticulture Mission- Kerala

1) Production of Planting Material

See Figures 9 (A), 10 and 11.

Table 1: Pattern of assistance for the production of planting material

Component	Assistance(Rs. in Lakhs)	
	Public Sector	Private Sector
Model/Large Nursery (2 to 4 ha)	6.25/ha [max. 25]	6.25/ha [max. 12.5]
Small Nursery (1 ha)	6.25/ha [max. 6.25]	6.25/ha [max. 3.125]
Setting up of new tissue culture units	100 lakhs [100% assistance]	100 lakhs [50% assistance]
Rehabilitation of Tissue Culture Lab	_	15 lakhs [50% assistance]
Vegetable Seed production (ha)	0.50/ha [100% assistance]	_
Purchase of breeder seed from ICAR/SAU	_	25% of cost
Import of planting material	10 lakhs [100% assistance]	5 lakhs [100% assistance]

2) Establishment of New Gardens/ Area Expansion

Table 2: Pattern of assistance for the establishment of new gardens/ area expansion

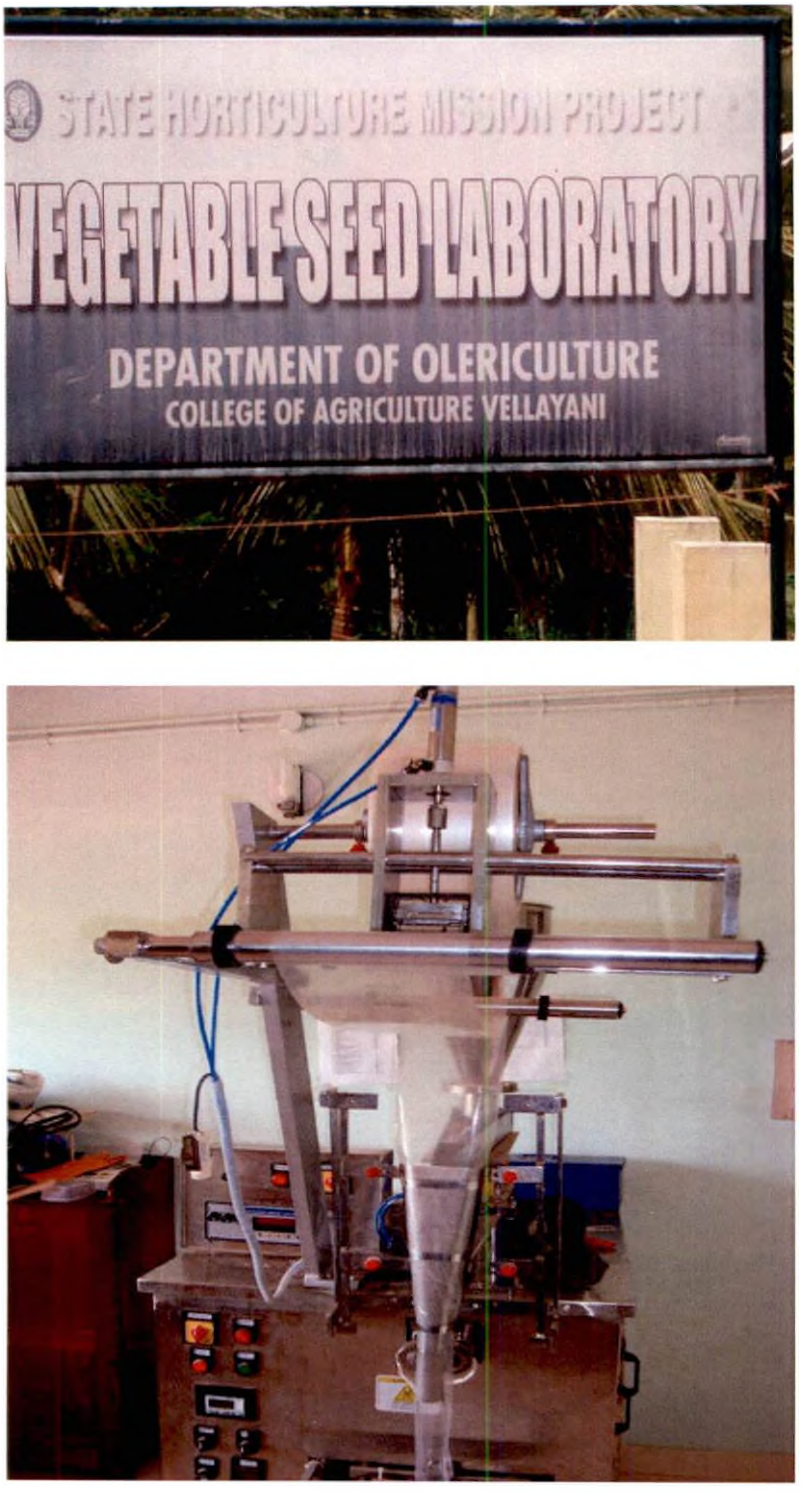

Figure 10: Vegetable seed laboratory with SHM-K funding

Component	Max. cost	Pattern of assistance
Fruit crops other than cost intensive crops using normal spacing with max. 4 ha/farmer		
Mango	Rs. 30,000/ ha	50% of cost in 3 installments of 60:20:20 subject to survival rate of 75% in 2nd and 90% in third year respectively.
Banana (sucker)	Rs. 70,000/ ha	50% of cost in 2 installments of 75:25 subject to survival rate of 90% in 2nd year.
Banana (High density)	Rs. 80,000/ ha	50% of cost in 2 installments of 75:25 subject to survival rate of 90% in 2nd year.
Pineapple (sucker)	Rs. 70,000/ ha	50% of cost in 2 installments of 75:25 subject to survival rate of 90% in 2nd year.
Tissue culture banana and pineapple	Rs. 83204/ ha	50% cost in 2 installments of 75:25
Flowers		
Cut flowers	Rs. 70,000/ ha	50% of the cost limited to 2 ha per beneficiary
Spices (for a max. area of 4 ha per beneficiary)		
Seed and rhizomatic spices	Rs. 25,000/ ha	50% of the cost
Perennial spices	Rs. 40,000/ ha	50% of the cost
Plantation crops (for a max. area of 4 ha per beneficiary)		
Cocoa	Rs. 40,000/ ha	50% of cost in 3 installments of 60:20:20 subject to survival rate of 75% in 2nd and 90% in third year respectively

Figure 11: Vegetable seed production in Palakkad District

3) Rejuvenation

Table 3: Pattern of assistance for the scheme rejuvenation of old and senile plantations

Component	Max. permissible cost	Pattern of assistance
Pepper	Rs. 30,000/ ha	50% of the total cost subject to a max. of Rs. 15,000/ ha which is limited to 2 ha per beneficiary.
Cocoa	Rs. 30,000/ ha	

4) Protected cultivation

Table 4: Pattern of assistance for the scheme protected cultivation

Component	Max. permissible cost	Pattern of assistance
Green house structure		
Fan and pad system	Rs. 1465/sq. m	50% of the total cost limited to 1000 sq. m per beneficiary.
Shade net house		
Tubular structure	Rs. 600/sq. m	50% of the total cost limited to 1000 sq. m per beneficiary.
Wooden structure	Rs. 410/sq. m	50% of the total cost limited to 5 units. (each unit not to exceed 200 sq. m) per beneficiary.

Cost of planting material of high value vegetables grown in poly house	Rs. 105/sq. m	50% of the total cost limited to 500 sq. m per beneficiary.
Cost of planting material of flowers for poly house	Rs. 500/sq. m	50% of the total cost limited to 500 sq. m per beneficiary.

5) Promotion of INM/IPM

Table 5: Pattern of assistance for the promotion of INM/IPM

Component	Max. permissible cost	Pattern of assistance
Promotion of INM/IPM	Rs. 2,000/ ha	50% of the total cost subject to a maximum of Rs.1,000/ha limited to 4 ha per beneficiary.
Biocontrol lab		
Public Sector	Rs. 80 lakhs/ unit	Rs. 80 lakhs/ unit
Private Sector	Rs. 80 lakhs/ unit	Rs. 40 lakhs/ unit as credit linked back ended subsidy

6) Organic Farming

Table 6: Pattern of assistance for the promotion of organic farming

See Figure 9 (B)

Component	Max. permissible cost	Pattern of assistance
Adoption of organic farming	Rs. 20,000/ ha	50% of cost subject to a maximum of Rs.10,000/ha limited to 4 ha per beneficiary, over 3 years as Rs.4000, Rs.3000 and Rs.3000 in the 1st, 2nd and 3rd year respectively
Organic certification	Project based	Rs. 5 lakh for a cluster of 50 ha which will include Rs. 1.5 lakh in first year, Rs. 1.5 lakh in 2nd year and Rs. 2 lakh in 3rd year.
Vermicompost unit/organic input production unit	Rs. 60,000/unit for permanent structure	50% of cost subject to the size of the unit 30'x8'x2.5' dimension of permanent structure to be administered on pro-rata basis.
Certification for GAP, including infrastructure.	50% of cost	50% of cost

7) Horticulture mechanization

Table 7: Pattern of assistance for horticulture mechanization

Component	Max. permissible cost	Pattern of assistance
Power operated machines/tools including power saw, plant protection equipments etc.	Rs. 35,000/ set	50% of the total cost limited to one set per beneficiary.
Power operated machines (upto 20 BHP) with rotovator/ equipment	Rs. 1,20,000/ set	50% of the total cost limited to one set per beneficiary.

Power operated machines (20 HP & above) including accessories/ equipments	Rs. 3,00,000/ set	50% of the total cost limited to one set per beneficiary.
Import of new machines and tools of horticulture for demonstration purpose (public sector)	Rs. 50 lakh	100% of total cost

8) Post harvest management

Table 8: Pattern of assistance for the promotion of post harvest management of horticultural crops

Component	Max. permissible cost	Pattern of assistance
Pack house/on-farm collection and storage unit	Rs. 3 lakhs/ unit with a size of 9m x 6m	50% of capital cost
Pre-cooling unit	Rs. 15 lakhs for 6 MT capacity	Credit linked back-ended subsidy @ 40% of the capital cost of project in general areas and 55% in case of hilly areas.
Cold storage units (construction/expansion/modernization)	Rs. 6000/MT for 5000MT	Credit linked back-ended subsidy @ 40% of the capital

in general areas	capacity	cost of project in general areas and 55% in case of hilly areas.
Refrigerated vans/containers	Rs. 24 lakhs/unit for 6 MT capacity	Credit linked back-ended subsidy @ 40% of the capital cost of project in general areas
Ripening chamber project	Rs. 6000/MT for 5000MT capacity	Credit linked back-ended subsidy @ 40% of the capital cost of project in general areas

9) Integrated mushroom production units for spawn and compost production

See Figure: 12(B)

Table 9: Pattern of assistance for the promotion of integrated mushroom production units for spawn and compost production

Component	Max. permissible cost	Pattern of assistance
Public sector		
Integrated mushroom production units	Rs. 50 lakh	100% of the cost
Spawn making unit	Rs. 15 lakh/unit	100% of the cost
Compost making unit	Rs. 20 lakh/unit	100% of the cost

Private sector		
Integrated mushroom production units	Rs. 50 lakh	50% of the cost for meeting the expenditure on infrastructure as credit linked back-ended subsidy
Spawn making unit	Rs. 15 lakh/unit	50% of the cost as credit linked back-ended subsidy
Compost making unit	Rs. 20 lakh/unit	50% of the cost as credit linked back-ended subsidy

10) Creation of water resources:

Table 10: Pattern of assistance for the creation of water resources

Component	Max. cost	Pattern of assistance
Community tanks/on farm ponds/ on farm water reservoir with plastic lining		
Plain areas	Rs.15 lakh/ unit	100% of the cost for 10 ha
Hilly areas	Rs.17.25 lakh/ unit	100% of the cost for 10 ha
Water harvesting system for individuals		
Plain areas	Rs.1.20 lakh/ unit	50% of maintenance cost to be ensured by the beneficiary
Hilly areas	Rs.1.38 lakh/ unit	50% of maintenance cost to be ensured by the beneficiary

(A) A SHM-K beneficiary with apiary unit

(B) Mushroom unit established using SHM-K funding

Figure 12: Apiculture and mushroom production

11) Pollination support through beekeeping

See Figure 12 (A)

Table 11: Pattern of assistance for promotion of beekeeping

Component	Max. cost	Pattern of assistance
Production of nuclear stock (public sector)	Rs.10 lakh	100% of the cost
Production of bee colonies by bee breeder	Rs.6 lakh	50% of cost for producing a minimum of 2000 colonies per year
Honey bee colonies	Rs. 1400/colony of 4 frames	50% of cost limited to 50 colonies/ beneficiary
Hives	Rs. 1600/hive	50% of cost limited to 50 colonies/ beneficiary
Equipments including honey extractor(4 frame), food grade container(30 kg), net etc	Rs. 14,000/set	50% of cost limited to one set/ beneficiary

12) Human resource development

See Figure: 13 (A) and 13 (B)

Table 12: Pattern of assistance for the development of human resource

(A) Training in mushroom production

(B) Gardener's training

Figure 13: HRD under SHM-K

Component	Max. cost	Pattern of assistance
HRD for supervisors and entrepreneurs	Rs.20 lakh/ training	100% of the cost in the 1st year. In subsequent years, cost of infrastructure not to be claimed.
HRD for gardeners	Rs.15 lakh/ training	100% of the cost in the 1st year. In subsequent years, cost of infrastructure not to be claimed.
Training for farmers		
Within the district (one day)	Rs. 400/day/farmer excluding transport	100% of the cost
Within the state	Rs. 750/day/farmer excluding transport	100% of the cost
Outside the state	Rs. 1000/day/farmer excluding transport	100% of the cost
Training/ study tour of technical staff/ field functioneries		
Within the state (7 days)	Rs. 200/day plus TA/DA as admissible	100% of the cost
Outside the state (group of minimum 5 participants) (7 days)	Rs. 650/day plus TA/DA as admissible	100% of the cost

Outside India	Rs. 5 lakh/participant	100% of the cost on actual basis
Exposure visit of farmers		
Within the district	Rs. 250/day/farmer excluding transport	100% of the cost
Within the state	Rs. 300/day/farmer excluding transport	100% of the cost
Outside the state	Rs. 600/day/farmer excluding transport	100% of the cost
Outside India	Rs. 3 lakh/participant	Project based. 100% of air/rail travel cost
Front line demonstration		
Technology dissemination through demonstration/FLD (Public sector)	Rs. 25 lakh	75% of cost in farmer's field and 100% of cost in farms belonging to public sector

13) Establishment of marketing infrastructure for horticultural produce

Table 13: Pattern of assistance for the establishment of marketing infrastructure for horticultural produce

Component	Max. cost	Pattern of assistance
Rural markets/ direct markets		
Credit linked back-ended project in general areas.	Rs. 20 lakh/unit	Credit linked back-ended subsidy @ 40% of the capital cost of project in general areas and 55% in case of hilly areas for individual entrepreneurs.
Credit linked back-ended project in case of hilly &scheduled areas.	Rs. 20 lakh/unit	Credit linked back-ended subsidy @ 40% of the capital cost of project in general areas and 55% in case of hilly areas for individual entrepreneurs.
Retail markets/ outlets (environmentally controlled)		
Credit linked back-ended project in general areas.	Rs. 10 lakh/unit	Credit linked back-ended subsidy @ 40% of the capital cost of project in general areas and 55% in case of hilly areas for individual entrepreneurs.
Credit linked back-ended project in case of hilly &scheduled areas.	Rs. 10 lakh/unit	Credit linked back-ended subsidy @ 40% of the capital cost of project in general areas and 55% in case of hilly areas for individual entrepreneurs.
Functioning infrastructure: for collection, sorting/grading, packing units etc.		
Credit linked back-ended project in general areas.	Rs. 15 lakh/unit	Credit linked back-ended subsidy @ 40% of the capital cost of project in general areas and 55% in case of hilly &scheduled areas for individual entrepreneurs.

Credit linked back-ended project in case of hilly &scheduled areas.	Rs. 15 lakh/unit	Credit linked back-ended subsidy @ 40% of the capital cost of project in general areas and 55% in case of hilly &scheduled areas for individual entrepreneurs.
Market extension, quality awareness and market led extension activities for fresh products	Rs. 3 lakh/event	100% assistance to state government/SHM/ public sector agencies

Appendix-4

Performance effectiveness of State Horticulture Mission-Kerala: A case study

Questionnaire for Implementing Officers

1. Name :
2. Respondent No :
3. Designation :
4. Krishibhavan :
5. Block :
6. Age :
7. Sex:
8. Educational status

   Please put the tick (√) mark in your highest academic qualification from the items given below:

   a) Diploma/ Equivalent
   b) Bachelor degree
   c) Masters degree
   d) Doctoral degree
9. Rural/urban background

   For the items given below please write the number of years you had lived in that particular location.

   a. Panchayat area: ____ years
   b. Municipal area: ____ years
   c. Corporation area: ____ years

10. Job experience (service)
    a. Total years in department of agriculture: ____ years
    b. Total years in other related organization/s with their name/s: ____ years

c. Total years of service (a+b): ____ years

11. Exposure to internet and information technology:

Please tick(√) the appropriate one:

To what extent do you seek the support of internet and information technology to develop your skills in your profession

Always:

Frequently:

Sometimes:

Never:

12. Total number of farmers under the Krishibhavan:

13. No. of SHM-K beneficiaries under the Krishibhavan:

Men-

Women-

14. Stakeholder participation index:

Please put the tick (√) mark in the appropriate box.

Sl. No	Statements	Always	Sometimes	Never
a)	I try to do a prior planning before the implementation of SHM-K programmes			
b)	I try to include farmers in the planning process for SHM-K programmes			
c)	I try to disseminate information related to SHM-K schemes to farmers in time			

d)	I try to arrange training for SHM-K beneficiaries regarding the horticultural crops			
e)	I encourage group formation among SHM-K beneficiaries			
f)	I try to implement SHM-K schemes which are location specific only			
g)	I ensure availability of relevant technology to SHM-K beneficiaries			
h)	I ensure timely availability of all concerned inputs to SHM-K beneficiaries			
i)	I ensure timely disbursement of SHM-K subsidy to SHM-K beneficiaries			
j)	I visit the fields of SHM-K beneficiaries			
k)	I give public recognition/reward to SHM-K beneficiaries			
l)	I take efforts to ensure that the physical and financial targets of SHM-K are met			
m)	I make efforts to ensure a remunerative market for the SHM-K beneficiaries			
n)	I keep proper records regarding the SHM-K schemes including the beneficiary list			

15. Constraint analysis:

Please indicate the extent of relevancy with respect to the following statements by ticking (√) the appropriate box:

Sl. No	Statements	Most important	important	Neutral	Less important	Least important
a)	Physical and financial targets fixed by SHM-K are unrealistic					
b)	Funds from SHM-K are not adequate					
c)	Funds from SHM-K are not timely					
d)	Procedure for getting funds from SHM-K is hectic					
e)	Guidelines of SHM-K are rigid such that easy implementation is almost impossible					
f)	There exist partiality in the allocation of SHM-K funds					
g)	Implementation of different schemes on same crop is difficult					
h)	Difficult to implement SHM-K schemes with current facilities and environment					
i)	Storage facility for horticultural products					

	are absent under SHM-K schemes					
j)	Marketing of horticultural products are difficult under SHM-K schemes					
k)	Facility for grievance redressal with respect to SHM-K schemes are absent					

Please specify any of the specific constraints you are facing regarding the implementation of SHM-K schemes

i)

ii)

iii)

16. Suggestion for improvement of SHM-K programme.

a)

b)

c)

Appendix-5

Performance effectiveness of State Horticulture Mission-Kerala: A case study

Interview schedule for farmers

1. Respondent number:
2. Name:
3. Address:
4. Krishibhavan:
5. Block:
6. Age:
7. Sex:
8. Educational status:
9. **Family type:**

Joint family	
Nuclear family	

10. Annual income:

11. Schemes availed from SHM-K:

a)

b)

c)

d)

12. Years in which benefits from SHM-K were availed:

2005-06	
2006-07	
2007-08	
2008-09	
2009-10	
2010-11	

13. Experience in banana/vegetable cultivation (years):

14. Source of information about SHM-K schemes:

Sl.No.	Source	Frequency of use		
		Often	Occasionally	Never
1.	Television			
2.	Radio			
3.	Krishibhavan			
4.	Newspaper			
5.	Internet			
6.	Other farmers			

15. Farm size:

16. Land use pattern:

Owned		**Leased in**	
SHM schemes	Non-SHM schemes	SHM schemes	Non-SHM schemes

17. Innovativeness:

Please indicate the extent of relevancy with respect to the following statements.

Sl. No	Statement	SA	A	UD	D	SD
1.	You would feel restless unless you try out an innovative method of which you have come across					
2.	You are cautious about trying new practices					
3.	You try to keep up-to-date information about subjects of your interest					
4.	You opt for traditional way of doing things than go for newer methods					
5.	You would prefer to wait for others to try out new techniques first					

SA- Strongly Agree A- Agree UD- Undecided D- Disagree SD- Strongly Disagree

18. Adoption behavior in banana/vegetable cultivation under SHM-K schemes:

Sl No.	Agricultural practice	Full adoption	Partial adoption	Non-adoption
1	Seed treatment			
2	Manuring			
3	Watering			
4	Thinning and gap filling			
5	Weed management			
6	Use of traps/baits			

7	Soil amelioration/treatment			
8	Soil testing			
9	Use of insecticide/fungicide			
10	Supervision of hired labour			
11	Storage			
12	Processing			

19. Farmer Participation in SHM-K programmes:

Sl.No	**Statement**	Always	Sometimes	Never
1.	I try to attend the meetings in the Krishibhavan regarding the SHM-K schemes			
2.	I actively try to gather information about SHM-K schemes			
3.	I try to attend the exhibitions organized by SHM-K			
4.	I try to obtain the news about the activities of SHM-K from mass media			
5.	I attended the training programmes organized by SHM-Kerala			

20. Beneficiary satisfaction index:

Express your extent of satisfaction with respect to the following statements

1-Highly Satisfied; 2-Satisfied; 3-Indifferent; 4-Disatisfied; 5-Highly dissatisfied.

Sl. No.	Statement	HS	S	I	D	HD
1	Adequacy of SHM-K funding					
2	Timeliness of SHM-K funding					
3	Procedures involved in SHM-K funding					
4	Appropriateness (need based)of SHM-K funding					
5	Facility for grievance redressal about SHM-K schemes					
6	Efforts taken by SHM-K for marketing of produces					

21. Constraint analysis:

Indicate your extent of relevancy with respect to the following statements.

Sl. No.	**Statement**	**SA**	**A**	**N**	**D**	**SD**
1	Availing benefits from SHM-K involves difficult procedures					
2	I am not getting information about SHM-K schemes on time					
3	Accessibility to SHM-K schemes is difficult					
4	SHM-K guidelines are not matching with the					

	existing rental pattern of land					
5	There exists partiality in the selection of beneficiaries of SHM-K schemes					
6	Lack of storage facilities for the horticultural products under SHM-K schemes					
7	Low subsidy under SHM-K schemes compared to input costs					
8	Absence of marketing facilities under SHM-K schemes					

SA- Strongly Agree A- Agree N- Neutral D- Disagree SD- Strongly Disagree

What all are your other specific constraints?

a)

b)

c)

22. Suggestions for improvement:

What all are you expecting from SHM-K so as to increase its performance?

Ans: i)

ii)

iii)

Appendix - 6

സംസ്ഥാന ഹോർട്ടികൾച്ചർ മിഷന്റെ പ്രവർത്തനക്ഷമത : ഒരു പഠനം

കർഷകർക്കുള്ള അഭിമുഖ പത്രിക

1. പ്രതികർത്താവിന്റെ നമ്പർ :
2. പേര് :
3. വിലാസം :

4. കൃഷിഭവൻ :
5. ബ്ലോക്ക് :
6. വയസ്സ് :
7. ലിംഗഭേദം :
8. വിദ്യാഭ്യാസ യോഗ്യത :
9. കുടുംബ ഘടന :

കൂട്ടുകുടുംബം	
അണുകുടുംബം	

10. വാർഷിക വരുമാനം :
11. സംസ്ഥാന ഹോർട്ടികൾച്ചർ മിഷനിൽ നിന്നും ധനസഹായം സ്വീകരിച്ചിട്ടുള്ള പരിപാടികൾ :

    a)

    b)

    c)

    d)

12. സംസ്ഥാന ഹോർട്ടികൾച്ചർ മിഷനിൽ നിന്നും ധനസഹായം സ്വീകരിച്ചിട്ടുള്ള വർഷങ്ങൾ :

2005 - 06	
2006 - 07	
2007 - 08	
2008 - 09	
2009 - 10	
2010 - 11	

13. വാഴ, പച്ചക്കറി കൃഷിയിലുള്ള പരിചയം (വർഷം) :

14. സംസ്ഥാന ഹോർട്ടികൾച്ചർ മിഷൻ പദ്ധതികളെക്കുറിച്ചുള്ള അറിവിന്റെ ഉറവിടം :

സീ. നം.	ഉറവിടം	ആവർത്തനതോത്		
		എപ്പോഴും	വല്ലപ്പോഴും	ഒരിക്കലുമില്ല
1.	ടെലിവിഷൻ			
2.	റേഡിയോ			
3.	കൃഷിഭവൻ			
4.	വർത്തമാനപത്രം			
5.	ഇന്റർനെറ്റ്			
6.	മറ്റ് കർഷകർ			

15. കൃഷിയിടത്തിന്റെ വിസ്തൃതി :

16. കൃഷിഭൂമിയുടെ വിനിയോഗ രീതി :

സ്വന്തം		പാട്ടത്തിനെടുത്തത്	
എസ്.എച്ച്.എം പദ്ധതികൾക്ക് കീഴിലുള്ളത്	എസ്.എച്ച്.എം പദ്ധതികൾക്ക് കീഴിൽ അല്ലാത്തത്	എസ്.എച്ച്.എം പദ്ധതികൾക്ക് കീഴിലുള്ളത്	എസ്.എച്ച്.എം പദ്ധതികൾക്ക് കീഴിൽ അല്ലാത്തത്

17. **പുതിയ കാര്യങ്ങൾ സ്വീകരിക്കുന്നതിനുള്ള സന്നദ്ധത**

ചുവടെയുള്ള ഓരോ വാക്യത്തിനോടും എത്രമാത്രം താങ്കൾ യോജിക്കുന്നു അല്ലെങ്കിൽ വിയോജിക്കുന്നു എന്നു വ്യക്തമാക്കുക.

സീ. നം.	വാക്യം	SA	A	UD	D	SD
1.	ഒരു നവീനരീതി കണ്ടാൽ അത് ചെയ്തു നോക്കാതെ എനിക്ക് ഇരിക്കപ്പൊറുതിയില്ല					
2.	നവീന രീതികൾ ചെയ്തു നോക്കുന്നതിൽ ഞാൻ ജാഗ്രത പുലർത്താറുണ്ട്					
3.	താൽപര്യമുള്ള വിഷയങ്ങളിൽ ഏറ്റവും പുതിയ അറിവ് സ്വായത്തമാക്കാൻ ഞാൻ ശ്രദ്ധിക്കാറുണ്ട്					
4.	ഞാൻ നവീന രീതികൾക്കു പകരം പാരമ്പര്യ രീതികൾ ചെയ്യാൻ താൽപര്യപ്പെടുന്നു					
5.	പുതിയ രീതികൾ മറ്റുള്ളവർ ചെയ്തതിനു ശേഷം ചെയ്യാൻ വേണ്ടി ഞാൻ കാത്തിരിക്കാറുണ്ട്.					

SA - ശക്തമായി യോജിക്കുന്നു

A - യോജിക്കുന്നു

UD - തീരുമാനം ഇല്ല

D - വിയോജിക്കുന്നു

SD - ശക്തമായി വിയോജിക്കുന്നു

18. **നിർവ്വഹണ സ്വഭാവം**

സീ. നം.	കൃഷിമുറ/പ്രവർത്തി	പൂർണ്ണ നിർവ്വഹണം	ഭാഗിക നിർവ്വഹണം	നിർവ്വഹണ മില്ലായ്മ
1.	വിത്തുപചാരം			
2.	വളമിടീൽ			
3.	ജലസേചനം			
4.	ഇടപോക്കൽ			
5.	കളനശീകരണം/കളപോക്കൽ			

6.	കെണികളുടെ ഉപയോഗം			
7.	കുമ്മായം ഇടീൽ			
8.	മണ്ണ് പരിശോധന			
9.	കീടനാശിനി/കുമിൾനാശിനി പ്രയോഗം			
10.	തൊഴിലാളികളുടെ മേൽനോട്ടം			
11.	സംഭരണം			
12.	സംസ്കരണം			

19. **സംസ്ഥാന ഹോർട്ടികൾച്ചർ മിഷൻ പരിപാടികളിലെ കർഷക പങ്കാളിത്തം**

സീ. നം	വാക്യം	എപ്പോഴും	വല്ലപ്പോഴും	ഒരിക്കലും ഇല്ല
1.	ഹോർട്ടികൾച്ചർ മിഷൻ പദ്ധതികളെക്കുറിച്ചുള്ള കൃഷിഭവൻ യോഗങ്ങളിൽ ഞാൻ പങ്കെടുക്കാറുണ്ട്			
2.	ഹോർട്ടികൾച്ചർ മിഷൻ പദ്ധതികളെക്കുറി-ച്ചുള്ള വിവരങ്ങൾ ഞാൻ ഉത്സാഹപൂർവ്വം ശേഖരിക്കാറുണ്ട്			
3.	ഹോർട്ടികൾച്ചർ മിഷൻ സംഘടിപ്പിക്കുന്ന മേളകളിൽ ഞാൻ പങ്കെടുക്കാറുണ്ട്			
4.	ദൃശ്യ-ശ്രവ്യ മാധ്യമങ്ങളിലൂടെയുള്ള ഹോർട്ടികൾച്ചർ മിഷനെ സംബന്ധിച്ചുള്ള വാർത്തകൾ കേൾക്കാൻ ഞാൻ ശ്രമിക്കാറുണ്ട്			
5.	ഹോർട്ടികൾച്ചർ മിഷൻ സംഘടിപ്പിക്കുന്ന പരിശീലന പരിപാടികളിൽ ഞാൻ പങ്കെടുക്കാറുണ്ട്			

20. പ്രായോജക സംതൃപ്തി നിലവാരം

താഴെപ്പറയുന്ന ചോദ്യങ്ങളെ സംബന്ധിച്ച് താങ്കൾ എത്രമാത്രം സംതൃപ്തൻ/അസംതൃപ്തൻ ആണെന്ന് നിർദ്ദേശിക്കുക.

സീ. ന.	വാക്യം	HS	S	N	D	HD
1.	ഹോർട്ടികൾച്ചർ മിഷൻ ധനസഹായത്തിന്റെ പര്യാപ്തത					
2.	ഹോർട്ടികൾച്ചർ മിഷൻ ധനസഹായത്തിന്റെ സമയക്ലിപ്തത					
3.	ധനസഹായം ലഭ്യമാകാനുള്ള നടപടിക്രമങ്ങൾ					
4.	ആവശ്യപ്രകാരമുള്ള ധനസഹായം					
5.	ഹോർട്ടികൾച്ചർ മിഷൻ പദ്ധതികളുമായി ബന്ധപ്പെട്ട പരാതി പരിഹാര സംവിധാനം					
6.	കാർഷിക വിപണനത്തിനായി ഹോർട്ടി-കൾച്ചർ മിഷൻ ചെയ്യുന്ന പ്രവർത്തനങ്ങൾ					

HS - വളരെയധികം സംതൃപ്തനാണ്

S - സംതൃപ്തനാണ്

N - അഭിപ്രായമില്ല

D - അസംതൃപ്തനാണ്

HD - വളരെയധികം അസംതൃപ്തനാണ്

21. പ്രശ്നനിർണ്ണയം

താഴെ കൊടുത്തിരിക്കുന്ന വാക്യങ്ങൾ എന്തുമാത്രം പ്രസക്തമാണ്.

സീ. നം.	വാക്യം	SA	A	N	D	SD
1.	ഹോർട്ടികൾച്ചർ മിഷൻ സഹായം ലഭിക്കാനുള്ള നടപടിക്രമങ്ങൾ പ്രയാസകരമാണ്					
2.	ഹോർട്ടികൾച്ചർ മിഷൻ പദ്ധതികളെക്കുറിച്ചുള്ള വിവരലഭ്യത ബുദ്ധിമുട്ടാണ്					
3.	ഹോർട്ടികൾച്ചർ മിഷൻ പദ്ധതികൾ സാധാരണ കൃഷിക്കാർക്ക് അപ്രാപ്യമാണ്.					
4.	ഹോർട്ടികൾച്ചർ മിഷൻ പദ്ധതി നിയമങ്ങളും പാട്ട വ്യവസ്ഥകളും തമ്മിലുള്ള പൊരുത്തക്കേട്					

5	ഹോർട്ടികൾച്ചർ മിഷൻ പ്രോയജ കരെ തെരഞ്ഞെടുക്കുന്നതിലുള്ള പക്ഷപാതിത്വം					
6.	ഹോർട്ടികൾച്ചർ മിഷൻ പദ്ധതികൾക്കു കീഴിൽ സംഭരണ ശാലകൾ ഇല്ലാത്ത അവസ്ഥ					
7.	ഹോർട്ടികൾച്ചർ മിഷൻ ധനസഹായം ഉൽപാദനോപാധികളുടെ വിലയെക്കാൾ വളരെ കുറവാണ്					
8.	ഹോർട്ടികൾച്ചർ മിഷനു കീഴിൽ വിപണന സംവിധാനങ്ങളുടെ അപര്യാപ്തത					

SA - ശക്തമായി യോജിക്കുന്നു

A - യോജിക്കുന്നു

N - അഭിപ്രായമില്ല

D - വിയോജിക്കുന്നു

SD - ശക്തമായി വിയോജിക്കുന്നു

നിങ്ങൾക്ക് മറ്റ് ബുദ്ധിമുട്ടുകൾ എന്തെങ്കിലും ഉണ്ടെങ്കിൽ പറയുക.

a)

b)

c)

22. ഹോർട്ടികൾച്ചർ മിഷനിൽ നിന്നും മറ്റെന്തെല്ലാം നിങ്ങൾ പ്രതീക്ഷിക്കുന്നു.

i)

ii)

iii)

PERFORMANCE EFFECTIVENESS OF STATE HORTICULTURE MISSION- KERALA: A CASE STUDY

by

CHINCHU.V.S

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ABSTRACT OF THE THESIS

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Kerala Agricultural University, Thrissur

DEPARTMENT OF AGRICULTURAL EXTENSION

COLLEGE OF AGRICULTURE

VELLAYANI, THIRUVANANTHAPURAM – 695 522

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ABSTRACT

The National Horticulture Mission (NHM) was launched during the year 2005-06 to provide a thrust to the development of horticulture sector in the country. State Horticulture Mission- Kerala is an organization functioning in the state under the Department of Agriculture, Government of Kerala since November 2005 for the implementation of National Horticulture Mission programme. The organization envisages end to end development of the horticulture sector in the state of Kerala from production to marketing.

The study was undertaken with the specific objective of studying the performance effectiveness of State Horticulture Mission-Kerala in terms of achievement of physical and financial targets, stakeholder participation and beneficiary satisfaction and to identify the constraints and formulate a strategy for increasing the effectiveness of the programme.

The study was conducted in Thiruvananthapuram district among 31 numbers of implementing officers of State Horticulture Mission schemes and 100 numbers of beneficiary farmers of State Horticulture Mission-Kerala. Secondary data from State Horticulture Mission-Kerala were also depended during the study.

The dependent variables in the study were achievement of physical targets, achievement of financial targets, stakeholder participation and beneficiary satisfaction. The independent variables for implementing officers were age, sex, education, rural/urban background, job experience and exposure to internet and IT and the independent variables for beneficiary farmers were age, sex, education, family type, annual income, experience, information source utilization, farm size, innovativeness and adoption.

The important findings of the study are listed below.

1. With respect to the physical targets, out of the 15 components, 11 had an achievement percentage of more than 80% and only four components had an achievement percentage lesser than 80%.

2. Similarly, in case of financial targets, out of the 15 components, 11 had an achievement percentage of more than 80% and only four components had an achievement percentage lesser than 80%.

3. Implementing officers have an impressive participation in the implementation of the schemes of State Horticulture Mission-Kerala.

4. The participation of beneficiary farmers in the schemes of State Horticulture Mission-Kerala is very good.

5. Majority of the beneficiaries are satisfied with the activities of State Horticulture Mission-Kerala.

6. Difficulty in the marketing of horticultural produce under SHM-K schemes followed by absence of proper storage facility for horticultural products under SHM-K schemes were found to be the most important constraints by both implementing officers as well as beneficiaries of State Horticulture Mission-Kerala.

With regard to the degree of performance effectiveness of State Horticulture Mission-Kerala, the researcher could come to the following conclusions:

1) The achievement of physical and financial targets by State Horticulture Mission-Kerala was impressive.

2) There observed a high degree of participation among both categories of stakeholders of State Horticulture Mission-Kerala, namely, implementing officers and beneficiary farmers.
3) The level of satisfaction of beneficiary farmers of State Horticulture Mission-Kerala was good.

The following are the important suggestions from the part of the researcher for the improvement of State Horticulture Mission programme.

1. It would be more beneficial for the farmers if State Horticulture Mission increase their rate of assistance to 50% for the recurring agricultural expenses.

2. State Horticulture Mission-Kerala must establish a greater and direct contact with the farmers of the state. A toll-free number can serve the purpose.

3. State Horticultural Mission-Kerala can explore the idea of forming a task force under its belt.

4. The minimum requirement of land area for implementing the schemes of State Horticulture Mission-Kerala must be reduced.

5. State Horticulture Mission-Kerala must give greater thrust in the storage, value addition and marketing of horticultural produce from small and marginal farmers.