

EVALUATION OF AGRICULTURAL POLYCLINICS – AN INDEPTH STUDY

BY
SHANKAR GANPATRAO PURI
M.Sc.(Agri.)



T 5745

THESIS

*Submitted to the Marathwada Agricultural University
Parbhani in Partial Fulfilment of the
Requirement for the Degree of*

**DOCTOR OF PHILOSOPHY
IN
EXTENSION EDUCATION**

**DEPARTMENT OF EXTENSION EDUCATION
MARATHWADA AGRICULTURAL UNIVERSITY
PARBHANI – 431 402 (M.S.), INDIA.**

2008

CANDIDATE'S DECLARATION

*I hereby declare that dissertation or
part thereof has not been previously
submitted by me to any other
University or Institution
for a degree or
diploma.*

PARBHANI
DATE: 17 DEC., 2008


(S.G.PURI)

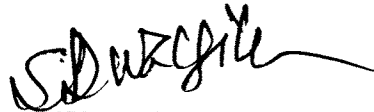
Dr. S. D. WANGIKAR
M. Sc.(Agri), Ph.D
Professor,
Department of Extension Education
MAU, Parbhani (M.S.)

CERTIFICATE-I

This is to certify that the dissertation entitled “**EVALUATION OF AGRICULTURAL POLYCLINICS—AN INDEPTH STUDY**” submitted to the Marathwada Agricultural University, Parbhani (M.S.) in partial fulfilment of the requirement for the degree of **DOCTOR OF PHILOSOPHY** in the subject of **EXTENSION EDUCATION** embodies the results of a bonafide research carried out by **Shri Shankar Ganpatrao Puri** under my guidance and supervision. No part of this dissertation has been submitted for any other degree, diploma, associateship, fellowship or other similar titles.

The assistance and help received during the course of this investigation have been fully acknowledged.

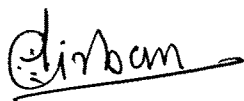
PARBHANI
DATED: 17, Dec., 2008


(S.D. Wangikar)
Major Advisor

CERTIFICATE-II

This is to certify that the dissertation entitled "EVALUATION OF AGRICULTURAL POLYCLINICS-AN INDEPTH STUDY" submitted by Shri Shankar Ganpatrao Puri to the Marathwada Agricultural University, Parbhani (M.S.) in partial fulfilment of the requirement for the degree of DOCTOR OF PHILOSOPHY in the subject of EXTENSION EDUCATION has been approved by the student's Advisory Committee after viva-voce examination in collaboration with the External Examiner.

External Examiner



Members



(S.D. Wangikar)

Professor & Major Advisor

Department of Extension Education
MAU, Parbhani



Dr. R.R. Chole

Head

Department of Extension Education
MAU, Parbhani



Dr. R.R. Kothikhane

Professor & CEEO


Directorate of Extension Education
MAU, Parbhani



Dr. V.T. Wattamwar

Associate professor


Department of Extension Education
MAU, Parbhani



Prof. P.R. Waghmare

Associate professor

Department of Economics and Statistics
MAU, Parbhani



Associate Dean (P.G.)

College of Agriculture
MAU, Parbhani (M.S.)

ACKNOWLEDGEMENTS

The author record his appreciation and gratefulness for the co-operation received from numerous sources in accomplishment of this research.

It is for me a golden chance of gesturing my heartstrings of gratitude towards Dr. S. D. Wangikar, Professor, Department of Extension, M.A.U. Parbhani and Chairman, Advisory Committee, who despite his heavy commitments, unswervingly inspired in exploring this novel area of research, constructively criticized and offered though provoking suggestions in finalization of dissertation.

The valuable suggestions and perfect guidance received in the preparation of this dissertation from the members of my advisory committee, Dr. R.R.Chole, Head, Department of Extension Education, M.A.U. Parbhani, Dr. R.R.Kothikane, Professor and CEO, Directorate of Extension Education, Parbhani, Dr. V.T.Wattamwar, Associate Professor, Department of Extension Education, M.A.U. Parbhani and Prof. P.R.Waghmare Associate Professor, Department of Agril. Economics and Statistics, M.A.U. Parbhani is gratefully acknowledged.

I am deeply indebted to the Vice-Chancellor, MAU, Parbhani for giving opportunity to complete the Ph.D. Programme

I am very much enlightened to express deep sense of gratefulness towards Dr.P.R.Shivpuje, Director of Instruction and Dean, Faculty of Agriculture, MAU, Parbhani for his constant encouragement and generous help during the course of this research.

I record my deep sense of gratitude towards Dr.V.S.Shinde, Associate Dean and Principal, College of Agriculture, Parbhani for providing me facilities for conducting the research.

I shall fail in my duties if i do not place on record my sincere thanks to Associate Professor Shri. R.B.Kale and Dr. R.D.Ahire, Assistant Professor Shri. U.N.Fatak, Dr.P.R.Deshmukh, and Dr.R.P.Kadam for their ungrudging assistance in the undertaking and all staff of the Department of Extension Education, MAU, Parbhani for their co-operation during the course of my post graduate.

I am very much beholden to Prof. S.G.Sarwade, Officer Incharge, Custard apple Research Station, Ambajogai and Prof. U.V.Kale, Officer Incharge, AICRP on Safflower Scheme, MAU, Parbhani for lavish help, humanitarian attitude and inspiration during the course of this quest.

I wish to place on record my sincere thank to the respondents i.e. selected Agricultural Polyclinics beneficiaries and working staff of the Agricultural Polyclinics for their guidance for collection of data during investigation period.

I can not forget my friend Dr.M.B.Patil, Dr.A.S.Jadhav, Shri. Andhare Deva, Shri. Sanjay More, Dr. Pramod Wakle Prof. V.B. Kamble, Dr. Prashant Bhosle, Dr.K.D.Navgire, Prof.C.B.Patil, Shri. Shankar Kamble Shri. Giri Kailash and Shri.Tithe for their warmer affection, co-operation and guidance during my post graduation studies.

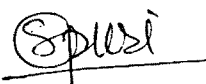
I express my deepest appreciation to my brother Shri Mahadev Ganpatrao Puri for timely help for this valuable educational achievement.

The moral support by friends Mr. Shivajirao Vidhate, Uddhavrao Shinde, Dr. Ashok Khabia, Anil Giri, Balkrushna Debadwar, Ganesh Doiphode, Rajesh Manure, Kawathe (Dada), Anil Pampatwar, Anil Nakhate, S.P. Raner, S.T. Bhatane, V.D.Khatal, G.K.Joshi and J.R. Wadkar have also played an important role in completion of study.

From hundreds of kilometer away, few people always wanted my success, my beloved father, Shri, Ganpatrao Puri, mother Sou. Dwarkabai Puri, sister Sou. Kusum and Sou.Pratibha, Vahini Sou.Anita and my relatives Shri Kalyan Puri, Sou. Shashikala Puri, Shri.Bhimrao Giri, Shri. Nand Krushnanand, Bhagwat, Balasaheb, Sunil, Onkar and here my wife Sou.Manisha, son. Abhishek and Rahul, and whose animating action continues to reverberate in my mind. Words run short to express my indebtedness to them who always inspired me with their love and affection, which enabled me to pass the trauma and drudgery with jovial fervour. The credit of shaping my career is entirely theirs, which cannot be quantified. I will fondly remember and cherish them throughout my life.

Last but not the least, I thank Shri. Khaleque for precise typing of the manuscript.

Place : Parbhani
Dated : 17 Dec. 2008


(S.G.PURI)

CONTENTS

Chapter No.	Particulars	Page No.
1	INTRODUCTION	1-8
2	REVIEW OF LITERATURE	9-70
3	THEORETICAL ORIENTATION	71-92
4	METHODOLOGY	93-121
5	RESULTS	122-158
6	DISCUSSION	159-187
7	SUMMARY AND CONCLUSIONS	188-200
8	IMPLICATIONS	201-206
	LITERATURE CITED	i-xxv
	APPENDICES	xxvi-xlvi
	ABSTRACT	xlix-lix

LIST OF TABLES

Table No	Title	Page No.
1	Agricultural Polyclinic wise respondents selected For the study	99
2	Distribution of the respondents by age	123
3	Distribution of the respondents by education	124
4	Distribution of the respondents by occupation	125
5	Distribution of the respondents by land holding	125
6	Distribution of the respondents by annual income	126
7	Distribution of the respondents by social participation	127
8	Distribution of the respondents by extension contact	127
9	Distribution of the respondents by risk orientation	128
10	Distribution of the respondents by economic motivation	129
11	Distribution of the respondents by attitude towards Agricultural Polyclinic	130
12	Knowledge of the respondents about extension activities of Agricultural Polyclinic and their organizational set up	132
13	Distribution of the respondents by knowledge about extension activities of Agricultural Polyclinics and their organizational set up.	134
14	Distribution of respondents according to Agricultural Polyclinic activity/practicewise benefits availed by respondents	136
15	Distribution of the respondents by benefit availed from Agricultural Polyclinic activities	138

Table No	Title	Page No.
16	Distribution of the respondents by Adoption of practices/activities of Agricultural Polyclinic	139
17	Distribution of the respondents by level of Adoption of activities/ practices extended through Agricultural Polyclinic	141
18	Relationship of personal, socio economic and psychological characteristics of the respondents with knowledge about extension activities of Agricultural Polyclinics and their organizational set up.	142
19	Relationship of personal, socio economic and psychological characteristics of the respondents with benefit availed from Agricultural Polyclinic activities/practices.	143
20	Relationship of personal, socio economic and psychological characteristics of the respondents with adoption of activities/ practices extended through Agricultural Polyclinic	144
21	Multiple regression analysis of knowledge with personal, socio economic and psychological characteristics of the respondents.	145
22	Multiple regression analysis of benefits availed with personal, socio economic and psychological characteristics of the respondents.	146
23	Multiple regression analysis of adoption with personal, socio economic and psychological characteristics of the respondents	147

Table No	Title	Page No.
24	Path analysis showing the effects of the personal, socio economic and psychological characteristics on knowledge of the respondents about activities/practices and organizational set up of Agricultural Polyclinic.	149
25	Path analysis showing the effects of the personal, socio economic and psychological characteristics on benefits availed from Agricultural Polyclinic activities/practices.	151
26	Path analysis showing the effects of the personal, socio economic and psychological characteristics on adoption of activities/practices extended through Agricultural Polyclinic	154
27	Constraints faced by the respondents while adopting the agricultural practices recommended through the Agricultural Polyclinic.	155

LIST OF FIGURES

Figure No.	Title	Between page No.
1	Conceptual Model	92-93
2	Map of Maharashtra state	93-94
3	Map of Marathwada region	93-94
4	Map of the selected districts for the research study	93-94
5	Distribution of the respondents by age	123-124
6	Distribution of the respondents by education	123-124
7	Distribution of the respondents by occupation	125-126
8	Distribution of the respondents by land holding	125-126
9	Distribution of the respondents by annual income	126-127
10	Distribution of the respondents by social participation	126-127
11	Distribution of the respondents by extension contact	127-128
12	Distribution of the respondents by risk orientation	127-128
13	Distribution of the respondents by economic motivation	129-130
14	Distribution of the respondents by attitude towards Agricultural Polyclinic	129-130
15	Distribution of the respondents by knowledge about extension activities of Agricultural Polyclinic	134-135
16	Distribution of the respondents by benefits availed from Agricultural Polyclinic activities/practices	138-139
17	Distribution of the respondents by level of Adoption of activities/ practices extended through Agricultural Polyclinic	141-142

Figure No.	Title	Between page No.
18	Path diagram showing the effect of the personal, socio economic and psychological characteristics on knowledge of the respondents about activities/practices and organizational set up of Agricultural Polyclinic.	149-150
19	Path diagram showing the effect of the personal, socio economic and psychological characteristics on benefits availed through adoption of activities/practices extended through Agricultural Polyclinic.	151-152
20	Path diagram showing the effect of the personal, socio economic and psychological characteristics on adoption of activities/practices extended through Agricultural Polyclinic	154-155



Introduction

1. INTRODUCTION

Agriculture is the basis of Indian economy. Proliferation of science and technology in agriculture has drastically changed the face of agriculture. These changes, therefore, make it necessary to change agricultural extension, which plays a pivotal role in socio-economic transformation in general, and in the life of rural masses, in particular. Agricultural production in our country is dependent mainly on rainfed farming. Production and productivity of drylands is severely hampered due to uncertainties and risk characteristics of erratic monsoon, as well as, low rainfall in certain parts of the country

In Maharashtra, farming is largely depends upon vagaries of monsoon. The most outstanding feature of agriculture in Maharashtra is the large semi-arid tropics area with erratic rains causing dwindling in the production, most often small landholders, who constitute large majority, are worst affected during adverse monsoon

Increasing yield per hectare implies the shift from traditional methods of production to new scientific methods that include new technological components such as, new varieties, cultural practices and new farming system. In many countries, there are wide gaps between the yields that could be obtained through use of available production technologies and the yields obtained by the majority of the farmers, their production cost is high and majority of farmers have not any subsidiary business in supporting their farming. This is mostly due to knowledge gap. In the national perspective, agriculture should develop into an effective instrument for creating income, employment and food availability. These triple goals could be achieved if we generate and disseminate the agricultural technologies that are relevant to the end users. However, neither

technology generation, nor technology transfer takes place in a vacuum. Both these processes are dependent upon each other. Similarly, both the processes are influenced by and do influence the social, cultural, economic, political and the like aspects in the society. Our country has come a long way after independence, but still faces the problems of poverty, hunger and malnutrition. The globalization, liberalization and privatization have posed new challenges and created new problems in certain aspects of agriculture. Technology development and technology transfer are the two crucial processes in agricultural development and socio-economic upliftment of the farming community. In Marathwada area, there is a large section of farming community, which is still unaware of technological development in the field of agriculture. It is also needed to minimize the production cost and influence the farmers towards the subsidiary businesses and safeguard them against uncertainty of monsoon with the acquisition of technical skills, management of agriculture and transfer of technology through training and demonstration.

In order to be able to compete, farmers should not only be well informed about findings of agricultural research, which are relevant for their situation, but they should also learn from practical experience through training and demonstration

The training of farmers is a critical input for the rapid transfer of agricultural technology. The present rate of agricultural production can be doubled if the available technologies are brought to bear with the production process and programmes focusing more and more on transferring our new technology away from the confines of laboratories and research institutes to the farmers and make them more result and work oriented. In this context, training occupies a strategic position.

The new technologies and the factors of production must be the basis for growth in agriculture, which requires recent knowledge,

update skills and latest sources of information, embodied in farmers. Several organized efforts have been made to disseminate the agricultural technologies with greater speed. Out of the important components of these efforts the farmers training programmes which are being run all over the country. Therefore, training and retraining is the chronic need of the farming community in this technological era. The training institutions, which existed, were by and large theoretically oriented and hence they could not make as much dent in increasing production and/or generating income in the farming community, as was expected. The adoption of production inputs and package programmes are determined by the way in which the individual farmer is able to put all the technologies together on his farm. The ultimate effectiveness of any programme depends on the ability of the farmers to make sound decision based on understanding of the alternatives opened to them and on appraisal of their consequences. In order to inculcate sound, practical oriented, need based, location specific decision making capacity and to update their knowledge, training is vital

Demonstration of technology is also another effective input for creating trustworthiness about technology and building self-confidence in the farmers for utilization of technology on farm. The demonstration is superior to other methods of dissemination of farm information, as far as its convincing power is concerned. It helps people to convince through the triple process of observing, hearing and learning by doing.

In this regard, the government of Maharashtra has realized the importance of agricultural research and its extension. Several policies were framed and adopted to narrow down this gap between research and its actual application. With this background, the government of Maharashtra has launched a pilot programme-"Agricultural Polyclinic" in 1997-98 as the innovative institutions for imparting vocational training, demonstration and diagnostic services in agriculture and allied subjects. The basic philosophy

behind Agricultural Polyclinic is to increase agricultural production through dissemination of advanced agricultural technology among farmers of the state through dominant demonstration in shortest period which is the major need for agricultural development, as well as, for improvement of socio-economic status of farmers. Government of Maharashtra has declared special agricultural policies for agricultural development in December 1996, but also giving remedies for removal of difficulties of farmers regarding farming, helping farmers through advises on developed agro-techniques, soil and water testing, fertilizer application techniques, water management through use of drip and sprinkler irrigation system, farm ponds and all the facilities regarding advanced farming at one place at existing state government nurseries and / or taluka seed farms at all talukas and /or district places of the state. In this context, the government of Maharashtra has established Agricultural Polyclinics in all taluka / district places step by step.

The total number of Agricultural Polyclinic in 2005-06 was 231. Under this programme, three major extension activities are the vital objectives of the programme.

1.1 Objectives of Agricultural Polyclinic:

- 1 Farmers training
- 2 Production technology demonstration
- 3 Agricultural services (Diagnostics) to farmers

Under this objective, certain activities are carried out for agricultural and socio-economic development of the farmers, which are as under.

1.1.1 Activities of Agricultural Polyclinic

A. Demonstrations and trainings regarding

- 1 Utilization of available land
- 2 Contour development

- 3 Preparation of PKV water shed model (farm pond)
- 4 Use of improved irrigation system.
- 5 NADEP compost utilization
- 6 Vermicompost utilization
- 7 Use of HaNPV
- 8 Use of Trichocard
- 9 Use of Neemark
- 10 Utilization of low cost cold storage (zero energy) for storage of agricultural produce
- 11 Utilization of shadenet and green house

B . Agricultural services to farmers (diagnostic)

- 1 Insect pest and diseases diagnostic facilities
- 2 Soil testing
- 3 Museum facilities regarding technologically advanced implements and model implements
- 4 Seed germination testing

1.2 Beneficiaries

Farmers from all categories would be the beneficiaries of the programme.

1.3 Subsidy to the beneficiaries

Earlier there was no provision of any subsidy to implement the activities on farmer's fields through Agricultural Polyclinic. They were only providing training and demonstration on these activities, but now State Agricultural Department was providing subsidy to implement such activities on farms of the beneficiaries.

1.4 Responsibilities of implementing officers

State Agricultural Department implements this programme by forming separate establishment at Government Nurseries and/ or Taluka Seed Farms.

Taluka Agricultural Officer is the overall controlling authority for executing all activities of Agricultural Polyclinic. He is responsible for organizing the farmers rallies in presence of local MLA and / or local leaders, training and demonstration programmes on various activities of agriculture and allied subjects and agricultural services (diagnostic) to farmers for increasing the production and productivity of farming and also giving remedies for removal of difficulties of farmers regarding farming through advice with the help of separate establishment of Agricultural Polyclinic (Anonymous 2003)

1.5 Need for study

Since 1997-98, Maharashtra Government has established Agricultural Polyclinic in several talukas and districts, to narrow down gap between knowledge, practices and adoption level to increase the productivity and production of farming. It is the programme for farmers to be able to improve their knowledge and be well informed about findings of agricultural research, which are relevant to their situation. In the light of this, it was therefore, thought worthwhile to take up an indepth study entitled, "Evaluation of Agricultural Polyclinics- An indepth study" to broadly understand and evaluate whether its planning and implementation have been proceeding in the right direction and whether the beneficiaries included in the programmes are actually taking benefits of programme and obtaining a clear and comprehensive picture of the present situation.

The specific objectives of the study were as follows.

- 1 To study personal, socio-economic and psychological characteristics of the respondents.
- 2 To know the attitude of respondents about extension activities of Agricultural Polyclinic.
- 3 To assess the knowledge of respondents about extension activities of Agricultural Polyclinic.

- 4 To study the extent of benefits availed by the beneficiary respondents
- 5 To measure the performance of Agricultural Polyclinic in terms of extent of adoption of recommended practices extended through Agricultural Polyclinics by the respondents
- 6 To find out the relationship between personal, socio-economic and psychological characteristics of respondents with adoption of recommended practices extended through Agricultural Polyclinic
- 7 To ascertain the constraints faced by the respondents while adopting the agricultural practices recommended through the Agricultural Polyclinic

1.6 Importance and scope of the study

Considering the importance of the programme as explained earlier, the present research study was undertaken.

The study was conducted in three districts of Marathwada region. The findings of the study could be applied for Marathwada region due to similar situation. The conclusions drawn would be useful for planners and policy makers and also for the implementing agencies of Agricultural Polyclinic in the State to determine the future strategy of revamping and revitalizing the functions of Agricultural Polyclinic. Findings of the investigation will thus help to strengthen and implement the programme effectively

The investigation was also focused on to evaluate availability and utilization of incentives offered in the programme in time and their performance in terms of adoption by the respondents.

1.7 Limitations of the study

The present investigation had limitations of time, study area, resources and manpower usually faced by single student investigator.

However, considerable care was taken to make the study more objective and systematic. It is necessary to mention that present investigation was carried out in a limited geographical area that is in three districts of Maharashtra state, and as such its findings may not be generalized for whole Maharashtra state. As the study was based more on the individual perception and expressed opinion of the respondents under study, personal biases and prejudices of the respondents might have crept in at points despite all possible precautions taken to avoid them. The researcher had tried to make the study as much objective as possible, however there might be some gaps as the findings of the study are based on the inherent ability of the respondents to respond, recall and on the verbal opinions expressed by them

1.8 Organization of the thesis

This thesis is presented in eight chapters. The first chapter deals with brief introduction, objectives, scope and limitations of the study. The review of literature is incorporated in second chapter. The third chapter is devoted for theoretical orientation. Description of the research methods and techniques of measurement have been described in fourth chapter, while results are narrated in the fifth chapter. Discussion on results in the light of literature is given in chapter six. Chapter seven is devoted for giving summary and conclusions of the research study and implications of the study are dealt in chapter eight.



*Review of
Literature*

2. REVIEW OF LITERATURE

A comprehensive review of literature is a pre-requisite for any scientific investigation. It assists in delineation of problem areas, provides an insight in to methods and procedures, develop operational definitions and provides a basis for interpretation and generalization of findings empirically. The Maharashtra state is the first state in India to implement the Agricultural Polyclinic scheme. Hence, related past studies on this aspect of the investigation were not observed, so, references having indirect bearing on the aspects of the study were reviewed and related literature available is taken as pathway. The review of the past research findings is presented in the following order.

- 2.1 Personal, socio-economic and psychological characteristics of the respondents
- 2.2 Attitude of respondents about extension activities of Agricultural Polyclinic.
- 2.3 Knowledge of respondents about extension activities of Agricultural Polyclinic
- 2.4 Extent of benefits availed by the beneficiary respondents.
- 2.5 Performance of Agricultural Polyclinics in terms of extent of adoption of recommended practices extended through Agricultural Polyclinic by respondents
- 2.6 Relationship between personal, socio-economic and psychological characteristics of respondents with adoption of recommended practices extended through Agricultural Polyclinic.
- 2.7 Constraints faced by the respondents while adopting the agricultural practices recommended through the Agricultural Polyclinic.

2.1 Personal,socio-economic and psychological characteristics of the respondents

2.1.1 Age

Ingole *et al.* (1988) observed that maximum (42.00 %) of the respondents were in the age group of 36 to 50, years followed by 39.00 per cent in 21 to 35 years age group.

Kingaonkar (1989) stated that the percentage of beneficiaries in middle age category was 55.00 per cent and that of non-beneficiaries, was 40.00 per cent, while 43.00 per cent beneficiaries and 40.00 per cent non-beneficiaries were in 18-30 years age category.

Patel (1989) reported that majority of the contact farmers (53.00 %) and fellow farmers (51.00 %) were in the middle age group.

Kulkarni *et al.* (1990) observed that nearly half of the fruit growers (47.83 %) were placed in the middle age group, that is 36 to 54 years, followed by 33.33 per cent and 19.34 per cent in the young and old age category, respectively.

Naidu and Singh (1990) reported that the mean age of the DPAP beneficiaries was 45 years.

Yadkikar (1991) found that more than half (64.00 %) of respondents at KVK were from middle age category, while 24.00 per cent were from young age category.

Asiabaka (1992) indicated that most of the participants were less than 35 years old.

Gajre (1992) observed that majority of the beneficiaries of IRDP were in middle age group, that is 31 to 45 years.

Ingle and Kude (1995) observed that relatively higher proportion KVK trainees were young in age, that is up to 25 years, (30.30 %) and in 26 to 35 years age group (33.33 %).

Desai *et al.* (1996) observed that the majority (75.50 %) of KVK trainees were young in age i.e. up to 35 years.

Snehalatha and Reddy (1997) revealed that majority of the respondents were in middle-age category.

Antwal (1998) observed that 66.00 per cent beneficiaries and 71.00 per cent non-beneficiaries were of young age (15-35 years). About 28.00 per cent beneficiaries and non-beneficiaries were in the middle age group (36-50 years) whereas a meagre percentage (7.00 per cent and 1.00 %) beneficiaries and non-beneficiaries were from the old age group (51 and above) respectively.

Meena (1999) stated that the majority of respondents were of young age category.

Saxena and Gour (1999) reported that about 50.00 per cent respondents were in young age group (18-22 years).

Deshmukh (2000) reported that 45.50 per cent of the respondents were in the young group, 38.50 per cent were in the middle age group, while 16.00 per cent were in the old age group.

Gogoi *et al.* (2000) observed that majority of both trained (T) and untrained (UT) respondents were of middle age group (T: 60.00 per cent, UT: 57.00 %).

Balasubramani (2001) reported that about 90.00 per cent of the respondents were from young and middle age group in comparison to only 10.00 per cent in old age group.

Chikhale *et al.* (2002) observed that majority of trainees were in the middle age group.

Satyanarayana *et al.* (2002) revealed that 60.00 per cent of the beneficiaries of Swarnjayanti Gram Swarozgar Yojana were middle age while 25.71 per cent were young and 14.29 per cent were old.

Sayanolla (2002) reported that majority (52.00 %) of the beneficiary farmers belonged to the age group of 36 to 50 years.

Nagabhushanam (2003) stated that maximum percentage (47.78 %) of the respondents were in the middle (36-45 years) age category.

Bhange (2004) observed that majority of beneficiaries were of middle age group.

Dhapke (2004) observed that maximum percentage of the respondents (45.33 %) belonged to 'middle' age category of 36 to 50 years.

Anonymous (2005) observed that maximum percentage of the respondents (45.00 %) belonged to the middle age (40-55 years) category, followed by 38.00 per cent in the young age (below 40 years). Only 17.00 per cent were in the old age (above 55 years) category

Chaudhary *et al.* (2005) stated that more than half (68.00 %) of the trained respondents belonged to 20-30 age group.

Issar and Dalal (2005) observed that 56.00 per cent adopters were having the mean age less than 41.17 years, whereas 46.00 per cent adopters were having the age more than equal to 41.17 years.

Kumaran and Jayaragavan (2005) revealed that majority of the farmers (82.50 %) belonged to old age group.

Patil *et al.* (2006) stated that majority (75.33 %) of the respondents were middle age.

Vashishtha *et al.* (2006) found that majority (64.00%) of the respondents engaged in social forestry, were belonging to the age group of 44 to 51 years.

Halakatti *et al.* (2007) (b) observed that majority of the trained (70.67 %) and untrained (79.80 %) dairy farm women were middle age.

Kauthale and Sale (2007) revealed that highest percentage of dairy farmers (58.30 %) belonged to middle-age group (between 35 to 55 years), followed by young age (31.70 %) and old age (10.00 %) group.

2.1.2 Education

Harikumar (1984) observed that 25.4 per cent of the beneficiaries were illiterate, more than 23.00 per cent had received primary education. About 32.6 per cent had studied up to the 7th standard, 16.3 per cent had high school education and 2.19 per cent of the beneficiaries had gone to colleges and approximately 0.8 per cent was having degree level education.

Bhanja and Venkatadri (1987) found that majority (77.25 %) of the respondents were illiterate.

Ingole *et al.* (1988) observed that the majority (76.00 %) was having either primary or secondary education, whereas 18.00 per cent owners were illiterate and 6.00 per cent of owners were under the higher education category.

Olowu *et al.* (1988) stated that the maximum (41.70 %) of the respondents were having primary education.

Naidu and Singh (1990) reported that majority (53.00 %) of DPAP beneficiaries were illiterate.

Tawde and Deshpande (1990) noted that the beneficiaries of horticultural development scheme were educated up to 6th standard

Nevase (1991) revealed that majority of the farmers had received primary education.

Nimje *et al.* (1991) reported that 60.00 per cent of the farmers were having education up to 7th standard. Only 4.00 per cent were illiterate

Gajre (1992) observed that majority of the beneficiaries of IRDP were educated up to primary school.

Pimparikar and Shetay (1993) noticed that 36.47 per cent of the respondents were educated at middle school level and about 25.00 per cent were at primary level. The percentage of illiterate was 28.23 per cent.

Antwal (1998) indicated that about 29.00 per cent of beneficiaries and 36.00 per cent non-beneficiaries were illiterate. About 19.00 per cent beneficiaries and 29.33 per cent non-beneficiaries were able to read and write, whereas 16.72 per cent and 28.00 per cent beneficiaries were educated up to primary school respectively. About 29.00 per cent beneficiaries and 6.6 per cent non-beneficiaries were educated up to high school. Only 6.54 per cent beneficiaries were educated up to collegiate and above group.

Vipin Kumar (1998) found that majority of the SHG participant respondents of Kerala Horticulture Development Programme belonged to higher category of education.

Saxena and Gour (1999) reported that about 53.00 per cent respondents had higher education.

Ahire (2000) observed that 42.66 per cent of respondents from watershed village and 37.33 per cent respondents from non-watershed village were having education up to high school level.

Deshmukh (2000) observed that 25.00 per cent respondents could read and write. 18.5 per cent respondents had primary school education, while 18.00 per cent respondents were able to read only, 13.5 per cent of the respondents were found to be of middle school, 12.5 per cent of the respondents were illiterate and 11.5 per cent were possessing high school education, whereas college education was sought by 1.0 per cent respondents.

Gogoi (2000) reported that educational level of respondents in trained (33.00%) and untrained (28.00 %) groups was up to middle

school level, while respondents with high school level were also substantial, 21.00 per cent trained and 19.00 per cent untrained.

More *et al.* (2000) observed that majority of the respondents (62.15 %) had medium level of education.

Bhati *et al.* (2002) found that maximum (46.90 %) of the respondents had education up to middle level and 26.00 per cent were illiterate.

Chikhale *et al.* (2002) observed that majority of trainees were educated up to secondary level.

Sayanolla (2002) reported that majority (50.00 %) of the beneficiary farmers had primary education, that is up to seventh standard.

Surve (2002) found that 33.34 per cent of the respondents had high school education followed by 26.66 per cent respondents were found educated up to college level, 16.66 per cent respondents were educated up to primary school and 15.00 per cent respondents were illiterate.

Farooqui and Godse (2003) reported that majority of respondents were illiterate.

Bhange (2004) observed that majority of beneficiaries were illiterate.

Dhapke (2004) observed that more than half (54.66 %) of the respondents were educated up to 'high school' level followed by 17.33 per cent had 'middle school' level education.

Anonymous (2005) observed that maximum percentage of the respondents (43.00 %) was having secondary level of education, whereas 37.00 per cent of the respondents were having primary level of education and 17.00 of the respondents were illiterate. Only 06.00 per cent of the respondents possessed higher level of education.

Kumaran and Jayaragavan (2005) revealed that majority (73.34 %) of the respondents had middle and below middle level of education.

Katkar and Ahire (2006) pointed out that most of the drip adopters had (40.00 %) secondary education.

Patil *et al.* (2006) (b) observed that 28.00 per cent of the respondents were having education up to high school level.

Singh and Khurana (2006) revealed that maximum number of the respondents (40.67 %) were illiterate and only 4.67 per cent were Graduate.

Vashishtha *et al.* (2006) reported that 96.00 per cent of the respondents were illiterate.

Halakatti *et al.* (2007) (b) observed that majority of the trained (51.87 %) and untrained (66.50 %) dairy farm women were in primary education level category.

Kauthale and Sale (2007) observed that half of the (50.00 %) respondents had attained secondary, 31.00 per cent had higher secondary education, 8.3 per cent had attained education up to college level, 6.7 per cent had primary level of education and only 3.3 per cent respondents were illiterate.

2.1.3 Occupation

Mehta and Joshi (1993) observed that marginal farmers formed the significant group (29.21%), followed by small farmers (21.64 %), agricultural and non-agricultural labours and rural artisans constituted 14.27, 15.90 and 11.61 per cent of the total selected families.

Hagone (1994) revealed that about 51.67 per cent of the respondent were engaged exclusively in agriculture, followed by 35.00 percent in agriculture + secondary business and 11.67 per cent in business

like grocery, cloth store, etc. Only 1.66 per cent were engaged in agriculture + family business.

Agre (1996) reported that majority of the respondents (55.71 %) were engaged in agriculture as main occupation.

Deshmukh (2000) reported that 39.00 per cent of the respondents were engaged in agriculture whereas 22.5 per cent respondents were engaged in caste occupation, 16.00 per cent respondents were engaged in labour that is agricultural labour, and 21.5 per cent respondents were engaged in business and very less per cent that is 0.5 were found to be busy in service.

Bhati *et al.* (2002) found that farming was the main occupation of all selected respondents (98.00 %); a few were engaged in subsidiary occupation.

Pandhare (2005) observed that 23.33 per cent beneficiary and 37.33 per cent non-beneficiary respondents were engaged exclusively in agriculture.

Sharma and Parmar (2005) reported that majority (75.00 %) of the farmers had agriculture as the main occupation.

2.1.4 Land holding

Gholve (1986) stated that majority of the respondents (62.10 %) had small size of land holding (up to 2 ha), followed by 20.53 per cent and 17.37 per cent with medium and big size of land holding (2.1 to 4.0 ha and above 4.0 ha), respectively.

Ingole *et al.* (1988) observed that 25.00 per cent of the cattle owners had a land holding of up to 2.00 hectares, 15.38 per cent with 2.1 to 4.00 hectares, 20.19 per cent with 4.1 to 6.0 hectares and 19.24 per cent had above six hectares. About 20.00 per cent of the respondents were landless.

Mehta and Dalvi (1990) found that cashew nut growers possessed, on an average, 3.33 hectares of land.

Shirsat (1992) found that 38.33 per cent of the respondents had medium size of farm.

Pimparikar and Shetay (1993) noticed that the proportion of the respondents having land holding between 2.1 to 4.00 ha was 45.88 per cent, whereas 29.42 per cent possessed land above 4.00 ha.

Sawant (1994) observed that majority of the beneficiaries of IRDP had holding up to 1 to 2 hectares.

Agre (1996) observed that 37.15 per cent respondents possessed land ranging between 2.01 to 6.00 hectares, followed by 31.43 per cent and 23.80 per cent respondents possessed land between 1.01 to 2.00 hectares and up to 1.00 hectare, respectively. A meagre percentage of respondents (7.62 %) possessed land upto 6.01 hectares and above.

Desai *et al.* (1996) observed that majority of KVK trainees owned 1.01 to 4.00 ha of land holding (60.1 %).

Ahire (2000) showed that 61.34 per cent of respondents from watershed village and 82.67 per cent respondents from non-watershed village were having medium size of land holding ranging from 2 to 7 hectares.

Bhati *et al.* (2002) found that majority (76.00 %) of the respondents were marginal farmers having less than 1.00 ha.

Chikhale *et al.* (2002) observed that majority of trainees belonged to big farmers category.

Sayanolla (2002) reported that majority (81.00 %) of the beneficiary farmers were having 0.51 ha to 2.5 ha size of land holding.

Karegaonkar (2003) revealed that the most of the respondents (39.16 %) were in semi medium category of land holding, 25.00 per cent and 20.00 per cent respondents were marginal and small land holders, respectively and very small number of the respondents were in big and medium category, that is 8.33 per cent and 7.51 per cent, respectively.

Nagabhushanam (2003) observed that near about equal percentage of the respondents (38.39 % and 36.67%) were having marginal and small land holding respectively.

Dhapke (2004) observed that one-third (34.00 %) of the respondents were 'small' farmers with a farm size ranging from 1.01 to 2.00 ha, followed by 28.00 per cent who were possessing '2.01 to 4 ha' of land.

Sateshkumar (2006) observed that maximum beneficiaries (37.50 %) were from semi-medium land holding group, 24.17 per cent of had small land holding, 23.33 per cent of had medium land holding and 9.16 per cent and 5.84 per cent had marginal and large land holding, respectively.

Singh and Khurana (2006) revealed that more than three-fourth of the respondents (76.00%) were having small operational land holding (2-13 acres) and only 6.00 per cent had large size of operational land holding.

Halakatti *et al.* (2007) (b) observed that 39.90 per cent of trained dairy farm women were having small and medium land holding. 13.00 per cent of trained dairy farm women were having big land holdings.

Kauthale and Sale (2007) revealed that majority of the farmers (63.3 %) were from small land holding (up to 2.5 ha.), followed by 20.00 per cent from large (above 4 ha.) and 16.7 per cent from medium land holding (2.5 to 4 ha.).

2.1.5 Annual income

Nevasse (1991) revealed that majority of the farmers had low annual income (Rs.4000 to 5000).

Mahajan (1993) revealed that majority of the respondents had higher income (42.00 %).

Pimparikar and Shetay (1993) noticed that more than one-third (37.64%) had income up to Rs 10000/-, while 34.11 and 28.25 per cent respondents had the annual income between Rs 10001/- to 15000/- and above Rs 15000/- respectively.

Kamble (1998) noted that most of the KVK respondents had medium income (55.00 %), followed by high income (35.83 %), while only 9.16 per cent of the KVK respondents had low income.

Chikhale *et al.* (2002) observed that majority of trainees were having annual income above Rs.115000/-.

Sayanolla (2002) revealed that majority (79.00 %) of the beneficiary farmers had annual income between Rs. 15001 to 85000.

Anonymous (2005) reported that 47.5 per cent of the respondents were having annual income between Rs. 24000-50000, followed by 36.5 per cent were having annual income between Rs. 12000-24000. Whereas, 9.00 per cent and 7.00 per cent had annual income below Rs 12000 and above Rs. 50000, respectively.

Pandhare (2005) reported that majority (72.00 %) of the beneficiary and 60.67 per cent non-beneficiary respondents had medium annual income, i.e. in between Rs. 52000 to Rs. 110000, whereas 12.66 per cent beneficiary and 29.33 per cent non-beneficiary respondents had low annual income, i.e. less than RS. 52000.

Katkar and Ahire (2006) observed that majority of drip adopters (66.00 %) had medium level of income.

Satheshkumar (2006) reported that majority of the beneficiaries (72.50 %) had medium level of annual income, followed by 15.00 pr cent of the beneficiaries had high level of annual income and about 12.50 per cent of them were having low income.

Kauthale and Sale (2007) revealed that 60.00 per cent farmers were from the medium level of income, followed by 25.00 belonged to low level of income and only 15.00 were from the high level of annual income.

2.1.6 Social participation

Gaur and Venugopal (1984) observed that there was no social participation of the beneficiaries.

Patel (1989) reported that majority of the contact farmers (60.00 %) had medium type of social participation.

Mehata and Dalvi (1990) reported that majority of the cashew nut growers (59.62 %) had low social participation, while 26.92 and 13.46 per cent respondents had medium and high social participation, respectively.

Shetay *et al.* (1990) revealed that most of the ber growers, that is 36.00 per cent, were the members of one organization, while only 4.00 per cent were office bearers of the village organization.

Nandanwankar (1991) observed that majority of the beneficiaries (70.80 %) and non-beneficiaries (78.75 %) did not participate in any social institution. However, 25.17 per cent beneficiaries and 21.25 per cent non-beneficiaries participated in social institutions.

Mahajan (1993) revealed that 68.00 per cent of the respondents belonged to low social participation group.

Pimparikar and Shetay (1993) reported that majority of the respondents (92.34 %) were the members of co-operative society, while the percentage of member of Grampanchayat was 5.88 per cent only.

Thombre (1993) stated that majority of the beneficiaries (90.00 %) had medium level of social participation, followed by 7.86 per cent and 2.14 per cent respondents having low level and high level, respectively.

Antwal (1998) found that a substantial percentage (61.81) of the beneficiaries and majority (77.33 %) of non-beneficiaries were having medium level of social participation. About 31.00 per cent beneficiaries and 21.00 per cent non-beneficiaries were having low level of social participation. Only 7.63 per cent beneficiaries and 1.33 per cent non-beneficiaries had high level of social participation.

Vipin Kumar (1998) stated that majority of the SHG participant respondents of Kerala Horticulture Development Programme belonged to higher category of social participation.

Ahire (2000) reported that maximum (46.67 %) of the respondents from watershed village had medium level of social participation.

Deshmukh (2000) revealed that maximum percentage of the respondents (48.00 %) had low social participation, whereas 27.00 per cent and 25.00 per cent of the respondents had high and medium social participation respectively.

Chikhale *et al.* (2002) observed that majority of trainees were having medium level of social participation.

Sayanolla (2002) found that majority (67.00 %) of the beneficiary farmers had low social participation.

Bhange (2004) observed that majority of beneficiaries had low social participation.

Kumaran and Jayaragavan (2005) revealed that majority (69.17 %) of the farmers were medium in their level of social participation.

Vinod Prakash (2007) revealed that majority (60.00 %) of the potato growers had no participation, followed by 21.50 per cent were member of one organization, 10.00 per cent were member of more than one organization and only 8.5 per cent were office holders.

2.1.7 Extension contact

Mahajan and Bajaj (1983) reported that nearly equal (39.20 % and 37.60 %) of respondents had high and medium extension contacts with agency.

Thakkar *et al.* (1990) reported that nearly 36.27 per cent contact farmers expressed 'Rare contact' with extension agency and 63.72 per cent had regular contact with the extension agency.

Mahajan (1991) revealed that 45.56 per cent farmers had medium extension contact with the agency.

Gajre (1992) observed that majority of the beneficiaries of IRDP had low extension contact.

Pimparikar (1994) found that majority (78.24 %) of the respondents of Watershed Development Project had medium extension contact, followed by 15.74 per cent respondents having high extension contact, while 6.02 per cent respondents had low extension contact.

Agre (1996) observed that majority of the beneficiaries of Horticultural Development Programme (69.52 %) had medium extension contact, followed by 15.72 per cent and 14.76 per cent of the beneficiaries were observed in high and low extension contact category, respectively.

Antwal (1998) observed that a significant percentage (49.09 %) of the beneficiaries were having medium contact with USBP personnel, followed by low (22.90 %). While 28.00 per cent beneficiaries were having high contact with UBSP personnel

Sawsakde (1998) observed that majority of the beneficiaries of Agril. Development Schemes (66.00 %) had medium extension contact, whereas 20.67 per cent of the beneficiaries had low level of extension contact and 13.33 per cent of the beneficiaries had high level of extension contact.

Meena (1999) stated that the majority of respondents were having poor extension contact.

Kausadikar (2000) observed that six out of every ten beneficiaries (59.33 %) had medium contacts with the extension personnel. However, more than one fourth (26.07 %) of them had high contacts with extension personnel, comparatively smaller proportion (14.00 %) of the farmers had less contact with the personnel of different extension agencies.

More *et al.* (2000) revealed that majority (62.86 %) of the respondents had medium level of extension contact.

Pulikken (2001) observed that majority of the beneficiaries (62.67 %) had medium level of extension contact, 28.00 per cent had high extension contact and 9.33 per cent of the beneficiaries had low extension contact.

Karegaonkar (2003) revealed that 37.50 per cent respondents had medium contact with the extension personnel, 32.50 per cent had high contact with extension personnel and 30.00 per cent had less contact with the personnel of different extension agencies.

Singh and Khurana (2006) observed that a large number of cauliflower growers (90.00 %) had low extension contacts, 8.00 per cent had medium extension contact and only 2.00 per cent had high extension contact.

2.1.8 Risk orientation

Gajre (1992) observed that majority of beneficiaries of IRDP showed medium risk performance.

Agre (1996) reported that majority of the respondents (58.57 %) were having medium risk bearing ability.

Gogoi *et al.* (2000) found that the risk preference for majority of trained respondents (66.00 %) was medium but low for untrained respondents (59.00 %).

More *et al.* (2000) observed that majority of the respondents (62.14 %) had medium level of risk preference.

Sayanolla (2002) stated that majority (60.00 %) of the beneficiary farmers were having low risk orientation.

Katkar and Ahire (2006) observed that majority of the respondents (60.00 %) had medium level of risk orientation.

Satheshkumar (2006) noticed that majority of the beneficiaries (70.00 %) had medium risk bearing ability. It was further noticed that 15.00 per cent of the beneficiaries had high risk bearing ability and 15.00 per cent of the beneficiaries had low risk bearing ability.

2.1.9 Economic motivation

Gajre (1992) noted that majority of the beneficiaries of IRDP belonged to medium economic motivation category.

Deshmukh (1994) revealed that substantial percentage of the respondents, i.e. 49.30 per cent were, having medium economic motivation, followed by 35.20 per cent and 14.50 per cent respondents had high and low economic motivation, respectively.

Jangwad (1996) observed that majority of the beneficiaries of Horticultural Development Programme, i.e. 72.50 per cent, belonged to the medium economic motivation category, while 12.50 per cent of the beneficiaries had low level of the economic motivation and 15.00 per cent of the beneficiaries belonged to high economic motivation category.

Ingle (1997) observed that 63.33 per cent of the trained farmers at KVK were having medium level of economic motivation, whereas, 26.66 per cent were having high economic motivation and only 10.00 per cent trainees were having low economic motivation.

Snehalatha and Reddy (1997) revealed that majority of the respondents had medium economic motivation.

Deshmukh (1999) observed that majority of the beneficiaries of KVK (61.00 %) had medium level of economic motivation, 24.00 per cent of them had high level of economic motivation and 15.00 per cent of them had low level of economic motivation.

Satheshkumar (2006) observed that majority of the beneficiaries, i.e. 70.83 per cent, belonged to the medium economic motivation category while 17.50 per cent of the beneficiaries had low level of the economic motivation and 11.67 per cent of the respondents belonged to high economic motivation category.

2.2 Attitude of respondents towards extension activities of Agricultural Polyclinic

Sood (1970) observed that majority of the respondents were having favourable attitude towards two educational programmes (Nutrition education and Kitchen gardeninig).

Madhu Mohan (1983) revealed that 60 per cent small farmers had favourable attitude, whereas majority of marginal farmers (71.80 %) and rural artisans (62.50 %) held medium favourable attitude towards IRDP.

Vasoya *et al.* (1983) revealed that majority of the contact farmers (60.00 %) possessed more favourable attitude towards Training and Visit system.

Sinha *et al.* (1984) observed that great majority of recipients (93.12 %) were found to be in favour of Rural Development Scheme.

Jain (1986) observed that community members had developed positive attitude towards the family planning programme and services as a result of population education activities in the Anganwadi. The number of family planning acceptors had also increased considerably.

Joshi and Sharma (1989) observed that respondents had medium level of attitude towards the social forestry programme.

Kingaonkar (1989) observed that maximum percentage of beneficiaries (98.67 %) had favourable attitude towards KGVP and about 2.00 per cent beneficiaries remained undecided.

Singh *et al.* (1989) observed that majority (55.00 %) of the farmers were having favourable attitude, while 45.00 per cent farmers were having unfavourable attitude towards Training and Visit system

Bajaj *et al.* (1990) revealed that majority of the growers had cultivated the custard apple due to their favourable attitude towards it.

Palande and Tripathi (1990) reported that majority of the respondents indicated favourable attitude towards IRDP.

Thakkar *et al.* (1990) observed that majority of the respondents (65.69%) had favourable attitude whereas, 24.51 per cent held strongly favourable attitude. Only 9.80 per cent respondents were found to have unfavourable attitude towards Training and Visit system

Nevasse (1991) revealed that majority of contact farmers had favourable attitude towards Training and Visit system.

Agre (1996) revealed that 87.10 per cent had favourable attitude towards Horticultural Development Programme.

Antwal (1998) stated that majority of the beneficiaries (80.72 %) and only 8.00 per cent of non-beneficiaries had expressed favourable attitude towards UBSP programme, whereas 9.45 per cent beneficiaries and 72.00 per cent non-beneficiaries expressed unfavourable attitude towards UBSP programme. About 10.00 per cent beneficiaries and 20.00 per cent non-beneficiaries were found to be neutral.

Vipin Kumar (1998) revealed that majority of the SHG participant respondents belonged to higher category of attitude towards Kerala Horticulture Development Programme.

Reddy *et al.* (2001) observed that there was slight difference in attitude of the farmers towards Dryland Agricultural Technology, that is

37.50 per cent, 30.83 per cent and 31.63 per cent had negative, neutral and positive attitude, respectively.

Kausadikar *et al.* (2002) revealed that majority of the respondents (60.00 %) had less favourable attitude towards the Horticultural Development Programme, while remaining 40.00 per cent of the respondents had more favourable attitude towards Horticultural Development Programme.

Panjabi *et al.* (2002) stated that nearly half of the total beneficiaries (51.66 %) were reported from the medium degree of attitude, whereas 32.92 per cent respondents were placed in low, while only 15.42 per cent were found to possess high attitude.

Karegaonkar (2003) revealed that, majority (73.33 %) of the respondents had favourable attitude towards ATMA, followed by 21.66 per cent had more favourable attitude, while 5.01 per cent had neutral attitude.

Bhange and Kolte (2004) observed that on an average, 19.44 per cent of the beneficiaries had 'more favourable' attitude, while less than three-fifth (58.05 %) had 'moderately favourable' attitude level towards National Watershed development programme activities.

Bhople *et al.* (2004) observed that over half of the beneficiaries (52.91 %) were having favourable attitude towards Water Users Co-operative Society, while remaining 45.08 per cent of beneficiaries indicated unfavourable attitude.

Mahendra Kumar and Singh (2004) found that the majority of the beneficiary farmers had favourable attitude towards Minikit Demonstration Programme, whereas 16.00 per cent beneficiary farmers had favourable attitude and only 12.00 per cent had unfavourable attitude towards Minikit Demonstration Programme.

Bhople *et al.* (2005) observed that an overwhelming majority of the beneficiary farmers (80.00 %) had moderately favourable attitude

towards Jawahar Well Scheme. Only 13.33 per cent of the beneficiary farmers were found to be highly favourably disposed towards Jawahar Well Scheme.

Pandhare (2005) reported that 76.67 per cent of the beneficiary and 62.00 per cent non-beneficiary respondents were having moderately favourable attitude towards KVK.

Patel *et al.* (2006) found out that majority (88.34 %) of beneficiaries had favourable attitude, followed by 8.33 per cent of respondents had unfavourable attitude and only 3.33 per cent of the beneficiaries had neutral attitude towards watershed management technology.

Reddy *et al.* (2006) revealed that majority (54.70 %) of the farmers possessed moderately favourable attitude on rice eco-friendly technologies, followed by 31.40 per cent with more favourable and only 13.90 had less favourable attitude towards rice eco-friendly technologies.

Santhi *et al.* (2007) observed that majority (82.00 %) of the women trainees were found to have positive attitude towards technology transfer.

2.3 Knowledge of respondents about extension activities of Agricultural Polyclinic

Gholve (1986) stated that majority of the respondents belonged to medium level of knowledge (57.37 %), followed by high and low level of knowledge, i.e. 23.68 per cent and 18.95 per cent, respectively.

Patil (1986) concluded that the highest percentage of farmers were observed in medium knowledge group.

Waghmare *et al.* (1988) observed that 19.33 per cent of beneficiaries were located in medium knowledge category. One-fifth of the beneficiaries possessed adequate knowledge about the implementation of Horticultural Development Scheme.

Mehata *et al.* (1989) revealed that more than half of the respondents were from medium knowledge level group (52.00 %), followed by low level of knowledge (25.00%) and high level of knowledge category (24.50 %).

Reddy (1989) observed that the mean knowledge score of the trained farmers was 28.61 per cent and that of untrained farmers was 20.07. The difference between two mean was found significant.

Bajaj *et al.* (1990) reported that majority of custard apple growers had knowledge about recommended practices of custard apple cultivation (63.67 %) and very few growers had the knowledge of seed treatment and planting by grafts, whereas 68.00 percent respondents had knowledge of improved varieties.

Yadkikar (1991) revealed that maximum number of the KVK respondents (55.50 %) gained medium level of knowledge, followed by low and high level of knowledge (23.00 per cent and 21.50 %), respectively.

Bhatt (1993) observed that majority of trained farmers had high and medium level of knowledge, while three-fourth of untrained farmers had medium to low level of knowledge regarding improved practices of paddy crops.

Jondhale *et al.* (1993) found that 56.66 per cent participant farmers were in the medium knowledge level group, while 23.33 per cent and 20.00 per cent were in low and high knowledge category, respectively.

Kakde (1993) revealed that knowledge level of majority of the respondents (76.11 %) was medium, followed by the high level of knowledge (14.45 %) and 09.44 per cent respondents had low level of knowledge.

Pimparikar (1994) observed that more than half of the respondents (51.85 %) had high knowledge, followed by 37.50 per cent of

respondents were having medium knowledge, while 10.65 per cent of the respondents were found to be possessing low knowledge.

Agre (1996) observed that majority (60.96 %) of the respondents had medium level of knowledge.

Wankhade (1997) observed that majority of the beneficiaries of ICDS (52.73 %) possessed medium level knowledge, 29.09 per cent of the beneficiaries possessed low level of knowledge and 18.18 per cent of the beneficiaries had high level of knowledge.

Antwal (1998) reported that a substantial percentage (60.00 and 65.33) of the beneficiaries and non-beneficiaries were having medium level of knowledge, respectively, whereas near about equal percentage of beneficiaries and non-beneficiaries (24.36 and 22.66) were having low level of knowledge. About 16.00 per cent beneficiaries and 12.00 per cent non-beneficiaries had high knowledge level

Kumaran (1998) reported that almost half of the farmers possessed low level of knowledge on water management practices, like method of planting, method of irrigation, water requirement, scheduling of irrigation, maintenance of water table etc.

Deshmukh (1999) observed that majority of the beneficiaries of KVK (64.00 %) had medium level knowledge, 19.00 per cent of the beneficiaries had high knowledge level and 17.00 per cent had low knowledge level.

Chapke (2000) revealed that 75.91 per cent of respondents had moderate knowledge about bio-control measures, whereas comparatively less percentage of respondents had low (16.05 %) and high (8.04 %) level of knowledge about bio-control practices.

More *et al.* (2000) observed that majority of the respondents (62.14 %) had medium level of knowledge, followed by high (27.86 %) and

T5745



low (10.00 %) level of knowledge about cotton production practices, respectively.

Balasubramani (2001) observed that more than 45.00 per cent of the respondents had medium level of knowledge and the remaining about 34.00 per cent were having low to very low level of knowledge about TANWA project.

Chinchmalatpure *et al.* (2001) reported that majority of the trained farmers (85.00 %) were having high to medium level of knowledge regarding the recommended practices of paddy crop, whereas the majority of the untrained farmers (82.50 %) were having low to medium level of knowledge regarding the recommended practices of paddy crop.

Dixit (2001) observed that majority of the beneficiaries of Agril. Development Schemes (56.67 %) possessed medium level of knowledge, 32.00 per cent of the beneficiaries had low level of knowledge and 11.33 per cent of the beneficiaries had high level of knowledge.

Pulikken (2001) observed that majority of the beneficiaries of Jawahar Well scheme (65.33 %) had medium level of knowledge, 18.00 per cent of the beneficiaries had high level of knowledge and 16.67 per cent of the beneficiaries had low level of knowledge.

Suryawanshi (2002) reported that more than two third of respondents (68.33 %) had medium knowledge about rural development programme.

Tarde *et al.* (2002) observed that 45.83 per cent of the farmers had knowledge about National Pulse Development Programme.

Shrivastava and Lakhera (2003) noted that high-level knowledge category had considerably increased from 16.67 to 25.00 percent; while medium level knowledge increased by more than 10.00 per cent. The low level knowledge category had been drastically reduced to 23.33 per cent, about mushroom production technology.

Anonymous (2004) reported that after initiation of TAR programme, most of the farmers (57.00 %) possessed medium to higher levels of knowledge of improved technology.

Chawane *et al.* (2004) revealed that majority of the farmers (66.66 %) were in medium category of knowledge. Only 18.67 per cent of the farmers had high level of knowledge about Soil and Rain Water Conservation Technology.

Dhapke (2004) observed that the respondents in general i.e 66.66 per cent had 'high' level of knowledge about Soil and Rain Water Management Technology.

Tapre and Ingle (2004) stated that three-fourth of the bee keepers (77.14 %) possessed high level of knowledge, followed by 14.29 per cent with medium level of knowledge. Only 8.57 per cent respondent bee keepers had low knowledge level on improved package of practices of bee keeping.

Chandrashekar *et al.* (2005) observed that half of the respondents (50.00 %) had high level of knowledge about the recommended practices of GPU-28 ragi cultivation, whereas, 36.67 and 13.33 per cent of the respondents had low and medium level of knowledge respectively.

Pandhare (2005) observed that 64.00 per cent beneficiary and 36.00 per cent non-beneficiary respondents had medium level knowledge about organic manures and pesticides, whereas 32.00 per cent beneficiary and 16.00 pr cent non-beneficiary respondents had high-level knowledge.

Sahana *et al.* (2005) stated that half of the respondents (50.00 %) had medium level of knowledge about the function of Raita Samparka Kendras, while about one fourth of farmers (26.67 %) had high level of knowledge and remaining 23.33 per cent had low level of knowledge about the functioning of Raita Sampark Kendras.

Suryawanshi and Chole (2005) found that in complete knowledge category, scheme wise distribution of respondents was as Grant in Aid to Mahila Mandal (18.33 %), Personal Grants to the Women Under Self Employment Scheme (24.16 %), Marriage Grants to the Daughters of Destitute Divorced Widows (50.83 %) and ICDS (47.50 %).

Prakash and Brar (2006) observed that majority (67.96 %) of the farmers were having medium level of knowledge about crossbreeding programme, whereas 17.96 per cent and 14.06 per cent of the farmers were having high and low level of knowledge about crossbreeding programme.

Hosmani *et al.* (2006) revealed that 67.00 per cent of the respondents had medium (37.00 %) to high (30.00 %) knowledge regarding general health practices.

Patil *et al.* (2006) (b) observed that majority of the respondents (72.67 %) possessed medium knowledge about watershed practices, while lesser percentage of respondents 14.00 per cent and 13.33 per cent possessed high and low knowledge, respectively.

Reddy *et al.* (2006) reported that majority (58.00 %) of the farmers possessed medium knowledge on rice eco-friendly technologies followed by 22.40 per cent and 19.60 per cent had high and low knowledge on rice eco-friendly technologies respectively.

Reddy and Reddy (2006) stated that majority (58.95 %) of the trainee farmers were having medium level of knowledge, followed by 22.81 per cent having low level of knowledge and 18.22 per cent were having high level of knowledge.

Satheshkumar (2006) observed that above half of the beneficiaries (54.16 %) possessed medium knowledge, 23.34 per cent of the respondents possessed high knowledge and 22.50 per cent of the beneficiaries had low knowledge of the Horticultural Development Programme.

Suryawanshi *et al.* (2007) observed that near about two- third (62.50 %) of the respondents had medium knowledge level, followed by 24.00 per cent and 13.50 per cent respondents had low and high knowledge level, respectively.

Halakatti *et al.* (2007) (b) reported that majority of the dairy farm women from trained group (80.00 percent) and untrained group (63.00 %) were having medium level of overall knowledge regarding dairy management practices.

2.4 Extent of benefits availed by the beneficiary respondents.

Ray *et al.* (1982) revealed that T&V system had brought a rising trend in employment and to some extent in farm income of the tribal farmers.

Anonymous (1985) reported that nearly 90.00 per cent of the beneficiaries were benefited from IRDP in terms of employment, income level, asset formation, consumption level and social status.

Phadtare (1985) reported that impact of Lab to Land programme on adopted farmers was observed in terms of increase in level of productivity, additional gain in income and employment generation

Khanna (1990) reported that about 64.00 per cent households felt that their overall status in the village society had been elevated as a consequence of their coverage under IRDP.

Mohod *et al.* (1991) observed that change in the cropping pattern and new crops, particularly such as wheat, gram, soybean and safflower were attributed to project launching and also yield of the crops certainly increased because of constant efforts put-forth by project functionaries through organizing demonstration, field trips, training imparted to project beneficiaries and personal contact with beneficiaries.

Bhalla (1992) concluded that there was an increase in the income level of almost all the beneficiaries (95.55 %) of the lab to land programme.

Pimparikar and Shetay (1993) reported that majority of the beneficiaries derived benefits due to watershed activities in the form of increase in income by 69.41 per cent, gain in knowledge about new technology by 60.00 per cent, soil conditions improvement by 80.00 per cent, checking of soil erosion (74.11 per cent), whereas 21.17 per cent reported that cultivable waste land was brought under afforestation.

Adhapure (1996) reported that 82.00 per cent of the respondents availed benefit of IRDP for removing the poverty and only 17.50 per cent respondents got benefit of this scheme for getting financial help and developing assets.

Jangwad (1996) observed that 49.00 per cent of the beneficiaries derived high benefits of the Horticultural Development Programme, about 47.50 per cent beneficiaries availed medium benefits and only 4.00 per cent of the beneficiaries got low level of the benefits of the programme.

Sawsakde (1998) observed that majority of the beneficiaries of Agril. Development Schemes (64.00%) derived medium level of benefits, then 19.33 per cent of the beneficiaries had high level of benefits and 16.67 per cent of the beneficiaries had low level of benefits.

Haque (2000) stated that 46.00 per cent of demonstrating farmers got increase in yield from 5 to 10 q/ha, 24.00 per cent from 1 to 5 q/ha and 14.00 per cent from 10 to 12 q/ha, while 16.00 per cent reported no increase in yield from large size field demonstration.

Dixit (2001) observed that majority of the beneficiaries of Agril. Development Scheme (60.00 %) derived medium level of benefits,

about 26.67 per cent of the beneficiaries derived low level of benefits and 13.33 per cent of the beneficiaries derived high level of benefits.

Pulikken (2001) observed that majority of the beneficiaries of Jawahar Well Scheme (77.33 %) derived high level of benefits, about 22.67 per cent of the beneficiaries had medium level of benefits and no beneficiaries had low level of benefits.

Palande *et al.* (2001) indicated that 7.00 per cent marginal farmers, 15.00 per cent small farmers and 10.00 per cent big farmers had increased irrigation through the National Watershed Development Programme.

Tayde *et al.* (2003) revealed that nearly two-third of the beneficiaries (66.00 %) had experienced change in their income from farming, to a moderate extent that is 58.97 to 89.342 change over the existing one by the adoption of sprinkler irrigation scheme.

Narkhede and Ingle (2004) observed increased maximum productivity in chilli (about 115.58 per cent) and minimum in maize that is 18.55 % in average productivity over base year as an impact of Nalganga Irrigation Project.

Palkar *et al.* (2004) observed that maximum beneficiaries reported the group benefits like increase in the greenery under Vanrai Bandhara area (70.00 %), increase in the water table in Vanrai Bandhara area (68.00 %), cultivation of vegetables and pulses was started (68.00 %), increase in the area under vegetables (62.00 %), villagers realized the importance of Vanrai Bandhara (62.00 per cent) and more water was available to cattle (42.00 per cent). In case of individual benefits, the beneficiaries reported the benefits like increase in farm yield (38.00 per cent) and drinking water for livestock (38.00 per cent), respectively.

Tapre and Ingle (2004) found that 20.00 per cent bee keepers received employment as an economic benefit through bee keeping vocation.

Patil *et al.* (2006) (a) stated that majority of the respondents expressed watershed helped to check soil and water erosion (82.00 %), helped in ground water recharge (80.00 %), increase in infiltration rate of water (78.00 %), increase in yield (74.00 %) and helped in increasing the cropping intensity (64.66 %).

Satheshkumar (2006) observed that majority of the respondents utilized their wasteland to high extent (51.73 %), while about 37.93 per cent and 10.34 per cent respondents utilized wasteland for horticultural development programme to medium and low level, respectively.

Tayade (2006) reported that cent per cent respondents availed the complete benefit in the form of kind. It means that all the beneficiaries had received the benefits of different empowerment programmes.

Gandotra *et al.* (2007) observed that 97.5 per cent of the respondents developed self confidence and improvement in personality, 95.00 per cent reported improvement in communication, removal of hesitation, modification in etiquettes in social groups, constructive use of leisure time and satisfaction of their learning instinct, while 92.50 per cent of the respondents reported knowledge gain in domestic and agricultural practices and improvement in living standard.

Shashidara *et al.* (2007) observed that high percentage of farmers felt the advantages like saving of water (95.55 %), saving of labour and cost for irrigation (92.22 %) and improved quality produce (70.00 %).

Sitadevi *et al.* (2007) reported that 15.58 per cent in Kumaratchi block and 14.38 per cent in Mel Bhuvanagiri block increased employment by women's participation in income generating non-farm activities was observed, as a result of various training programmes attended by woman participants.

Suneetha (2007) stated that there was significant growth in income generation of the beneficiaries in Kodumoor Mandal after the implementation of DWCRA programme.

Tiwari and Vashishth (2007) stated that majority of farm women (90.6%) had found maximum knowledge gain and improvement in their skill about preparation of urea molasses mixture, improvement in perishable life of food products and vermicomposting through vocation

2.5 Performance of Agricultural Polyclinics in terms of extent of adoption of recommended practices extended through polyclinic by respondent

Sood (1970) found that majority of the respondents were medium adopters with regard to two aspects-nutrition education and kitchen gardening.

Patel (1982) revealed that majority from all the three categories had high level of extent of adoption (84 % in case of medium and big farmers and 64 per cent in case of small farmers). Thirty five per cent of the small farmers had low extent of adoption.

Deshmukh (1987) revealed that majority of the respondents (62.78 %) were found in medium level of adoption category, whereas 20.00 per cent of the respondents belonged to high level of adoption category and nearly 17.00 per cent respondents belonged to the low adoption category.

Reddy (1989) indicated that 45.00 per cent of the trained farmers were in the high adoption group, 41.67 per cent were in the medium adoption and only 13.33 per cent were in low adoption group.

Mahajan (1991) reported that significant per cent of the respondents (38.89%) were from medium level of adoption.

Umale *et al.* (1991) reported that majority of the respondents (89.58 %) planted Eucalyptus under Agro-forestry programme; Bamboo and Babul were planted by 37.50 per cent and 25.00 per cent of the

respondents, respectively. Very few farmers planted other trees like Ber, Casia, Shiras and Mango.

Yavalkar *et al.* (1991) stated that half of the total respondents (50.00 %) adopted recommended plant protection practices to medium extent, whereas more than one fourth respondents (26.19 %) were low adopters. Only 23.81 per cent respondents were found adopting recommended plant protection practices to a higher extent.

Bhatt (1993) reported that more than half of the trained farmers had high and medium level of adoption, whereas two-third of the untrained farmers had medium and low level of adoption of improved practices of paddy crops.

Deshmukh *et al.* (1994) observed that 47.50 per cent of the respondents had high adoption regarding improved farm practices, 32.50 per cent were medium adopters, whereas one-fifth fell in the category of low adoption.

Pimparikar (1994) pointed out that majority of the respondents (61.11 %) had medium adoption, while 24.54 per cent of respondents were found to be in high adoption category. The percentage of low adoption was to the tune of 14.35 per cent only.

Annapurna *et al.* (1996) noted that 87.00, 97.00, 99.50, 25.00, 62.00 and 18.00 per cent of bakery, mat making, doll making, smokeless chulla, dairy and poultry trainees of KVK respectively adopted the practices after training.

Antwal (1998) revealed that the remarkable percentage (66.18) of the beneficiaries and 62.66 per cent of non-beneficiaries were having medium adoption level, whereas 21.45 per cent beneficiaries and 10.66 per cent non-beneficiaries were having low adoption level. Near about 12.00 per cent beneficiaries and 27.00 per cent non-beneficiaries were having high adoption level.

Kumaran (1998) concluded that majority of the respondents had medium level adoption of water management practices.

Jondhale *et al.* (2000) reported that about 55.00 per cent of the trained farmers and 63.33 per cent of untrained farmers were located in medium adoption level group, while 31.68 per cent of the trained and untrained farmers were in high and low adoption level, respectively. Whereas, 13.33 per cent trained farmers were grouped in low and high adoption level respectively.

Chinchmalatpure *et al.* (2001) reported that the majority (90.00 %) of the trained, as well as, untrained farmers were having high to medium and low to medium extent of adoption of recommended practices of paddy crop respectively.

Kadam *et al.* (2001) observed that majority (68.00 %) of the beneficiaries had adopted only one practice.

Reddy (2001) observed that the contact farmers adopted 34.56 per cent of the technologies.

Dakhore *et al.* (2002) reported that nearly half of the respondents (49.52 %) possessed high level of adoption, followed by 29.53 per cent and 20.95 per cent respondents had medium and low level of adoption of recommended practices of Horticultural Development Programme, respectively.

Dhuware and Pande (2002) revealed that 40.83 per cent respondents were in medium category of adoption of recommended watershed practices, followed by one-third of respondents in low and one-fourth respondents in high adoption category.

Gupta *et al.* (2003) reported that majority of the respondents (46.67 %) had medium, 40.00 per cent had low and only 13.33 per cent had high adoption level of watershed management practices.

Hadole and Dakhore (2003) reported that most (93.33 %) of the respondents had medium level of adoption of recommended practices of sugarcane crop, followed by 6.00 per cent and 0.67 per cent respondents had high and low level of adoption, respectively.

Patel *et al.* (2003) observed that majority (66.82 %) of the beneficiaries of NWDPRRA had medium level of adoption of watershed management technology, followed by 17.05 per cent were with low and 16.13 per cent were with high level of adoption.

Shrivastava and Lakhera (2003) reported that after training, the level of adoption had increased among high (13.33%) and medium level (61.67 %) regarding mushroom production technology.

Anonymous (2004) reported that after initiation of TAR programme, majority of the farmers (54.00 %) possessed medium to higher levels of adoption of improved technology.

Dhapke (2004) observed that majority (77.33 %) of the respondents were in high category of adoption of Soil and Rain Water Management Technology.

Mohammad *et al.* (2004) reported that 62.50 per cent of respondents were found to have medium level of adoption, followed by 19.17 per cent in low level and 18.33 per cent in high level of adoption of agro-forestry practices.

Narkar *et al.* (2004) observed that majority of the kagzi lime growers (61.66 %) were having medium level of adoption; whereas it was observed that growers having low and high level of adoption were same that is 19.17 per cent.

Tapre and Ingle (2004) revealed that nearly two-third respondent bee keepers (65.71 %) adopted improved package of practices of bee keeping at moderate level, followed by 22.86 per cent respondent

bee keepers at high level and 11.43 per cent were found to adopt relatively less improved bee keeping practices.

Chaudhary and Panjabi (2005) stated that majority (65.00 %) of the respondents fell in the medium level of adoption, while rest, i.e. 35.00 per cent of the respondents were equally distributed in low and high adoption category.

Gayathri *et al.* (2005) stated that more than three-fourth (78.00 %) of the programme area respondents were found with high level of adoption of fertilizer brands of Coromandel Fertilizers, followed by 18.00 per cent with medium level of adoption and the rest 4.00 per cent with low level of adoption.

Chandran *et al.* (2005) observed that majority (66.7 %) of the respondents had continued adoption of drip irrigation system in their plots after CWRDM project period.

Pandhare (2005) reported that 46.00 per cent beneficiary and 32.00 per cent non-beneficiary respondents were found in medium level adoption category, whereas 44.00 per cent beneficiary and 24.00 per cent non-beneficiary respondents had high-level adoption of organic manures and pesticides.

Kaur *et al.* (2006) concluded that majority (69.31 %) of the respondents adopted newly introduced farm practices through ATMA.

Prakash and Brar (2006) observed that majority (63.28 %) of the farmers were having medium level of adoption of all crossbreeding practices, whereas 18.75 per cent and 17.96 per cent of the farmers were having high and low level of adoption of all crossbreeding practices.

Katkar and Ahire (2006) observed that more than half of the drip adopters (55.00 %) had medium level of adoption of recommended practices related to drip irrigation system, followed by one fourth of the

respondents (26.00 %) had low level of adoption and 19.00 % had high level of adoption.

Mavi *et al.* (2006) indicated that beneficiaries of the Self Employed Programme were better adopters of improved dairy farming practices than non-beneficiary.

Chandracharan *et al.* (2007) observed that 58.00 per cent of the respondents were having medium level of adoption, followed by 30.67 per cent had low adoption. Only 11.33 per cent of the respondents were having high level of adoption of watershed practices under Sujala Watershed Project.

Halakatti *et al.* (2007) (b) revealed that more than 90.00 per cent of trained dairy farm women were either medium or high adopters, whereas only 60.00 per cent of the untrained dairy farm women were only medium overall adopters and none fell under high overall adopters category.

Halakatti *et al.* (2007) (a) found that majority (68.00 %) of the respondents belonged to the medium adopter category. Whereas the remaining respondents were divided almost equally in low (15.00 %) and high (17.00 %) adopter categories.

Shashidara *et al.* (2007) observed that more than half the respondents (55.55 %) were in medium adoption category. Whereas, around one-fourth each of the respondents were in high (21.11 %) and low (23.33 %) adoption categories.

Srinivasa *et al.* (2007) reported that the improvement of adoption indices was found to be 90.69 per cent.

Vinod Prakash (2007) revealed that maximum (60.00 %) of the potato growers were found under the medium adoption level whereas, 23.00 per cent were under low level of adoption and 17.00 per cent were in high adoption category.

2.6 Relationship between the personal, socio-economic and psychological characteristics of respondents with knowledge of the respondents about Agricultural Polyclinic activities/practices and their organizational setup.

2.6.1 Age with knowledge

Pal (1970) found that age was not related with change in the knowledge.

Reddy and Reddy (1988) observed that age were not associated with knowledge of the contact farmers about paddy cultivation.

Sharma and Khan (2001) observed that age in trained and untrained groups were positively and significantly associated with knowledge

Shrivastava and Lakhera (2003) observed that age were significantly and positively related with knowledge after training received for mushroom production technology.

Chandrashekar *et al.* (2005) found that age were positively related with knowledge level of GPU-28 ragi variety growing farmers.

Gautam *et al.* (2005) found that age was negatively associated with knowledge level of dairy farmers regarding artificial insemination.

Suryawanshi and Chole (2005) found that age were significantly and positively related with knowledge of farm women about rural development programmes.

Hosamani *et al.* (2006) noticed that age was not related with knowledge level of rural women about general health practices.

Lakshmanan and Geethadevi (2007) observed that age was not related with knowledge of sericultural technologies for CSR hybrid cocoon production.

Meenal and Rajan (2007) observed that age was not related with knowledge of improved sericulture technologies by farmers in Sathyamangalam.

Shashidara *et al.* (2007) found that age was not related with knowledge of drip irrigation management practices.

2.6.2 Education with knowledge

Pal (1970) found that education was not related with change in the knowledge.

Reddy and Reddy (1988) observed that education were not associated with knowledge of the contact farmers about paddy cultivation.

Sharma and Khan (2001) observed that education in trained and untrained groups were positively and significantly associated with knowledge.

Shrivastava and Lakhera (2003) observed that education were significantly and positively related with knowledge after training received for mushroom production technology.

Mohammad *et al.* (2004) observed that education were significantly and positively correlated with knowledge possessed by the respondents of agroforestry practices.

Chandrashekar *et al.* (2005) noticed that education was not related with knowledge level of GPU-28 ragi variety growing farmers.

Gautam *et al.* (2005) observed that education was strongly positively and significantly correlated with knowledge level of dairy farmers regarding artificial insemination.

Suryawanshi and Chole (2005) found that education were positively and significantly associated with knowledge of farm women about rural development programme.

Hosamani *et al.* (2006) observed that education were positively and significantly associated with knowledge level of rural women about general health practices.

Prakash and Brar (2006) found that education were positively and significantly associated with knowledge

Lakshamanan and Geethadevi (2007) observed that education were positively and significantly associated with knowledge of sericulture technologies for CSR hybrid cocoon production.

Meenal and Rajan (2007) observed that education was not related with knowledge of improved sericulture technologies by farmers in Sathyamangalam.

Shashidara *et al.* (2007) found that education was not related with knowledge of drip irrigation management practices.

2.6.3 Occupation with knowledge

Pal (1970) found that occupation was positively and significantly related with change in the knowledge.

Gautam *et al.* (2005) found that occupation was positively and significantly associated with knowledge level of dairy farmers regarding artificial insemination.

Suryawanshi and Chole (2005) found that occupation were positively and significantly associated with knowledge of farm women about rural development programme.

2.6.4 Land holding with knowledge

Reddy and Reddy (1988) observed that farm size were positive and significantly associated with knowledge of the contact farmers about paddy cultivation.

Mohammad *et al.* (2004) observed that land holding were significantly and positively correlated with knowledge possessed by the respondents of agroforestry practices.

Gautam *et al.* (2005) found that land holding were positively and significantly correlated with knowledge level of dairy farmers regarding artificial insemination

Suryawanshi and Chole (2005) observed that land holding were significantly and positively related with knowledge of farm women about rural development programmes.

Hosamani *et al.* (2006) observed that land holding were positively and significantly associated with knowledge level of rural women about general health practices.

Lakshmanan and Geethadevi (2007) observed that land holding were significantly and positively associated with knowledge of sericultural technologies for CSR hybrid cocoon production.

Shashidara *et al.* (2007) found that land holding was not related with knowledge of drip irrigation management practices.

2.6.5 Annual income with knowledge

Shrivastava and Lakhera (2003) observed that annual income were significantly and positively related with knowledge after training received for mushroom production technology.

Mohammad *et al.* (2004) observed that annual income were significantly and positively correlated with knowledge possessed by the respondents of agroforestry practices.

Survawanshi and Chole (2005) observed that annual income were significantly and positively related with knowledge of farm women about rural development programmes.

Hosamani *et al.* (2006) observed that annual income were positively and significantly associated with knowledge level of rural women about general health practices.

Shashidara *et al.* (2007) observed that annual income was not related with knowledge of drip irrigation management practices.

2.6.6 Social participation with knowledge

Pal (1970) found that social participation was positively and significantly related with change in the knowledge.

Reddy and Reddy (1988) observed that social participation were not related with knowledge of the contact farmers about paddy cultivation.

Shrivastava and Lakhera (2003) found that social participation were significantly and positively related with knowledge after training received for mushroom production technology.

Mohammad *et al.* (2004) observed that social participation was significantly and positively correlated with knowledge possessed by the respondents of agroforestry practices.

Suryawanshi and Chole (2005) found that social participation were significantly and positively related with knowledge of farm women about rural development programmes.

Lakshmanan and Geethadevi (2007) observed that social participation were significantly and positively associated with knowledge of sericultural technologies for CSR hybrid cocoon production.

Meenal and Rajan (2007) observed that social participation was significantly and positively related with knowledge of improved sericulture technologies by farmers in Sathyamangalam.

2.6.7 Extension contact with knowledge

Reddy and Reddy (1988) observed that contact with extension agency were positively and significantly associated with knowledge of the contact farmers about paddy cultivation.

Sharma and Khan (2001) observed that extension contact in trained and untrained groups were positively and significantly associated with knowledge.

Shrivastava and Lakhera (2003) found that social participation were significantly and positively related with knowledge after training received for mushroom production technology.

Chandrashekar *et al.* (2005) found that extension contact were positively related with knowledge level of GPU-28 ragi variety growing farmers.

Lakshmanan and Geethadevi (2007) observed that extension contact were significantly and positively associated with knowledge of sericultural technologies for CSR hybrid cocoon production.

Meenal and Rajan (2007) observed that extension contact was significantly and positively related with knowledge of improved sericulture technologies by farmers in Sathyamangalam.

2.6.8 Risk orientation with knowledge

Reddy and Reddy (1988) observed that risk preference were positively and significantly associated with knowledge of the contact farmers about paddy cultivation.

Mohammad *et al.* (2004) observed that risk orientation was significantly and positively correlated with knowledge possessed by the respondents of agroforestry practices.

Chandrashekar *et al.* (2005) found that risk preference were positively related with knowledge level of GPU-28 ragi variety growing farmers.

Shashidara *et al.* (2007) found that risk orientation were were positively related with knowledge of drip irrigation management practices.

2.6.9 Economic motivation with knowledge

Gautam *et al.* (2005) found that economic motivation were positively and significantly related with knowledge level of dairy farmers regarding artificial insemination.

2.6.10 Attitude with knowledge

Reddy *et al.* (2001) found that attitude were positively and significantly related with knowledge training needs.

Prakash and Brar (2006) observed that attitude were positively and significantly associated with knowledge

2.7 Relationship between the personal, socio-economic and psychological characteristics of respondents with benefits availed from Agricultural Polyclinic activities/practices.

2.7.1 Age with benefits availed

Shinde *et al.* (1997) observed that age were positively and significantly correlated with benefits availed of dairy development programme.

Sharma and Khan (2001) found that age in trained and untrained groups were positively and significantly associated with income gain

Satheshkumar (2006) observed that age were negatively correlated with benefits availed of horticultural development programme.

2.7.2 Education with benefits availed

Sinha *et al.* (1984) noticed that education had positively and significantly associated with increase of social and economic standings.

Shinde *et al.* (1997) observed that education were positively and significantly associated with benefits availed of dairy development programme.

Sharma and Khan (2001) observed that education in trained and untrained groups were positively and significantly associated with income gain.

Satheshkumar (2006) observed that education were positively and significantly correlated with benefits availed of horticultural development programme.

2.7.3 Occupation with benefits availed

Shinde *et al.* (1997) observed that occupation were positively and significantly correlated with benefits availed of dairy development programme.

2.7.4 Land holding with benefits availed

Shinde *et al.* (1997) observed that land holding were positively and significantly correlated with benefits availed of dairy development programme.

Satheshkumar (2006) observed that land holding were positively and significantly correlated with benefits availed of horticultural development programme.

2.7.5 Annual income with benefits availed

Shinde *et al.* (1997) found that annual income were positively and significantly correlated with benefits availed of dairy development programme.

Satheshkumar (2006) observed that annual income were positively and significantly correlated with benefits availed of horticultural development programme.

2.7.6 Social participation with benefits availed

Shinde *et al.* (1997) observed that social participation were positively and significantly correlated with benefits availed of dairy development programme.

Satheshkumar (2006) observed that social participation were positively and significantly correlated with benefits availed of horticultural development programme.

2.7.7 Extension contact with benefits availed

Shinde *et al.* (1997) found that extension contact were positively and significantly correlated with benefits availed of dairy development programme.

Sharma and Khan (2001) observed that education in trained and untrained groups were positively and significantly associated with income gain.

Satheshkumar (2006) observed that extension contact were positively and significantly correlated with benefits availed of horticultural development programme.

2.7.8 Risk orientation with benefits availed

Shinde *et al.* (1997) observed that risk orientation were positively and significantly correlated with benefits availed of dairy development programme.

Satheshkumar (2006) observed that risk orientation were positively and significantly correlated with benefits availed of horticultural development programme.

2.7.9 Economic motivation with benefits availed

Shinde *et al.* (1997) observed that economic motivation were positively and significantly correlated with benefits availed of dairy development programme.

Satheshkumar (2006) observed that economic motivation were positively and significantly correlated with benefits availed of horticultural development programme.

2.8 Relationship between the personal, socio-economic and psychological characteristics of respondents with adoption of recommended practices

2.8.1 Age with adoption

Lakshminarayan (1969) observed that age did not influence the adoption of improved practices.

Pal (1970) reported that age was not significantly correlated with adoption behaviour of the farmers.

Sanoria and Sharma (1983) observed that age had negative and significant relationship with adoption.

Chorge (1985) found that age was positively and significantly related with adoption.

Suryanarayana (1985) found that age had negative significant correlation with the extent of adoption of paddy practices.

Girase (1986) observed that age was not associated with adoption of advocated technology in case of both experimental and control group of respondents.

More (1987) in rational analysis of contact farmers of Purna command area concluded that age was positively and significantly related with the adoption of agricultural technology.

Olowu *et al.* (1988) observed that age had positive and significant relationship with the adoption of improved cassava varieties.

Sheoran and Ram Kumar (1988) found that age of the beneficiaries had positive and significant relationship with overall adoption

Yadkikar (1991) found that age had negative and significant relationship with adoption.

Agre (1996) reported that age did not exhibit any relationship with the adoption of Horticultural Development Programme.

Dhuware and Pande (2002) revealed that age did not have significant relationship with the adoption

Gupta *et al.* (2003) observed that age did not establish significant correlation with adoption of watershed management technology.

Patel *et al.* (2003) found that age had negative significant relationship with adoption.

Dhapke (2004) observed that age was not related with the adoption of soil and rainwater management technology.

Mohammad *et al.* (2004) revealed that age did not shown any relationship with adoption of agro forestry practices.

Prakash and Brar (2006) stated that age exhibited non-significant relationship with extent of adoption level of dairy farmers.

Lakshmanan and Geethadevi (2007) observed that age did not show significant relation with adoption of sericultural technologies for CSR hybrid cocoon production.

Meenal and Rajan (2007) indicated that age did not have significant relationship with adoption of improved sericulture technologies.

2.8.2 Education with adoption

Pal (1970) reported that education was not significantly correlated with adoption behaviour of the farmers.

Katarya (1980) found that correlation of increased adoption was positive and significant with formal education of the farmers.

Sanoria and Sharma (1983) concluded that education was positively and significantly related with adoption of T and V, and Lab to land programme.

Joshi and Shinde (1984) observed that education had shown a significant association with adoption of sorghum production technology.

Olowu *et al.* (1988) observed that education had positive and significant relationship with the adoption of improved cassava varieties.

Sheoran and Ram Kumar (1988) revealed that education of the respondents was not related with adoption.

Reddy and Reddy (1988) concluded that education of the respondents was having negative significant correlation with adoption of paddy cultivation practices.

Mahajan (1993) revealed that education was positively and significantly correlated with adoption.

Sharma and Khan (2001) observed that education was positively and significantly related with adoption of improved sheep rearing practices.

Dhuware and Pande (2002) revealed that education level was positively and significantly associated with adoption of watershed management practices.

Patel *et al.* (2003) found that education had negative and significant relationship with adoption.

Bandgar *et al.* (2004) concluded that education was positively and significantly correlated with adoption of University recommended cotton technologies.

Dhapke (2004) observed that education did not have significant relationship with the adoption of Soil and Rain Water Management Technology.

Prakash and Brar (2006) observed that education exhibited positive and significant relationship with extent of adoption of dairy farmers.

Katkar and Ahire (2006) observed that education was positively and significantly correlated with adoption.

Singh and Khurana (2006) observed that educational level was found to be positively and significantly correlated with adoption of recommended plant protection measures.

Halakatti *et al.* (2007) found that education established positive and significant correlation with adoption of dairy farming technology by rural women under SGSY scheme.

Lakshmanan and Geethadevi (2007) observed that education was having positive and significant correlation with adoption of sericultural technologies for CSR hybrid cocoon production.

Meenal and Rajan (2007) found that education did not establish significant relationship with adoption of improved sericulture technologies.

2.8.3 Occupation with adoption

Ingle and Kude (1995) observed that occupation of KVK trainees was not related with their adoption of improved farm technology.

Agre (1996) reported that occupation was not significantly related to adoption of Horticultural Development Programme.

Pagar (1996) revealed that the occupation did not exhibit significant relationship with adoption of agro forestry practices.

Mohammad *et al.* (2004) revealed that occupation did not establish significant relationship with adoption of agro forestry practices.

2.8.4 Land holding with adoption

Choubey (1972) found that there was no significant correlation between size of holding with adoption

Ojha (1984) observed that the relationship of size of land holding of farmers with adoption of recommendations was significant at.

Gholve (1986) reported that size of land holding was found to be positively and significantly correlated with adoption of improved practices.

Ingle and Wayazade (1989) reported that land holding was positively and significantly related to the extent of adoption of agriculture technologies in rainfed farming project.

Nevase (1991) revealed that size of land holding was having positive and significant correlation with adoption.

Wayazade (1992) concluded that land holding was positively and significantly related with extent of adoption of technology.

Deshmukh (1994) found that there was positive and significant relationship between land holding and adoption.

Pagar (1996) observed that land holding was positively and significantly correlated with adoption of agro forestry practices.

Dhuware and Pande (2002) observed that land holding had positive significant relationship with adoption of watershed management technology.

Gupta *et al.* (2003) observed that land holding had no significant correlation with adoption of watershed management technology.

Bandgar *et al.* (2004) observed that land holding was positively and significantly correlated with the adoption of University recommended cotton technologies.

Patil (2004) found positive and highly significant relationship between land holding and adoption of biofertilizers.

Prakash and Brar (2006) reported that land holding exhibited positive and significant relationship with extent of adoption of dairy farmers.

Katkar and Ahire (2006) observed that land holding was positively and significantly correlated with adoption.

Singh and Khurana (2006) observed that size of operational land holding was positively and significantly correlated with adoption of recommended plant protection measures.

Lakshmanan and Geethadevi (2007) found that total land holding did not show significant correlation with adoption of sericultural technologies for CSR hybrid cocoon production.

Meenal and Rajan (2007) found that land holding was positively and significantly correlated with adoption of improved sericulture technologies.

2.8.5 Annual income with adoption

Sanoria and Sharma (1983) revealed that annual income was positively and significantly correlated with the adoption of T and V system and Lab to Land programme.

Joshi and Shinde (1984) observed that there was significant relationship between annual income and adoption.

Nevasse (1991) revealed that annual income was found to have positive and significant correlation with adoption.

Wayazade (1992) concluded that annual income was positively and significantly related with extent of adoption of technology.

Mahajan (1993) reported that annual income had no significant correlation with adoption of gram technology.

Deshmukh (1994) showed that annual income was positively and significantly correlated with adoption.

Agre (1996) revealed that the annual income was positively and significantly correlated with the adoption of Horticultural development programme.

Dhapke (2004) observed that annual income was positively and significantly related with the adoption of Soil and Rain Water Management Technology.

Mohammad *et al.* (2004) revealed that annual income had positive and significant relationship with adoption of agro forestry practices.

Prakash and Brar (2006) observed that annual income was positively and significantly correlated with extent of adoption level.

Katkar and Ahire (2006) observed that annual income was positively and significantly correlated with adoption.

Narayanagowda *et al.* (2006) found that annual income was positively and significantly related with the adoption of agro-forestry and silvi-pasture practices.

Meenal and Rajan (2007) found that annual income was positively and significantly related with adoption of improved sericulture technologies.

2.8.6 Social participation with adoption

Chorge (1985) found that social participation was having positive and significant correlation with adoption.

Sheoran and Ram Kumar (1988) found that social participation was not significantly correlated with adoption.

Gavimath and Sethurao (1989) revealed that there was significant correlation between the social participation and adoption behaviour.

Tawde (1991) pointed out that social participation was significantly and positively related with the adoption of pomegranate technology.

Wayazade (1992) concluded that social participation was positively and significantly related with extent of adoption of technology.

Lianbika and Nikhade (1993) showed that social participation was found to be significantly associated with adoption of pineapple cultivation

Pagar (1996) found that social participation had positive and significant relationship with adoption of agro forestry practices.

Daipuria *et al.* (2001) reported that there was significant correlation between social participation with adoption of agricultural technologies.

Dhuware and Pande (2002) observed that social participation was positively and significantly correlated with adoption of watershed management practices.

Bandgar *et al.* (2004) observed that social participation had positive and significant relation with adoption of University recommended cotton technologies.

Mohammad *et al.* (2004) revealed that social participation had positive and significant relationship with adoption of agro forestry practices.

Narkar *et al.* (2004) observed that social participation was positively and significantly correlated with adoption of recommended cultivation practices of Kagzilime.

Narayanagowda *et al.* (2006) found that social participation was positively and significantly related with adoption of agro-forestry and silvi-pasture practices.

Prakash and Brar (2006) observed that social participation showed positive and significant relationship with extent of adoption level of dairy farmers.

Halakatti *et al.* (2007) showed that social participation was positively and significantly related with adoption of dairy farming technology by rural women under SGSY scheme.

Lakshmanan and Geethadevi (2007) revealed that social participation had not shown any relationship with adoption of sericultural technologies for CSR hybrid cocoon production.

Meenal and Rajan (2007) found that social participation was positively and significantly correlated with adoption of improved sericulture technologies.

2.8.7 Extension contact with adoption

Sheoran and Ram Kumar (1988) found that extension contact had no significant relationship with adoption.

Reddy and Reddy (1988) stated that contact with extension agencies was positively and significantly correlated with adoption of paddy cultivation practices.

Agre (1996) revealed that extension contact was positively and significantly correlated with adoption of Horticultural Development Programme.

Jondhale *et al.* (2000) found that relationship of extension contact of trained farmers was non-significant with adoption, while extension contact of untrained farmers was positively and significantly related to adoption of improved practices.

Daipuria *et al.* (2001) reported that there was significant correlation between extension contact and adoption of agricultural technologies.

Hadole and Dakhore (2003) reported that extension contact was positively and significantly related with adoption of sugarcane cultivation practices.

Dhuware and Pande (2002) observed that extension contact was positively and significantly associated with adoption of watershed management practices.

Bandgar *et al.* (2004) observed that extension contact was positively and significantly related with the adoption of University recommended cotton technologies.

Dhapke (2004) observed that extension contact was positively and significantly related with the adoption of Soil and Rain Water Management Technology.

Narkar *et al.* (2004) observed that extension contact was positively and significantly correlated with adoption of recommended cultivation practices of kagzilime.

Lakshmanan and Geethadevi (2007) revealed that extension contact was having positive and significant relationship with adoption of sericultural technologies for CSR hybrid cocoon production.

Meenal and Rajan (2007) observed that extension contact was having positive and significant relationship with adoption of improved sericulture technologies.

2.8.8 Risk orientation with adoption

Katarya (1980) found that correlation of adoption was positive and significant with risk orientation of the farmers.

Dudhani *et al.* (1987) indicated non-significant relationship between risk orientation and adoption.

Mahajan (1993) reported that risk orientation was positively and significantly related with adoption of gram technology.

Agre (1996) reported that risk orientation was positively and significantly correlated with adoption of Horticultural Development Programme.

Daipuria *et al.* (2001) reported that there was significant correlation between risk orientation with adoption of agricultural technologies.

Patel *et al.* (2003) reported that risk orientation was positively and significantly correlated with adoption.

Jadhav *et al.* (2004) reported that risk preference was positively and significantly correlated with adoption of improved agricultural technology by the farmers.

Mohammad *et al.* (2004) revealed that risk preference was positively and significantly correlated with adoption of agro forestry practices.

Katkar and Ahire (2006) observed that risk orientation was positively and significantly correlated with adoption.

Narayanagowda *et al.* (2006) observed that risk orientation was positively and significantly correlated with adoption of agro-forestry and silvi-pasture practices.

Shashidara *et al.* (2007) reported that risk orientation was positively and significantly correlated with adoption of drip irrigation management practices.

2.8.9 Economic motivation with adoption

Mahajan (1993) reported that economic motivation was positively and significantly related with adoption of gram technology.

Agre (1996) revealed that economic motivation did not exhibit any relationship with adoption of Horticultural Development Programme.

Halakatti *et al.* (2007) observed that economic motivation was having positive and significant correlation with adoption of dairy farming technology by rural women under SGSY scheme.

2.8.10 Attitude with adoption

Chattopadhyaya (1976) showed that attitude of respondents was positively and significantly related with their extent of adoption of agriculture innovations.

Chorge (1985) found that attitude of the respondents was positively and significantly related with adoption.

Narayana Gowda (1992) stated that relationship of attitude of watershed beneficiaries was positively significant with adoption of watershed development programme.

Agre (1996) reported that attitude was having positive and significant correlation with adoption of Horticultural Development Programme.

Pagar (1996) noted that attitude was possessing positive and significant correlation with adoption of agro forestry practices.

Surekha *et al.* (1997) observed that relationship of attitude of beneficiaries was non-significant with adoption of watershed development programme.

Bonny (1998) reported that attitude of farmers towards sustainable agriculture showed positive and significant association with adoption of sustainable agricultural practices.

Patel *et al.* (2003) reported that attitude had positive and significant relation with adoption.

Jadhav (2004) reported a positive and significant relationship between attitude and adoption of improved agricultural technology by the farmers.

Prakash and Brar (2006) pointed out that attitude was positively and significantly related with extent of adoption level of dairy farmers.

Halakatti *et al.* (2007) observed that there was positive and significant correlation with adoption of dairy farming technology by rural women under SGSY scheme.

2.8.11 Knowledge with adoption

Rogers (1961) in a study with Ohio farmers reported a highly positive correlation between the farmer's knowledge of innovations and the extent of adoption of the innovations.

Mahajan (1980) reported a positive and significant relationship between knowledge and adoption of agriculture technology.

Panwar (1990) found that the level of knowledge was highly related with the extent of adoption of recommended varieties, seed treatment, chemical fertilizers and insecticides in contact as well as non-contact farmers.

Agre (1996) reported that knowledge had positive and significant relationship with adoption of Horticultural Development Programme.

Pagar (1996) observed that knowledge established a positive and significant relationship with adoption of agro forestry practices.

Daipuria *et al.* (2001) reported that there was significant correlation between knowledge of technology with adoption of agricultural technologies.

Patel *et al.* (2003) reported that knowledge was positively and significantly related with adoption.

Halakatti *et al.* (2007) (a) found that knowledge was having positive and significant relationship with adoption of dairy farming technology by rural women under SGSY scheme.

2.8.12 Benefits with adoption

Agre (1996) reported that the incentives offered in the Horticultural Development Programme showed a positive and significant relationship with the adoption of Horticultural Development Programme.

Meenal and Rajan (2007) found that income/year was having positive and significant relationship with adoption of improved sericulture technologies.

2.9 Constraints faced by the respondents while adopting the agricultural practices recommended through the Agricultural Polyclinic.

Mahajan (1980) pointed out that the problems faced by the farmers in adoption were, inadequate credit, low price to farm produce,

non-existence of proper farm roads, high cost of fertilizers, high rate of interest charged, inadequate irrigation facilities and lack of supply of improved seed from agricultural university.

Deokate (1985) reported that constraints faced by respondents in adoption of technology were the high cost of inputs, non-availability of equipment, delay in getting loan and non-availability in time.

Rade *et al.* (1990) observed that the major constraints reported by majority of the farmers were lack of knowledge of the respective practices viz., use of recommended seed rate, application of proper dose of chemical fertilizers and plant protection measures. Besides it, inadequate finance for labour, non-availability of irrigation sources and inadequate rainfall were the other constraints reported by the farmers.

Pimparikar and Shetay (1993) observed that majority of the beneficiaries faced constraints like, non availability of inputs in time, no incentive for purchase of inputs, adequate crop loans were not sanctioned, high cost of inputs, lack of knowledge of plant protection measures, lack of knowledge about contour cultivation and lack of guidance from technical staff, whereas some of the beneficiaries faced the lack of equipments and appliances, difficulty in watching the crops at far away fields and non availability of grass seeds

Agre (1996) observed that lack of irrigation facilities, plants do not survive due to attack of insect, pests and natural calamities, lack of Government support in getting more price in market, non-availability of planting material at right time, damage of seedlings in transport and lack of storage facilities were some of major constraints faced by the respondents.

Jangwad (1996) observed that 66.25 per cent of beneficiaries of Horticultural development Programme expressed that good quality of seedlings/cuttings were not available, 68.75 per cent beneficiaries expressed that seedlings and cuttings were not available at proper time.

About 80.00 per cent beneficiaries stated that pesticides/ chemicals/ fertilizers were not available in time. About 95.00 per cent of the beneficiaries expressed that supply of seedlings/ cuttings/ fertilizers were not available in required quantity. As much as 96.25 per cent of the beneficiaries stated that required fruit crops and their varieties could not be planted.

Gogoi (2000) observed that agricultural extension officers and village level extension workers were the main source of agricultural information to the farmers but non-availability of agricultural extension officers and village level extension workers posed serious problems. Moreover, 40.33 per cent stated the lack of agricultural training programme. Other problems as mentioned by respondents were, lack of government support by means of financing subsidies and fragmented and small land holding which hindered the adoption rate.

Kausadikar (2000) observed that most of the beneficiaries of HDP (85.33 %) reported that the finance provided by the Government was the main problem, followed by non-availability of seedlings of grafts in time (70.00 %), inadequate irrigation facilities (65.33 %), sub-standard quality of grafts/seedling (58.00 %) and inadequate and untimely technical guidance (52.66 %). A considerable proportion of the farmers had expressed the problems namely, delay in getting subsidy (45.33 %) and non-availability of desired fruit crop variety (35.33 %).

Kadam *et al.* (2001) stated that 'lack of information / guidance' was the major reason for non-adoption of recommended soil and water conservation practices. The second important reason for non-adoption of recommended soil and water conservation practices was 'non-availability of inputs, material/ labour etc'.

Gupta *et al.* (2003) reported that untimely availability of watershed based technology (38.33 per cent) was a serious constraint in

adoption of watershed technology; followed by unavailability of finance in time (35.00 per cent), lack of irrigation facilities (33.33 per cent) and high input cost (30.00 per cent).

Waman *et al.* (2003) revealed that most of the tribal farmers had poor economic condition (70.00 %); inadequate credit facilities (64.62 %) and high prices of chemical fertilizers and pesticides (62.31 %); while considerable number of tribal farmers reported untimely availability of credit facilities for purchase of critical inputs (36.92 %).

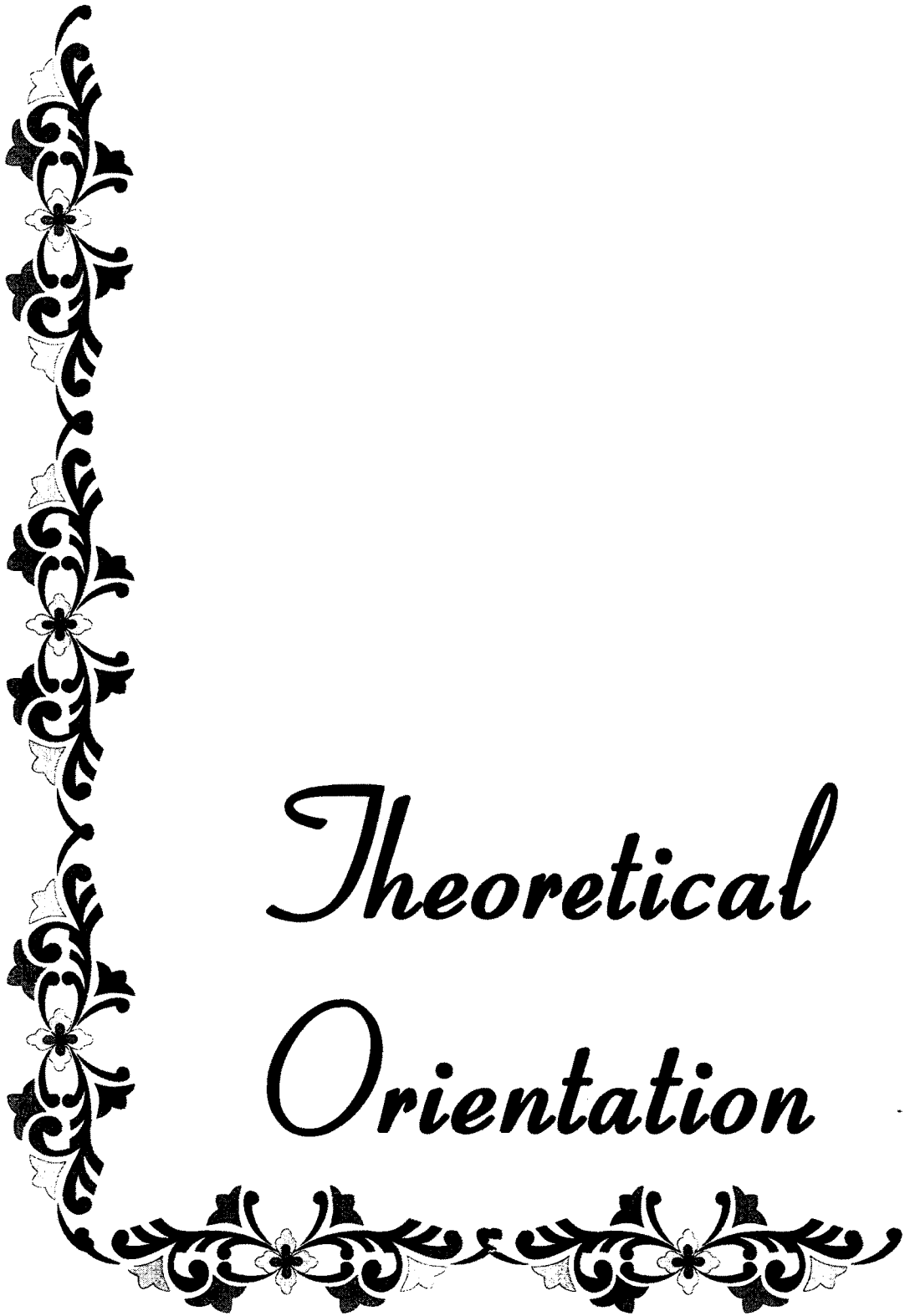
Ali (2006) stated that cultivation problems in agriculture were credit facilities not available to the farmers for the procurement of seeds and he also found that 41.33 per cent of participants were having problems related to availability of labours.

Kaur *et al.* (2006) reported that on an overall basis, a total of 16(15.84 %), 9 (8.91 %) and 19 (18.81 %) of the beneficiaries of the total 101 farmers were complaining about problems in relation to the non availability of good quality of improved seeds, insecticides/pesticides and the zero-till-drill machine at appropriate sowing time, respectively.

Satheshkumar (2006) observed that 95.83 per cent of the beneficiaries stated that required variety of fruit crops and their varieties could not be planted, 93.33 per cent of the beneficiaries expressed that supply of seedlings/ cuttings/ fertilizers were not available in required quantity. About 91.66 per cent of beneficiaries expressed that granted subsidy was paid belatedly, 71.66 per cent of the beneficiaries expressed that good quality of seedlings/ cuttings were not available and 69.16 per cent of the beneficiaries expressed that seedlings and cuttings were not available at proper time

Kavathalkar *et al.* (2007) revealed that the respondents faced the constraints of finance under this group were high cost of concentrates (88.88 %), non remunerative price for milk (83.70 %), high cost of green

fodder (79.25 %), high cost of labour (72.59 %) and poor economic conditions (54.07 %). He further reported that respondents too faced the constraints like lack of scientific knowledge (81.48 %) and non-availability of fodder seeds in time (33.33 %).



*Theoretical
Orientation*

3. THEORETICAL ORIENTATION

In any research study, it is not only essential and important, but also pre-requisite, to describe a theoretical framework based on latest knowledge related to the specific field of study.

The attempt has been made to provide the required information about Agricultural Polyclinic in the present chapter.

The main objective of this chapter is to describe broadly the conceptual paradigm used which provides a theoretical base for the empirical investigation and guidance for selection of variables for the study and operationalisation of the concepts. The information collected in this context is presented under following seven subheads.

- 3.1 Agricultural Polyclinic
- 3.2 Genesis of Agricultural Polyclinic
- 3.3 Mandates and functions of Agricultural Polyclinic
- 3.4 Taxonomical aspects (theoretical setting)
 - 3.4.1 Training as a concept
 - 3.4.2 Demonstration and diagnostic activities as a concept
 - 3.4.3 Attitude as a concept
 - 3.4.4 Knowledge about Agricultural Polyclinic
 - 3.4.5 Benefits from Agricultural Polyclinic
 - 3.4.6 Human behaviour
 - 3.4.7 Adoption behaviour
 - 3.4.8 Evaluation as a concept
- 3.5 Independent variables
- 3.6 Constraints
- 3.7 Conceptual model

3.1 Agricultural Polyclinic

For fast growing population, rapid increase in agricultural productivity is essential thing, as agriculture is the mainstay of India's economy. Scientific transformation of agriculture is an important prerequisite for rural development. The present rate of agricultural production could be doubled if the available technologies are brought to bear with the production process and programmes, focusing more and more on transferring new technologies away from the confines of laboratories and research institutes to the farmers' field and make them more result and work oriented.

The geographical area of Maharashtra state is 308.000 lakh hectares, out of which the net area under agriculture is 176.36 lakh hectares. This proportion at national level is less at 43.4 per cent. Agriculture is an important sector in the state economy as about 65.00 per cent of the population in the state is dependent on agriculture for livelihood. In spite of the rapid growth of industries and services sectors in Maharashtra, agriculture still is an important economic activity (Pathan and Mangnale, 2004). Socio-economic status is largely dependent on agricultural production and agro based business. Considering this vast area under cultivation and dependency of socio economic status of the people of the state on farming, several policies were framed and adopted to develop the agriculture and agro business. In order to be able to compete, farmers should not only be well informed about findings of agricultural research, which are relevant for their situation, but they should also learn from practical experience through training and demonstration.

In Maharashtra state, there is a wide scope for increasing the productivity and production through adoption of advance agro technology. The climate of the state is most suitable for growing several arid zone fruits

and other crops, there is also a wide scope for bringing uncultivable or barren land under cultivation and for development of agro based business, as about 29 lakh hectares area in the state is uncultivable or barren land (Agre 1996).

The government of Maharashtra realized the importance of agriculture and allied business development and planned a programme for its proliferation. Moreover, to have effective implementation of programmes in agriculture and for rapid development, a separate programme that is "Agricultural Polyclinic" was started in the year 1997-98. Since then, the Agricultural Polyclinic has implemented various programmes for development of agriculture and allied business, as a new thrust to improve socio economic status of the clientele. Due to this programme, agriculture has gained new dimension and momentum.

3.2 Genesis of the Agricultural Polyclinic

Agricultural Polyclinic programme is an ambitious programme launched by the government of Maharashtra as a new thrust to improve socio economic status of the farming communities. The programme is primarily aimed to narrow down the gap between research and its application through farmers training, agro technology demonstration and diagnostic services to all farmers. The word "Agricultural Polyclinic" itself gives very clear idea as to what the programme means. An analysis of the term reveals that,

1. It is related to agriculture
2. It is a programme regarding agricultural development.

The word 'clinic' implies an institution giving medical and other treatment or advice and 'polyclinic' means a clinic able to treat a wide variety of diseases or advices, whereas Agricultural Polyclinic is an institution giving medical treatments including insecticides, pesticides, weedicides, growth regulators, plant inhibitors, growth retardants, soil and

water nutrients, etc and advice regarding production technology through training and demonstration in a wide range.

The term 'agriculture' refers broadly to the technology of raising plants, animals and allied business. This is ensured through farmers training, production technology demonstration and giving advice through demonstration and diagnostic services.

3.3 Mandates and functions of Agricultural Polyclinic

Agricultural Polyclinic is a project of State Agriculture Department of Maharashtra for testing and transfer of agricultural technologies, to bridge the gap between the production and productivity and to increase self-employment opportunities among the farming communities. In order to achieve this, the Agricultural Polyclinic should carry out the activities on the basis of its objectives as under in order to fulfill its mandate.

Objectives of the Agricultural Polyclinics

1. Organizing vocational training programmes in agriculture and allied enterprises.
2. Demonstrations on major cereal crops, oil seeds and pulses and other enterprises related to agriculture.
3. Diagnostic services regarding soil and water testing, plant protection and agricultural related problems.

Activities of Agricultural Polyclinic under above objectives are

A. Demonstrations and trainings regarding

1. Utilization of available land
2. Contour development
3. Preparation of PKV water shed model (farm pond)
4. Use of improved irrigation system.
5. NADEP compost utilization
6. Vermicompost utilization

7. Use of HaNPV
 8. Use of Trichocard
 9. Use of Neemark
 10. Utilization of low cost cold storage (zero energy) for storage of agricultural produce
 11. Utilization of shadenet and green house
- B. Agricultural services to farmers (diagnostic)**
1. Insect pest and diseases diagnostic facilities
 2. Soil testing
 3. Museum facilities regarding technologically advanced implements and model implements
 4. Seed germination testing

The objectives stated here are common for all Agricultural Polyclinics. The mandate of an Agricultural Polyclinic is unique for the clientele, their resources and constraints and nature of the ecosystem. The success of an Agricultural Polyclinic is judged by the extent to which it has been able to fulfill its obligations specified in the mandate.

The Agricultural Polyclinic is sponsored by the Maharashtra State Agricultural Department and implemented on existing state government nurseries or on Taluka Seed Farm in all talukas and /or districts level step by step. The first Agricultural Polyclinic was established in 1997-98. The total number of Agricultural Polyclinics in 2005-06 was 231.

The head of the Agricultural Polyclinic is Agriculture officer. In addition to this, supporting staff are, one Agriculture Supervisor, two Agriculture Assistants and four-grade one labourers. The team works in an integrated manner and organizes all the activities related to the mandate of the Agricultural Polyclinic. Depending upon requirement, expertise can be drawn from amongst the local farmers, SAUs and state agricultural department for a short period.

The achievement of Agricultural Polyclinic is measured in terms of training courses organized, follow-up of field extension activities organized, extent of adoption of activities and the impact of these activities to get the benefits to the farming community in general and agricultural production in particular.

The Agricultural Polyclinic activities are supported and monitored by State Agricultural Department headed by a Director at state level and Superintendent Agriculture Officer at district level. In addition to this, Sub-divisional Agriculture Officer at sub-division of districts and Taluka Agricultural Officers support at taluka level.

Infrastructural Facilities

The Agricultural Polyclinic is a full-fledged institute consisting of its own building, demonstration farm and units, equipments, etc. The building facilities include office and training hall. The demonstration farm is normally laid down on the 20 hectares farm land provided by the nurseries or by the taluka seed farm.

Financial support

Maharashtra state agricultural department extends the cent per cent funding for the Agricultural Polyclinic.

Linkages

A cursory look at the activities of the Agricultural Polyclinic will show that strong vertical and horizontal linkages are required to successfully perform the activities. Therefore, it has been linked with State Agricultural Department of Maharashtra. It is envisaged that the Regional Research Stations of the State Agricultural University will be the center of research activities in a particular agro- climatic zone.

Hence, the Agricultural Polyclinic works in close collaboration with State Agricultural Department and with the Research Stations of the State Agricultural Universities.

Local Consultative Committee

Proper management of the Agricultural Polyclinic is the responsibility of the working staff. The State Agricultural Department provides guidelines and periodic supervision. The Agricultural Polyclinic, being a participatory institution of farmers, researchers and extension workers, a local consultative committee is constituted to provide guidelines to the Agricultural Polyclinic staff and forces the activities normally undertaken by the Agricultural Polyclinic. The State Agricultural Department has provided guidelines for constituting a broad-based local consultative committee, which normally includes working staff of Agricultural Polyclinic, representatives from irrigation department, Panchayat Samittee, and progressive farmers. Secretary of this committee is Taluka Agricultural Officer. The local consultative committee meets in every season. The committee appreciates regular holding of these meetings so that the Agricultural Polyclinic functions as per action plan prepared by the staff.

3.4 Taxonomical aspects (theoretical setting)

3.4.1 Training as a concept

Training is one of the most critical inputs for human resource development. If this input is scientifically and carefully organized and implemented, it results in changing the behaviour of the trainee, which results in developing the skill and expertise for proper implementation of the ongoing development programmes.

Training refers to an act, process or method of one who trains. Training indicates a **planned** activity to which a person is subjected to induce learning. Training aims at behavioral changes to be used in life or vocation. It has a sense of immediacy about application.

Oatey (1970) defined training as any activity, which deliberately attempts to improve the person's skill at a task.

Hamblin (1974) defined training as an activity, which deliberately attempts to improve a person's skills on a job.

ILO (1986) defined training as activities, which are essentially aimed to provide attitude, knowledge and skills required for employment in a particular occupation or a group of occupations for exercising a function in any field of economic activity.

Misra (1999) defined training as a planned communication process for manpower development to bring desired changes in knowledge, skills, practice, attitude, behaviour and other things in accordance with job requirement.

Thus, the above definitions point to some commonalities about training, as given below:

1. Training is planned and purposeful instruction. It is non-formal and semi-structured in nature.
2. Training aims to improve performance of participants, so that they can contribute to effectiveness of the group or organization they belong.
3. Training is an instrument to induce change in behavior of individuals for personal social organizational effectiveness. Training is basically adult learning.

What training can do?

1. Training can help people to develop job related skills and adjust with change in organization.
2. It can develop self-awareness, inter-personal skills, achievement motivation and such other behavioural attributes.
3. It can orient people to get equipped for higher responsibilities.
4. It can help in creating professionalism and learning culture in organization.

5. It can update people with current changes in technology

Vocational training of farmers in Agricultural Polyclinic

Vocational training of farmers has been the major objective of the Agricultural Polyclinic in past and will continue to be so in future as well. The objective is to organize vocation based and skill oriented training of farmers, farm women and rural youth, so that they could adopt new methods of farming and increase farm income. Thus, the emphasis is not on crops but on vocations. The Agricultural Polyclinic staff, in consultation with the Taluka Agricultural Officer of concerned taluka, selects the potential trainees.

3.4.2 Demonstration as a concept

The word 'demonstration' means to teach something by proven technology. The use of demonstration is based on the dogma that what people see and do, they usually believe. The demonstration is an advisory method that consists in persuading by showing or by direct action. It refers to the principle of active, intuitive and living pedagogy. The demonstration is superior to the other methods of dissemination of farm information as far as its conviction power is concerned. It helps people through the triple process of observing, hearing and learning by doing

Wilson and Gallup (1955) rightly pointed out that result demonstration establishes a proof about the improved practice as applicable locally. It is not a matter of discovering new truth but of pointing out that the research findings of the experiment station apply to local conditions.

The demonstration conducted under the close supervision of the scientists of National Research System are called frontline demonstrations, because the scientists themselves demonstrate the technologies for the first time before being fed in to the main extension system of the state department of agriculture. The objective is to demonstrate newly released crop production and protection technology and

its management practices in the farmers' fields under different agro-climatic regions and farming situations.

Agricultural Polyclinic organizes demonstrations, which aim at demonstrating the production potentialities of newly released and pre-released production technologies of cereals, pulses and oilseeds on fields and in laboratories. The Agricultural Polyclinics have also been given the responsibility of conducting demonstrations on preparation and use of Nadep compost, vermicompost, HaNPV, trichocard, neemark, contour development, PKV watershed model (farm pond), etc which could serve as model for extension agencies and farmers.

3.4.3 Diagnostics as a concept

Diagnosis means determination of the nature of a disease or ailment. Diagnosis is the identification of a diseases or disorder. A clinical diagnosis is based on the remedial history (including crop rotation, cultural practices, etc) and physical examination of the plants, animals, soil and water, it may be confirmed with chemical treatment and microscopic observation of infested part of plant and analysis of soil and water and other laboratory tests. Diagnosis by physical examination includes external appearance of infested part of plant, growth habit of plant and other abnormalities. Ascertaining temperature, pulse and blood pressure related to animal. A list of possible causes the differential diagnosis is developed and then narrowed down by further tests that eliminate or support specific possibilities.

Diagnostic means to determine the nature of soil and water, infestation to plants and/ or animals and related remedial skills to control the determined nature.

3.4.4 Attitude as a concept

An attitude is the more or less permanent feelings, thoughts and predisposition a person has about certain aspects of his environment.

Allport (1935) suggested that attitude has three components, namely cognitive, affective and behavioural.

Thurstone (1946) explained that the affective component of an attitude which gives a motivating character, serves as a link between cognition and action tendencies. He viewed attitude as “the degree of positive or negative affect associated with some psychological object.” By psychological objects means any symbol, phrase, slogan, person, institution, ideas or idea towards which a person can differ with respect to positive or negative effect.

According to Newcomb (1950) attitude is pre-dispositions to act, perceive, think and feel in relation to some thing.

3.4.5 Knowledge about Agricultural Polyclinic

Knowledge occurs when an individual (or other decision making unit) is exposed to the innovation’s existence and gains some understanding of how it functions.

Knowledge is one of the important components of behaviour and as such it plays a major role in the covert and overt behaviour of human being. Once knowledge is acquired, it produces changes in the thinking process of an individual, which would lead to further changes in the mental aptitudes. Theoretically speaking, there are many types of knowledge a farmer needs if he is to adopt Agricultural Polyclinic activities

Bradford and Glenn (1953) mentioned “farming is such a complex business that farmers are rarely successful in acquiring all the existing knowledge concerning production process which they employ. Knowledge of production methods is one of the basic requirements for managing a farm” It could be said, therefore, that complete working knowledge is very essential for proper adoption.

English and English (1961) defined knowledge as a body of understood information possessed by an individual or by a culture.

Some observers claim that an individual plays a passive role in being exposed to knowledge about an innovation. It is argued that one becomes aware of an innovation quite by accident, as one cannot actively seek an innovation until one knows that it exists. For example, Coleman *et. al.* (1966) concluded that initial knowledge about a new medical drug mainly occurred through communication channels and messages (such as sales persons and advertising) that physicians did not seek; at later stages in the innovation-decision process, however, doctors became active information seekers, usually from network peers.

Other scholars of diffusion feel that an individual gains knowledge only through behaviour that must be initiated and that knowledge is not just a passive activity. The predispositions of individuals influence their behaviour towards communication messages and the effects that such messages are likely to have. Individuals generally tend to expose themselves to ideas that are in accordance with their interests, needs or existing attitudes. Hassinger (1959) argues that individuals will seldom expose themselves to messages about an innovation unless they first feel a need for innovation and that, even if such individuals are exposed to these innovation messages, such exposure will have little effect, unless the individual perceives the innovation as relevant to his needs and consistent with his existing attitude and beliefs. Hassinger's viewpoint is that need for an innovation must usually precede knowledge of an innovation. An individual may develop a need when he or she learns that an innovation exists. Therefore, innovation can lead to needs and vice versa. Thus, knowledge of the existence of an innovation can create motivation for its adoption.

3.4.5.1 Types of knowledge about an innovation

An innovation typically contains software information, which is embodied in the innovation and serves to reduce uncertainty about the

cause-effect relationships that are involved in achieving a desired outcome (such as meeting a need or problem of the individual). Questions such as ‘What is the innovation?’ ‘How does it work?’ and ‘Why does it work?’ are the main concerns of an individual, once he or she is aware that an innovation exists. So, knowledge motivates an individual to seek “how-to” knowledge and principle knowledge. This type of information seeking is concentrated at the knowledge stage of the innovation-decision process.

How-to knowledge consists of information necessary to use an innovation properly. The adopter must understand what quality of an innovation to secure, how to use it correctly and so on. In the case of innovation that are relatively more complex, the amount of how-to knowledge needed for proper adoption is much greater than in the case of less complex ideas. And when an adequate level of how-to knowledge is not obtained prior to the trial and adoption of an innovation, rejection or discontinuance is likely to result. To date, we have few diffusion investigations that deal with how-to knowledge.

Principle knowledge consists of information dealing with the functioning principles underlying how the innovation works. Examples of principle knowledge are: the notion of germ theory, which underlies the functioning of vaccinations and latrines in village sanitation and health campaigns; and the biology of plant growth which underlies fertilizer innovations. It is usually possible to adopt an innovation without principle knowledge, but the danger of misusing the new idea is greater and discontinuance may result. Certainly, the long-range competence of individuals to judge future innovations is facilitated by principle know-how. Most change agents seem to concentrate their efforts on creating knowledge; this can be achieved more effectively in many client systems by mass media channels.

For the purpose of this study, knowledge has been defined as the awareness of the respondents about Agricultural Polyclinic activities and their organizational setup.

3.4.6 Benefits from Agricultural Polyclinic

Benefits are the advantage factors, which are gained through utilization of any activity, which attracts the respondents and sustain them to adopt the activities or practices. The benefits may be in the form of increased income, better land utilization of available land, decreased production costs, etc. The advantages received by the respondents after participating in Agricultural Polyclinic activity were considered for the purpose of study.

If any new activity is to be implemented or introduced, then accruing of benefits act as a sustaining force. As there is increased yield, better utilization of available land, decreased production cost from those activities, the beneficiaries think that it is profitable to sustain for its continued adoption

So, in any developmental activities, benefits play a vital role, and in the same way, in Agricultural Polyclinic activities, they act as a catalyst in increasing benefits.

3.4.7 Human behaviour

Human behavior forms a sub system within the individuals. This can be explained as composite of the goals and ends one selects and the means one chooses to pursue or reach these ends. Weber (1947) conceptualizing behaviour within an action frame of reference states, "in 'action', is included all human behaviour when, and in so far as, the acting individual attaches a subjective meaning to it. Action in this sense, may be either overt or purely inward or subjective; it may consist of positive intervention in a situation or of deliberately refraining from such intervention or passively acquiescing in the situation." Therefore, human

behaviour can be analyzed on the basis of means and ends scheme of behavioural characteristics.

By and large, behaviour is basically oriented which may be immediate or distant and the individual's efforts are directed towards the attainment of the desired ends with the means at one's disposal.

Parson's and Shils (1965) conceived that behavior is oriented towards attainment of ends by means of normatively regularized energy.

This sort of conceptualization of behaviour implies that it aims towards the goal and other anticipated state of affairs, it is regulated in norms, manner and it involves expenditure of efforts or motivation.

Krech and Crutchfield (1948) pointed that selection of goals, as well as, means would depend on the three criteria, namely;

1. Cultural norms and values: These act as standards and provide criteria by which people visualize their goals,
2. Biological capacity: Individuals differ in their perceptual and cognitive capabilities which influence their selection of goals,
3. Accessibility in the physical and social environment: An individual will most likely orient his behaviour towards some goal attainable within his environment. His frame of reference regarding the realization of that goal will also be influenced by environmental and situational factors. Thus accessibility of alternatives is also an important factor in the individual's choice for the selection of one or the other.

3.4.8 Adoption behaviour

Adoption refers to both the mental acceptance and also covers use of recommended practices.

Ramsey *et al* (1959) conceived adoptions as cognitive. Adoption involves complex decisions and changes including acquiring

knowledge and critically evaluating practices in terms of individual situation. Behavioural adoption consists of actual use of the practices.

In the present study, behavioral adoption is use of recommended practices on continuing basis. Thus, adoption is a kind of social action and it is conceptualized as behaviour predisposition manifested in the acceptance of recommended practices known to increase productivity and income. In the present study, it is attempted to understand the extent to which farmers adopted the recommended practices extended through Agricultural Polyclinic and to know the factors which influence the performance of Agricultural Polyclinic, so as to be able to predict the behavior of the farmers and control the known factors in a possible manner and channelise the course of farmers action.

Since adoption is an action, it involves the use of means for its attainment. In this case, both means and ends are concretely identifiable objects or states and are also clearly distinguishable. For example, the agricultural technology consists of high yielding varieties of crops, fertilizers, plant protection chemicals, etc. which, if used by farmers, can help them attain perceived ends. The role of situation or environment is very crucial in understanding human action. Behaviour takes place in situation and it has, therefore, profound influence on the individual's action. Sometimes, situation 'present' the actor with certain goals to decisive rate of situation.

The social system, of which individuals are members, has dominant effect on the behaviour of individuals. Members of the social system characterized by traditional norms will be prone to resist any change. Human action is dependent upon many factors. Parsons (1954) expressed that action takes place in a situation consisting of physical and cultural factors. What action an actor performs depends upon how he orients to and evaluates the given situation in terms of the alternatives

available and the expected gratification to be derived. The orientation and the evaluation process, in turn, depend upon the personality and cultural systems. To be precise, the action process is dependent upon psychological, biological, social, cultural and physical factors involved in the situation. On the basis of the studies conducted in India and elsewhere, most important factors and individual characteristics were selected in relation to extent of adoption of recommended practices extended through clinic. They were, a) personal, b) socio- economic and c) psychological.

3.4.9 Evaluation as a concept

Evaluation is a word which is very commonly used and indicates assessment or appraisal of something. This term is used more in the sense of examining or scrutinizing some activity and giving judgment about its success or failure.

The evaluation has its origin in the Latin word 'valour' meaning 'to be strong' or 'valiant'. Its dictionary meaning is the 'determination of the value', 'the strength' or 'worth' of something 'an appraisal' 'an estimate' of the force or 'making a judgment of something'. It may be formal or informal.

Evaluation may be defined as a process of systematic appraisal by which we determine the worth, value or meaning of something.

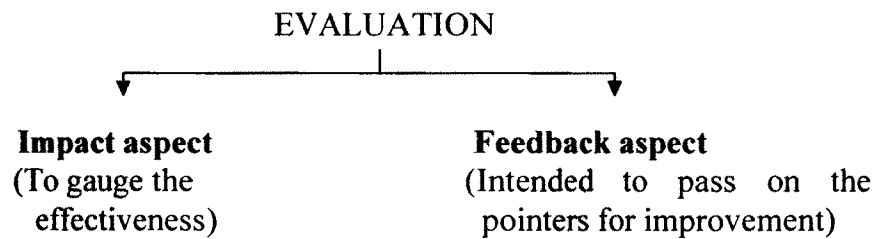
Purpose of Evaluation

The purpose of evaluation is not to determine the nature of activity in its social, economic or cultural context, but also to derive guidelines for its future planning, as well as, that of new projects of a similar nature. The main purpose is to facilitate effective decision making without jumping to conclusions.

The two major purposes of evaluation are:

- a) To study the impact or effectiveness of the programme in achieving its objective
- b) To provide the feedback of relevant important information to the pointers / agencies concerned in order to attain higher standards of excellence.

The purpose is not limited to a few released impact variables but comprises all situations where decision-making is involved. To put it diagrammatically.



According to this concept, the major purpose of evaluation as said above, is to evaluate the programme on a continuous basis, to modify the actual operations in the light of the data gathered and to regard it as an ongoing process which should be planned together with the project itself. This means, evaluation of any programme should have two purposes or aims. First, to provide trust-worthy evidence to planners and administrators for decision-making and second to judge the effectiveness of the programme.

3.5 Independent variables

The role of environment is one of the important factors in understanding the human behaviour in the situation. It has influence on individual's action. Rogers (1962) conformed that the role of situation determines the action of an individual. An individual member's social system with traditional outlook shall resist the change.

The action of the person depends on situation consisting of social, economic, physical, psychological and cultural factors. The action of actor depends upon his orientation to evaluate the opinion. The attitude and adoption behavior of an individual is influenced by many personal and socio-psychological factors. By careful consideration, only 12 such factors, which were assumed to have influence on the adoption of recommended practices by farmers, extended through Agricultural Polyclinic were considered for the purpose of study.

The personal factors which precede others in order of time expected to lead by certain other variables were, age, education. Socio-economic factors like occupation, land holding, annual income, social participation and extension contact; and psychological factors like risk orientation, economic motivation, attitude, knowledge and benefits derived from Agricultural Polyclinic were expected to have their influence.

3.6 Constraints in adoption of recommended practices by the respondents extended through Agricultural Polyclinic

Constraint implies forcible restriction and confinement of action. In this study, constraints refer to problems experienced by the adopter farmers in adoption of Agricultural Polyclinic activities. Past researches have indicated number of constraints which caused severe set back to spread of new technology by farmers. The important ones are high price of seedlings, fertilizers, insecticides, pesticides, plant protection measures, lack of storage facility, unfavourable climate, irregular electric supply, labour problem, high rate of wages, non-availability of money within time and lack of technical guidance, etc. An attempt was made in the present study to know the constraints which farmers faced while adopting the Agricultural Polyclinic activities / practices.

Agricultural Polyclinic in prevalent context

Any programme of development, and so the Agricultural Polyclinic scheme, is launched in a given social reality. The prevailing social reality provides an important context to development and implementation of a programme. It is the responsibility of the planners and of those involved into the developmental process through devising the programme based upon the felt needs and the problems of the people. The Agricultural Polyclinic, in a right perspective, aims at bringing about desired changes in attitude, knowledge, benefit and practices of farmers in respect of agriculture and allied enterprises. Thus, it has got the cognitive, affective and connative dimension for personality change. However, things do not go in mathematical way, as the developmental programme is launched in a given social reality. There is always a mixture of enhancing and impeding factors existing in the reality. The personal characteristics of target group interacting with environment of the programme or it may put serious barriers to it. Therefore, every programme needs to have flexibility without loosing its core.

The programme must be able to make a dent upon a change in personality structure in its cognitive, affective and connative domain. Once such changes are brought about, the programme automatically leads to its ultimate goal. It happens for the simple reason that the cognitive and affective dissonance act as a strong mobilizing factor pushing the target group towards acceptance and adoption of recommended practices. However, situational constraints in terms of lack or inadequate infrastructure and non-availability of inputs in programme. In order to harness upon the cognitive dissonance, the change agency must be very conscious of timely supply of required inputs and services. Constant efforts on the part of programme agency are necessary to maintain the resultant change in personality and removal of situational constraints. It requires

missionary zeal and strong determination on the part of agency to overcome the constraints and implement the programme effectively. The effectiveness is judged in terms of attainment of programme objectives. But, to enable the change- agency to come to this expectation needs to be provided with the required human and material resources and the adequate budget. These factors are the components of efficiency of the programme agency. The effectiveness largely depends upon the efficiency of the programme and so the Agricultural Polyclinic scheme.

Definitions of the terms used in the study

1. Beneficiary respondents

The beneficiaries are those who have participated in one or more activities of Agricultural Polyclinic.

2. Adoption of Agricultural Polyclinic recommended practices

In the present case, it has been operationalised as acceptance and full use of technologies and practices recommended by Agricultural Polyclinic.

3.7 The conceptual model

In order to assess the assumed relationship between independent and dependent variables, a conceptual model (fig.1) was developed.

The conceptual model is the model articulated from the obtained facts. It was observed from the available literature that the adoption of activities and success of any developmental programme is influenced by number of factors. Under the present study, it was assumed that adoption is the product of its major factors and it is being influenced not only by the benefits availment but the extent of knowledge about Agricultural Polyclinic. Similarly, it was also assumed that number of independent variables (personal, socio-economic and psychological) also play their role in influencing knowledge, benefits and adoption of

Agricultural Polyclinic activities in presence of above mentioned related variables.

The study being exploratory in nature, no hypotheses were framed.

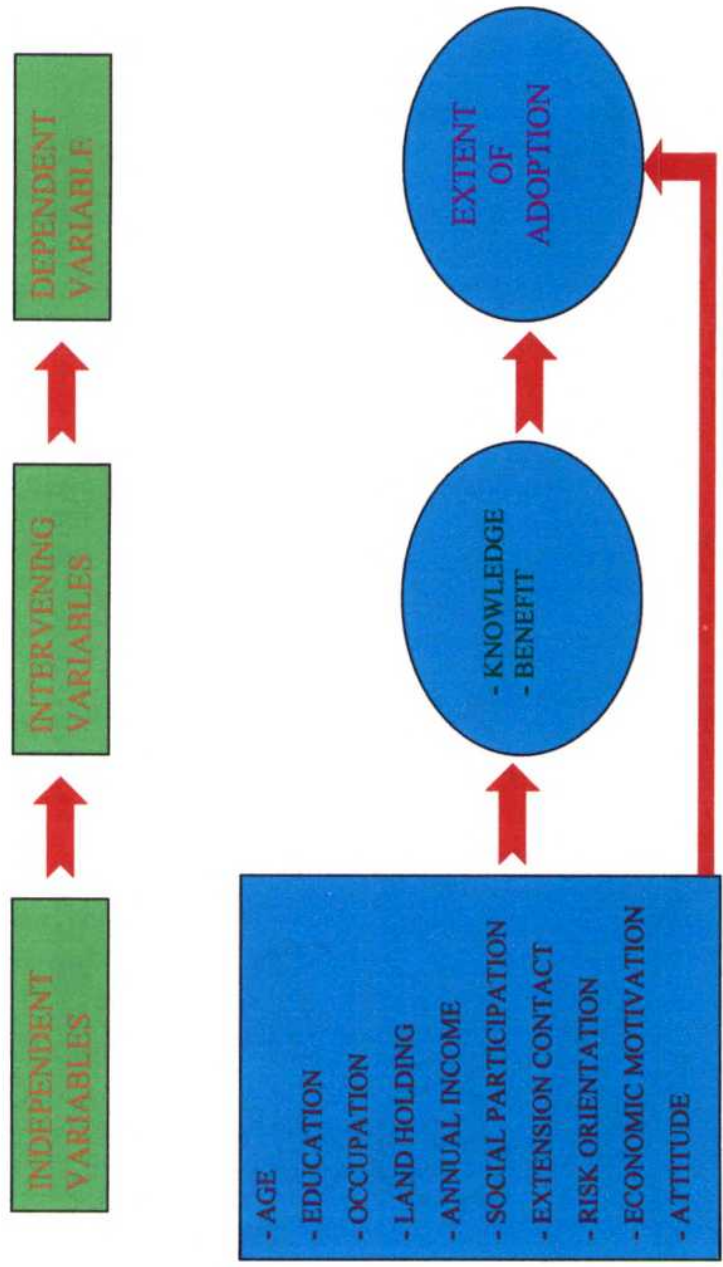


Fig. 1. Conceptual model



Methodology

4. METHODOLOGY

The present chapter deals with the methodology. The procedures and techniques used in this study are explained in this chapter.

The research methods used in conducting this study are presented under the following major heads.

- 4.1 Research design
- 4.2 Locale of the study
- 4.3 Sampling procedure
- 4.4 Sources of data collection
- 4.5 Variables and their measurement
- 4.6 Constraints
- 4.7 Tools and techniques of data collection
- 4.8 Statistical tests and procedures of analysis

4.1 Research design

Ex-post facto research design was used in this study as independent variables have already acted on dependent variable.

4.2 Locale of the study

The present study was undertaken in Marathwada region of Maharashtra State. The Marathwada region comprises of eight districts. The total geographical area of the region is 645250 sq.km. and net sown area under various crops is 48.89 lakh hectares.

The climate in general is dry except during southwest monsoon season. Rainy season starts from June and lasts up to the end of September. It is followed by cool dry season from October to January and hot dry season from February to May. The average rainfall of this region is 827 mm. The temperature ranges between 9.2°C (minimum) to 43.8°C (maximum).

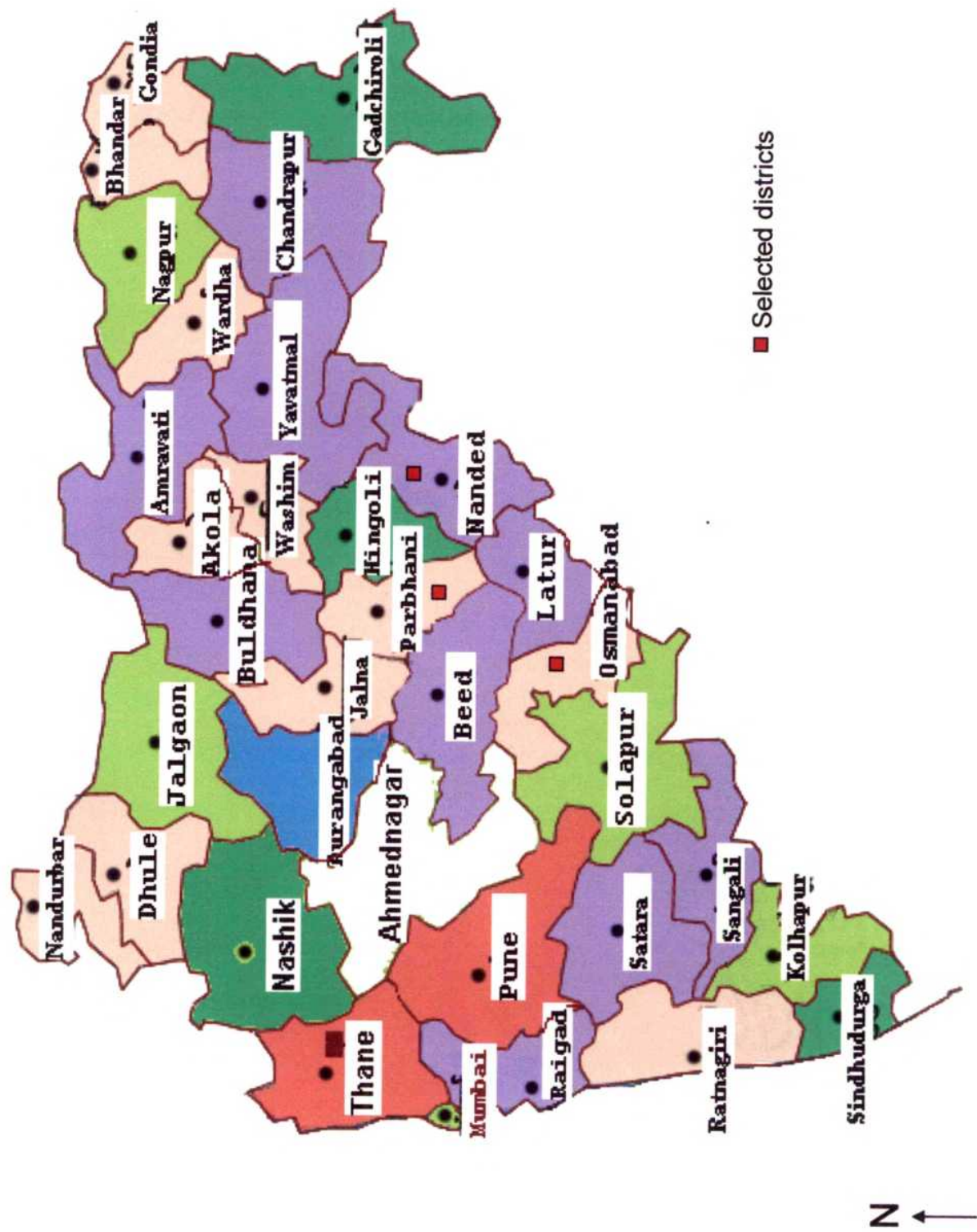


Fig. 2. Map of Maharashtra State

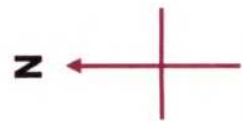
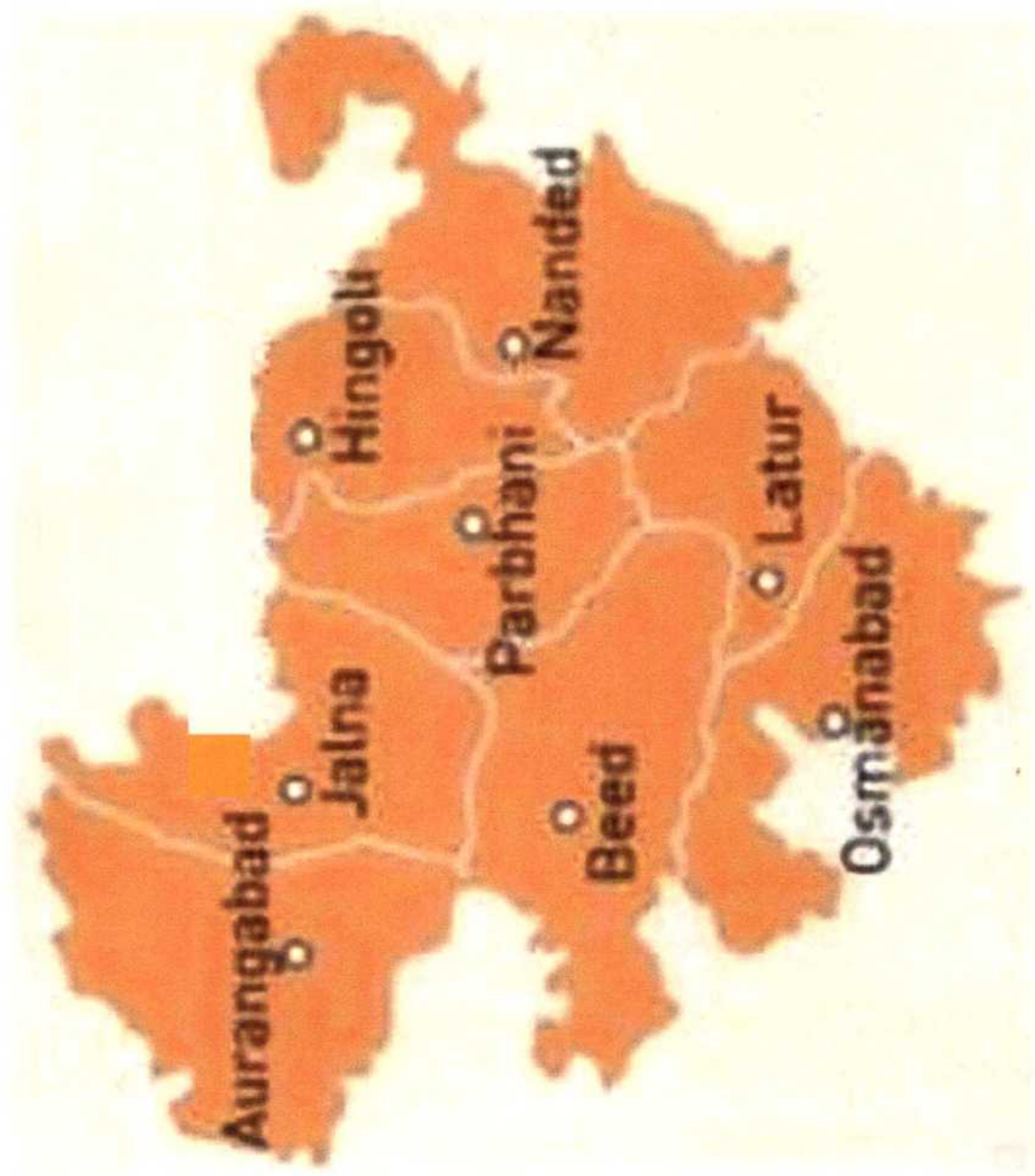


Fig. 3. Map of Marathwada Region

The present study was undertaken in three districts namely, Parbhani, Nanded and Osmanabad, out of eight districts in Marathwada region.

4.2.1 Salient features of the districts

4.2.1.1 Physiography

4.2.1.1.1 Parbhani

Parbhani district is situated at 408 m above mean sea level. The district lies between 18.45° and 20.17° North latitude and 76.13° and 77.29° East longitude. The total area of district is 7847 sq.km. After separation of Hingoli, administratively it is divided into two sub-divisions viz., Parbhani and Selu. According to 2001 census, total population of Parbhani district was 14,91,109 of which, 77.49 per cent was rural population. Majority of the people are depending on agriculture. It lies in Godawari basin. There are in all 1451 villages in nine talukas of Parbhani district.

4.2.1.1.2 Nanded

The district of Nanded is in between 18.15° and 19.55° North latitude and 77.7° to 78.15° East longitude. The district has a geographical area of 10528 Sq. Kms. The district is surrounded in the North by Yeotmal District, in the West by Parbhani, Latur and Osmanabad districts, in the South by Bidar district of Karnataka State and in the East by Nizamabad and Adilabad districts of Andhra Pradesh.

As per 2001 Census, the population in Nanded district is 28,76,259. Urban population is just 6,89,000 (23.96 %), while the rural population is 21,87,259 (76.04%). The decennial growth of population in the district during the period 1991-2001 was about 33.21%. Out of the total urban population, about 54.35% is in the Nanded City alone.

4.2.1.1.3 Osmanabad

Osmanabad district is situated between parallels of 17.35' and 18.4' North latitude and between meridians of 75.16° and 76.4° East longitude. The total geographical area is 7,48,478 hectares. The area under cultivation is 5,98,188 hectares. The total population is 14,72,256, out of which 12,39,009 is rural and 2,33,247 is urban (2000-2001 Census).

4.2.1.2 Soil

4.2.1.2.1 Parbhani

The major soil type of Parbhani district is black cotton soil. The soil varies both in texture and depth. On the Northern portion of the district, it is shallow and relatively poor in the South. It becomes deep and fairly rich in Godawari valley, especially along the bank of Godawari river.

4.2.1.2.2 Nanded

The black cotton soil in the district is rich in calcium, magnesium and carbonates, but poor in Nitrogen, Potassium and Phosphorous. It has a high moisture and humidity retention capacity. The river basin of Godavari, Mangurd, Mongia and Penganga has deep and good quality soil along the banks. The soil near hilly areas is laterite and mixed with stone.

4.2.1.2.3 Osmanabad

The soil of Osmanabad is light and light to medium not capable of retaining moisture, which is suitable only for the growth of kharif crops.

4.2.1.3 Climate and rainfall

4.2.1.3.1 Parbhani

The climate of Parbhani district is tropical. The year may be divided into three seasons.

1. Moderately warm wet season from June to September
2. A cool dry season from October to February

3. Hot dry season from March to May.

The rainy season, which starts from June and prevails up to September, is warm and pleasant. During the rainy season, the temperature normally ranges between 21 to 31°C. The winter season is comparatively dry and starts from November and ends in February. January is the coolest month of the year. The hot dry season starts in March and lasts upto May. The maximum temperature is in the month of May, which rises even as high as 45°C. Hot dry winds prevail occasionally in April and November. During the summer, the days are hot and nights are fairly cool. The temperature normally varies between 41.5°C and 14.6°C during the year. This district comes in assured rainfall zone.

4.2.1.3.2 Nanded

The climate in Nanded district is extreme with large variations in the temperature. During summer, the district experiences extreme heat with the mercury touching 44°C, while in the winter, the temperature drops to 9°C. The district receives rain from the Southwest monsoon during the months of June to September. The average rainfall in the district is 1150 mm. Kinwat Taluka receives the maximum rainfall, while Kondhav receives the minimum.

4.2.1.3.3 Osmanabad

The climate of Osmanabad district is tropical. The temperature ranges between 8.0°C to 38°C in winter and maximum 42.5°C in summer. The hot season starts from February and continues up to beginning of June. The Monsoon starts in the month of June and lasts till month of September and accounts for rainfall of 700 mm.

4.2.1.4 Cropping pattern

4.2.1.4.1 Parbhani

Major kharif crops are jowar, soybean, tur, mung, cotton etc. whereas major crops grown in rabi are jowar, wheat, gram, safflower and sunflower.

The crops like banana and sugarcane are grown in many parts of district, the vegetable crops like onion, tomato, brinjal, cabbage, garlic and chilli are also cultivated under seasonal crops.

4.2.1.4.2 Nanded

Major kharif crops are jowar, bajra, tur, soybean, mung, cotton, sunflower, etc. whereas major crops grown in rabi are rabi jowar, wheat, gram, sunflower, groundnut, etc.

Horticulture crops like mango, citrus, grapes, ber, pomegranate etc. are also cultivated. Sugarcane and banana are grown in many part of the district.

4.2.1.4.3 Osmanabad

The main kharif crops grown in the area are hybrid jowar, tur, mung, udid and in some part, groundnut is cultivated. Major crops grown in rabi are rabi jowar, wheat, sunflower and gram. Linseed and safflower are also cultivated on small scale.

The horticultural crops like mango, grapes, custard apple, ber, and pomegranate are grown in some parts of the district.

4.3 Sampling procedure

4.3.1 Selection of talukas and Agricultural Polyclinics

Out of eight districts in the Marathwada region, three districts namely Parbhani, Nanded and Osmanabad were selected on the basis of

having more than two Agricultural Polyclinics functioning in the districts. In Marathwada region thirty-six Agricultural Polyclinics were started upto 2005.

From each selected district, two talukas were selected on the basis of earlier establishment of Agricultural Polyclinics and two Agricultural Polyclinics from each district were selected on the basis of same principle. Each taluka having one Agricultural Polyclinic.

4.3.2 Selection of respondents

The list of respondents was obtained from the concerned officer of Agricultural Polyclinic and respondents were drawn by n^{th} method of random sampling. Steps involved in n^{th} method of random sampling were, all the population was arranged in serial numbers from 1 to N, and the size of sample was determined. Secondly the sampling interval was determined by dividing the population by the size of the sample i.e. $N/n=K$. where, K =Sample interval, n =Sample size and N =Size of population. Third step was that a number was selected at random from the first sampling interval. The subsequent samples were selected at equal or regular intervals. This method was separately adopted for each Agricultural Polyclinic and from each list of polyclinic, 25 respondents were drawn by n^{th} method of random sampling. Thus, final sample comprised of 150 respondents. The details of the Talukas in each district with number of respondents selected from total number of beneficiaries who participated in selected Agricultural Polyclinic activity are given in Table 1.

Table 1. Agricultural Polyclinic wise respondents selected for the study

Sr. No.	Name of the districts	No. of Agricultural Polyclinics in the district	Name of the selected Agricultural Polyclinic and taluka	No. of beneficiaries who participated in Agricultural Polyclinic activity	Number of respondents selected
1.	Parbhani		Jintur Agricultural Polyclinic, Jintur	247	25
			Gangakhed Agricultural Polyclinic, Gangakhed	143	25
2.	Nanded		Dhanegaon Agricultural Polyclinic, Nanded	77	25
			Kasarali Agricultural Polyclinic, Biloli	191	25
3.	Osmanabad		Tuljapur Agricultural Polyclinic, Tuljapur	169	25
			Yermala Agricultural Polyclinic, Kallam	82	25

4.3 Sources of data Collection

Data were collected directly from the sample respondents through a structured schedule specially designed for the study.

4.4 Variables and their measurement

The selection of variables included in the study was done on the basis of an extensive review of literature and discussion with experts. Only those variables, which had relevance with the study, were finally selected. The Ex-post facto method of analysis was used in the present

study. The list of variables along with instruments used for their measurement is presented under the following headings.

4.4.1 Independent variables

4.4.1.1 Age

Age of the respondents was measured as revealed by the respondents themselves in the form of number of completed years as on the date of interview. The respondents were classified into three categories as mentioned below.

Sr. No.	Category	Age (years)
1.	Young	18 to 35
2.	Middle	36 to 55
3.	Old	56 and above

4.4.1.2 Education

Education is operationally defined as the formal schooling undergone by the respondents. Responses were classified on the basis of their educational achievements. For measurement of educational level, a numerical score of zero was assigned for illiterate, one was assigned for 'can read or write'. Further, for each year of schooling a score of one was added to the formal years of the schooling, for standard 1st the score was 1+1, and for standard 2nd the score was 2+1 and like wise. Categorization was done as follows.

Sr. No.	Category	Education (Score)
1.	Illiterate	0
2.	Can read or write	1
3.	Primary	2 to 5
4.	Secondary	6 to 11
5.	Higher secondary	12 to 13
6.	Graduate and above	14 and above

4.4.1.3 Occupation

Occupation refers to the sources by which a respondent gets input in terms of income. Occupation of the respondents was measured as revealed by the respondents themselves in the form of operating work as on the date of interview. Scoring to different occupations was as follows.

Sr. No.	Category	Occupation (Score)
1.	Farming	1
2.	Farming + labour	2
3.	Farming + subsidiary occupation	3
4.	Farming + business	4
5.	Farming + service	5

4.4.1.4 Land holding

Land holding was defined as the number of hectares of the land owned by the respondents. The respondents were categorized into following categories by adopting the classification, given by Government of Maharashtra.

Sr. No.	Category	Land holding (ha)
1.	Marginal	0-1.00 ha
2.	Small	1.01-2.00 ha
3.	Semi-medium	2.01-4.00 ha
4.	Medium	4.01-10.00 ha
5	Large	10.01 and above ha

4.4.1.5 Annual income

It refers to the total annual earnings of individual respondent and its family members in terms of rupees per annum from all the sources of income.

On the basis of annual income, the respondents were categorized as follows on the basis of mean \pm S.D.

Sr. No.	Category	Annual income (Rs.)
1.	Low	Up to 27854
2.	Medium	27855 to 100321
3.	High	100322 and above

4.4.1.6 Social participation

It was operationally defined as the position, an individual respondent occupied, with reference to participation in group activities in social institutions, either as a member or office bearer.

Each of the respondent was assigned a score of one, if he was a member of an organization and a score of two if he was an office bearer at the time of interview. Score was multiplied by number of participation years. Such item was taken as indication of social participation.

On the basis of social participation, the respondents were categorized as follows on the basis of mean \pm SD.

Sr. No.	Category	Social participation (Score)
1.	Low	Up to 11
2.	Medium	12 to 40
3.	High	41 and above

4.4.1.7 Extension contact

Extension contact is operationalized as the contact made by the beneficiaries with the extension workers or agencies in the village or outside the villages. It was measured by assigning a score of two for regular contact, one score for the occasional contact and zero score for no contact. Categorization was made on the basis of mean \pm SD.

Sr. No.	Category	Extension contact (Score)
1.	Low	Up to 2
2.	Medium	3 to 6
3.	High	7 and above

4.4.1.8 Risk orientation

In the present study, the risk bearing ability was operationalised as the degree to which an individual oriented towards risk and uncertainty and had courage to face the problems in day-to-day life. It was measured with the help of risk preference scale developed by Supe and Singh (1969). This scale included six items, of which item numbers 1 to 5 were positive and the sixth was negative. Responses were categorized as strongly agree, agree, undecided, disagree and strongly disagree with the scoring of 5, 4, 3, 2, 1 and 1, 2, 3, 4, 5 for positive and negative statements, respectively.

Maximum score an individual could obtain on this scale was 30 and the minimum was six. Categorization was made on the basis of mean \pm SD.

Sr. No.	Category	Risk orientation (Score)
1.	Low	Up to 17
2.	Medium	18 to 26
3.	High	27 and above

4.4.1.9 Economic motivation

Economic motivation is the degree to which an individual intends to earn to a maximum extent.

In the present study, economic motivation was measured by economic motivation scale developed by Supe and Singh (1969). In this scale, six questions were asked and responses were categorized as strongly

agree, agree, undecided, disagree and strongly disagree with the scoring of 5, 4, 3, 2, 1 and 1, 2, 3, 4, 5 for positive and negative statements respectively.

Maximum score an individual could obtain on this scale was 30 and the minimum was six. The categories were made on the basis of $\text{mean} \pm \text{SD}$.

Sr. No.	Category	Economic motivation (Score)
1.	Low	Up to 18
2.	Medium	19 to 27
3.	High	28 and above

4.4.1.10 Attitude

Development of attitude scale

Number of attitude scales have been developed by various researchers to measure the attitude of individuals towards various objects. Though different techniques are available for the construction of attitude scale, Likert's Summated rating technique is the most commonly employed one. The same technique was used to construct the attitude scale.

Items collection

The items of the attitude scale are called statements. These statements were collected through the reviewed literature.

As a first step in developing scale, a large number of statements about Agricultural Polyclinic activities/practices and their organizational setup were collected from relevant literature, information, interviews with the personnel connected with the implementation of the Agricultural Polyclinic. A tentative list of items was drafted keeping in view the applicability of items suited to the area of study. These statements were framed in such a way that they express the positive or negative attitude. In order to get a five-point judgment, five alternative response

categories ranging from strongly agree to strongly disagree were assigned to each statement. The statements so collected regarding Agricultural Polyclinic activities/practices and their organizational setup were discussed with the personnel connected with the implementation of the Agricultural Polyclinic.

They were suggested to add/delete any statement, which they deemed, fit for inclusion/deletion. They were also asked to check the statement for being favourable or unfavourable towards Agricultural Polyclinic activities/practices and their organizational setup. Again the statements were rewritten in the light of criticism and comments of the experts. This way finally a total number of statements were retained. Efforts were made to select equal number of positive and negative statement.

As a result of 50 statements, 42 statements were carefully edited by using the 14 criteria suggested by Edwards (1957). Out of 42 statements collected critically, 14 statements were selected finally (given in appendix-I). The statement thus reflected the opinion of the farmers in respect of Agricultural Polyclinic activities/practices.

Item analysis

Sixty slips of these statement were sent to the judges selected related with the Agricultural Polyclinic which included Taluka Agricultural Officers, Circle Agricultural Officers, Supervisors and Assistants from the State Agricultural Department. Out of these judges only 40 judges returned the slips after duly recording. Their own agreement and disagreement in five point rating method, namely strongly agree, agree, undecided, disagree and strongly disagree. The related items were placed in a random sequence against the rating points namely strongly agree, agree, undecided, disagree and strongly disagree and 5, 4, 3, 2 and 1 score was given to each of the responses respectively for positive items and scoring was reversed for

negative items. The total score of respondents was obtained by summing the weights on all the items.

Final selection of the items

For the final selection of the items, the critical ratio of each statement was calculated. For this, the frequency distribution of scores based upon the responses to all statements was obtained. Twenty five per cent of the respondents with the highest score and also twenty five per cent of the respondents with the lowest total score provided the criterion group to evaluate the individual statements. The critical ratio was calculated by using the following formula suggested by Edwards.

$$t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\frac{\sum(X_H - \bar{X}_H)^2 + \sum(X_L - \bar{X}_L)^2}{n(n-1)}}$$

Where,

X_H^2 = Sum of the squares of the individual scores in the high group

X_L^2 = Sum of the squares of the individual scores in the low group

\bar{X}_H = The mean score on a given statement for the high group

\bar{X}_L = The mean score on a given statement for the low group

Critical ratio ('t' values) was calculated for all the statements.

Seven positive and seven negative statements were selected having highest 't' values. These 't' values were more than 1.75 and were significant indicating that any one of these items significantly differs between the high and low group. The total of the 14 items thus included in the scale are given in appendix-I.

Reliability of the scale

The reliability of the scale was worked out by using the split-half method. The items of the scale were divided into equal halves by

pooling the odd numbered items for one scale and even numbered items for other scale. Each scale was administered to a group of 20 farmers and one agreement between the two sets of scores in each scale, one an odd numbered and other on even numbered items, was determined by a correlation of coefficient between the two sets was found to be highly significant. The reliability coefficient thus obtained indicated that interval consistency of the attitude scale constructed for the study was quite high.

To further know the dependability of the scale, test = retest method was used. The scale was administrated twice to the same group consisting of 20 samples at an interval of 10 days. The agreement between the scores obtained from the two allocations of same scale was determined by means of a correlation coefficient, which is called coefficient of stability or dependability. The coefficient calculated was highly significant testifying the reliability (dependability) of the scale. From the reliability of the half test, the self correlated of the whole test was then estimated by the Rulon's (1939) formula, which is as follows:

$$r_{tt} = 1 - \frac{\sigma^2 d}{\sigma^2 t}$$

Where,

- r_{tt} = coefficient of reliability
- d = difference between the two half score of the respondents
- $\sigma^2 d$ = variance of those differences
- $\sigma^2 t$ = variance of total score
- σ = $1/n \left[\sum x_1^2 - \frac{(x_1)^2}{n} \right]^{1/2}$

Where,

- n = number of respondents

n_i = score or frequency
 n_i^2 = square of the frequency

The calculated value of reliability of coefficient for whole test by the split half method was 0.51, which is highly significant. Therefore, it is concluded that the scale is reliable.

Validity of the scale

While selecting attitude statements, due care was exercised in obtaining a fair degree of content validity.

Attitude scoring procedure

Attitude is defined as degree of negative or positive feelings associated with some psychological objects towards which people differ in varying degrees.

Attitude towards Agricultural Polyclinic was assessed being an important variable for success of the programme.

The attitude of respondents towards Agricultural Polyclinic was measured with the help of attitude scale specially developed for the study. In this scale fourteen items were finally selected. Five point continuum was used. The score assigned for the positive statements was 5, 4, 3, 2, 1 for strongly agree, agree, undecided, disagree and strongly disagree respectively. The scoring for the negative statement was just the reverse. For ascertaining the nature of attitude, the maximum and minimum scores of the respondents were taken into consideration, which were 70 and 14 respectively. The point between possible maximum and minimum score was 42 i.e. neutral score. Hence the respondents obtaining score 43 to 70 were classified to be possessing favourable attitude and 14 to 41 as unfavourable attitude towards Agricultural Polyclinics.

Sr. No.	Category	Score
1.	Favourable	43 to 70
2.	Unfavourable	14 to 41
3.	Neutral	42

4.4.2 Intervening variables

4.4.2.1 Knowledge

One of the variables under this study was to examine the knowledge of the respondents in respect of Agricultural Polyclinic.

Knowledge was defined in the words of Bloom *et al.* (1956), “Those behaviour and test situations which emphasized the remembering either by recognition or recall of ideas, materials or phenomenon”. The knowledge of Agricultural Polyclinic therefore refers to “those behaviour of respondent farmers which emphasized remembering the information about Agricultural Polyclinic either by recognition or recall of ideas, materials or phenomenon at the time of interview.

Framing suitable questions on Agricultural Polyclinic activities/practices and their organizational setup developed knowledge test. There were 22 items included in the teacher made knowledge test. The items selected reflected the opinion of the farmers in respect of Agricultural Polyclinic activities/practices and their organizational setup.

Score of one and zero were given respectively for correct and incorrect responses. There was thus a possibility of scoring a maximum of 22 score for all correct answers and a zero for all wrong answers. Categorization of responses was done on the basis of mean \pm 1 SD.

Sr. No.	Category	Knowledge (Score)
1.	Low	Up to 13
2.	Medium	14 to 19
3.	High	20 and above

4.4.2.2 Benefits

Benefits refer to the advantages received by the respondents after participating in Agricultural Polyclinic activity.

Collection of items

The content of benefit was composed of statements called items. A pool of statements on relevant item was prepared by referring to literature on Agricultural Polyclinic and by contacting the officials of the Agricultural Polyclinic. The items thus selected were nine. The selected items reflected the extent of benefit accrued by the respondents through adoption of activities extended through Agricultural Polyclinic.

The extent of benefits derived by the respondents was assessed in terms of utilization of wasteland, increased income derived from agricultural produce and allied business, decreased production costs of agricultural produce and allied business, contour development on essential lands to develop contour, coverage of lands under irrigation by utilization of farm ponds and improved irrigation systems, average expenditure on fertilizers, insecticide-pesticides and storage of agricultural produce and requirement of seeds in kgs per hectare for sowing.

The procedure adopted in quantification of extent of benefits obtained from Agricultural Polyclinic activities/practices by the respondents is depicted below.

Sr. No	Items	Procedure	
		Index=After /BeforeX100	Benefit= 100 -index
1	Waste land utilization (ha)	$\frac{\text{Actual wasteland taken under Cultivation after participation (ha)}}{\text{Available wasteland possessed by respondents before participation (ha)}} \times 100$	Benefit = 100 -index

Sr. No	Items	Procedure	
		Index=After /BeforeX100	Benefit= 100 -index
2	Increased income from all sources (Rs)	$\frac{\text{Income derived from all sources by respondents after participation (Rs)}}{\text{Income from all sources by respondents before participation (Rs)}} \times 100$	Benefit = 100 -index
3	Decreased production cost/expenditure on farming and allied business (Rs)	$\frac{\text{Production cost / expenditure on farming and allied business after participation (Rs)}}{\text{Production cost / expenditure on farming and allied business before participation (Rs)}} \times 100$	Benefit = 100 -index
4	Contour development on essential land to develop counter (ha)	$\frac{\text{Contour developed on essential land to develop contour (ha)}}{\text{Available land essential to develop contour (ha)}} \times 100$	Benefit = 100 -index
5	Coverage of land under irrigation through farm ponds and improved irrigation systems (ha)	$\frac{\text{Land covered under irrigation by utilization of farm ponds and improved irrigation systems (ha)}}{\text{Maximum possibilities of land covered under irrigation by utilization of farm ponds and improved irrigation system (ha)}} \times 100$	Benefit = 100 -index
6	Expenditure saving on fertilizer cost (Rs)	$\frac{\text{Annual expenditure on fertilizer after participation (Rs)}}{\text{Annual expenditure on fertilizer before participation (Rs)}} \times 100$	Benefit = 100 -index

Sr. No	Items	Procedure	
		Index=After /BeforeX100	Benefit = 100 -index
7	Expenditure saving on insecticide / pesticide cost (Rs)	$\frac{\text{Annual expenditure on insecticide/pesticide after participation (Rs)}}{\text{Annual expenditure on insecticide/pesticide before participation (Rs)}} \times 100$	Benefit = 100 -index
8	Expenditure saving on agricultural produce storage (Rs)	$\frac{\text{Annual expenditure on agricultural produce storage after participation}}{\text{Annual expenditure on agricultural produce storage before participation}} \times 100$	Benefit = 100 -index
9	Seed requirement for sowing(kg/ha)	$\frac{\text{Required seeds for sowing after participation (kg/ha)}}{\text{Seeds required for sowing before participation (kg/ha)}} \times 100$	Benefit = 100 -index

The proportion for each of the nine items (After / Before) for benefits was calculated. In order to get over all picture of extent of benefits of Agricultural Polyclinic activities, the total value of all the nine items were divided by nine, the total number of items, that is average index was calculated (Appendix-II), The resulting value was taken as 'extent of benefit' for adoption of Agricultural Polyclinic activities/ practices and the scores given were as follows.

Sr. No.	Category	Index	Benefits (Score)
1.	Low	Up to 14.84per cent	1
2.	Medium	14.85to30.83 per cent	2
3.	High	30.84 and above per cent	3

4.4.3 Dependent variable

4.4.3.1 Adoption

It is not only sufficient to participate just in Agricultural Polyclinic activities but the beneficiaries should also adopt the technological practices adequately in order to derive maximum economic benefit of the programme. The adoption of technology recommended by Agricultural Polyclinic was, therefore included as the dependent variable in the study.

For computing adoption index of respondents, the extent of adoption was measured in terms of adoption level. The extent of adoption of the recommended activities/practices concerning Agricultural Polyclinic was measured by means of adoption index, developed on the lines of adoption intensity index used by Choubay (1972). The extent of adoption of technological practices was measured by working out the composite adoption index, as the purpose was to quantify the extent of adoption of practices for the management of the farming extended through Agricultural Polyclinic and not to arrive at individual practice adoption. Fifteen technological practices were selected for the study of extent of adoption

To fix weightage based on the intrinsic difficulty of adoption of practices, 40 judges comprising, Head of the Departments of Agronomy, Entomology, Horticulture, Professors of the Departments of Agronomy, Entomology, Horticulture, Agril. Engineering and some postgraduate students at MAU were contacted in person with a request to indicate the degree of difficulty in adoption of each selected practices extended through Agricultural Polyclinic by the farmers. The copy of the instructions given to the judges is given in appendix-III. The scoring procedure followed for quantifying the responses were

Very difficult	....	5
Difficult	....	4
Neither difficult nor easy	....	3
Easy	....	2
Very easy	....	1

The mean scores of the 'judges' responses was rounded to the nearest whole number for each practice and weightages were assigned for the respective practice

The procedure adopted in the quantification of extent of adoption of Agricultural Polyclinic activities was as follows:

Activities / Practices

Sr.No	Practice	weightage	Procedure
1.	Available Land utilization	2	Actual land put under cultivation (ha) ----- X weightage Potential area that can be put under cultivation
2.	Contour development	3	Actual area put under contour development (ha) -----X weightage Potential area that can be put under contour development
3.	Farm pond preparation	3	Actual number of farm pond prepared ----- X weightage No. of farm pond required
4.	Use of improved irrigation systems	3	Actual area put under improved irrigation system (ha) -----Xweightage Potential land that can be put under improved irrigation system (ha)

5. Nadep compost utilization 3 Actual area put under utilization of Nadep compost (ha)
-----Xweightage
Potential area that can be put under utilization of Nadep compost (ha)
6. Vermicompost utilization 3 Actual area put under utilization of vermicompost (ha)
-----Xweightage
Potential area that can be put under utilization on vermicompost (ha)
7. Insect / pests diagnostic facilities utilization (ha) 3 Actual area put under diagnostics facilities used for insects / pests
-----X weightage
Potential area that can be put under diagnostics facilities for insects / pests (ha)
8. Use of HaNPV 3 Quantity of HaNPV applied (lit/ha)
----- X weightage
Quantity of HaNPV recommended (lit/ha)
9. Use of Trichocard 3 Quantity of Trichocard applied (card/ha)
----- X weightage
Quantity of Trichocard recommended (card/ha)
10. Use of Neemark 2 Actual area put under utilization of Neemark (ha)
----- X weightage
Potential area that can be put under utilization of Neemark (ha)
11. Soil testing 3 Actual area covered under soil testing (ha)
----- X weightage
Potential area that can be covered under soil testing (ha)

- | | |
|---|---|
| 12. Utilization of improved implements (ha) | 3 Actual area covered under utilization of improved implements (ha)
-----X weightage
Potential area that can be covered under, utilization of improved implements (ha). |
| 13. Use of cold storage (zero energy) | 4 Actual quantity of agricultural produce put in cold storage (kg)
----- X weightage
Potential quantity of agricultural produce that can be put in cold storage (kg) |
| 14. Use of shadenet and green house | 4 Actual area put under shadenet and green house
----- X weightage
Potential area that can be put under shadenet and green house (ha) |
| 15. Use of Seed germination testing lab | 3 Actual number of crops seeds put under seed germination test
----- X weightage
Potential number of crop seeds that can be put under seed germination testing |

The proportions for each of the fifteen practices (actual/potential) were calculated and multiplied by the corresponding weightage. The values of all the fifteen items were summed and then divided by 45, the total number of weightage. The resulting value was multiplied by 100 to indicate the percentage of the extent of adoption of practices extended through Agricultural Polyclinic. The resulting value was taken as 'adoption index' (computation given in appendix-IV)

$$\text{Adoption index} = \frac{\text{Practices actual used}}{\text{Practices recommended or potential to be used}} \times 100$$

The respondents were categorized into three categories on the basis of mean \pm 1 SD.

Sr. No.	Category	Adoption (Score)
1.	Low	Up to 35.00
2.	Medium	35.01 to 63.69
3.	High	63.70 and above

4.5 Constraints

Oxford dictionary defines the word constraint as confinement, restriction of liberty or compulsion of circumstances put upon the behaviour of an individual. Constraints are the factors that limit the adoption process.

In the present study, constraints have been operationally defined as the problems or difficulties encountered by the respondents in the adoption of practices extended through Agricultural Polyclinics.

The probable constraints were identified and structured.

Respondents were asked to elicit their responses with regard to the problems or difficulties they encountered in the adoption of recommended practices.

The responses were recorded against the structured constraints. The frequency and percentage of respondents against each constraint was worked out.

4.6 Tools and techniques of data collection

Main tools used in the present study was interview schedule with the scales for measuring dependent, independent and intervening variables. The methods followed for developing and administering the tool for data collection are explained below

4.6.1 Development of schedule

The interview schedule was drafted so as to collect the information in line with the objectives of the study. The schedule was

developed in two sections. In the first section, questions related to selected personal, socio-economic and psychological characteristics of the respondents namely, age, education, occupation, land holding, annual income, social participation, extension contact, risk orientation, economic motivation and attitude were included.

Section second of the interview schedule consisted the questions regarding the knowledge of the respondent about Agricultural Polyclinic activities/ practices and their organization setup, benefits availed from Agricultural Polyclinic activities/ practices, extent of adoption level of Agricultural Polyclinic activities/ practices and constraints faced by the respondents while adoption of Agricultural Polyclinic activities/ practices. While structuring the schedule, attention was given to make the questions simple and self explanatory with clarity, so that it would hold good while interviewing the sample of Agricultural Polyclinic beneficiaries.

4.6.2 Pretesting of schedule

The interview schedule was pretested by interviewing ten Agricultural Polyclinic beneficiaries from Parbhani tahsil of Parbhani district. This was considered necessary to rectify the shortcomings, if any, in the schedule. The finalized schedule (given in Appendix-V) was used as the instrument for collection of data.

4.6.3 Collection of data

The respondents were individually contacted for the purpose of interview. Majority of the selected respondents were contacted at their homes. In some cases, they were contacted at their farms also. In the first instance, author introduced himself or was introduced by village level workers. After the introduction, purpose of visit, object and importance of study and the significance of the co-operation of the respondents in the investigation were well explained to the respondents to establish proper rapport.

Thereafter, question wise interview was conducted and responses were marked in the schedule. Every possible care was taken to maintain congenial atmosphere to get the unbiased opinion of the respondents. Some of the respondents were visited more than once to collect the data at their convenience. The interview schedule thus filled was checked before closure of interview for its completion in all respects.

4.7 Statistical procedure used for the analysis of data

The data collected through the interview schedule was coded, classified and analyzed in order to make the findings meaningful. For interpretation and drawing inferences, following statistical methods were used.

4.7.1 Mean (\bar{X})

The arithmetic mean (\bar{X}) is the quotient that results when the sum of all the items in the series is divided by the number (N) of items.

The formula in terms of symbol is

$$\bar{X} = \frac{\sum X}{N}$$

Where,

\bar{X} = Arithmetic mean

$\sum X$ = Sum of each individual item

N = Total number of items

4.7.2 Standard deviation

The standard deviation was found by taking the difference of each item in the series from the arithmetic mean (\bar{X}), squaring this difference (X^2), summing all the square differences ($\sum X^2$) and dividing by the number of items (N) and lastly calculating the square root of product by using the following formula.

$$\text{S.D.} = \sqrt{\frac{\sum x^2}{N}}$$

Where,

S.D. = Standard deviation

$\sum x^2$ = Sum of square of the deviation from the mean

N = The number of items

4.7.3 Frequency and percentage

Some of the data were subjected to analysis and interpretation in terms of frequency and percentage, wherever necessary.

4.7.4 Pearson's coefficient of correlation (r)

This technique was used to find out the relationship between independent and dependent variables. Following formula was used for computation of 'r' value.

$$r = \frac{\sum XY - (\sum X \sum Y)/N}{\sqrt{[\sum x^2 - (\sum x)^2/N] [\sum Y^2 - (\sum Y)^2/N]}}$$

Where,

N = Number of observations

r = Coefficient of correlation

X = Value of independent variables

Y = Value of dependent variables

4.7.5 Multiple regression

This technique was used to know the partial and complete influence of independent variables on dependent variable. For the present study, linear model of regression equation was used as follows.

$$Y_1 = a + b_1x_1 + b_2x_2 + \dots + b_nx_n$$

Where,

Y_1 = dependent variable

a = Constant value

x_1, \dots, x_n = independent variables

b_1, \dots, b_n = the regression coefficient for the respective variables

u = random variable

4.7.6 Path analysis

This was used to identify the direct, total indirect and substantial indirect effect of independent variables on dependent variable.

Path analysis adopting multivariate path model suggested by Land (1969) was used to isolate direct, indirect and substantial effect of independent variables on dependent variables of the respondents.

The formula used was as follows.

$$Z_{12} = P_{12.1} Z_1 + P_{12.2} Z_2 + \dots + P_{12.n} Z_n + P_{12} \cdot Z_a$$

Where,

Z_{12} = Dependent variable

Z_1 to Z_n = Independent variables

Z_a = Residual factor



Results

5. RESULTS

The main focus of the present investigation was on the performance of Agricultural Polyclinic in Marathawada region in terms of changed attitude, gain in knowledge, benefits availed and adoption of different activities extended through Agricultural Polyclinic. Attempts were also made to understand the influence of various factors on the performance of Agricultural Polyclinic. The efforts were also made to know certain profile characteristics of the respondents. The results are presented under the following major heads.

- 5.1 Personal, socio-economic and psychological characteristics of respondents.
- 5.2 Attitude of respondents about extension activities of Agricultural Polyclinic.
- 5.3 Knowledge of respondents about extension activities of Agricultural Polyclinic.
- 5.4 Extent of benefits availed by the beneficiary respondents.
- 5.5 Performance of Agricultural Polyclinic in terms of extent of adoption of recommended practices extended through Agricultural Polyclinics by the respondents.
- 5.6 Relationship between personal, socio-economic and psychological characteristics of respondents with adoption of recommended practices extended through polyclinic
- 5.7 Constraints faced by the respondents while adopting the agricultural practices recommended through the Agricultural Polyclinic.

5.1 Personal,socio-economic and psychological characteristics of respondent.

So as to facilitate the comprehension of the sample and interpretation of results, a set of relevant personal, socio economic and psychological characteristics of the respondents was included in the study. Therefore, the characteristics viz. age, education, occupation, land holding, annual income, social participation, extension contact, risk orientation, economic motivation, attitude, knowledge and benefits which act as objective criteria were included in the study.

5.1.1 Age

As regards age of the respondents under study it was measured on the basis of completed years at the time of interview. Data pertaining to age of the respondents are presented in Table 2.

Table 2: Distribution of the respondents by age

Sr.No.	Age (years)	Frequency	Per cent
1.	Young (18 to 35)	32	21.33
2.	Middle (36 to55)	87	58.00
3.	Old (56 and above)	31	20.67
	Total	150	100.00

Mean age 44.95 years

It was evident from Table 2 that the sample predominantly comprised of middle age (36 to 55 years) (58.00%), followed by 21.33 per cent and 20.67 per cent in young (18 to 35 years) and old (56 and above) age category, respectively.

5.1.2 Education

Analysis of the educational achievement of the respondents is an important determinant in the development process. An attempt was made in the present study to know the distribution of the respondents on the basis of educational level.

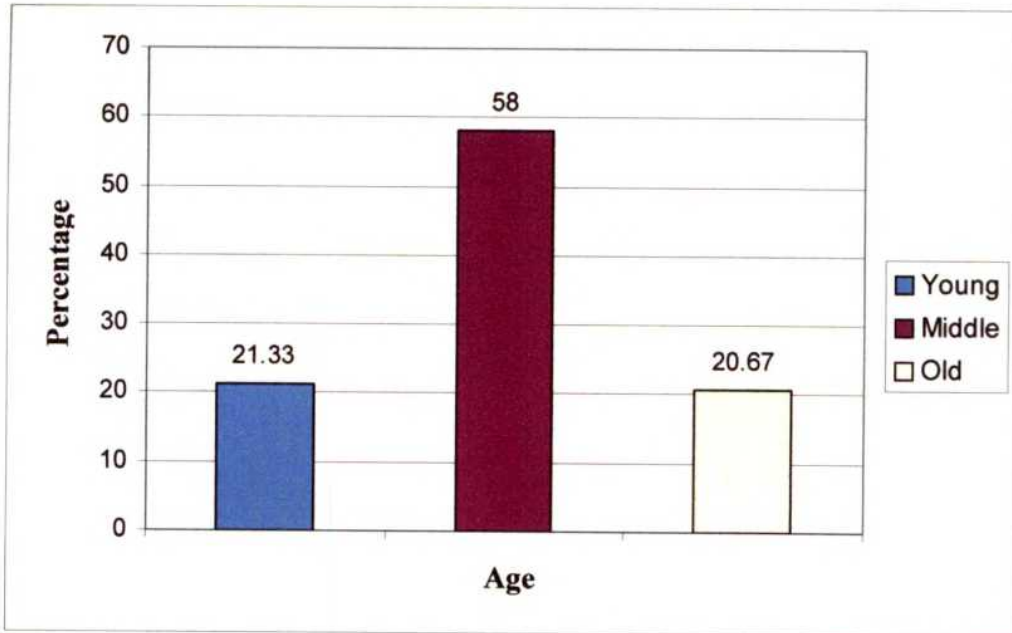


Fig 5: Distribution of the respondents by age

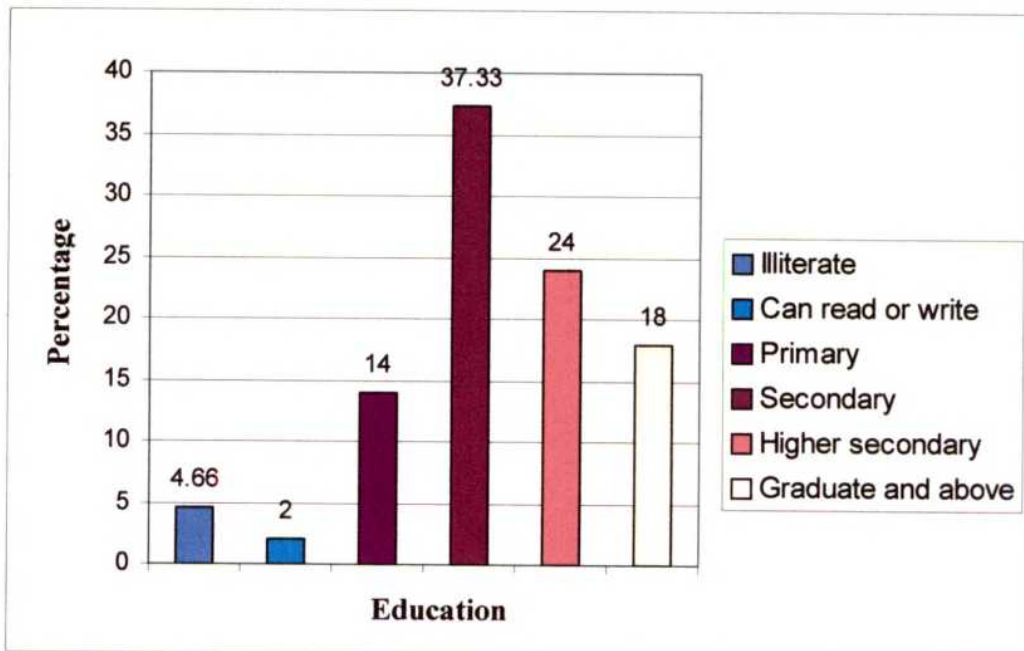


Fig 6 : Distribution of the respondents by education

Table 3: Distribution of the respondents by education

Sr.No.	Category	Frequency	Per cent
1.	Illiterate	7	4.66
2.	Can read or write	3	2.00
3.	Primary	21	14.00
4.	Secondary	56	37.33
5.	Higher secondary	36	24.00
6.	Graduate and above	27	18.00
	Total	150	100.00

Mean 10.05 stds.

It is indicated from Table 3 that 37.33 per cent of the respondents were having secondary level education. About 24.00 per cent of the respondents were possessing higher secondary level and 18.00 per cent of the respondents were educated up to graduate and above, whereas 14.00 per cent of the respondents fell in primary category of education. While meagre percentage of the respondents (4.66 and 2.00) were in the categories of illiterate and could read or write, respectively. The mean educational level of respondents was 10.05.

5.1.3 Occupation

Occupation in rural area had direct relevance with the rural development process. The occupation of the respondents was analyzed and results are depicted in Table 4

It is revealed from the Table 4 that one third (33.33 per cent) of the respondents were having farming as main occupation, followed by one fourth (24.00 per cent) respondents doing subsidiary occupation along with farming. Whereas, 18.00 per cent and 16.66 per cent were engaged in farming plus labour and farming plus service, respectively. Only 8.00 per cent respondents were doing business and looking after farming also.

Table 4: Distribution of the respondents by occupation

Sr.No.	Category	Frequency	Per cent
1.	Farming	50	33.33
2.	Farming + labour	27	18.00
3.	Farming + subsidiary occupation	36	24.00
4.	Farming + business	12	8.00
5.	Farming + service	25	16.66
	Total	150	100.00

Mean score 2.65

5.1.4 Land holding

Land holding of the respondents was categorized on the basis of possession of land.

It is observed from Table 5 that sizable amount of the respondents (59.33 %) were in semi-medium category, followed by 15.33 in the marginal, 10.67 per cent in small category, whereas 8.00 per cent and 6.67 per cent were in medium and large categories, respectively. The mean land holding of respondents was 2.82 ha.

Table 5: Distribution of the respondents by land holding

Sr. No.	Category	Frequency	Per cent
1.	Marginal	23	15.33
2.	Small	16	10.67
3.	Semi-medium	89	59.33
4.	Medium	12	8.00
5	Large	10	6.67
	Total	150	100.00

Mean 2.82 ha.

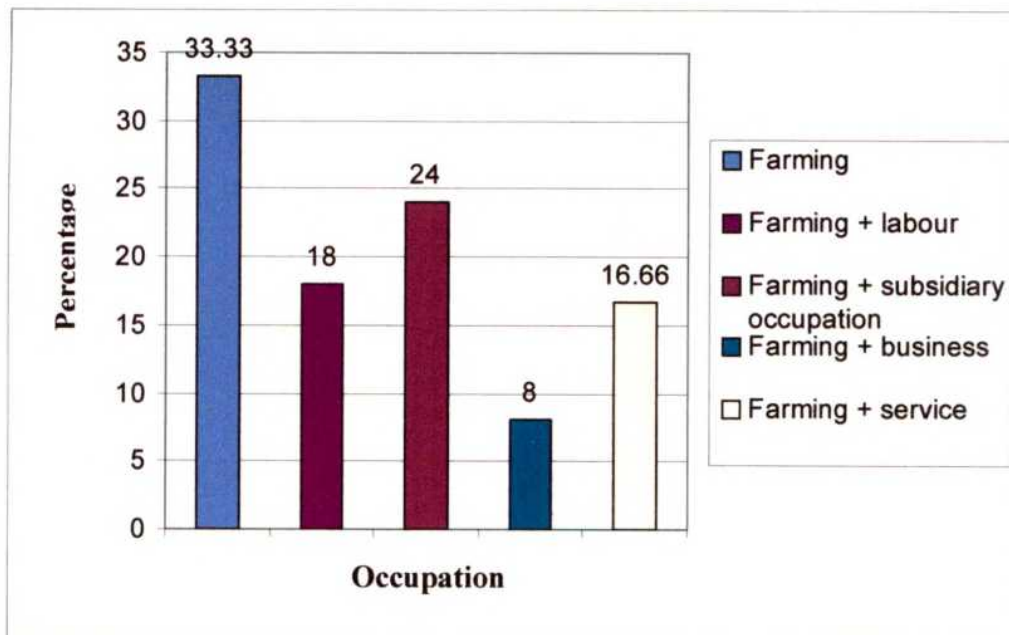


Fig 7 : Distribution of the respondents by occupation

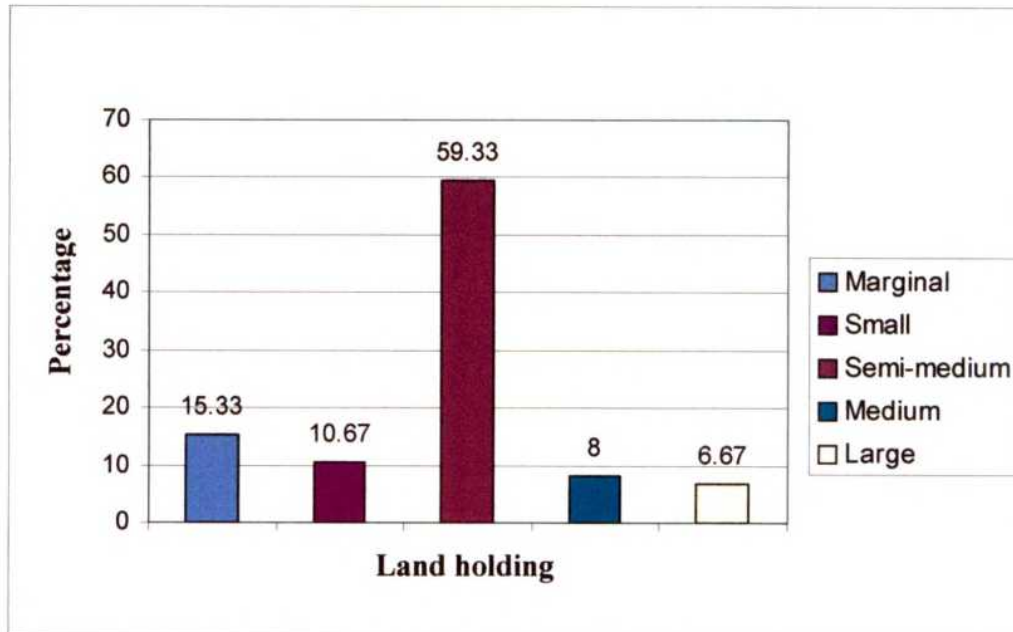


Fig 8 : Distribution of the respondents by land holding

Thus the composition of the respondents revealed that the sizable number of farmers were in semi- medium category, followed by marginal and small category. Meagre percentage of farmers were in medium and large category of land holding.

5.1.5 Annual income

Annual income is one of the important variables influencing adoption of advanced technology in farming. The term annual income here refers to the annual earning of the respondents from all the sources. Higher income group can spend more money on purchase of even costly inputs. Economic level determines the investment pattern of farmers, hence the annual income of the beneficiaries was studied and results are presented in Table 6

Table 6: Distribution of the respondents by annual income

Sr.No.	Category	Frequency	Per cent
1.	Low (up to Rs. 27854)	18	12.00
2.	Medium (Rs.27855 to100321)	86	57.33
3.	High (Rs.100322 and above)	46	30.67
	Total	150	100.00

Mean Rs. 93733.30

It is apparent from the Table 6 that 57.33 per cent of the beneficiaries were having medium level of annual income and 30.67 per cent of the respondents were having high level of annual income. Whereas, 12.00 per cent of them were having low level of annual income. The mean annual income of respondents was Rs. 93733.30

5.1.6 Social Participation

Social participation refers to the membership or holding of an official position in organization. It was assumed that the farmers, who participated in more number of organizations would tend to be more active

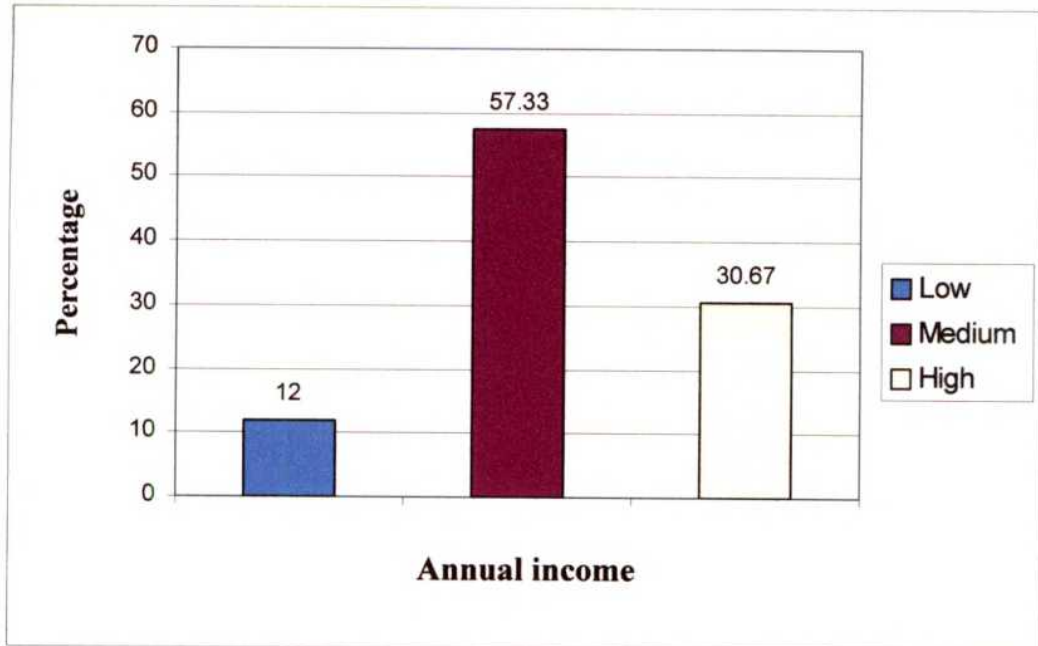


Fig 9 : Distribution of the respondents by annual income

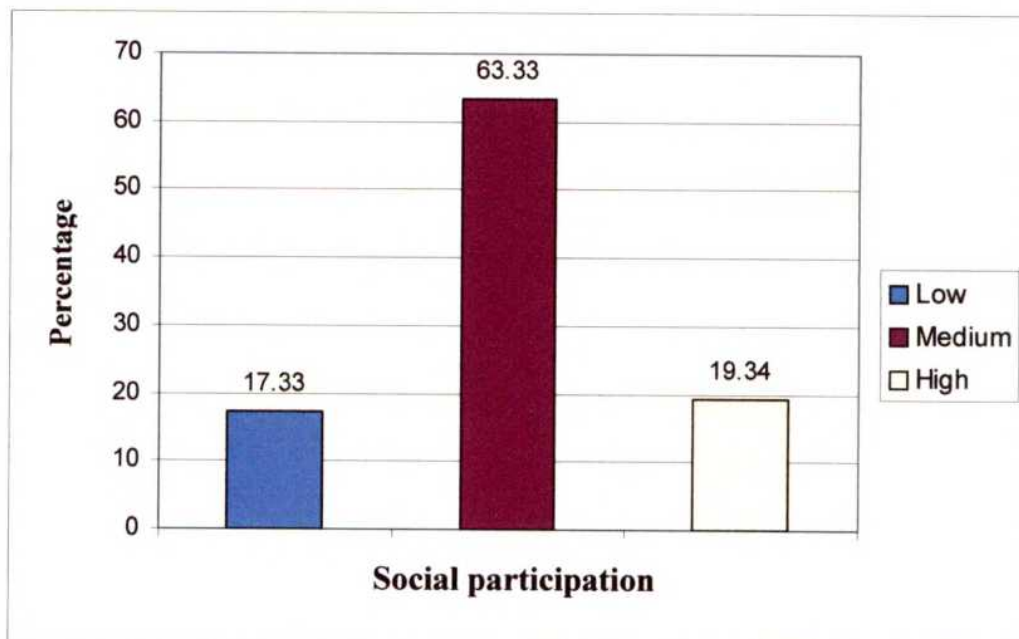


Fig 10 : Distribution of the respondents by social participation

and would acquire more information about new farming techniques. The results about social participation are given in Table 7.

Table 7: Distribution of the respondents by social participation

Sr.No.	Category	Frequency	Per cent
1.	Low (score up to 11)	26	17.33
2.	Medium (score 12 to 40)	95	63.33
3.	High (score 41 and above)	29	19.34
	Total	150	100.00

Mean score 25.38

It is evident from Table 7 that little less than two-third (63.33%) of the respondents were having medium level of social participation, one-fifth (19.34 per cent) respondents were having high social participation, whereas 17.33 per cent respondents were having low social participation. The mean social participation of respondents was 25.38

5.1.7 Extension contact

It refers to the number of contacts made by the farmers with the personnel of extension agencies for securing advice in respect of Agricultural Polyclinic activities/practices. It was felt that extension contacts might influence the knowledge, extent of benefits and extent of adoption of activities/ practices extended through Agricultural Polyclinic. The data in this respect were collected and distribution of the beneficiaries according to their extent of extension contacts is given in Table 8.

Table 8: Distribution of the respondents by extension contact

Sr.No.	Category	Frequency	Per cent
1.	Low (score up to 2)	17	11.33
2.	Medium (score 3 to 6)	122	81.34
3.	High (score 7 and above)	11	7.33
	Total	150	100.00

Mean score 4.00

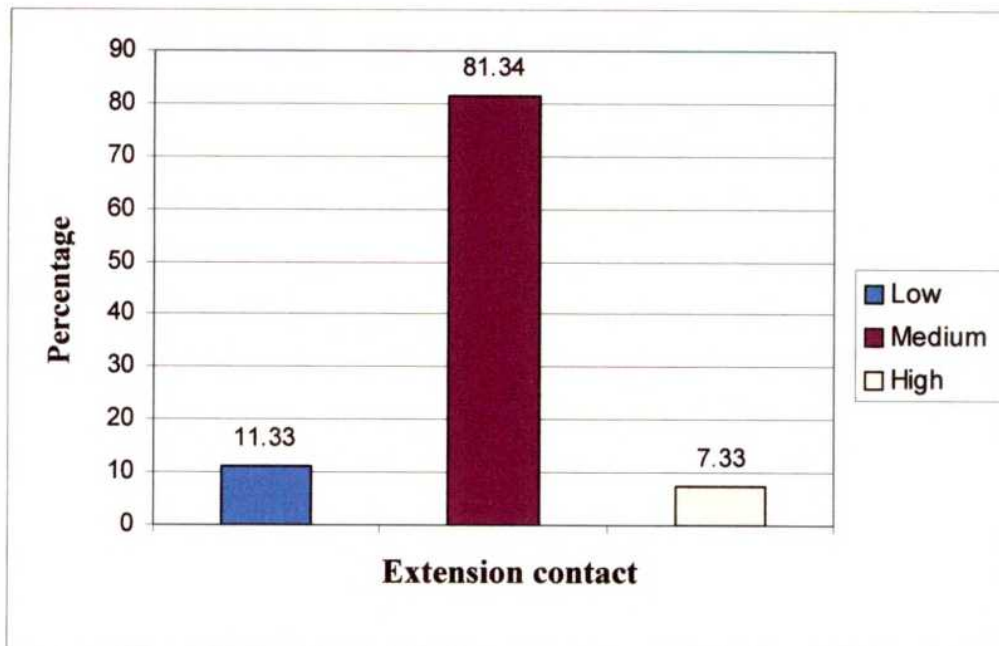


Fig 11 : Distribution of the respondents by extension contact

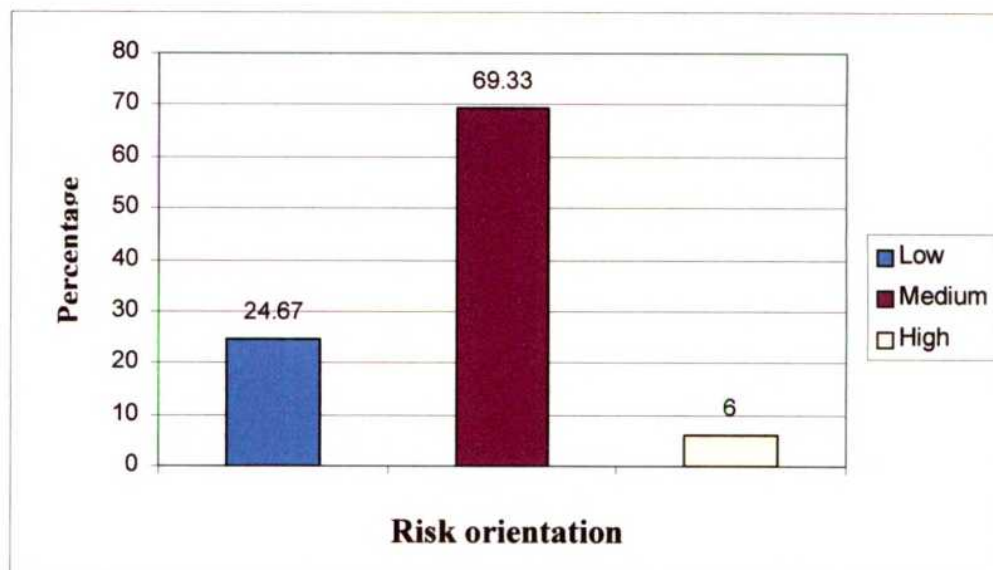


Fig 12 : Distribution of the respondents by risk orientation

It is observed from Table 8 that majority of the beneficiaries (81.34 %) had medium contacts with the extension agencies, followed by 11.33 per cent and 7.33 per cent respondents were in low and high extension contact categories, respectively. The mean extension contact score of respondents was 4.00

5.1.8 Risk orientation

Risk orientation could be expressed as the degree to which a farmer is oriented to take risk and uncertainty and has courage to face the problems in farming. A farmer who is having this particular trait will naturally adopt recommended agricultural technology in order to get maximum profit. Therefore it was considered as an important independent variable for the present study. The analysis of the same is given in Table 9.

Table 9: Distribution of the respondents by risk orientation

Sr.No.	Category	Frequency	Per cent
1.	Low (score up to 17)	37	24.67
2.	Medium (score 18 to 26)	104	69.33
3.	High (score 27 and above)	9	6.00
	Total	150	100.00

Mean score 21.68

As regards the risk orientation, the data presented in Table 9 highlighted that majority of the respondents (69.33 %) were having medium risk orientation. It was further noticed that one-fourth (24.67 per cent) of the respondents had low risk orientation and a meagre percentage of respondents (6.00 %) had high risk orientation. The mean risk orientation score of respondents was 21.68

5.1.9 Economic motivation

The economic motivation leads logically to the development of wealth and assets of an individual. Therefore, in rural development process, the economic motivation acts as a crucial element with special

reference to Agricultural Polyclinic. The analysis of economic motivation has been shown in Table 10.

Table 10: Distribution of the respondents by economic motivation

Sr.No.	Category	Frequency	Per cent
1.	Low (score up to 18)	33	22.00
2.	Medium (score 19 to 27)	110	73.34
3.	High (score 28 and above)	7	4.66
	Total	150	100.00

Mean score 22.45

Table 10 shows the economic motivation of the respondents. It is evident that majority (73.34 %) belonged to the medium economic motivation category, whereas 22.00 per cent of the respondents had low level of the economic motivation and 4.66 per cent of the respondents belonged to high economic motivation category. The mean economic motivation score of respondents was 22.45.

5.2 Attitude of respondents about extension activities of Agricultural Polyclinic.

Attitude is the degree of negative or positive affect associated with some objects towards which people differ in varying degrees. Attitude towards Agricultural Polyclinic was assessed, it being an important variable for success of the programme. The analysis of attitude is shown in Table 11.

The distribution of the respondents according to their attitude towards the Agricultural Polyclinic is revealed in Table 11. It is manifested from the table that majority of the respondents (90.00 %) had expressed favourable attitude towards the Agricultural Polyclinic, whereas, 8.00 per cent expressed unfavourable attitude towards the Agricultural Polyclinic and only 2.00 per cent were found to have neutral attitude.

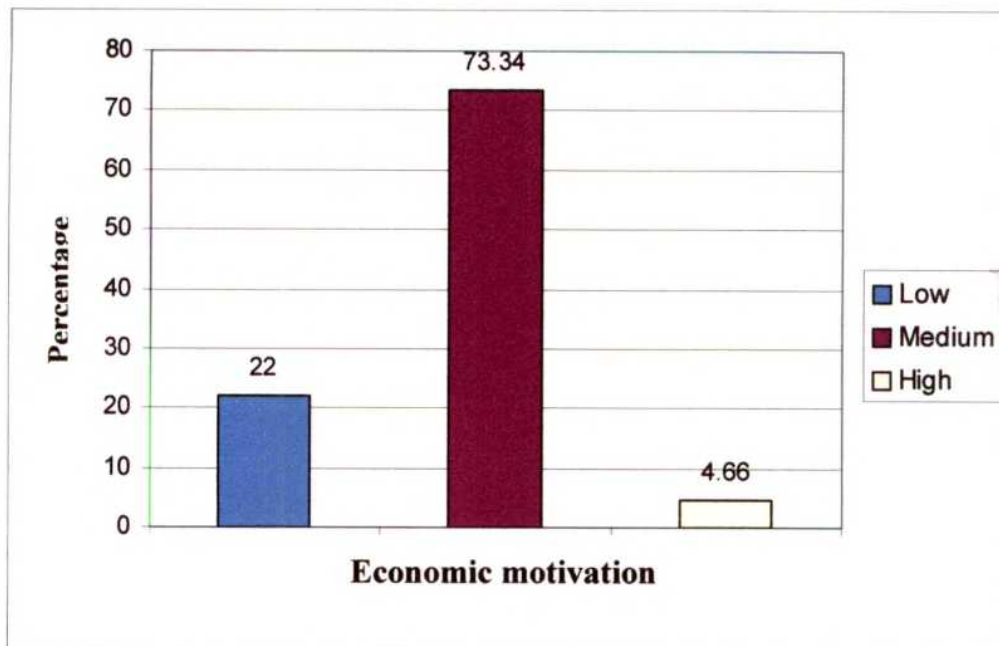


Fig 13 : Distribution of the respondents by economic motivation

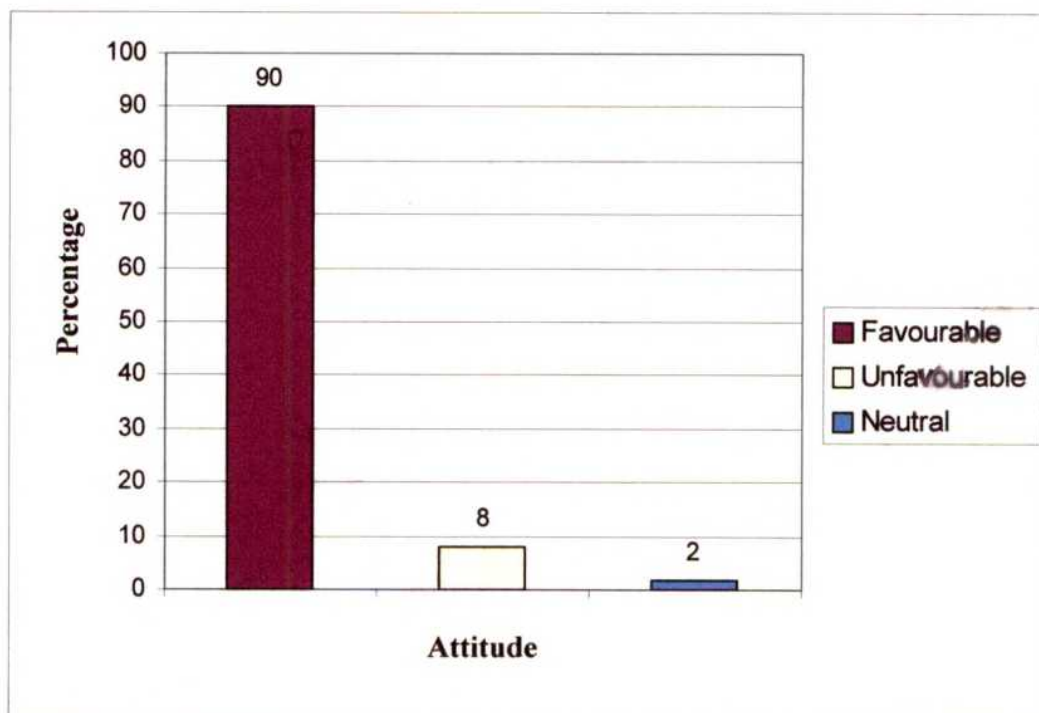


Fig 14 : Distribution of the respondents by attitude towards Agricultural Polyclinic

Table 11: Distribution of the respondents by attitude towards Agricultural Polyclinic

Sr.No.	Category	Frequency	Per cent
1.	Favourable (score 43 and above)	135	90.00
2.	Unfavourable (score 14 to 41)	12	8.00
3.	Neutral (score 42)	3	2.00
	Total	150	100.00

Mean score 50.88

5.3 Knowledge of respondents about extension activities of Agricultural Polyclinic

Knowledge is one of the components of behaviour. It plays an important role in the covert, as well as, overt behaviour of an individual. The information pertaining to knowledge of the respondents about the organizational set up and activities/practices extended through Agricultural Polyclinic is presented under the following headings.

5.3.1 Organizational set up and activities/practice wise knowledge level

The information pertaining to knowledge of the different extension activities of Agricultural Polyclinic and their organizational set up was assessed in case of beneficiaries of the Agricultural Polyclinic. Comprehensive information about knowledge of respondents under study is illustrated in Table 12.

Perusal of the data in Table 12 elucidates that 98.66 per cent of the respondents knew proper utilization of farmland and water, soil and water-testing services given on Agricultural Polyclinic, while 94.00 per cent were knowing that contour development demonstrations were organized to demonstrate full utilization of rainy water in field. Further, it was noted that 91.33 per cent were in the know that all the farmers are the beneficiaries of this programme, followed by 90.00 per cent were knowing

that the trainings were given to produce Neemark from Neemseed. Government of Maharashtra state had started the Agricultural Polyclinic programme was known by 89.33 per cent. Training was given on organic fertilizers production on Agricultural Polyclinic and more information was provided on utilization of sprinkler and drip irrigation system on Agricultural Polyclinic was known by 88.66 per cent of the respondents and also about equal (86.66 per cent) of the respondents were knowing activities like diagnostic services were given to control insect pest and diseases on Agricultural Polyclinic and one or two days training courses were organized on Agricultural Polyclinic.

Further, it was noticed that as many as 82.66 per cent, 80.66 per cent and 74.00 per cent of the respondents were knowing activities like PKV watershed model (farm pond) prepared on Agricultural Polyclinic and its demonstration is shown, Bioagent was produced for control insect pest on the Agricultural Polyclinic and Agricultural Polyclinic programme was linked with State Agricultural Department, respectively. Training, Demonstration and Agricultural services, was the major aims to start the Agricultural Polyclinic programme, was known by the 71.33 per cent respondent. Taluka Agricultural Officers were responsible to organize training programmes, and on decided rate available and produced products are sold in small quantity on Agricultural Polyclinic were equally (67.33 %) known by the respondents. In case of services for seed germination testing provided to the farmers on Agricultural Polyclinic, 65.33 per cent of the respondents were having this knowledge. As many as 64.66 per cent of the respondents knew that information on agriculture is provided to the farmers through established library and museum.

In this context further, it is manifested that substantial (54.66 %) percentage of the respondents were knowing that more than two Agricultural Polyclinics are working in the district and 52.66 per cent of the

respondents were knowing that thorough information was given on high tech agriculture based on green house, shadenet and zero energy cold storage on Agricultural Polyclinic. Whereas half (50.66 %) of the respondents were knowing that separate establishment was functioning on the Agricultural Polyclinic work, while 30.66 % and 28.00 per cent of the respondents were knowing that Liliput gin was utilized for training and demonstration to remove lint from cotton seed on Agricultural Polyclinic and Agricultural Polyclinic programme was started in 1997-98, respectively.

Table 12: Knowledge of the respondents about extension activities of Agricultural polyclinic and their organizational set up

(n=150)

Sr. No	Statements	Correct		Incorrect	
		Frequency	Per cent	Frequency	Per cent
1	Govt. of Maharashtra state started the Agricultural Polyclinic programme.	134	89.33	16	10.67
2	Agricultural Polyclinic programme was started in 1997-98	42	28.00	108	72.00
3	Agricultural Polyclinic programme was linked with State Department of Agriculture, Maharashtra.	111	74.00	39	26.00
4	Separate permanent establishment is working there in Agricultural Polyclinic.	76	50.66	74	49.34
5	All the farmers are the beneficiaries of this programme	137	91.33	13	8.67
6	More than two Agricultural Polyclinics are working in the district	82	54.66	68	45.34
7	Training, Demonstration and Agricultural services were the major aims to start the Agricultural Polyclinic programme	107	71.33	43	28.67

Sr. No	Statements	Correct		Incorrect	
		Frequency	Per cent	Frequency	Per cent
8	Liliput gin was utilized for training and demonstration to remove lint from cottonseed on Agricultural Polyclinic.	46	30.66	104	69.34
9	Contour development demonstration is organized to demonstrate the full utilization of rain water in field.	141	94.00	9	6.00
10	Taluka Agricultural Officers were responsible to organize training programmes.	101	67.33	49	32.67
11	PKV watershed model (farm pond) prepared on Agricultural Polyclinic and its demonstration is shown.	124	82.66	26	17.34
12	Training was given on organic fertilizers production on Agricultural Polyclinic.	133	88.66	17	11.33
13	Diagnostic services were given to control insect pest and diseases on Agricultural Polyclinic.	130	86.66	20	13.34
14	Bioagent was produced for control insect pest on the Agricultural Polyclinic.	121	80.66	29	19.34
15	Trainings were given to produce Neemark from Neemseed.	135	90.00	15	10.00
16	On decided rates, available and produced products are sold in small quantity on Agricultural Polyclinic	101	67.33	49	32.67
17	For proper utilization of farmland and water, soil and water testing services was given on Agricultural Polyclinic.	148	98.66	2	1.34

Sr. No	Statements	Correct		Incorrect	
		Frequency	Per cent	Frequency	Per cent
18	For information on agriculture, library and museum facilities were provided on Agricultural Polyclinic	97	64.66	53	33.34
19	More information was provided on utilization of sprinkler and drip irrigation system on Agricultural Polyclinic.	133	88.66	17	11.34
20	Thorough information was given on high tech agriculture based on green house, shadenet and 'zero' energy cold storage in Agricultural Polyclinic.	79	52.66	71	47.34
21	One or two days training courses were organized on Agricultural Polyclinic.	130	86.66	20	13.34
22	Services for seed germination testing were provided to the farmers on Agricultural Polyclinic	98	65.33	52	34.67

5.3.2 Overall knowledge level

The respondents were categorized on the basis of their overall knowledge about extension activities of Agricultural Polyclinic and their organizational set up and data are presented in Table 13.

Table 13: Distribution of the respondents by knowledge about extension activities of Agricultural Polyclinics and their organizational set up.

Sr.No.	Category (score)	Frequency	Per cent
1.	Low (up to 13)	28	18.67
2.	Medium (14 to 19)	105	70.00
3.	High (20 and above)	17	11.33
	Total	150	100.00

Mean score 16.30

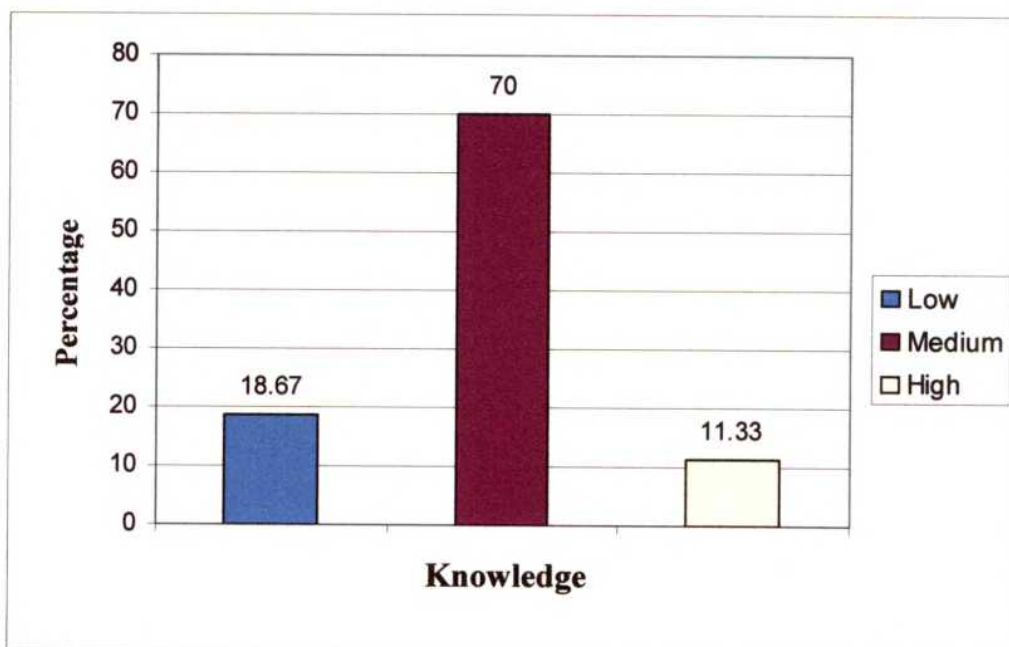


Fig 15 : Distribution of the respondents by knowledge about extension activities of Agricultural polyclinics and their organizational set up.

It is depicted from Table 13 that majority (70.00 %) of the respondents were having medium level of knowledge about extension activities of Agricultural Polyclinics and their organizational set up. Whereas 18.67 per cent were having low level of knowledge. About 11.33 per cent of the respondents possessed high level of knowledge. The mean knowledge score of respondents was 16.30.

5.4 Extent of benefits availed from Agricultural Polyclinic activities/practices by beneficiary respondents.

Benefits are the advantages received by the respondents after participating in Agricultural Polyclinic activities. Certain activities/practices which were influencing the programme were identified by discussion with Agricultural Polyclinic experts. If these benefits availed are taken into consideration while implementing the Agricultural Polyclinic programme, the performance of Agricultural Polyclinic programme is perceived to be very good. Thus, nine benefited activities/practices were included in the study and the respondents were asked to give the response in terms of whether they have availed or unavailed benefits and how much benefits availed before participation and after participation in Agricultural Polyclinic activities/practices was taken into consideration for calculating the benefits availed from Agricultural polyclinic activities/practices, that has been presented under the following headings.

5.4.1 Activity/practicewise benefits availed from Agricultural Polyclinic

The data pertaining to benefits availed from Agricultural Polyclinic activities/practices was assessed in case of beneficiary respondents of Agricultural Polyclinic, which are presented in Table 14.

Table 14: Distribution of respondents according to Agricultural Polyclinic activity/practicewise benefits availed by respondents

(n=150)

Sr. No	Activities/Practices	Benefits availed		Benefits unavailed	
		Freq uency	Per cent	Frequ ency	Per cent
1	Utilization of wasteland.	27	18.00	123	82.00
2	Increased income derived from agricultural produce and allied business.	117	78.00	33	22.00
3	Decreased production costs of agricultural produce and allied business.	114	76.00	36	24.00
4	Contour development on essential lands to develop contour.	133	88.67	17	11.33
5	Coverage of lands under irrigation by utilization of farm ponds and improved irrigation systems.	35	23.33	115	76.67
6	Average expenditure on fertilizers.	71	47.33	79	52.67
7	Average expenditure on insecticide-pesticides.	87	58.00	63	42.00
8	Average expenditure on storage of agricultural produce.	42	28.00	108	72.00
9	Requirement of seeds in kgs per hectare for sowing.	80	53.33	70	46.67

It is evident from Table 14 that majority (88.67%) of the respondents had availed benefit from Agricultural Polyclinic activities/practices as contour development on essential lands to develop contour is important. The other important benefits availed from Agricultural Polyclinic activities/practices were in the following order namely; increased income derived from agricultural produce and allied business (78.00%), decreased production costs of agricultural produce and allied business (76.00%), average expenditure on insecticide-pesticides (58.00%), requirement of seeds in kgs per hectare for sowing (53.33%).

Some of the other activities/practices like average expenditure on fertilizers (47.33%), average expenditure on storage of agricultural produce (28.00%), coverage of lands under irrigation by utilization of farm ponds and improved irrigation systems (23.33%) and utilization of wasteland (18.00%) also benefited the respondents.

5.4.2 Overall extent of benefits availed from Agricultural Polyclinic activities/practices.

The overall extent of benefits availed from Agricultural Polyclinic activities/practices was assessed in terms of utilization of wasteland, increased income derived from agricultural produce and allied business, decreased production costs of agricultural produce and allied business, contour development on essential lands to develop contour, coverage of lands under irrigation by utilization of farm ponds and improved irrigation systems, average expenditure on fertilizers, average expenditure of insecticide-pesticides, average expenditure on storage of agricultural produce and requirement of seeds in kgs per hectare for sowing.

Index for each of these was calculated and also average index was computed to get overall picture. Results are presented in Table 15.

Table 15: Distribution of the respondents by benefit availed from Agricultural Polyclinic activities/practices

Sr.No.	Category	Frequency	Per cent
1.	Low (score up to 14.84)	27	18.00
2.	Medium (score 14.85 to 30.83)	95	63.33
3.	High (score 30.84 and above)	28	18.67
	Total	150	100.00

Mean score 22.84

A glance at relevant data in Table 15 would make it apparent that considerable percentage (63.33%) of the respondents were having medium level of benefits availed from Agricultural Polyclinic activities, whereas nearly equal percentages (18.67 and 18.00) of respondents were having high and low level of benefits availed, respectively.

5.5 Performance of Agricultural Polyclinic in terms of adoption of recommended practices extended through Agricultural Polyclinic by the respondents

It is not only sufficient to participate just in Agricultural Polyclinic activities, but the respondents should also adopt the technological practices adequately in order to derive maximum economic benefit of the programme. The adoption of Agricultural Polyclinic technology was therefore included as the dependent variable in the study. The adoption level of the respondents in relation to extended practices/activities was assessed and findings are presented under the following heading.

5.5.1 Adoption of practices/activities extended through Agricultural Polyclinic

The data regarding adoption of different practices/activities extended through Agricultural Polyclinic by the respondents are illustrated in Table 16.

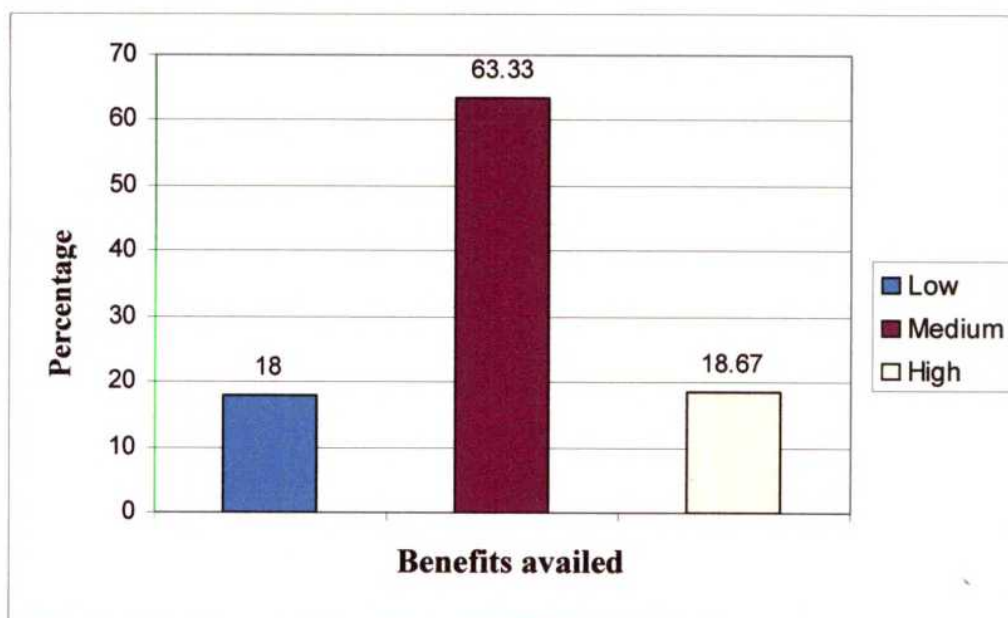


Fig 16: Distribution of the respondents by benefits available from Agricultural Polyclinic

Table 16: Distribution of the respondents by adoption of practices/ activities of Agricultural Polyclinic

Sr. No.	Practices/Activities	Adoption		Non adoption	
		Frequ-ency	Percent	Frequ-ency	Percent
1	Land Utilization of possessed	150	100.00	00	00.00
2	Contour development	135	90.00	15	10.00
3	Farm pond preparation	46	30.66	104	69.34
4	Use of improved irrigation systems	50	33.33	100	66.67
5	Nadep compost utilization	139	92.66	11	7.34
6	Vermicompost utilization	131	87.33	19	12.67
7	Insect/pests diagnostic facilities utilization	146	97.33	04	2.67
8	Use of HaNPV	71	47.33	79	52.67
9	Use of Trichocard	54	36.00	96	64.00
10	Use of Neemark	138	92.00	12	8.00
11	Soil testing	135	90.00	15	10.00
12	Utilization of improved implements	145	96.66	5	3.34
13	Use of cold storage (zero energy)	40	26.66	110	73.34
14	Use of shadenet and green house	6	04.00	144	96.00
15	Use of seed germination testing lab	66	44.00	84	56.00

With the close observation of Table 16, it can be seen that all the respondents were utilizing their possessed land for cultivation. Other practices adopted by majority of the respondents were, Insect/pests diagnostic facilities (97.33 %), improved implements (96.66%), Nadep compost (92.66%) Neemark (92.00%). Further, it was noted that equal (90.00 per cent) of the respondents had adopted soil testing practice and contour development technology. Vermicompost utilization activity was adopted by 87.33 per cent of the respondents.

Further, it was noticed that nearly half (47.33%) of the respondents had adopted use of HaNPV technology, whereas 44.00 per cent of the respondents had adopted the seed germination testing technology, while significant (36.00 %, 33.33%, 30.66% and 26.66%) had adopted Trichocard, improved irrigation systems, farm pond and cold storage (zero energy), respectively. Meagre percentage of the respondents (4.00%) had adopted high tech agricultural technology based on shadenet and green house.

5.5.2 Overall adoption level of recommended practices /activities extended through Agricultural Polyclinic

The data pertaining to overall adoption level of practices /activities extended through Agricultural Polyclinic by the respondents are given in Table 17.

So far as distribution of the respondents on the basis of overall extent of adoption of activities/ practices extended through Agricultural Polyclinic was concerned, it is visible from Table 17 that majority of the respondents (65.34 %) had medium level of adoption, followed by 21.33 per cent and 13.33 per cent respondents had high level and low level of adoption, respectively.

Table 17: Distribution of the respondents by level of Adoption of activities/ practices extended through Agricultural Polyclinic

Sr.No.	Category	Frequency	Per cent
1.	Low (score below 35.00)	20	13.33
2.	Medium (score 35.01to 63.69)	98	65.34
3.	High (score 63.70 and above)	32	21.33
	Total	150	100.00

Mean score 49.35

5.6 Relational Analysis

This section presents the results regarding knowledge, benefits and adoption by the respondents of Agricultural Polyclinic activities/practices and its relationship with other variables and also takes into account the predictive values and relative importance of the independent and intervening variables in explaining the variation in dependent variable i.e. adoption of activities/practices extended through Agricultural Polyclinic by the respondents with the help of coefficient of correlation, multiple regression analysis and path analysis.

5.6.1 Coefficient of correlation

The coefficient of correlation was computed to find out the existence of relationship between personal, socio-economic and psychological characteristics of respondents with knowledge, benefits availed and adoption of activities/practices extended through Agricultural Polyclinic

5.6.1.1 Relationship between personal, socio-economic and psychological characteristics of respondents with knowledge of the respondents about extension activities of Agricultural Polyclinics and their organizational set up.

Information pertaining to relationship between personal, socio-economic and psychological characteristics with knowledge of the

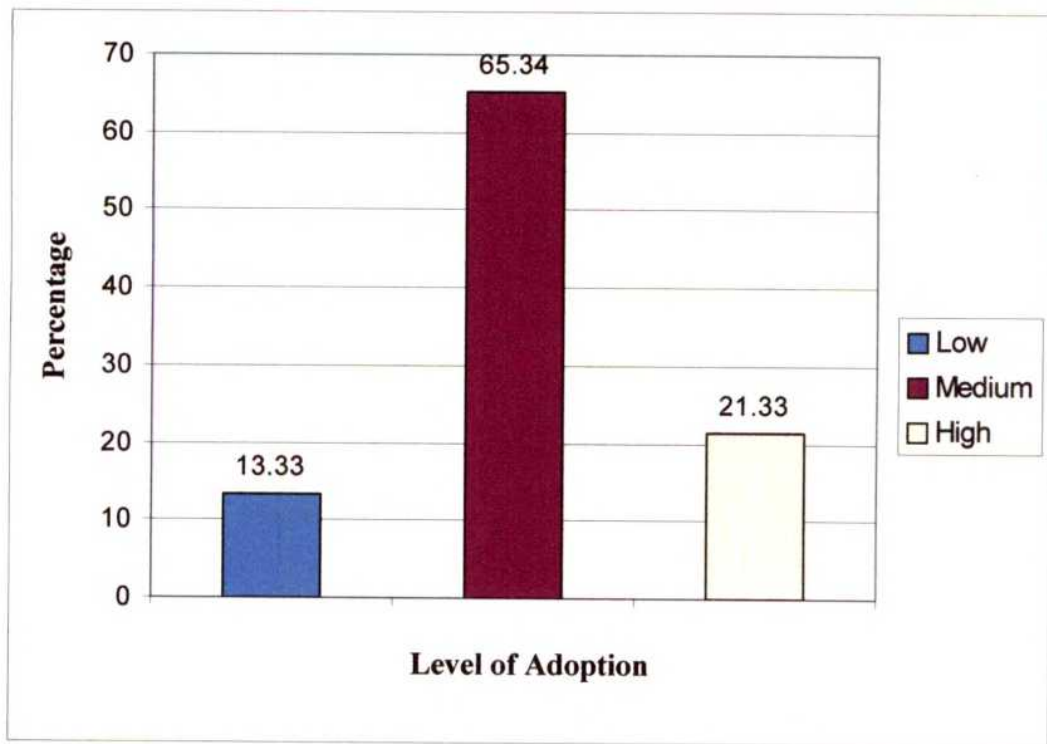


Fig 17 : Distribution of the respondents by level of Adoption of activities/ practices extended through Agricultural Polyclinic

respondents about extension activities of Agricultural Polyclinics and their organizational set up is presented in Table 18.

Table 18: Relationship of personal, socio economic and psychological characteristics of the respondents with knowledge about extension activities of Agricultural Polyclinics and their organizational set up

Sr.No.	Characteristics/variables	Correlation coefficient
1	Age	-0.006
2	Education	0.473 **
3	Occupation	-0.016
4	Land holding	0.516 **
5	Annual income	0.545 **
6	Social participation	0.263 **
7	Extension contact	0.401 **
8	Risk orientation	0.573 **
9	Economic motivation	0.529 **
10	Attitude	0.496 **

** Significant at 0.01 level of probability.

The result of correlation analysis showed that out of 10 independent variables, eight variables namely, risk orientation, annual income, economic motivation, land holding, attitude, education, extension contact and social participation, were positively and significantly related to the knowledge of the respondents about Agricultural Polyclinic at 0.01 per cent level of probability. Age and occupation could not show any significant relationship with the knowledge.

5.6.1.2 Relationship between personal, socio-economic and psychological characteristics of respondents with benefits availed from Agricultural Polyclinic activities/practices.

Relationship between personal, socio economic and psychological characteristics of the respondents with benefits availed through Agricultural Polyclinic activities/practices is shown in Table 19.

Table 19: Relationship of personal, socio economic and psychological characteristics of the respondents with benefits availed from Agricultural Polyclinic activities/practices.

Sr.No.	Characteristics/variables	Correlation coefficient
1	Age	0.051
2	Education	0.502 **
3	Occupation	-0.023
4	Land holding	0.561 **
5	Annual income	0.570 **
6	Social participation	0.253 **
7	Extension contact	0.390 **
8	Risk orientation	0.491 **
9	Economic motivation	0.387 **
10	Attitude	0.299 **

** Significant at 0.01 level of probability.

The data in Table 19 indicated that the independent variables viz. annual income, land holding, education, risk orientation, extension contact, economic motivation, attitude and social participation showed positive and significant relationship with benefits availed from adoption of Agricultural Polyclinic activities/practices at 0.01 per cent level of probability. Age and occupation did not show any significant relationship with the benefits availed.

5.6.1.3 Relationship of personal, socio economic and psychological characteristics of the respondents with adoption of activities/practices extended through Agricultural Polyclinic.

Data pertaining to the relationship between personal, socio economic and psychological characteristics of the respondents and adoption of activities/ practices extended through Agricultural Polyclinic are presented in Table 20.

Table 20: Relationship of personal, socio economic and psychological characteristics of the respondents with adoption of activities/ practices extended through Agricultural Polyclinic

Sr. No.	Characteristics/variables	Correlation coefficient
1	Age	0.042
2	Education	0.465 **
3	Occupation	-0.058
4	Land holding	0.494 **
5	Annual income	0.547 **
6	Social participation	0.285 **
7	Extension contact	0.358 **
8	Risk orientation	0.552 **
9	Economic motivation	0.500 **
10	Attitude	0.415 **
11	Knowledge	0.830 **
12	Benefits availed	0.833 **

** Significant at 0.01 level of probability.

The results of correlation analysis showed that out of twelve variables, benefits availed, knowledge, risk orientation, annual income, economic motivation, land holding, education, attitude, extension contact and social participation, were positively and significantly related with

adoption of activities/practices at 0.01 per cent level of probability. Whereas age and occupation could not show any relationship with adoption of Agricultural Polyclinic activities/ practices.

5.6.2 Multiple regression analysis

The multiple regression analysis was done to know the combined effect of all the independent and intervening variables i.e. knowledge and benefits in explaining the dependent variable.

5.6.2.1 Multiple regression analysis of knowledge with personal, socio economic and psychological characteristics of the respondents.

The information pertaining to multiple regression analysis of knowledge with personal, socio economic and psychological characteristics of the respondents is illustrated in Table 21.

Table 21: Multiple regression analysis of knowledge with personal, socio economic and psychological characteristics of the respondents.

Sr.No.	Characteristics/variables	Regression Coefficient ('b' value)	Standard Error	Calculated 't' value
1	Age	0.0103	0.0154	0.6656
2	Education	0.0101	0.0435	2.3360 **
3	Occupation	-0.1592	0.0989	-1.6100
4	Land holding	0.1774	0.1056	1.6803
5	Annual income	0.0008	0.0093	2.4165 **
6	Social participation	0.0119	0.0115	1.0380
7	Extension contact	0.0383	0.1114	0.3437
8	Risk orientation	0.1282	0.0546	2.3476 **
9	Economic motivation	0.0370	0.0562	0.6577
10	Attitude	0.1010	0.0277	3.6429 **

$R^2 = 0.587$

F val =19.785

N=150

** Significant at 0.01 level of probability.

It is seen from Table 21 that the set of variables included in regression analysis could explain the variation in knowledge of the respondents about extension activities of Agricultural Polyclinics and their organizational set up to the tune of 58.70 per cent. The 'f' value (19.78) was significant at one percent level of probability. The independent variables viz. attitude, annual income, risk orientation and education were found to have contributed significantly to the knowledge of the respondents at 0.01 level of probability. The regression coefficients of these variables were 3.6429, 2.4165, 2.3476 and 2.336, respectively

5.6.2.2 Multiple regression analysis of benefits availed with personal, socio economic and psychological characteristics of the respondents.

Table 22: Multiple regression analysis of benefits availed with personal, socio economic and psychological characteristics of the respondents

Sr. No.	Characteristics/variables	Regression Coefficient ('b' value)	Standard Error	Calculated 't' value
1	Age	0.1129	0.0487	2.3151 **
2	Education	0.6465	0.1371	4.7124 **
3	Occupation	-0.6494	0.3118	-2.0823
4	Land holding	0.9037	0.3330	2.7246 **
5	Annual income	0.0002	0.0001	2.0368 *
6	Social participation	0.0040	0.0363	0.1114
7	Extension contact	0.1507	0.3514	0.4290
8	Risk orientation	0.5614	0.1722	3.2602 **
9	Economic motivation	-0.2681	0.1774	1.5107
10	Attitude	0.0232	0.0874	0.2657

R² = 0.560

F val = 17.718

N=150

* Significant at 0.05 level of probability.

** Significant at 0.01 level of probability.

It is illustrated from Table 22 that the set of variables included in regression analysis could explain the variation in benefits availed from Agricultural Polyclinic activities/practices to the extent of 56.00 per cent. The 'f' value (17.71) was significant at one percent level of probability. The education, risk orientation, land holding and age contributed positively and significantly to the benefits availed at 0.01 level of probability and annual income was found to have contributed positively and significantly to the benefits availed by the respondents at 0.05 of probability. The regression coefficients of these variables were 4.7124, 3.2602, 2.7246, 2.3151 and 2.0368, respectively.

5.6.2.3.1 Multiple regression analysis of adoption with personal, socio economic and psychological characteristics of the respondents.

Table 23: Multiple regression analysis of adoption with personal, socio economic and psychological characteristics of the respondents

Sr. No.	Characteristics/ variables	Regression Coefficient ('b' value)	Standard Error	Calculated 't' value
1	Age	-0.0047	0.0611	-0.0782
2	Education	-0.0489	0.1814	-0.2698
3	Occupation	-0.5288	0.3890	-1.3592
4	Land holding	-0.4982	0.4195	-1.1876
5	Annual income	0.0002	0.0001	1.7035 *
6	Social participation	0.0497	0.0044	1.1095
7	Extension contact	-0.3573	0.4316	8.2791 **
8	Risk orientation	0.0511	0.2195	0.2328
9	Economic motivation	0.2840	0.2228	1.2776
10	Attitude	0.1125	0.1141	0.9867
11	Knowledge	1.9574	0.4000	4.8927 **
12	Benefits	1.9574	0.1268	6.7969 **

$R^2 = 0.797$

F val = 44.807

N=150

* Significant at 0.05 level of probability.

** Significant at 0.01 level of probability.

It is evident from Table 23 that the set of variables included in regression analysis could explain the variation in adoption of Agricultural Polyclinic activities/practices by the respondents to the extent of 79.70 per cent. The 'F' value (44.80) was significant at one percent level of probability. Extension contact, benefit and knowledge contributed positively and significantly to the adoption at 0.01 level of probability, whereas annual income contributed positively and significantly to the adoption at 0.05 level of probability. The regression coefficients of these variables were 8.2791, 6.7969, 4.8927 and 1.7035, respectively

5.6.3 Path analysis

The coefficient of correlation of the data presented earlier illustrated relationship between independent, and dependent variables in presence of all other variables, which are normally operative in real life situation. The relationship exhibited by correlation study may undergo change in different situations, where some of the independent variables may not exist in the environment or they may be concealed. In order to know the influence of independent variables both directly, as well as, through other variables, the correlation coefficient values indicated earlier were attempted for path analysis.

5.6.3.1 Path analysis of knowledge about extension activities of Agricultural Polyclinic and their organizational set up.

Direct effect.

It is noticed from Table 24 that the highest direct positive influence on knowledge was exerted by risk orientation (0.2355), attitude (0.2268), annual income (0.226), education (0.1747) and land holding (0.1387). A considerable direct positive effect was also exercised by social participation (0.0668), economic motivation (0.0654), age (0.0472) and extension contact (0.0226). Whereas, occupation (-0.1048) exerted negative

direct effect on knowledge about extension activities of Agricultural Polyclinic and their organizational set up.

Table 24: Path analysis showing the effects of the personal, socio economic and psychological characteristics on knowledge of the respondents about activities/practices and organizational set up of Agricultural Polyclinic.

Sr. No.	Variables	Direct effect	Total Indirect effect	Substantial indirect effect	
				1	2
X1	Age	0.0472	-0.0057	0.0472 (X1)	0.0263 (X2)
X2	Education	0.1747	0.4730	0.1747 (X2)	0.1082 (X8)
X3	Occupation	-0.1048	-0.0160	0.0714 (X5)	0.0307 (X2)
X4	Land holding	0.1387	0.5161	0.1577 (X5)	0.1387 (X4)
X5	Annul income	0.2260	0.5451	0.226 (X5)	0.0968 (X4)
X6	Social participation	0.0668	0.2627	0.0668 (X6)	0.0624 (X5)
X7	Extension contact	0.0226	0.4013	0.0989 (X5)	0.0729 (X8)
X8	Risk orientation	0.2355	0.5725	0.2355 (X8)	0.0836 (X10)
X9	Economic Motivation	0.0654	0.5295	0.1924 (X8)	0.0935 (X10)
X10	Attitude	0.2268	0.4963	0.2268 (X10)	0.0868 (X8)

Total indirect effect

As regards the total indirect effect on knowledge of the respondents about extension activities of Agricultural Polyclinic and their organizational set up, it is further seen from Table 24 that the highest positive total indirect effect was exercised by risk orientation (0.5725) followed by annul income (0.5451). Other variables exercising total indirect positive effect on knowledge were in the following order: economic motivation (0.5295), land holding (0.5161), attitude (0.4963),

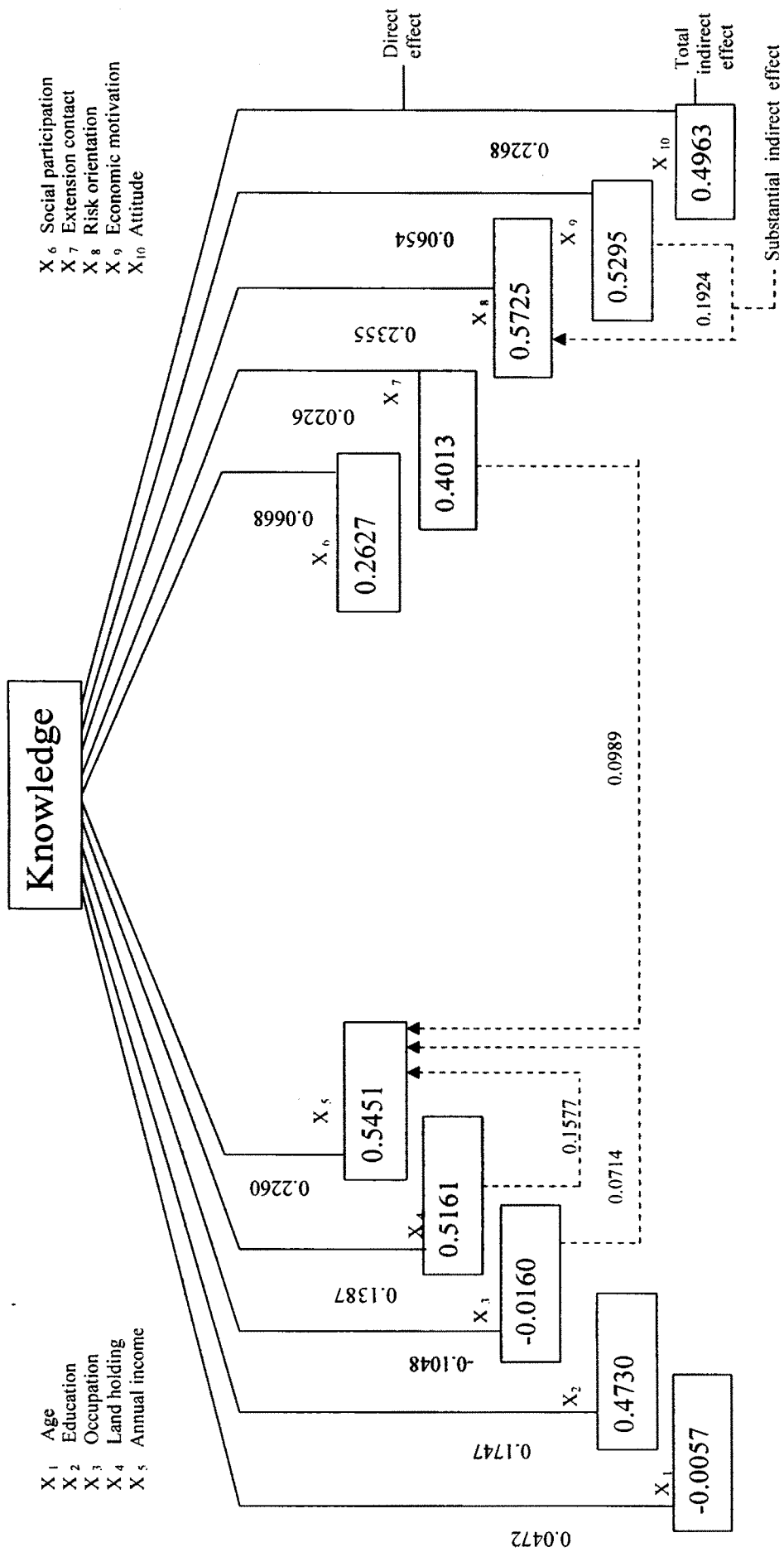


Fig 3 : Path diagram showing the effect of the of the personal, socio economic and psychological characteristics on knowledge of the respondents about activities/practices and organizational set up of Agricultural polyclinic.

education (0.473), extension contact (0.4013) and social participation (0.2627).

Substantial indirect effect

As regards the indirect effects, the first substantial indirect effect on knowledge of the respondents was exercised by land holding (0.1577) through annual income, followed by extension contact (0.0989) and occupation (0.0714) through annual income. The other first substantial indirect effect exercised was by economic motivation (0.1924) through risk orientation.

The data further showed that highest second substantial indirect effect on knowledge was exercised by economic motivation (0.0935), followed by risk orientation (0.0836) through attitude, annual income (0.0968) through land holding and social participation (0.0624) through annual income. The other second substantial indirect effect was exercised by attitude (0.0868) and extension contact (0.0729) through risk orientation, occupation (0.0307) and age (0.0263) through education.

Thus, it is observed that annual income, risk orientation, attitude, land holding and education were the important variables in absence of which, independent variables are not able to influence the knowledge of the respondents about Agricultural Polyclinic and their organizational set up.

5.6.3.2 Path analysis of benefits availed from Agricultural Polyclinic activities/practices.

Direct effect.

It is evident from Table 25 that the highest direct positive influence on benefits availed by the respondents was exercised by education (0.3637), followed by risk orientation (0.3375) and land holding (0.2321). Considerable direct positive effect was also exercised by annul

income (0.1966), age (0.1696), extension contact (0.0291), attitude (0.0171) and social participation (0.0074).

Occupation (-0.1399) and economic motivation (-0.1551) exercised negative direct effect on benefits availed through adoption of Agricultural Polyclinic activities /practices.

Table 25: Path analysis showing the effects of the personal, socio economic and psychological characteristics on benefits availed from Agricultural Polyclinic activities/practices.

Sr. No.	Variables	Direct effect	Total Indirect effect	Substantial indirect effect	
				1	2
X1	Age	0.1696	0.0506	0.1696 (X1)	0.0351 (X3)
X2	Education	0.3637	0.5022	0.3637 (X2)	0.1551 (X8)
X3	Occupation	-0.1399	-0.0226	0.0639 (X2)	0.0621 (X5)
X4	Land holding	0.2321	0.5608	0.2321 (X4)	0.1372 (X5)
X5	Annul income	0.1966	0.5698	0.1966 (X5)	0.162 (X4)
X6	Social Participation	0.0074	0.2534	0.0658 (X4)	0.0653 (X1)
X7	Extension contact	0.0291	0.3895	0.1079 (X4)	0.1045 (X8)
X8	Risk orientation	0.3375	0.4906	0.3375 (X8)	0.1671 (X8)
X9	Economic motivation	-0.1551	0.3871	0.2757 (X8)	0.1646 (X2)
X10	Attitude	0.0171	0.2992	0.1244 (X8)	0.1101 (X2)

Total indirect effect

The highest positive total indirect effect on benefits availed by the respondents was exercised by annul income (0.5698), followed by land holding (0.5608). The other variables such as education (0.5022), risk

orientation (0.4906), extension contact (0.3895), economic motivation (0.3871), attitude (0.2992), social participation (0.2534) and age (0.0506) exerted indirect effect on benefits availed.

Substantial indirect effect

As regards the substantial indirect effects, the first highest substantial indirect effect on benefits availed by the respondents was exercised by economic motivation (0.2757) through risk orientation. The other variables having first substantial indirect effect on benefits availed were attitude (0.1244) through risk orientation, extension contact (0.1079) and social participation (0.0658) through land holding and occupation (0.0639) through education.

The data further showed that highest second substantial indirect effect on benefit availed was exercised by economic motivation (0.1646) through education, followed by attitude (0.1101) through education. It is also observed from Table 25 that second substantial indirect effect on benefits availed was exercised by social participation (0.0653) and annual income (0.162) through age, education (0.1551) and extension contact (0.1045) through risk orientation, occupation (0.0621) and land holding (0.1372) through annual income and age (0.0351) through occupation.

5.6.3.3 Path analysis of adoption of activities/practices.

Direct effect

It is found from Table 26 that the highest direct positive influence on adoption was exerted by benefits (0.481), followed by knowledge (0.3574). Other variables exercising total direct effect were in the following order: economic motivation (0.0916), social participation (0.0507), attitude (0.0461) and risk orientation (0.0171).

Age (-0.004), education (-0.0154), extension contact (-0.0385), occupation (-0.0635), land holding (-0.0711) and annul income (-0.1151) exerted negative direct effect on adoption of activities/practices.

Total indirect effect

In respect of total indirect effect, the highest positive total indirect effect on adoption by respondents was exercised by benefits (0.8335), followed by knowledge (0.83). Other variables exercising total indirect effect were in the following order: risk orientation (0.5525); annul income (0.5473), economic motivation (0.5002), land holding (0.4942), education (0.4647), attitude (0.4148), extension contact (0.3584), social participation (0.2855) and age (0.0419).

Substantial indirect effect

The highest first substantial indirect positive effect on adoption of Agricultural Polyclinic activities/practices by the respondents was exercised by knowledge (0.3737) through benefit. The other variables having first substantial indirect positive effect on adoption of Agricultural Polyclinic activities/practices by the respondents were annul income (0.274) through benefit, land holding (0.2697) through benefit, education (0.2416) through benefit, risk orientation (0.236) through benefit, extension contact (0.1874) through benefit, social participation (0.1219) through benefit and age (0.0243) through benefit

The data further revealed that highest second substantial indirect effect on adoption was exerted by benefits (0.2776) through knowledge. The other variables like risk orientation (0.2046), annul income (0.1948), land holding (0.1844), education (0.169), extension contact (0.1434) and social participation (0.0939) through knowledge had also substantial indirect effect on adoption.

It is also observed from table that the second substantial indirect effect on adoption was exercised by economic motivation (0.1862)

through benefits, attitude (0.1439) through benefits; age (0.0195) social participation and occupation (0.0016) through risk orientation.

Table 26: Path analysis showing the effects of the personal, socio economic and psychological characteristics on adoption of activities/practices extended through Agricultural Polyclinic

Sr. No.	Variables	Direct effect	Total Indirect effect	Substantial indirect effect	
				1	2
X1	Age	-0.004	0.0419	0.0243 (X12)	0.0195 (X6)
X2	Education	-0.0154	0.4647	0.2416 (X12)	0.169 (X11)
X3	Occupation	-0.0635	-0.058	0.0364 (X5)	0.0016 (X8)
X4	Land holding	-0.0711	0.4942	0.2697 (X12)	0.1844 (X11)
X5	Annul income	-0.1151	0.5473	0.274 (X12)	0.1948 (X11)
X6	Social participation	0.0507	0.2855	0.1219 (X12)	0.0939 (X11)
X7	Extension contact	-0.0385	0.3584	0.1874 (X12)	0.1434 (X11)
X8	Risk orientation	0.0171	0.5525	0.236 (X12)	0.2046 (X11)
X9	Economic motivation	0.0916	0.5002	0.1892 (X11)	0.1862 (X12)
X10	Attitude	0.0461	0.4148	0.1774 (X11)	0.1439 (X12)
X11	Knowledge	0.3574	0.83	0.3737 (X12)	0.3574 (X11)
X12	Benefits	0.481	0.8335	0.481 (X12)	0.2776 (X11)

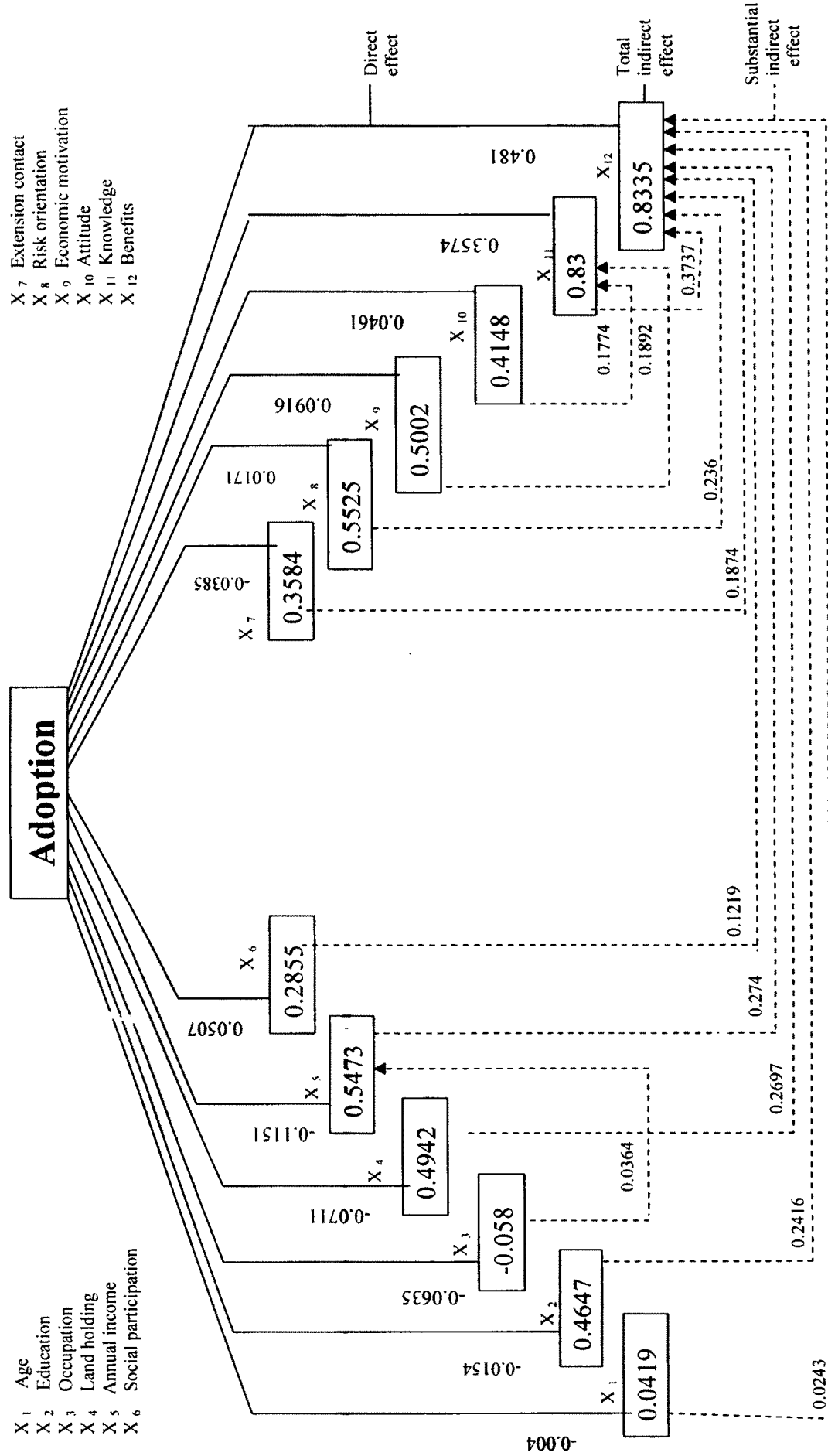


Fig 5 : Path diagram showing the effect of the personal, socio economic and psychological characteristics on adoption of activities/practices extended through Agricultural polyclinic

5.7 Constraints faced by the respondents while adopting the agricultural practices recommended through the Agricultural Polyclinic.

One of the objectives of the study was to find out the constraints faced by the respondents in the adoption of recommended activities/practices extended through Agricultural Polyclinics. Comprehensive information about constraints faced by respondents under study is delineated in Table 27.

Table 27: Constraints faced by the respondents while adopting the agricultural practices recommended through the Agricultural Polyclinic.

(n=150)

Sr. No	Constraints	Frequ- Ency	Percen- tage	Rank
1	Scarcity of irrigation facilities	80	53.33	4
2	Less land holding for contour work	26	17.33	19
3	Vermicompost and Vermiculture were not easily available	96	64.00	3
4	More time required to fill up and for watering of NADEP pits	71	47.33	6
5	Soil and water testing was not carried out at proper time	70	46.66	7
6	Unavailability of products prepared and sold by Agricultural Polyclinic	60	40.00	8
7	Less land holding to prepare PKV watershed model/ farm pond	37	24.66	16
8	Insect, pest and disease diagnosis was not carried out at proper time	49	32.66	12
9	Non availability of recommended remedial chemicals at right time in market	26	17.33	18

Sr. No	Constraints	Frequ- Ency	Percen- tage	Rank
10	More distance to approach and take information from Agricultural Polyclinic and places of programme organized by Agricultural Polyclinic	17	11.33	20
11	Problems in adoption due to timely unavailability of technical guidance from the Agricultural Polyclinic	40	26.66	15
12	Non adoptable recommended technologies	35	23.33	17
13	Could not read the information available in library due to illiteracy	7	04.66	21
14	Difficulties were occurred in easy availability of model implements based on new technology	54	36.00	10
15	Perception of the respondents that they could not be benefited by the use of shadenets and low cost green houses	7	04.66	22
16	Respondents could not undergo any training or demonstration of high tech agriculture based on shadenet, green house and low cost green house	97	64.66	2
17	Lack of financial support from Agricultural Polyclinic	139	92.66	1
18	Training courses organized by the Agricultural Polyclinic were of short duration	74	49.33	5
19	The information given in training courses was not properly understood	44	29.33	14
20	Demonstrations not shown properly, for sufficient information	46	30.66	13
21	Lack of irrigation facilities	56	37.33	9
22	Seed germination testing was not carried out at proper time by Agricultural Polyclinic	51	34.00	11

It is elucidated from Table 27 that the first and foremost constraint faced by respondents was lack financial support from Agricultural Polyclinic (92.66%), followed by as many as 64.66 per cent of the respondents who faced the main constraint of not undergoing any training or demonstration of high tech agriculture based on shadenet, green house and low cost green house.

Other important constraints faced by respondents were in following order: Vermicompost and Vermiculture were not easily available (64.00 %), scarcity of irrigation facilities (53.33 %), training courses organized by the Agricultural Polyclinic were of short duration (49.33%), more time required to fill up and for watering of NADEP pits (47.33%), soil and water testing was not carried out at proper time (46.66%).

Some of the other constraints expressed by the respondents were, unavailability of products prepared and sold by Agricultural Polyclinic (40.00%), lack of irrigation facilities (37.33%), difficulties in easy availability of model implements based on new technology (36.00%), seed germination testing was not carried out at proper time by Agricultural Polyclinic (34.00%), insect, pest and disease diagnosis was not carried out at proper time (32.66%), demonstrations not shown properly for sufficient information (30.66%), the information given in training courses was not properly understood (29.33%), problems in adoption due to timely unavailability of technical guidance from the Agricultural Polyclinic (26.66%), less land holding to prepare PKV watershed model/ farm pond (24.66%), non adoptable recommended technologies (23.33%), non availability of recommended remedial chemicals at right time in market (17.33%), less land holding for contour work (17.33%), more distance to approach and take information from Agricultural Polyclinic and places of

programmes organized by Agricultural Polyclinic (11.33%), could not read the information available in library due to illiteracy (04.66%) and perception of the respondents that they could not be benefited by the use of shadenets and low cost green houses (04.66%).



Discussion

6. DISCUSSION

The Agricultural Polyclinic programme is one of the most important agricultural developmental programmes. The Agricultural Polyclinic programme has received considerable attention from students, teachers and researchers due to its multisectional nature. The Agricultural Polyclinic programme aims to reach all needy farmers particularly to rural areas. Three major extension activities are the vital objectives of the programme, such as farmers training, production technology, demonstration and agricultural services (diagnostics) to farmers difficulties are provided. These services are made available through the convergence. The theme of providing these services is primarily on the consideration that overall impact will be much better if the different services are provided in an integrated manner. No systematic study seems to have been undertaken to study the effectiveness of the Agricultural Polyclinic programme in Marathawada region of Maharashtra state as yet.

The present chapter deals with the discussion regarding findings on activities/practices of the Agricultural Polyclinic programme besides personal, socioeconomic and psychological characteristics of the respondents. The study primarily focused on performance of Agricultural Polyclinic by studying adoption of recommended activities/practices extended through Agricultural Polyclinics by farmers in Marathawada region. The findings are discussed under the following heads.

- 6.1 Personal, socioeconomic and psychological characteristics of the respondents.
- 6.2 Attitude of the respondents towards Agricultural polyclinic.
- 6.3 Knowledge of the respondents about Agricultural Polyclinic and their organizational set up.

- 6.4 Benefits availed from Agricultural Polyclinic activities.
- 6.5 Performance of Agricultural Polyclinic in terms of extent of adoption of recommended activities/practices extended through Agricultural Polyclinics by the respondents.
- 6.6 Relational analysis i.e. coefficient of correlation, multiple regression and path analysis
- 6.7 Constraints faced by the respondents while adopting the Agricultural Polyclinic activities/practices.
- 6.1 Personal, socioeconomic and psychological characteristics of the respondents.**

Personal, socioeconomic and psychological characteristics of the respondents were studied with a view to draw a general picture of the respondents. It included age, education, occupation, land holding, annual income, social participation, extension contact, risk orientation and economic motivation.

6.1.1 Age

The result of present investigation showed that the sample predominantly comprised of middle age (36 to 55 years) (58.00%), followed by 21.33 per cent and 20.67 per cent in young (18 to 35 years) and old (56 and above) age category, respectively. Which indicated that highest number of the respondents belonged to middle age category, followed by young age and old age group respectively.

The findings are similar to the finding of Kingaonkar (1989), Patel (1989), Snehalata and Reddy (1997), Chikhale *et al.* (2002), Satyanarayana *et al.* (2002), Sayanolla (2002), Nagabhushanam (2003), Bhangre (2004), Issar and Dalal (2005) and Kauthale and Sale (2007).

6.1.2 Education

As regards education of the respondents, it is evident from Table 3 that 37.33 per cent of the respondents were having secondary level education. About 24.00 per cent of the respondents were possessing higher secondary level and 18.00 per cent of the respondents were educated up to graduate and above, whereas 14.00 per cent of the respondents fell in primary category of education. While meagre percentage of the respondents (4.66 and 2.00) were in the category of illiterate and could read or write, respectively. The mean educational level of respondents was 10.05.

It leads to the conclusion that farmers from all the categories of education participated in Agricultural Polyclinic activities.

Education plays an important role in motivating and acquiring more information regarding management and cultivation practices. It also helps in getting the information from farm literature and might have helped in increasing the knowledge level, broadening the outlook, favourable attitude towards new technological practices. Such findings were noticed by Pimparikar and Shetay (1993), Vipin Kumar (1981), Ahire (2002), Gogoi (2000), More *et al.* (2000), Chikhale *et al.* (2002), Surve (2002) and Anonymous (2005).

6.1.3 Occupation

So far as occupation of the respondents was concerned, it is seen from the results presented in Table 4 that 33.33 per cent of the respondents were having farming as main occupation, followed by 24.00 per cent respondents doing subsidiary occupation along with farming. Whereas 18.00 per cent and 16.66 per cent were engaged in farming plus labour and farming plus service, respectively. Only 8.00 per cent respondents were doing business and looking after farming also. This shows that substantial percentage of the respondents were engaged in various occupations together with farming.

These findings lead to conclude that most of the income of the respondents was mainly derived from farm-based activities; few respondents earned income from business or service categories too.

The findings of the study are supported by the findings of Deshmukh (2000) and Pandhare (2005).

6.1.4 Land holding

Regarding land holding of the respondents, it was observed from Table 5 that most of the respondents (59.33 %) were in semi-medium category, followed by 15.33 in the marginal, 10.67 per cent in small category, whereas 8.00 per cent and 6.67 per cent were in medium and large category, respectively. The mean land holding of respondents was 2.82 ha.

Thus the composition of the respondents revealed that the highest number of farmers were in semi- medium category, followed by marginal and small category. Meagre percentage of farmers were in medium and large category of land holding. The probable reason may be that due to the land ceiling act, every respondent possesses specific size of land. After separation of family, the land fragmentation takes place and common holding is steadily decreasing due to continuous fragmentation of holdings and hence large size of holding are rarely observed.

The findings of the present study are consistent with the findings of Mehata and Dalvi (1990), Pimparikar and Shetay (1993) and Agre (1996)

6.1.5 Annual income

It is apparent from Table 6 that majority of the beneficiaries (57.33 %) were having medium level of annual income and 30.67 per cent of the respondents were having high level of annual income. Only 12.00 per cent of them were having low level of annual income. The mean annual

income of respondents was Rs 93733.3. This indicates that about three-fifth of the beneficiary respondents were having medium annual income.

This shows that annual income of the respondents is good. This might be due to implementation of training programmes, demonstration of advanced technology on farming and provision of agricultural services to Agricultural Polyclinic beneficiaries. The benefits are mostly availed by the beneficiary farmers by implementing recommended cultivation and management practices/activities which might have increased the yields and ultimately high returns were gained by beneficiary respondents.

The findings are in conformity with the findings of Kamble (1998), Chikhale *et al.* (2002), Sayanolla (2002), Pandhare (2005), Katkar and Ahire (2006) and Kauthale and Sale (2007).

6.1.6 Social participation

Regarding social participation of the respondents in various social organizations, it was noted from Table 7 that most (63.33%) of the respondents were having medium level of social participation, 19.34 per cent respondents were having high social participation, whereas 17.33 per cent respondents were having low social participation. The mean social participation score of respondents was 25.38

It means that the Agricultural Polyclinic beneficiary respondents had medium level of social participation, followed by nearly equal percentage with low and high level. It seems that majority of the respondents were taking active part in the activities of social organizations while one-fifth of them were indifferent in this regard, possibly because of their engagements in other occupational works.

The findings of the study are supported by the study of Patel (1989), Antwal (1998), Chikhale *et al.* (2002) and Kumaran and Jayaragavan (2005).

6.1.7 Extension contact

As regards extension contact, it is observed from Table 8 that majority of the beneficiaries (81.34 %) had medium contacts with the extension agencies, followed by 11.33 per cent and 7.33 per cent respondents having low and high extension contact, respectively. The mean extension contact score of respondents was 4.00

This indicates that smaller proportion of the respondents had low contact with the extension personnel and had generally good contacts with the extension agencies. The frequency of extension contact is an indicator of an urge among the farmers about the scientific information, which affects their knowledge level and also adoption. It plays an important role in the implementation of any development programme.

Pimparikar (1994), Kausadikar (2000), More *et al.* (2000), and Pulikken (2001) observed that majority of the respondents were found in medium extension contact category, which is similar to the findings of this study.

6.1.8 Risk orientation

As far as risk orientation is concerned, the data presented in Table 9 highlighted that most of the respondents (69.33 %) were having medium risk orientation. It was further noticed that 24.67 per cent of the respondents had low risk orientation and a meagre percentage of respondents (6.00 %) had high-risk orientation. The mean risk orientation score of respondents was 21.68, which indicated medium risk orientation.

Risk orientation ability of the respondents seemed to be moderate. Higher education and higher annual income of the respondents might have changed their attitude and might have motivated them to accept new ideas involving somewhat risk.

The findings of the study are similar to the findings of Gajre (1992), Agre (1996), Gogoi *et al.* (2000), More *et al.* (2000), Sayonolla (2002), Katkar and Ahire (2006) and Satheshekumar (2006).

6.1.9 Economic motivation

Table 10 shows the economic motivation of the respondents. It is evident that majority (73.34 %) belonged to the medium economic motivation. Whereas 22.00 per cent of the respondents had low level of the economic motivation and 4.66 per cent of the respondents belonged to high economic motivation category. The mean economic motivation score of respondents was 22.45. Thus in general, majority of the respondents showed medium economic motivation.

The findings of Jangwad (1996), Snehalatha and Reddy (1997) and Satheshkumar (2006) were in consonance with above findings.

6.2 Attitude of the respondents towards Agricultural polyclinic

Attitude is an important psychological variable determining the response of an individual towards Agricultural polyclinic.

It is clear from Table 11 that majority of the respondents (90.00 %) had expressed favourable attitude towards the Agricultural Polyclinic, whereas 8.00 per cent expressed unfavourable attitude towards the Agricultural Polyclinic and only 2.00 per cent were found to possess neutral attitude.

Almost all the beneficiaries expressed the favourable attitude towards Agricultural Polyclinic; this may be due to continuous contact of beneficiaries with polyclinic and also effective rendering of services by the personnel to the beneficiary farmers, which indicates that the beneficiaries were convinced about the benefits of Agricultural Polyclinic programme and their activities/practices.

These findings are supported by the findings of Sood (1970), Madhu Mohan (1983), Sinha *et al.* (1984), Kingaonkar (1989), Nevase (1991), Agre (1996), Antwal (1998), Karegaonkar (2003), Bhople *et al.* (2005), Pandhare (2005), Patel *et al.* (2006) and Santhi *et al.* (2007).

6.3 Knowledge of the respondents about Agricultural Polyclinic and their organizational set up.

Knowledge was assessed by putting twenty-two questions to the respondents about general working of Agricultural Polyclinic and their organizational set up.

It is seen from Table 12, that out of twenty-two questions about extension activities/practices of Agricultural Polyclinic and their organizational set up, near about twelve activities/practices such as proper utilization of farmland and water; soil and water-testing services given on Agricultural Polyclinic, contour development demonstrations organized to demonstrate full utilization of rain water in field, all the farmers are the beneficiaries of this programme, training given to produce Neemark from Neemseed, Government of Maharashtra state had started the Agricultural Polyclinic programme, training was given on organic fertilizers production on Agricultural Polyclinic, more information was provided on utilization of sprinkler and drip irrigation system on Agricultural Polyclinic, diagnostic services given to control insect pest and diseases on Agricultural Polyclinic, one or two days training courses were organized on Agricultural Polyclinic, PKV watershed model (farm pond) prepared on Agricultural Polyclinics field and demonstrations were given on its utilization, bioagent was produced for control of insect pest on the Agricultural Polyclinic and Agricultural Polyclinic programme was linked with State Agricultural department were known by 98.66, 94.00, 91.33, 90.00, 89.33, 88.66, 88.66, 86.66, 86.66, 82.66, 80.66 and 74.00 per cent of the respondents, respectively. Whereas, five activities/practices like training, demonstration

and agricultural services were the major aims to start the Agricultural Polyclinic programme, Taluka Agricultural Officers were responsible to organize training programmes, on decided rate, available and produced products are sold in small quantity on Agricultural Polyclinic, seed germination testing is provided to the farmers on Agricultural Polyclinic and information on agriculture is provided to the farmers through established library and museum, were known by 71.33, 67.33, 67.33, 65.33, and 64.66 per cent of the respondents, respectively and remaining five activities/practices such as more than two Agricultural Polyclinics are working in the district, thorough information was given on high tech agriculture based on green house, shadenet and 'zero' energy cold storage on Agricultural Polyclinic, separate establishment was functioning on the Agricultural Polyclinic work, Liliput gin was utilized for training and demonstration to remove lint from cotton seed on Agricultural Polyclinic and Agricultural Polyclinic programme was started in 1997-98, were known by 54.66%, 52.66%, 50.66%, 30.66%, 28.00 per cent of the respondents, respectively.

This indicates that the beneficiary respondents of Agricultural Polyclinics had moderate knowledge about the extension activities of Agricultural Polyclinic and their organizational set up.

Apropos overall knowledge about extension activities of Agricultural Polyclinic and their organizational set up, it was observed that majority (70.00 %) of the respondents were having medium level of knowledge, whereas 18.67 per cent were having low level of knowledge. About 11.33 per cent of the respondents were having high level of knowledge. The mean knowledge score of respondents was 16.30.

It can, therefore, be stated that majority of the respondents were having medium knowledge level. The inference can be drawn from these findings that Agricultural Polyclinic beneficiary respondents had

good knowledge about extension activities of Agricultural Polyclinics and their organizational set up. One of the reasons might be good extension efforts made by the personnel of Agricultural Polyclinics leading to desirable knowledge level of the respondents. In addition, their higher education level, better social participation, good extension contact and medium annual income might have facilitated in increasing their knowledge level about extension activities of Agricultural Polyclinics and their organizational set up.

The findings of this study are similar with the findings of Kakde(1993), Agre (1996), Deshmukh (1999), Chapke (2000), More *et al.* (2000), Chinchmalatpure *et al.* (2001), Pulikken (2001), Suryawanshi (2002), Chawane *et al.* (2004), Prakash and Brar (2006), Patil *et al.* (2006) and Halakatti *et al.* (2007).

6.4 Benefits availed from Agricultural Polyclinic activities/practices.

Nine beneficial activities/practices which were influencing the programmes were developed by discussion with Agricultural Polyclinic experts. Such beneficial activities/practices were included in the study and the respondents were asked to give the response in terms of whether they availed the benefits or not and how much benefits were availed before participation and after participation in Agricultural Polyclinic activities/practices. The difference was taken in to consideration for calculating the benefits availed from Agricultural polyclinics activities/practices.

It was found that three benefits availed from Agricultural Polyclinic activities/practices by majority of respondents were contour development on essential lands, increased income derived from agricultural produce and allied business and decreased production cost of agricultural

produce and allied business by 88.67, 78.00 and 76.00 per cent respectively.

Further, it is noticed that two benefits namely average expenditure on insecticide-pesticides and requirement of seeds in kgs per hectare for sowing were availed by substantial (58.00 and 53.33) per cent of the respondents. Some of the other four activities/practices like average expenditure on fertilizers, average expenditure on storage of agricultural produce, coverage of lands under irrigation by utilization of farm ponds and improved irrigation systems and utilization of wasteland were the benefits availed from Agricultural Polyclinics activities/practices by 47.33, 28.00, 23.33 and 18.00 percent of the respondents respectively.

As regards, overall extent of benefits availed from Agricultural Polyclinic, a glance at relevant data would make it apparent that considerable percentage (63.33%) of the respondents were having medium level of benefits availed from Agricultural Polyclinic activities, whereas nearly equal percentages (18.67 and 18.00) of respondents were having high and low level of benefits availed, respectively. The mean benefits availed score was 22.84. This indicated that the respondents were having medium benefits availed.

This might be due to adoption of technology, as well as, utilization of wasteland. Another reason could be that the agricultural programmes organized through training, demonstrations coupled with prompt agricultural services to solve the difficulties of farmers might have enabled the farmers to take more crops and undertaking of allied business leading to increase in income from farming and allied business. The information disseminated through the Agricultural Polyclinic programme might have also helped the respondents in decreasing the cost of production of crops and allied business. In addition, contour development, coverage of land under irrigation by utilization of PKV watershed model (farm pond)

and improved irrigation systems might have facilitated in retention of soil moisture resulting into more production and ultimately increased income. Moreover, average expenditure on fertilizers, insecticides pesticides and chemicals, storage of produce and requirement of seeds in kgs per hectare for sowing was also reduced by using seed germination testing lab, agricultural services like diagnostic service for soil and water testing, demonstrations on utilization of zero energy cold storage by Agricultural Polyclinic.

These findings are in consonance with the findings of Phadtare (1985), Bhalla (1992), Pimparikar and Shetay (1993), Sawsakde (1998) and Dixit (2001).

6.5 Performance of Agricultural Polyclinic in terms of extent of adoption of recommended activities/practices extended through Agricultural Polyclinics by the respondents.

The adoption of any agricultural technology depends upon accurate and up-to-date knowledge, a person has about it. Unless the farmer has complete knowledge about the technology and the skill to use it, he will not be motivated to adopt it.

With the close observation of Table 16, it is seen that all the respondents had utilized their possessed land for cultivation. Other practices adopted by majority of the respondents were, insect/pests diagnostic facilities (97.33 %), improved implements (96.66%), Nadep compost (92.66%) Neemark (92.00%). Further, it was noted that equal (90.00) per cent of the respondents adopted soil testing practice and contour development technology. Vermicompost activity was adopted by 87.33 per cent of the respondents.

Further, it was noticed that nearly half (47.33%) of the respondents adopted HaNPV technology. Whereas 44.00 per cent of the respondents adopted the seed germination testing technology, while

significant (36.00 %, 33.33%, (30.66% and 26.66%) proportion of respondents adopted Trichocard, improved irrigation systems, farm pond preparation and facility of cold storage (zero energy), respectively. Meagre percentage of the respondents (4.00%) adopted high tech agricultural technology based on shadenet and green house.

Hence, it can be conjectured from above findings that almost all the respondents had full utilization of their possessed land for cultivation may be due to the maximum cultivation of the crops and doing allied business to obtain more income on the strength of exposure to trainings and demonstrations.

Secondly, majority of the respondents adopted insect/pest diagnostic facilities, improved implements, Nadeb compost, Neemark, soil testing practice, contour development and vermicompost. This might be due to effective training, demonstrations and catering timely diagnostic services through the Agricultural Polyclinic.

Further, it was noticed that less than half of the respondents adopted HaNPV technology, seed germination facilities, trichocard, improved irrigation system, PKV watershed model (farm pond) and cold storage. The plausible reasons for comparatively less adoption might be the non-availability as well as perceived difficulties in obtaining HaNPV and Trichocard, time factor for seed germination testing, and the financial reasons for farm pond and cold storage preparation. Meagre percentage of the respondents adopted high tech agricultural technology based on shadenet and green house. This might be due to the more initial cost required to develop and utilize it and also the perception of the respondents that they would not be benefited by the use of shadenets and green house. The another reason might be the lack of irrigation facilities.

So far as overall distribution of the respondents on the basis of extent of adoption of activities/ practices extended through Agricultural

Polyclinic was concerned, it is visible from Table 17 that majority of the respondents (65.34 %) had medium level of adoption, followed by 21.33 per cent and 13.33 per cent respondents having high level and low level of adoption.

Looking to the importance of the Agricultural Polyclinic activities/practices from the point of view of increasing the crop production, decreasing expenditure, proper utilization, considerable knowledge gain and increased benefits availment, the adoption receives a boost and the beneficiaries were seen to be motivated to adopt Agricultural Polyclinic activities/practices. However, there is still a scope to escalate the adoption level.

The findings of this study are in line with the findings of Deshmukh (1987), Pimparikar (1994), Antwal (1998), Jondhale *et al.* (2000), Patel *et al.* (2003), Mohammad *et al.* (2004), Narkar *et al.* (2004), Tapre and Ingle (2004), Choudhary *et al.* (2005) and Halakatti *et al.* (2007)

6.6 Relational analysis.

6.6.1 Coefficient of correlation

6.6.1.1 Relationship between personal, socio-economic and psychological characteristics of respondents with knowledge of the respondents about extension activities of Agricultural Polyclinics and their organizational set up.

The results presented in Table 18 revealed that, out of 10 independent variables, eight variables namely, risk orientation, annual income, economic motivation, land holding, attitude, education, extension contact and social participation were positively and significantly related to the knowledge of the respondents about Agricultural Polyclinic at 0.01 level of probability. Age and occupation could not show any significant relationship with the knowledge.

This meant that higher risk orientation of the respondents showed significant influence over the knowledge level. This might have happened because of the uncertainties of climatic conditions and assured market places may not be closer to places of production. Due to this, respondents turned have to new multiple cropping system and allied business that resulted in increasing knowledge.

Also, the variables like annual income, economic motivation and land holding showed significant relationship with the knowledge. This might be due to possibility that economic characteristics and economic status of the respondents might have led to more experiments in the farming business which facilitated to increase knowledge level. Favourable attitude helps to attract towards the technology, education helps an individual in grasping and understanding the ideas and taking the rational decision, extension contact is the most potent and viable factor which is capable of deciding the fate of the technology and social participation increases the interaction experiences in the form of exchange of ideas and strengthen the experiences, which is very effective in increasing the knowledge. Therefore, these factors might have shown positive significant relationship with knowledge level of the respondents about extension activities/practices extended through Agricultural Polyclinic and their organizational setup.

The finding of this study are similar with the findings of Reddy and Reddy (1988), Sharma and Khan (2001), Shrivastava and Lakhera (2003), Mohammad *et al.* (2004), Chandrashekar *et al.* (2005), Gautam *et al.* (2005), Suryawanshi and Chole (2005), Hosamani *et al.* (2006), Prakash and Brar (2006), Lakshmanan and Geethadevi (2007), Meenal and Rajan (2007) and Shashidara *et al.* (2007).

6.6.1.2 Relationship between personal, socio-economic and psychological characteristics of respondents with benefits availed from Agricultural Polyclinic activities/practices

The results depicted in Table 19 indicated that the independent variables viz. annual income, land holding, education, risk orientation, extension contact, economic motivation, attitude and social participation showed positive and significant relationship with benefits availed from adoption of Agricultural Polyclinic activities/practices. This might be due to the fact that all these independent variables are the characteristics of the adopters of new and technologically advanced practices of cultivation. The advance technologies are more beneficial than old technologies and therefore, naturally these variables might have show a significant relationship with the benefits availed from Agricultural Polyclinic activities/practices.

However, age and occupation of the respondents did not show any significant relationship with the benefits availment. The finding of this study are similar with the findings of Sinha *et al.* (1984), Shinde *et al.* (1997), Sharma and Khan (2001) and Satheshmukar (2006)

6.6.1.3 Relationship of personal, socio economic and psychological characteristics of the respondents with adoption of activities/ practices extended through Agricultural polyclinic.

The results regarding the adoption of activities/ practices extended through Agricultural Polyclinic presented earlier in Table 20 connoted that out of 12 variables, benefits availed, knowledge, risk orientation, annual income, economic motivation, land holding, education, attitude, extension contact and social participation, were positively and significantly related with adoption of activities/practices. The plausible reasons for such a trend of finding are described below.

6.6.1.3.1 Age with adoption

Age could not exhibit any relationship with the adoption of Agricultural Polyclinic activities/ practices. This means that age had no effect on adoption of Agricultural Polyclinic activities/ practices.

The respondents from all the age groups were found spread over in all the categories of adoption levels in more or less equal number. The distribution did not establish any particular pattern. Moreover, age is a personal characteristic of an individual, which is not affected by social or environmental factors. Farming is major occupation of this area. Because of this, age of the respondents might have shown nonsignificant differences in the adoption levels of Agricultural Polyclinic activities/practices.

These findings are in line with the findings of Pal (1970), Girase (1986), Agre (1996), Dhuware and Pande (2002), Gupta *et al.* (2003), Dhapke (2004), Mohammad *et al.* (2004), Prakash and Brar (2006), Lakshmanan and Geethadevi (2007), and Meenal and Rajan (2007).

6.6.1.3.2 Education with adoption

Respondent's education was positively and significantly related with adoption of Agricultural Polyclinic activities/ practices.

Education broadens knowledge horizon of the individual and provides direction to thinking process of the individuals and obviously, its significant influence had been observed in the adoption of Agricultural Polyclinic activities/ practices. This might be due to the fact that higher education increases their contact with sources of information, enables respondents to have an access to print media, store them for future use and retrieve them when needed. This might have helped the respondents to be aware about improved technology, leading to rapid and greater extent of adoption.

The above results are in conformity with those of Katarya (1980), Sanoria and Sharma (1983), Joshi and Shinde (1984), Olowu *et al.*

(1988), Mahajan (1993), Sharma and Khan (2001), Dhuware and Pande (2002), Bandgar *et al.* (2004), Patil (2004), Prakash and Brar (2006), Katkar and Ahire (2006), Singh and Khurana (2006), Halakatti *et al.* (2007) and Lakshmanan and Geethadevi (2007).

6.6.1.3.3 Occupation with adoption

It was noticed from the results that occupation of the respondents had not exhibited any significant relationship with the adoption of activities/practices extended through Agricultural Polyclinic.

It can be said from these observations that major occupation did not exert any influence on the adoption of Agricultural Polyclinic activities/practices. Farming being the major occupation of almost all the respondents, so also, the factors like value of the produce, accessibility to market etc. put greater impact, than occupation alone, on the adoption by all the respondents.

The results of the study are corroborated by the findings of Ingle and Kude (1995), Agre (1996), Pagar (1996) and Mohammad *et al.* (2004).

6.6.1.2.4 Land holding with adoption

Land holding was positively and significantly related to the adoption of Agricultural Polyclinic activities/practices. The prosperity and economic development of the farming community depends upon land use pattern, therefore, land holding plays an important role in adoption of Agricultural Polyclinic activities/practices. The owners and operators of large size farm are generally sound in economic condition and can afford to take the risk involved in technology adoption. Small farmers often lack in the resources needed, which keep them away from adoption of recommended practices.

Generally, farmers adopt those practices proportionate to their land holding and other resources that are available to them. The farmers

with larger size of land holdings are better placed to plan and utilize maximum agricultural resources than small farmers. The farmers with larger land holdings are generally with good socio-economic status and hence possibility of adoption of the improved farming practices with necessary investment increases.

The findings of Choubey (1972), Ojha (1984), Gholve (1986), Ingle and Wayazade (1989), Nevase (1991) and Wayazade (1992) are supportive to the findings of the present study.

6.6.1.3.5 Annual income with adoption

It was found that there was a positive and significant relationship between the annual income of the respondents and adoption level of Agricultural Polyclinic activities/practices.

This leads to conclude that the annual income of the farmers plays a decisive role in moulding their adoption behaviour. The farmers with higher economic status usually hold influential positions in the rural areas and are looked upon as respectable personalities in the rural area. Usually, such persons first try, use and demonstrate the new farm technology on their own farms. This results in to higher adoption by them.

These findings are similar with the findings of Sanoria and Sharma (1983), Joshi and shinde (1984), Nevase (1991), Wayazade (1992), Deshmukh (1994), Agre (1996), Dhapke (2004), Mohammad *et al.* (2004), Prakash and Brar (2006), Katkar and Ahire (2006), Narayanagowda *et al.* (2006) and Meenal and Rajan (2007).

6.6.1.3.6 Social participation with adoption

It was found that there was a positive and significant relationship between the social participation of the respondents with adoption of Agricultural Polyclinic activities/practices. This indicates that higher the social participation of the respondents, more readily they adopted the new technology than those with less social participation. This

may be due to the fact that involvement of an individual in different social and co-operative ventures brings him in contact with the other well informed people and organizations. This involvement increases the interaction experiences in the form of exchange of ideas and information and strengthen the experiences resulting in to enriching knowledge of that individual and ultimately increasing, adoption of improved technologies to some extent by that individual.

The findings of the present study are consistent with the findings of Chorge (1985), Gavimath and Sethurao (1989), Tawade (1991), Wayazade (1992), Lianbika and Nikhade (1993), Pagar (1996), Daipuria *et al.* (2001), Dhuware and Pande (2002), Bandgar *et al.* (2004), Mohammad *et al.* (2004), Narkar *et al.* (2004), Narayanagowda *et al.* (2006), Prakash and Brar (2006), Halakatti *et al.* (2007) and Meenal and Rajan (2007).

6.6.1.3.7 Extension contact with adoption

It was found that there was a positive and significant relationship between the extension contact of the respondents and their adoption level pertaining to the activities/practices extended through Agricultural Polyclinic.

It implies that contacts with the extension workers of the various development departments might have inspired the farmers to adopt the recommended technology. Personal contacts of the respondents with the extension workers might have helped them in getting solved their problems and getting convinced about utility of the recommendations. This might have resulted in higher adoption by the respondents.

The findings of the present study are similar to the findings of Reddy and Reddy (1988), Agre (1996), Daipuria *et al.* (2001), Hadole and Dakhore (2003), Dhuware and Pande (2002), Bandger *et al.* (2004), Dhapke (2004), Narkar *et al.* (2004), Lakshamanan and Geethadevi (2007), and Meenal and Rajan (2007).

6.6.1.3.8 Risk orientation with adoption

Risk orientation showed a positive and significant relationship with the adoption of Agricultural Polyclinic activities/practices.

It can be said from these observations that risk orientation of respondents show significant influence over the adoption level. Adoption increased with the increase in risk orientation to a significant extent. This might have happened because of the unavailability of market place closer to places of production and uncertainties of climatic conditions, which might have increased the risk in farming business.

This finding is in line with that of Katarya (1980), Mahajan (1983), Agre (1996), Daipuria *et al.* (2001), Patel *et al.* (2003), Jadhav *et al.* (2004), Mohammad *et al.* (2004), Katkar and Ahire (2006), Narayanagowda *et al.* (2006) and Shashidara *et al.* (2007).

6.6.1.3.9 Economic motivation with adoption

Positive correlation was observed between the economic motivation and adoption. This might be because the farmers with high economic motivation looks towards for higher economic returns, thereby they tend to adopt more of Agricultural Polyclinic activities/practices.

The finding is supported by that of Mahajan (1993) and Halakatti *et al.* (2007).

6.6.1.3.10 Attitude with adoption

It was found that attitude had positive and significant relationship with the adoption of Agricultural Polyclinic activities/practices. This connotes that more favourable the attitude towards Agricultural Polyclinic activities/practices, more would be their adoption. It is stated that attitude is a precursor of action, hence it is logical to find such observation in the study.

The findings are in line with Chattopadhyaya (1976), Chorge (1985), Narayana Gowda (1992), Agre (1996), Pagar (1996), Bonny (1998), Patel *et al.* (2003), Jadhav (2004), Prakash and Brar (2006) and Halakatti *et al.* (2007).

6.6.1.3.11 Knowledge with adoption

It was found that there was a positive and significant relationship between the knowledge level of Agricultural Polyclinic beneficiary respondents and their adoption level about Agricultural Polyclinic activities/practices.

This showed that the knowledge level of Agricultural Polyclinic beneficiary respondents had much effect on the adoption of the activities/practices extended through Agricultural Polyclinic. Detailed knowledge of the recommended practices is a pre-requisite for adoption. If the farmer does not have sufficient knowledge of the recommended practices, he may not adopt them. Once he becomes fully aware of the technology and is convinced of its utility, he will not hesitate in adopting it. Obviously, the adoption of the recommended technology would be more among the farmers with high knowledge level than those with low knowledge level.

Similar findings were observed by Rogers (1961), Mahajan (1980), Panwar (1990), Agre (1996), Pagar (1996), Daipuria *et al.* (2001), Patel *et al.* (2003) and Halakatti *et al.* (2007).

6.6.1.3.12 Benefits availed with adoption

The results established a statistically significant positive relationship between benefits availed and adoption of Agricultural Polyclinic activities/practices.

This clearly indicates that more the availment of benefit due to increased income or decreased production cost, more will be the adoption of Agricultural Polyclinic activities/practices. The increased

income or decreased production cost act as a motivating force. So, when increased income or decreased production cost was perceived, respondents went for adoption of the Agricultural Polyclinic activities/practices. So, there is a direct link between availment of benefits due to increased income or decreased production costs and the adoption of Agricultural Polyclinic activities/practices.

These findings are supported by the findings of Agre (1996) and Meenal and Rajan (2007).

6.6.2 Multiple regression analysis

The prime purpose of multiple regression analysis was to comprehend the predictive value and relative importance of the independent variables in explaining the intervening and dependent variables. Regression analysis provides estimate values of intervening and dependent variable from the value of the independent variables. It evaluates the proportion of variance in the intervening and dependent variable that has been accounted for by the regression equation. In general, the greater the value of R^2 , the better is the fit and more useful regression equation of predictive device. Taking this theoretical background in consideration, the data were subjected to regression analysis.

When the multiple regression coefficient (R^2) was estimated on the data, it was found that 58.70 per cent of the variation was explained by the selected 10 independent variables in knowledge of the respondents. The remaining 41.30 unexplained variation might be attributed to the variables not included in the study. Four variables that is attitude, annual income, risk orientation and education contributed positively and significantly contributed to the knowledge of the respondents. Thus, those emerged as the important independent variables contributing to the knowledge about Agricultural Polyclinic activities/practices and their organizational set up.

In case of multiple regression analysis of the benefits availed from Agricultural Polyclinics activities/practices, it was established that selected 10 independent variables explained substantial (56.00 %) variation in the benefits availed. Remaining 44.00 per cent unexplained variation might be attributed to the variables not included in the study. Education, risk orientation, land holding, age and annual income contributed positively and significantly to the benefits availed and were found to be assuming greater importance to the benefits availed.

The multiple regression analysis regarding dependent variable i.e. adoption of Agricultural Polyclinic activities/practices lead to the conclusion that an appreciable that is 79.70 per cent variation was explained by the selected twelve independent variables. Remaining 20.30 per cent unexplained variation might be attributed to the variables not included in the study. It was revealed from the data that out of twelve variables only four variables namely extension contact, benefits availed, knowledge and annual income had positive and significant effect on the adoption of Agricultural Polyclinic activities/practices and were found to be relatively important. This implies that these variables were crucial in predicting the adoption of Agricultural Polyclinic activities/practices.

A comparative looking at the multiple regression analysis of the role played by the selected variables in Agricultural Polyclinic knowledge, benefits availed and adoption would bring out a very interesting finding that these selected independent variables had worked better in explaining the variation in adoption of Agricultural Polyclinic activities/practices.

6.6.3 Path analysis

With a view to have better insight about the effect of independent variables on the dependent variables, both directly as well as through other variables, path analysis was computed.

To brief the discussion on the findings of path analysis pertaining to the knowledge, benefits availed and adoption of activities/practices extended through Agricultural Polyclinic, it could be noticed that highest direct effect on the knowledge was exerted by risk orientation, followed by attitude, annual income, education and land holding. These variables could influence the knowledge even in the absence of other variables. Hence, they are important variables. Further, it was visible that maximum total indirect effect on the knowledge was exercised by risk orientation. The other variables such as annual income, economic motivation, land holding, attitude, education, extension contact and social participation exerted total indirect effect on knowledge in descending order. These results indicated that above variables might have affected other related variables at first instance and finally, knowledge of Agricultural Polyclinics. The variable land holding, routed through annual income, exerted largest first substantial indirect effect on the knowledge, followed by extension contact and occupation through annual income and economic motivation through risk orientation. Thus, these variables first influenced the annual income and risk orientation, which in turn led to increase knowledge. Annual income and risk orientation, thus have been proved to be important variables in absence of which other independent variables might not have been able to influence the knowledge.

With regard to benefits availed by the respondents, it was clear that education exerted the highest direct effect on the benefits availed, followed by other variables namely, risk orientation, land holding, annual income, age, extension contact, attitude and social participation in

descending order. Further, annual income was crucial in exerting the highest total indirect effect on benefits availed. The other variables such as land holding, education, risk orientation, extension contact, economic motivation, attitude, social participation and age exerted on benefits availed in descending order. Highest substantial indirect effect on benefits availed was first exercised by economic motivation routed through risk orientation, followed by attitude through risk orientation. The other variables such as extension contact and social participation acted through land holding and occupation through education. Thus, these variables first influenced the risk orientation, land holding and education, which after led to benefits availed.

Path analysis in respect of adoption of Agricultural Polyclinic activities/practices pointed out that highest direct effect on adoption was exerted by benefits availed. The other variables namely knowledge, economic motivation, social participation, attitude and risk orientation were also having positive direct influence on adoption. These variables can influence the adoption even in the absence of other variables, hence they are very important.

Benefits availed exerted the highest indirect positive effect on adoption. The other variables such as knowledge, risk orientation, annual income, economic motivation, land holding, education, attitude, extension contact, social participation and age were observed in descending order in this context. These variables would have affected other related variables at first instance and finally, adoption of Agricultural Polyclinic activities/practices.

Knowledge exerted the highest substantial indirect effect on adoption through benefits availed. The other variables were annual income, land holding, education, risk orientation, extension contact, social participation and age routed through benefits availed. Thus, these variables first influenced benefits availed, which in turn, led to adoption. After path

analysis study of adoption of Agricultural Polyclinic activities/practices, it was observed that benefits availed emerged as a very important variable in absence of which independent variables would not have been able to influence the adoption.

6.7 Constraints faced by the respondents while adopting the Agricultural Polyclinic activities/practices.

The respondents encountered some important constraints while adopting the agricultural activities/practices. It was observed from the Table 27 that 92.66 per cent respondents perceived lack of financial support from Agricultural Polyclinic as the main constraint. The financial requirement is a most crucial factor for adoption of Agricultural Polyclinic activities/practices such as farm pond preparation based on PKV watershed model, purchase of advanced implements and inputs, development of high tech agriculture based on shadenet, green house and zero energy cold storage. If respondents are financially predicamented, the fate of technology will be at stake.

As many as 64.66 per cent respondents stated that they did not undergo any training or demonstration on high tech agriculture based on shadenet, green house and low cost green house. It implies that the extension functionaries from Agricultural Polyclinic programme responsible for bringing alround development in agriculture, may organize with greater frequency the trainings or demonstrations on the stated topics.

Vermicompost and Vermiculture were not easily available (64.00 %), scarcity of irrigation facilities (53.33 %), training courses organized by the Agricultural Polyclinic were of short duration (49.33%), more time required to fill up and for watering of NADEP pits (47.33%), soil and water testing was not carried out at proper time (46.66%), unavailability of products prepared and sold by Agricultural Polyclinic (40.00%), lack of irrigation facilities (37.33%), difficulties in easy

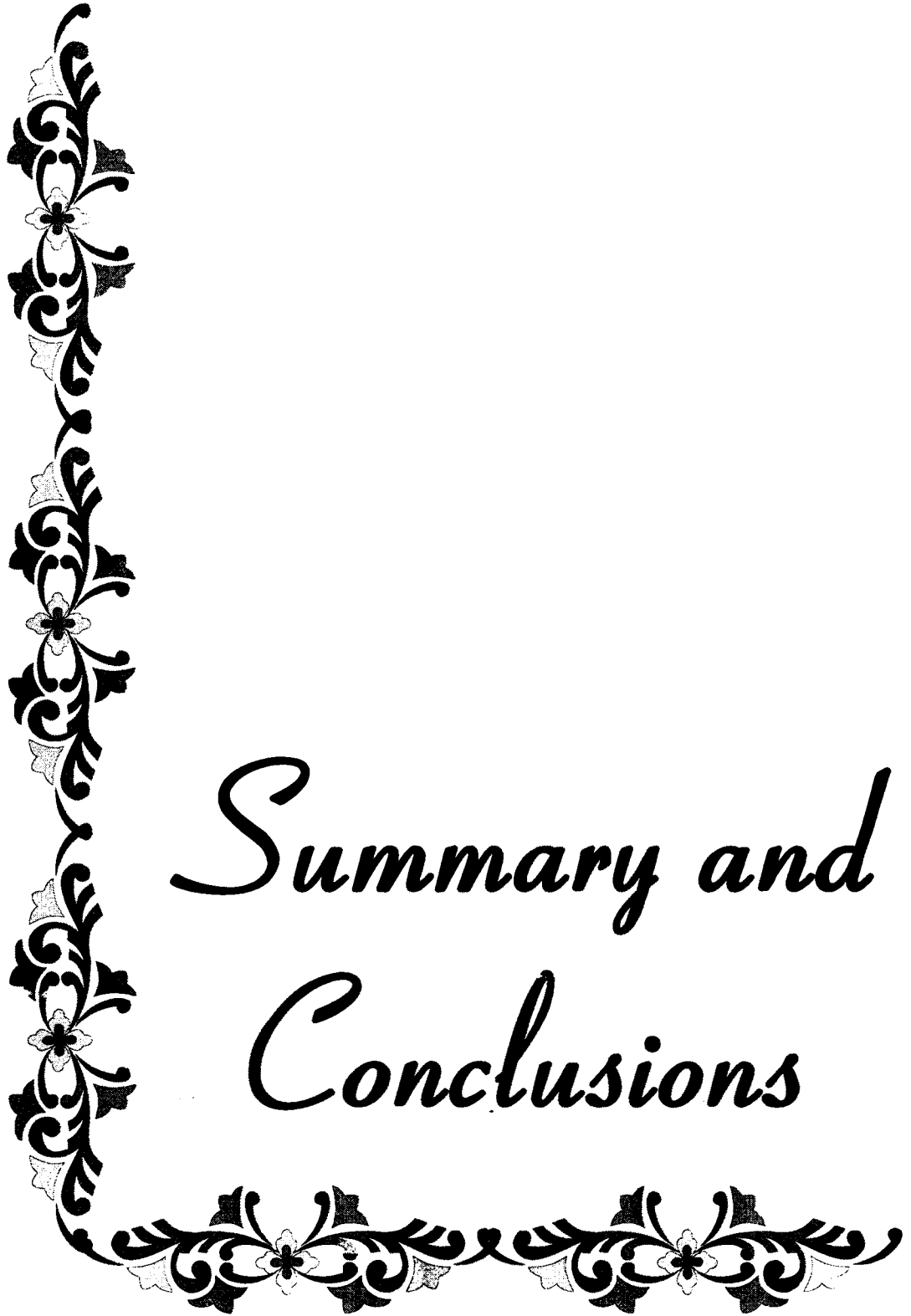
availability of model implements based on new technology (36.00%), seed germination testing was not carried out at proper time by Agricultural Polyclinic (34.00%), insect, pest and disease diagnosis was not carried out at proper time (32.66%), demonstrations not shown properly for sufficient information (30.66%), the information given in training courses was not properly understood (29.33%), problems in adoption due to timely unavailability of technical guidance from the Agricultural Polyclinic (26.66%), less land holding to prepare PKV watershed model/ farm pond (24.66%), non-adoptable recommended technologies (23.33%), non availability of recommended remedial chemicals at right time in market (17.33%), less land holding for contour work (17.33%), more distance to approach to take information from Agricultural Polyclinic and places of programmes organized by Agricultural Polyclinic (11.33%), could not read the information available in library due to illiteracy (04.66%) and perception of the respondents that they could not be benefited by the use of shadenets and low cost green houses (04.66%) were the other important constraints expressed by the respondents while adopting the Agricultural Polyclinic activities/practices.

It can be concluded from the results that respondents faced the unavailability of crucial inputs while adoption of Agricultural Polyclinic activities like vermicompost and vermiculture, products prepared by Agricultural polyclinic, advance implements and remedial chemicals. This might be due the improper co-ordination between the extension personnel of Agricultural Polyclinic and supply agencies, also another reason might be more distance and financial difficulties to purchase or make available such inputs by the respondents. Also the respondents faced constraints in diagnostic services like soil and water testing, insect pest and diseases diagnosis and seed testing sample and their effective remedial solutions. This might be due to the inconvenience to respondents to

approach and contact with Agricultural Polyclinic, extension and technical personnel. Constraints like unavailability of technical guidance, non-adoptable technologies, perception of the respondents that they could not be benefited by use of shadenets and low cost green houses, short duration training courses, information not properly understood training course were the constraints faced. This might be due to the programmes organized by Agricultural Polyclinic were not on suitable line and another reason might be due to problem of easy approach to the Agricultural Polyclinic places where the programmes were organized by Agricultural Polyclinic.

The constraints like scarcity of irrigation and lack of irrigation were faced by the respondents. This might be the reason for less adoption of improved irrigation system and resource development to make available the water for preparation of farm ponds and contour development hence the difficulty faced in adoption of Agricultural Polyclinic activities/practices.

These findings are supported by Pimparikar and shetay (1993), Agre (1996), Jangwad (1996), Gogai (2000), Kausadikar (2000), Kadam *et al.* (2001), Gupta *et al.* (2003), Waman *et al.* (2003) and Satheshkumar (2006).



*Summary and
Conclusions*

7. SUMMARY AND CONCLUSIONS

7.1 Summary

Scientific transformation of agriculture is an important pre-requisite for rural development. To propel Indian agriculture in new era the quality, technical skill and management in agricultural manpower must improve in consonance with rapidly changing national and global market needs. If any organization wishes to assure a leadership role, it has no option but to strengthen its human resource base.

Among many other human resources of farmers and agricultural development programme, Maharashtra state government had launched a pilot programme “Agricultural Polyclinic” in 1997-98 in all talukas/districts step by step. Agricultural Polyclinic programme plays key role for training, demonstration and agricultural services (diagnostic) to farmers about agricultural technology, to narrow down gap between knowledge, practice and adoption level for increasing the productivity and production of farming. Evaluation of Agricultural Polyclinic gives facts, comprehension of adaptation of training, demonstration and agricultural services to make them more useful to the farmers.

The programme is being implemented in the Maharashtra state for about 10 years. Scientific evaluation of the Agricultural Polyclinics was felt necessary in the light of its vitality. A few observational studies have been made by the state agriculture department of Maharashtra, wherever the programme was implemented, but these studies were in the form of annual progress report and lacked research base. Therefore the present study entitled “Evaluation of Agricultural Polyclinics - An Indepth Study” was conducted with following specific objectives.

1. To study personal, socio-economic and psychological characteristics of the respondents.
2. To know the attitude of respondents about extension activities of Agricultural Polyclinic.
3. To assess the knowledge of respondents about extension activities of Agricultural Polyclinic.
4. To study the extent of benefits availed by the beneficiary respondents
5. To measure the performance of Agricultural Polyclinic in terms of extent of adoption of recommended practices extended through Agricultural Polyclinics by the respondents
6. To find out the relationship between personal, socio-economic and psychological characteristics of respondents with adoption of recommended practices extended through Agricultural Polyclinic
7. To ascertain the constraints faced by the respondents while adopting the agricultural practices recommended through the Agricultural Polyclinic.

7.1.1 Methodology

The present study was conducted in selected three districts. Out of eight districts of Marathwada region, three districts were selected on the basis of those districts having more than two Agricultural Polyclinics functioning in the districts and also on the basis of earlier establishment of Agricultural Polyclinics in the district. From these selected districts, two talukas on the basis of earlier establishment of polyclinics were selected and on the basis of same principle, from each district two Agricultural Polyclinics were selected. From these selected Agricultural Polyclinics, a total of 150 respondents – 25 from each Agricultural Polyclinic were selected by nth method of random sampling. Ex-post facto research design

was used and respondents were interviewed personally. The independent variables namely, age, education, occupation, land holding, annual income, social participation, extension contact, risk orientation, economic motivation and attitude towards Agricultural Polyclinic were considered. Knowledge and benefits availed were included as intervening variables in the study. Adoption of activities/practices extended through Agricultural Polyclinic was considered as dependent variable. As far as statistical tests are concerned, frequency and percentage, mean and standard deviation, Pearson's coefficient of correlation, multiple regression analysis and path analysis were resorted to analyze the gathered data. The salient findings of the study are epitomized below.

7.1.2 Findings

7.1.2.1 Personal,socio-economic and psychological characteristics of the respondents.

7.1.2.1.1 Age

It was noticed from the findings that, a substantial percentage (58.00 %) of the respondents were of middle age.

7.1.2.1.2 Education

In case of education, a significant (37.33 %) proportion of the respondents were possessing higher secondary level of education. The mean educational level of respondents was 10.05

7.1.2.1.3 Occupation

So far as occupation of the respondents was concerned, 33.33 per cent had farming as main occupation and remaining respondents were engaged in various occupations together with farming.

7.1.2.1.4 Land holding

It was evident that most of respondents (59.33 %) were having semi medium size of land holding. The mean land holding of respondents was 2.82 ha.

7.1.2.1.5 Annual income

It was seen from the relevant data that most of the beneficiaries (57.33 %) were having medium level of annual income. The mean annual income of respondents was Rs. 93733.3.

7.1.2.1.6 Social participation

It was noticed that most of the respondents (63.33%) were having medium level of social participation. The mean social participation score of respondents was 25.38

7.1.2.1.7 Extension contact

As regards extension contact, it was observed that majority of the beneficiaries (81.34 %) had medium contact with the extension agencies. The mean extension contact score of respondents was 4.00

7.1.2.1.8 Risk orientation

It was observed that most of the respondents (69.33 %) were having medium risk orientation. The mean risk orientation score of respondents was 21.68

7.1.2.1.9 Economic motivation

Majority (73.34 %) of the respondents belonged to the medium economic motivation category. The mean economic motivation score of respondents was 22.45.

7.1.2.2 Attitude of respondents about extension activities of Agricultural Polyclinic

As regards attitude, it was seen that majority of the respondents (90.00 %) had expressed favourable attitude towards the Agricultural Polyclinic

7.1.2.3 Knowledge of respondents about extension activities of Agricultural Polyclinic and their organizational setup

Out of twenty-two questions about extension activities/practices of Agricultural Polyclinic and their organizational set

up, twelve activities/practices namely proper utilization of farmland and water; soil and water-testing services given on Agricultural Polyclinic, contour development demonstrations organized to demonstrate full utilization of rainy water in field, all the farmers are the beneficiaries of this programme, training given to produce Neemark from Neemseed, Govt. of Maharashtra state had started the Agricultural Polyclinic programme, training was given on organic fertilizers production on Agricultural Polyclinic, more information was provided on utilization of sprinkler and drip irrigation system on Agricultural Polyclinic, diagnostic services given to control insect pest and diseases on Agricultural Polyclinic, one or two days training courses were organized on Agricultural Polyclinic, PKV watershed model (farm pond) prepared on Agricultural Polyclinic and demonstrations were given for their utilization, biological insect pest control measure was produced on the Agricultural Polyclinic and Agricultural Polyclinic programme was linked with State Agricultural department were known by 98.66, 94.00, 91.33, 90.00, 89.33, 88.66, 88.66, 86.66, 86.66, 82.66, 80.66 and 74.00 per cent of the respondents, respectively. With regards to overall knowledge about extension activities of Agricultural Polyclinic and their organizational set up, it was observed that majority (70.00 %) of the respondents were having medium level of knowledge. The mean knowledge score of respondents was 16.30.

7.1.2.4 Extent of benefits availed by beneficiary respondents

Out of nine beneficial activities/practices, the benefits of three Agricultural Polyclinic activities/practices namely contour development on essential lands, increased incomes derived from agricultural produce and allied business and decreased production costs of agricultural produce and allied business were availed by 88.67, 78.00 and 76.00 per cent by the respondents, respectively.

As regards, overall extent of benefits availed from Agricultural Polyclinic, considerable proportion (63.33%) of the respondents had availed medium level of benefits from Agricultural Polyclinic activities. The mean benefits availed score was 22.84.

7.1.2.5 Performance of Agricultural Polyclinic in terms of extent of adoption of recommended practices extended through Agricultural Polyclinics by the respondents

It was observed that out of fifteen recommended extension activities/practices extended through Agricultural Polyclinic, only one activity i.e. utilization of possessed land for cultivation was adopted by all the respondents. Other seven activities/practices, namely insect/pests diagnostic facilities, improved implements, Nadep compost, Neemark, soil testing, contour development technology and Vermicompost were adopted by 97.33, 96.66, 92.66, 92.00, 90.00, 90.00 and 87.33 per cent of the respondents, respectively.

Remaining six activities/practices namely HaNPV, seed germination testing, Trichocard, improved irrigation systems, farm pond preparation and facility of cold storage (zero energy) were adopted by 47.33, 44.00, 36.00, 33.33, 30.66 and 26.66 per cent of the respondents, respectively. Meagre proportion of the respondents (4.00%) adopted high tech agricultural technology based on shadenet and green house.

In case of distribution of the respondents on the basis of overall extent of adoption of activities/ practices extended through Agricultural Polyclinic, it was seen that majority of the respondents (65.34 %) had medium level of adoption.

7.1.2.6 Relational analysis.

7.1.2.6.1 Coefficient of correlation

7.1.2.6.1.1 Relationship between personal, socio-economic and psychological characteristics of respondents with knowledge of the respondents about extension activities of Agricultural Polyclinics and their organizational set up.

Out of 10 independent variables, eight variables namely, risk orientation, annual income, economic motivation, land holding, attitude, education, extension contact and social participation, were positively and significantly related with the knowledge of the respondents about Agricultural Polyclinic and their organizational setup.

7.1.2.6.1.2 Relationship between personal, socio-economic and psychological characteristics of respondents with benefits availed from Agricultural Polyclinic activities/practices.

The variables namely annual income, land holding, education, risk orientation, extension contact, economic motivation, attitude and social participation showed positive and significant relationship with benefits availed from adoption of Agricultural Polyclinic activities/practices.

7.1.2.6.1.3 Relationship of personal, socio economic and psychological characteristics of the respondents with adoption of activities/ practices extended through Agricultural Polyclinic.

The variables namely benefits availed, knowledge, risk orientation, annual income, economic motivation, land holding, education, attitude, extension contact and social participation were positively and significantly related with adoption of activities/practices extended through Agricultural Polyclinics.

7.1.2.6.2 Multiple regression analysis

In multiple regression analysis of knowledge about the extension activities/practices of Agricultural Polyclinic and their organizational setup, 58.70 per cent variation was explained by the selected set of 10 independent variables. Variables namely attitude, annual income, risk orientation and education contributed positively and significantly to the knowledge of the respondents towards the extension activities of Agricultural Polyclinic and their organizational setup.

Further, it was seen that set of selected 10 variables included could explain the variation in benefits availed of respondents to the extent of 56.00 per cent. The education, risk orientation, land holding, age and annual income positively and significantly contributed to the benefits availed from Agricultural Polyclinic activities/practices by the respondents.

The set of selected 12 variables explained the variation in adoption of practices by the respondents to the extent of 79.70 per cent. The variables extension contact, benefits availed, knowledge and annual income contributed positively and significantly to the adoption level.

7.1.2.6.3 Path analysis

In case of knowledge of extension activities of Agricultural Polyclinic and their organizational setup, path analysis showed that direct effect was exerted by risk orientation, followed by attitude, annual income, education, land holding, social participation, economic motivation, age and extension contact. These variables could influence knowledge favourably even in the absence of other variables. Whereas highest total indirect effect was caused by risk orientation. The other variables namely annual income, economic motivation, land holding, attitude, education, extension contact and social participation exerted total indirect effect on knowledge in descending order. Variables namely land holding, extension contact and

occupation through annual income and economic motivation through risk orientation exerted substantial indirect effect on knowledge.

Path analysis results of benefits availed from Agricultural Polyclinic activities/practices had shown that highest direct effect was exerted by education, followed by risk orientation. The other variables namely land holding, annual income, age, extension contact, attitude, and social participation exerted direct effect on benefits availed in descending order. Highest total indirect effect was caused by annual income. The other variables namely land holding, education, risk orientation, extension contact, economic motivation, attitude, social participation and age exerted total indirect effect on benefits availed in descending order. Highest substantial indirect effect on benefits availed was exercised by economic motivation and attitude through risk orientation, extension contact and social participation through land holding and occupation through education.

Path analysis in respect of adoption of activities/practices extended through Agricultural Polyclinic showed that highest direct effect was exerted by benefits availed, followed by knowledge. The other variables namely economic motivation, social participation, attitude and risk orientation exerted positive influence on adoption. Further, it was noticed that highest total indirect effect was caused by benefits availed, followed by knowledge, other variables namely risk orientation, annual income, economic motivation, land holding, education, attitude, extension contact, social participation and age in descending order. Highest substantial indirect effect on adoption of activities/practices extended through Agricultural Polyclinic was exerted by knowledge routed through benefit availed. The other variables namely annual income, land holding, education, risk orientation, extension contact, social participation and age routed through benefit availed exerted substantial indirect effect on adoption of the Agricultural Polyclinic activities in descending order.

Path analysis results indicated that the variables namely benefits availed, knowledge, education, risk orientation, attitude, annual income and land holding were crucial variables.

7.1.2.7 Constraints faced by the respondents while adopting the Agricultural Polyclinic activities/practices.

It was observed that lack of financial support from Agricultural Polyclinic was the main constraint perceived by majority of the respondents (92.66%), followed by not undergoing any training or demonstration of high tech agriculture based on shadenet, green house and low cost green house (64.66%). Other important constraints faced by respondents were, Vermicompost and Vermiculture were not easily available, scarcity of irrigation facilities, training courses organized by the Agricultural Polyclinic were of short duration, more time required to fill up and for watering of NADEP pits, soil and water testing was not carried out at proper time as reported by 64.00, 53.33, 49.33, 47.33 and 46.66 per cent of the respondents, respectively.

7.2 Conclusions

From the study, it is conclude that majority of the respondents had medium extension contacts belonged to the medium economic motivation and expressed favourable attitude. A substantial percentage of the respondents were of middle aged, semi medium size of land holding having medium level of annual income with medium level of social participation and medium risk orientation. And a significant per cent of the respondents were possessing higher secondary level of education with farming as main occupation. In respect of knowledge, it is found that out of twenty-two near about twelve activities/practices were known by majority of the respondents and having medium level of overall knowledge. Regarding benefits availed, out of nine benefited activities/practices, three benefits were availed by majority of the respondents and considerable

percentage were having medium level of overall benefits availed. In case of adoption out of fifteen recommended extension activities/practices extended through Agricultural Polyclinic, only one activity i.e. utilization of their possessed land for cultivation was adopted by all the respondents. Other seven Agricultural Polyclinic activities/practices were adopted by majority of the respondents and majority of the respondents had medium level of overall adoption.

With regard to relational analysis variables like risk orientation, annual income, economic motivation, land holding, attitude, education, extension contact and social participation, were found to be positively and significantly related with the knowledge of the respondents. The variables such as annual income, land holding, education, risk orientation, extension contact, economic motivation, attitude and social participation showed positive and significant relationship with benefits availed. Regarding adoption the variables like benefits availed, knowledge, risk orientation, annual income, economic motivation, land holding, education, attitude, extension contact and social participation, were positively and significantly related with adoption of activities/practices.

In multiple regression analysis of knowledge, 58.70 percent variation was explained by the selected set of 10 independent variables. Variables like attitude, annual income, risk orientation and education contributed positively and significantly to the knowledge. Further it was seen that set of selected 10 variables included could explain the variation in benefits availed of respondents to the extent of 56.00 percent. The education, risk orientation, land holding, age and annual income could positively and significantly contribute to the benefits availed. The contribution of independent variables in adoption was 79.70 percent and the variables like extension contact, benefits availed, knowledge and annual income contributed positively and significantly to the adoption level.

Path analysis of knowledge showed that direct effect was exerted by risk orientation followed by attitude, where as highest total indirect effect was caused by risk orientation. Variables namely land holding, extension contact and occupation through annual income and economic motivation through risk orientation exerted substantial indirect effect on knowledge. Path analysis results of benefits availed had shown that highest direct effect was exerted by education, followed by risk orientation. And highest total indirect effect was caused by annual income. Highest substantial indirect effect on benefits availed was exercised by economic motivation and attitude through risk orientation. In respect of adoption, highest direct effect was exerted by benefits availed followed by knowledge. The highest total indirect effect was caused by benefits availed, followed by knowledge on adoption. And highest substantial indirect effect on adoption of activities/practices extended through Agricultural Polyclinic was exerted by Knowledge routed through benefits availed. Path analysis results indicated that the variables like benefits availed, knowledge, education, risk orientation, attitude, annual income and land holding were crucial variables.

It is observed that lack of financial support from Agricultural Polyclinic was the main constraint perceived by majority of the respondents followed by not undergoing any training or demonstration of high tech agriculture based on shed net, green house and low cost green house. Other important constraints like Vermicompost and Vermiculture were not easily available, scarcity of irrigation facilities, training courses organized by the

Agricultural Polyclinic were of short duration, more time required to fill up and for watering of NADEP pits, soil and water testing was not carried out at proper time were faced by majority percentage of respondents.



Implications

7. IMPLICATIONS

Indisputably, training, demonstration and diagnostic services are the life and blood of the agricultural organization and the performance of any agricultural organization, therefore, can be adjudged on the effectiveness and efficiency of its training, demonstration and services (diagnostic). In order to be able to compete, farmers should not only be well informed about findings of agricultural research, which are relevant for their situation, but they should also learn from practical experience through training and demonstration. Hence, the findings of this study would be of immense help for the extension agencies and administrators engrossed in the mission of speedifying agriculture and allied development. The conclusions of the present study would also be of great utility in toning-up and invigorating the overall administration of development programme.

Research outcome of a single study are not certainly sufficient for drawing generalizations, but they may act atleast as a pilot for planning the desired training, demonstration and services strategy. On the retrospection of the findings and conclusions, introspection of oneself may serve to design a healthy training, demonstration and diagnostic services plan within organization.

The implications based on the findings emerging out of the present investigation have been discussed in two ways like action implications and future areas for research.

8.1 Action implications

It is hoped that the findings of the study will be useful to planners of the programme and to those who are involved in its implementation in the following way

8.1.1 The study led to a very encouraging fact that the programme had significantly contributed to the formation of favourable attitude,

knowledge gained, benefits availed and adoption of different Agricultural Polyclinic activities/practices by the respondents. It leads to the implication that the Agricultural Polyclinic programme is playing its role as per the objectives and hence may be implemented on wider scale reaching to overall areas within the state and in other states where such type of programme are not existing.

On the other hand, though the adoption was high as 49.35%, there is substantial scope for further adding to adoption level. It is, therefore imperative that the implementing agencies, working officers and staff may work with more commitment and zeal to reach to the beneficiaries and persuade them.

8.1.2 The study has brought out useful information about the personal, socio economic and psychological characteristics of the respondents. This information can be used by the implementing agencies, working officers and extension agencies for identifying the prospective beneficiaries and thus can minimize their efforts for locating the beneficiaries to get maximum response from the beneficiaries.

8.1.3 Education, land holding, annul income, social participation, extension contact, risk orientation, economic motivation, attitude, knowledge and benefits availed have been found to be important variables positively related with adoption of Agricultural Polyclinic activities/practices as shown by the correlation and path analysis. Extension contact, benefits availed, knowledge and annul income emerged as important variables in the regression analysis which contributed significantly to the adoption of Agricultural Polyclinic activities/practices. It is therefore implied that all the above variables may be taken in to account particularly at the initial stage of launching and working stage of programme. The beneficiaries having fore mentioned characteristics may be used as opinion leaders by implementing agencies and working officers to

ensure the success in launching and working stage of programme. So, efforts need to be made to increase the functional and resource literacy of the respondents by way of providing them opportunities to participate in social activities and encouraging them to do so. Similarly, encouraging to contact the extension personnel, would increase their adoption.

8.1.4 The conclusion was drawn from the findings that 90.00% of the respondents exhibited favourable attitude about Agricultural Polyclinic activities/practices. However, question remains unanswered as to why 10.00 per cent of them showed unfavourable or neutral attitude towards the Agricultural Polyclinic activities/practices. The unfavourable or neutral attitude may act as a barrier to successful implementation of the programme. This leads to the implication that implementing agencies should keep personal contact and establish rapport with respondents and change their attitude favourably towards this programme.

8.1.5 It was observed in the present study that respondents had acquired good knowledge about the Agricultural Polyclinic activities/practices and their organizational setup, but knowledge of some of the activities/practices extended through Agricultural Polyclinic was not up to the desired level. This means, they did not have adequate knowledge of the programme. In order to up-date the knowledge of the respondents about Agricultural Polyclinic activities/practices and their organizational setup, the implementing agency may organize farmers rallies, special training programmes, demonstrations and provide them with literature about Agricultural Polyclinic programme. They may also disseminate the information about Agricultural Polyclinic programme on mass media like television, radio, films and newspapers.

8.1.6 Though, only one-fifth of the respondents were in high category of benefits availed due to Agricultural Polyclinic activities/practices, still four-fifth (81.33%) did not get the full benefits of

Agricultural Polyclinic activities/practices. This aspect needs attention as to why the respondents did not get the benefits, as desired. This might be due to the constraints faced in resources availability, lack of information in training, demonstration and diagnostic services, lack of social participation, lack of extension contact, unfavourable attitude and somewhat less knowledge of Agricultural Polyclinic activities/practices. So, the implementing agencies, working officers and staff may provide the necessary guidance for availability and organizing the effective and special training programme, demonstration and providing effective diagnostic services at proper time. They should also motivate the respondents to get high benefits by activities/practices extended through Agricultural Polyclinics.

8.1.7 It was clear from the present study that nearly one-fifth of respondents were in the category of high adoption of Agricultural Polyclinic activities/practices. This means that remaining respondents were not, fully adopting the Agricultural Polyclinic activities/practices. The implementing agencies, working officers and staff making personal contact should identify such respondents and should encourage them to participate fully and derive benefits of Agricultural Polyclinic programme. Therefore, it is recommended that, more effective training programme, demonstrations and diagnostic services for beneficiary respondents be organised by the implementing agency, as well as, by the parallel organisations such as Agricultural Universities and agricultural department of Zilla Parishad.

8.1.8 Great efforts should be made to convince the farmers about the utility of NADEP compost; vermicompost, Neemark, HaNPV application and benefits of high tech agricultural based on shadenet, green house, zero energy cold storage, improved implements and seed germination testing. To achieve this, the effective training and demonstrations need to be organized on the farmer's fields.

8.1.9 A number of constraints were faced by the respondents while adopting Agricultural Polyclinic activities/practices. A few important of them have led to some recommendations. Almost all of the respondents faced the major constraint in adoption namely the lack of financial support from Agricultural Polyclinic. The Agricultural Polyclinic activities/practices like farm pond preparation, high tech agriculture based on shadenet, greenhouse and zero energy cold storage require capital investment. For such type of activities on farmers field, the financial support is made available through the Zilla Parishad, state and central agricultural department. Such type of financial support should be provided through Agricultural Polyclinic. Implementing agencies and working staff of Agricultural Polyclinic may keep close liaisons with Zilla Parishad, state and central agricultural department and banking sector for providing requisite loan or financial support for adopting such Agricultural Polyclinic activities.

Also, majority of the respondents expressed the constraints of not undergone any training or demonstration of high tech agriculture based on shadenet, green house and zero energy cold storage. So, effective and special training programmes on suitable line should be organized by the implementing agencies, working officers and staff of Agricultural Polyclinic.

Apt guidance by implementing agencies and working officers will lead to more easier availability of resources to respondents. The resources or inputs like vermicompost, vermiculture, HaNPV, neemark be provided in Agricultural Polyclinic on decided prices on the norms of implementing agency.

The respondents mentioned the constraint of more time required to fillup and watering of NADEP pits. But it is the fact that effectiveness and cost of NADEP compost production is more beneficial as

compared to that of time requirement. Hence, it is necessary to prove the effectiveness of NADEP compost by implementing agency and working officers through provision of related literature and special training programme.

Soil and water testing was not carried out at proper time was the constraint faced by the respondents. The soil and water testing report is necessary for getting information of soil and water health. On the basis of such information, respondents can apply proper doses to particular crop cultivations. Hence, it is necessary to make effective arrangements to carry out soil and water testing at proper time by implementing agencies and working officers.

8.2 Future areas of research

8.2.1 The study needs to be replicated at different locations, so as to ascertain and generalize the findings. A number of generalizations may come up through these efforts regarding performance of Agricultural Polyclinic programme, which may help in better implementation of the programme in future.



*Literature
Cited*

LITERATURE CITED

- Adhapure, V.G. 1996. Impact of Integrated Rural Development Programme (IRDP) on rural development in Beed district. M.Sc. (Agri.) Thesis, MAU, Parbhani.
- Agre, P.C. 1996. A study on the factors influencing the performance of Horticultural Development Programme in Marathwada region. Ph. D. Thesis, MAU, Parbhani (M.S.).
- Ahire, R.D. 2000. A study on the consequences of watershed development programme. Ph.D. Thesis, MAU, Parbhani (M.S.).
- Ali, J. M. 2006. A study on the cultivation problems in agriculturists. *Kisan world*, **33**(10):51-52.
- ✓ Allport, G.W. 1935. Attitudes, in a handbook of social psychology (Ed.) C. Murchison Clark University Press, Worcester.
- Annapurna ,P., Manjunath, L., Swamy, S. and Megeri, S. N. 1996. Opinion of farm women towers training programme of Krishi Vigyan Kendra. *Karnataka J. Agric. Sci.*, **9**(2):325-330.
- Anonymous, 1985. Loopholes inflicting IRDP. *Yojana.*, **29**(18):15-16.
- Anonymous, 2003. Maharashtra Government, Agri, AHDS and fishery dept. decision No-AP-2502/P.K.137/17-A, dated 6 Jan, 2003
- Anonymous, 2004. Impact of T.A.R. project. PDCSR, Meerut., Annual Report :102.
- Anonymous, 2005. Impact of transfer of technology. IIPR, Kanpur., Annual Report:57-58.
- Antwal, P.N. 1998. An indepth study on uplift of slum dwellers through Urban Basic Services for the poor in Parbhani district. Ph. D. Thesis, MAU, Parbhani (M.S.).

- Asiabaka, C.C. 1992. A case study of the agricultural programme of the National Directorate of Employment in Nigeria. *J. Rural Dev.*, **11**(3):291-297.
- Bajaj, S.S., Dhongde, M.P. and Khaole, V.V. 1990. Sources of information in getting the crop loan. *Maharashtra J. Extn. Educ.*, **9**:315-318.
- Balasubramani, K.S 2001. Empowerment of farm women under Tamil Nadu in agriculture (TANWA) project. M.Sc. Thesis, (unpub.) IARI, New Delhi.
- Bandgar, S.G., Kude, N.R. and Bhople, R.S. 2004. Adoption of University recommended cotton technologies and the constraints faced by the farmers. *PKV Res. J.*, **28**(1):91-95.
- *Bhalla, H.S. 1992. Impact of lab to land programme in Ludhiana. M.Sc. Thesis, Punjab Agricultural University, Ludhiana, India.
- Bhange, S. B. and Kolte, H. S. 2004. Construction of scale to measure attitude of beneficiaries towards watershed development. *Asian J. Extn. Educ.*, **23**(2):156-162.
- Bhange, S.B. 2004. Impact of National Watershed Development Programme for Rainfed Area on socio-economic status of farmers. Ph.D. Thesis (unpub.), MPKV, Rahuri (M.S.).
- Bhanja, S.K. and Venkatadri, S. 1987. Analysis of the profiles of dairy cattle beneficiaries under IRDP. *J. Rural Dev.*, **6**(3):280-287.
- Bhati, D.S., Chauhan, J.S. and Singh, A. 2002. Benchmark survey analysis of project area under Indo-UK collaboration. *Maharashtra J. Extn. Educ.*, **21**(2):43-47.
- Bhatt, J.P. 1993. Image and impact of Sardar Smruti Kendra, Navsari. Thesis Abstract, Guj. Agril. Uni. Navasari campus, Navasari, **19**(3):164.

- Bhople, R.S., Wankhade, P.P. and Adhau, A. 2004. Knowledge and attitude of beneficiaries about Water Users Co-operative Society. *PKV Res. J.*, **28**(2):243-244.
- Bhople, R.S., Pulikken, B. and Wankhade, P.P. 2005. Awareness knowledge and attitude of farmers about Jawahar Well Scheme. *Rural India*, **68**(9-10):180-182.
- *Bloom, B.S., Englehardt, H., Furst, E. and Krathwal, D. R. 1956. *Taxonomy of education objectives. The cognitive domain.* Orient longmans, New York.
- Bonny, B.P. 1998. Sustainability of rice production system- A case of Padashekarams' in Kerala. Ph.D. Thesis (unpub.), IARI, New Delhi.
- *Bradford, L.A. and Glenn, L.J. 1953. *Farm management analysis*, New York, John Willy and sons. Inc.
- Chandracharan, V., Syed, S., Hirevenkanagoudar and Chandargi, D.M. 2007. Adoption of watershed practices by the respondents of Sujala watershed. *Karnataka J. Agric. Sci.*, **20**(1):176-177.
- Chandran, K.M., Joseph, E.J. and Mammen, G. 2005. Analysis of perception of farmers on Drip Irrigation System. *Inernat. J. Trop. Agric.*, **23**(1-4):283-293.
- Chandrashekar, N.R., Gangadharappa, N.R. and Suresha, S. V. 2005. Knowledge level of farmers about selected technological interventions in TAR-IVLP. *Mysore J. Agric.Sci.*, **39**(3):410-414.
- Chapke, R. 2000. Knowledge and Adoption of farmers about Bio Control Measures. *Maharashtra J. Extn. Educ.*, **19**:41- 47
- Chattopadhyay, B. 1976. Diffusion of wheat technology in a traditionally rice growing state. M.Sc. (Agri.) Thesis (unpub.), IARI, New Delhi.

- Chaudhary, A., Vashishtha, P., Kunwar, N. and Srivastava, A. 2005. Role of KVK training programme on rural women of Fatehpur district, UP. *Indian J. Soc. Res.*, **46**(2):115-118.
- Chaudhary, M.C. and Panjabi, N.K. 2005. Adoption behaviour of tribal and non-tribal farmers regarding improved social forestry practices. *Rural India.*, **68**(7) :140-141.
- Chawane, C. B., Bhople, R. S. and Ingle, G. S. 2004. Knowledge of farmers about Soil and Rain water Conservation Technology and its determinants. *J. Soil and Crops*, **14**(1):91-94
- Chikhale, S. Shinde, P.S. and Bhople, R.S. 2002. Assessing impact of training imparted by Krishi Vigyan Kendra on dryland agricultural technology. *Maharashtra J. Extn. Educ.*, **21**(2):57-60.
- Chinchmalatpure, U.R., Saiyad, A.S. and Mayani, V.V. 2001. Impact of KVK on paddy growers. *Rural India*, **64**(10):208-209.
- Chorge, T.L. 1985. A study of the impact of 20 point economic programme on the agricultural development, adoption and socio-economic status of the farmers. Ph.D. Thesis, MPKV, Rahuri (M.S.).
- Choubay, C.L. 1972. A study of differential adoption of high yielding wheat varieties technology as related to and influenced by selected demographic, socio-psychological and political variables in Sehore district, Madhya Pradesh. Ph.D. Thesis, IARI, New Delhi.
- *Coleman, James. 1966. *Medical innovation: A diffusion study*, New York, Bobbs-Merrill. MS(E).pp59.
- Daipuria, O.P., Sharma, R.P. and Singh, V.B. 2001. To study the relationship of personal characteristics with adoption of

- innovation in Northern Madhya Pradesh. *Indian Res. J. Exten. Educ.*, 1(1):57-60.
- Dakhore, K. M., Deshmukh, K.A. and Agre, P.C. 2002. Performance of Horticultural Development Programme in Marathawada region of Maharashtra. *Maharashtra J. Extn. Educ.*, 21(2):117-118.
- Deokate, S.S. 1985. A study of the adoption of sunflower production technology and the constraints faced by the farmers in the T and V system in south Solapur block of the Solapur district. Ph.D. Thesis, MPKV, Rahuri (M.S.).
- Desai, V. 1988. Rural development : *Experiments in rural development*. Vol. IV., Himalaya Publishing House, New Delhi : 22-44.
- Desai, B.R., Girase, K.A. and Kokate, K.D. 1996. Appraisal of training programmes of Krishi Vigyan Kendra. *Maharashtra J. Extn. Educ.*, 74-79.
- Deshmukh, N.D. 1994. A study on adoption of groundnut technology and the investment pattern of additional income in Karpara Project Area. Ph.D. Thesis, MAU, Parbhani (M.S.).
- Deshmukh, N.D., Wangikar, S.D. and Bhadarge, H.H. 1994. A study on the impact of pilot project on adoption of improved farm practices. *Maharashtra J. Exten. Educ.*, 13:75-78.
- Deshmukh, P.R. 2000. A study on implementation aspects of IRDP programme as perceived by the beneficiaries in selected blocks of Parbhani district. Ph. D. Thesis (unpub.), MAU, Parbhani (M.S.).
- Deshmukh, R.W. 1987. A evaluation study on the impact of Krishi Pandhari on agricultural development. M.Sc. (Agri.) Thesis, MAU, Parbhani (M.S.).

- Deshmukh, S. B. 1999. Knowledge and adoption of improved farm practices by the KVK beneficiaries M.Sc. (Agri.) Thesis P.D.K.V., Akola (M.S.).
- Dhapke, K. A. 2004. A study on soil and water conservation practices adopted by farmers in Rain Water Harvesting Project. *Asian J. Extn. Educ.*, 23(2):186-190.
- Dhillen, J.S. and Samundri, B.S. 1965. Attitude of village level worker towards the community development programme. *Maharashtra J. Extn. Edn.*, 1(2):85-91.
- Dhuware, S.R. and Pande, A.K. 2002. Adoption of recommended watershed practices among beneficiaries. *Maharashtra J. Extn. Educ.*, 21(2):36-38.
- Dixit, R.D. 2001 Benefits received by tribal farmers from selected Agricultural Development Schemes. M.Sc. (Agri.) Thesis P.D.K.V., Akola (M.S.).
- Dudhani, C.M., Sethurao, M.K. and Badachikar, S.Y. 1987. Impact of the Drought-Prone Area Programme on the demonstrator farmers. *J. Rural Dev.*, 6(1):128-138.
- *Edward, A.C. 1957. Techniques of attitude scale construction. New York: Appleton centenary Crafts, Inc. 13, 16, 153-57.
- *English, H.B. and English, A.G. 1961. *A comprehensive dictionary of psychological and psychoanalytical terms*, New York, interdiscipline, Vol. 7, Spring I. P. 123.
- Farooqui, H. F. and Godse, J. 2003. Impact of Nutrition Education on knowledge and practices of rural women. *Maharashtra J. Ext. Edun.* 22:100-102.
- Gajare, S.S. 1992. Evaluation of IRDP in Parbhani district. Ph.D. Thesis (unpub), MAU, Parbhani.

- Gandotra, V., Saini, S.K. and Gill, T. K. 2007. Benefits derived by rural women of Punjab by joining Punjab Kisan Club PAU, Ludhiana. *Indian J. Soc. Res.*, **48**(2):175-182.
- Gaur, R.A. and Venugopal, S. 1984. Contributions of SFDA in development of small and marginal farmers. *Maharashtra J. Extn. Educ.*, **3**:123-124.
- Gautam, M.K. Mandal and Pramod, B. 2005. Knowledge level of dairy farmers regarding artificial insemination. *J. research, SKUAST-J*, **4**(1): 120-125.
- Gavimath, U.S. and Sethurao, M.K. 1989. Knowledge level and adoption behaviour of improved practices of home-gardening among Mahila Mandal members trained in Applied Nutrition Programme. *Maharashtra J. Extn, Educ.*, **8**:7-11.
- Gayathri, G., Theodore, R.K. and Lokanadhan, K. 2005. Impact of extension programme of a private Agro-input Firm. *Inernat. J. Trop. Agric.*, **23**(1-4):31-39.
- Gholve, M.A. 1986. Socio-cultural and psychological correlates of tribal development in Kinwat block of Nanded district of Maharashtra State. Ph.D. Thesis (unpub), MAU, Parbhani (M.S.).
- Ghosh, B.N. and Ghosh, R. 1991. Under development and growth process. In: *Economic growth development and planning*. Deep and deep public. New Delhi. Pp3-4.
- Girase, K.S. 1986. A study of adoption of improved dryland agricultural technology in an Integrated Dryland Agricultural Development Project in Maharashtra. M.Sc.(Agri) Thesis, MPKV, Rahuri (M.S.).

- Gogoi, M. 2000. Impact of Minor Irrigation Development Corporation on improved rice cultivation. *Maharashtra J. Extn. Educ.*, **19**:206-210.
- Gogoi, M., Phukan, E. and Talukdar, R.K. 2000. Impact of farmers training programme on adoption of rice production technology by farmers. *Maharashtra J. Extn. Educ.*, **19**:232-238.
- Gupta, D., Sharma, S.K. and Kakran, M.S. 2003. Constraints in adoption of watershed management technology. *Maharashtra J. Extn. Educ.*, **22**(2):86-89.
- Hadole, S.M. and Dakhore, K.M. 2003. Correlates of adoption of sugarcane production technology by sugarcane growers. *Maharashtra J. Extn. Educ.*, **22**(2):207-210.
- Hagone, R.G. 1994. A study of role performance of contact farmers in Training and Visit System. M.Sc. (Agri.) Thesis, MAU, Parbhani (M.S.).
- Halakatti, S.V., Kamareddy, V. and Gowada, S.M. 2007.(a) Determinants of adoption of dairy farming technologies by rural women under SGSY scheme. *Karnataka J. Agric. Sci.*, **20**(2):323-325.
- Halakatti, S.V., Sajjan, C.M., Gowda, S.M., and Kamareddy, V. 2007. (b) Empowerment of women through dairy training. *Karnataka J. Agric. Sci.*, **20**(1):89-92.
- *Hamblin, A.C. 1974. Evaluation and control of training, Mc Graw Hill:6-7
- Haque, M. S. 2000. Impact of Compact Block Demonstration on increase in productivity of rice. *Maharashtra J. Extn. Educ.*, **19**:22-27.
- Harikumar, S. 1984. Has IRDP succeeded?. *Yojana.*, **28**(16):17-20.
- *Hassinger, Edward. 1959. Stages in the adoption process. *Rural Sociology.*, **24**:52-53 RS(N).

- Hosamani, V. B., Sundaraswamy, B., Manjunath, L. and Manjula, N. 2006. Knowledge level of rural women about general health practices. *Karnataka J. Agric. Sci.*, **19**(3):734-736.
- *ILO, 1986. Vocational training, Glossary of selected terms, Geneva
Author: 75.
- Ingle, Lalit Arun 1997. Impact of farmers training programme of Krishi Vigyan Kendra on knowledge and adoption of improved practices of ground in Aurangabad district. M.Sc.(Agri), Thesis MAU, Parbhani (M.S.).
- Ingle, P.O. and Kude, N.R. 1995. Evaluation of KVK programmes. *Agri. Ext. res.*, **7**(2): 3-6.
- Ingle, P.O. and Wayazade, M.K. 1989. Adoption of agricultural technology in rainfed farming project. *Maharashtra J. Extn. Educ.*, **8**:189-192.
- Ingole, N. P., Saigaonkar, P. B. and Kothekar, M. D. 1988. Adoption of improved animal husbandry practices by owners of crossbred cattle under ICDP. *Indian J. Extn. Educ.*, **24**(3&4):59-62.
- Issar, D. and Dalal, R.S. 2005. Association between socio-personal attributes of Biogas plant adopters with their knowledge regarding Biogas technology in Haryana. *Indian J. Soc. Res.*, **46**(1):55-62.
- Jadhav, D.L., Kawale, A.B., Dudhate, D.G., Kapse, P.S. and Prajapati, M.R. 2004. Extent of adoption of improved agricultural technology by the farmers of Mehsana district of Gujarat State. *J. Soil and Crops*, **14**(1):105-107.
- Jain, M. 1986. Training in integration of population education in ICDS- A study of its social impact. *Research on ICDS- An Overview*, **1**:204-205.

- Jangwad, N.P. 1996. A study on availment of benefits of Horticultural Development Programme. M.Sc. (Agri) Thesis, MAU, Parbhani (M.S.).
- Jondhale, S.G., Chole, R.R. and Khandagale, G.B. 1993. Impact of knowledge dissemination programme of ICRISAT. *Maharashtra J. Extn. Educ.*, **12**:135-139.
- Jondhale, S.G., Ingale, L.A. and Fatak, U.N. 2000. Impact of Krishi Vigyan Kendra training on adoption of improved practices of summer groundnut. *Maharashtra J. Extn. Educ.*, **19**:109-111.
- Joshi, V.D. and Sharma, D.K. 1989. Social forestry in relation to its adoption by the farmers with special reference to psychological attitude. *Maharashtra J. Extn. Educ.*, **8**:125.
- Joshi, Y.B. and Shinde, N.V. 1984. Adoption of sorghum production technology and constraints faced in securing good yields. *Maharashtra J. Extn. Educ.*, **3**:113-118.
- Kadam, J. R., Patil, V. G. and Hardikar, D. P. 2001. Knowledge and adoption of soil and water conservation practices in Watershed Development Project. *Maharashtra J. Extn. Educ.*, **20**:138-140.
- Kakde, P.S. 1993. A study on recommended crop production technology of selected oilseed crops. M.Sc. (Agri.) Thesis, MAU, Parbhani (M.S.).
- Kamble, S.P. 1998. Impact of Krishi Vigyan Kendra training on participant rural women. M.Sc. (Agri.) Thesis, MAU, Parbhani (M.S.).
- Karegaonkar, S.D. 2003. A study on attitude of the farmers towards Agricultural Technology Management Agency in Aurangabad district. M. Sc. (Agri.) Thesis, MAU, Parbhani.

- Katarya, J.S. 1980. A study on the impact of Farmers Training Centre and Krishi Gyan Kendra in relation to change in farm technology in Haryana state. Ph.D. Thesis (unpub), IARI, New Delhi.
- Katkar, B.S. and Ahire, M.C. 2006. A study on adoption of drip irrigation system in Maharashtra state. *Internat. J. Agric. Sci.*, **2**(2):335-337.
- Kaur, G.,Gupta, A.K and Balbir Kumar 2006. Evaluative analysis of technological interventions initiated under Agricultural Technology Management Agency Project in Gurdaspur district of Punjab. *J. Res. Punjab Agric. Univ.*, **43**(4):353-60
- Kausadikar K. D. 2000. A study on attitude of the farmers towards Horticultural Development Programme in Parbhani District. M.Sc.(Agri) Thesis, MAU., Parbhani (M.S.).
- Kausadikar, K.D., Suradkar, D.D. and Narkar, G.S. 2002. Determinants of attitude towards Horticultural Development Programme. *Maharashtra J. Extn. Educ.*, **21**(2):92-94.
- Kauthale, V.K. and Sale, D.L. 2007. Role of communication media in adoption of dairy management practices by farmers in Pune district of Maharashtra. *Inernat. J. Trop. Agric.*, **25**(3):419-426.
- Kavathalkar, N.G., Patil, S.R., Kankhar, D.H., Desale, R.J. and Mane, S.H. 2007. Constraints in adoption of scientific recommendations in feeding of dairy animals in Nagpur district. *Indian Dairyman*, **59**(12):51-55.
- Khandwala, P.N. and Pareek, Udai .1988. OBS and Social development. In: *Social development, A new role for the organizational sciences*. Sage public. New Delhi.pp 99.

- Khanna, I. 1990. Integrated Rural development Programme-Strategy for self-employment. *J. Rural Dev.*, 9(1):29-48.
- Kingaonkar, S.B. 1989. Impact of Kayadu Gramvikas Pratisthan on the upliftment of rural women. M.Sc. (Agri.) Thesis (unpub), MAU, Parbhani (M.S.).
- *Krech, D. and Crutchfield, R.S. 1948. *Theory and problems of social psychology*. New York, McGraw Hill Book Co. Inc.
- Kulkarni, R.R., Nandapurkar, G.G. and Waghmare P.R. 1990. Awareness of horticultural development scheme among farmers. National level Seminar on changing scenario of rainfed horticulture in rural areas. MAU, Parbhani, pp: 94-97.
- Kumaran, M. 1998. Effectiveness of agricultural extension services in irrigation command area. Ph.D. Thesis, IARI, New Delhi.
- Kumaran, M. and Jayaragavan, K.V. 2005. Farmers' knowledge level and extent of adoption of water management practices in an Irrigation Command Area. *Agric. Situa. India*, 62 (4):267-270.
- Lakshmanan, S. and Geethadevi, R.G. 2007. Knowledge and adoption levels of farmers of bivoltine and crossbreed sericultural technologies. *Indian J. Seric.*, 46(1):72-75.
- Lakshminarayan, H. D. 1969. Characteristics of adopters and non adopters of farm practices. *Behavioural Science and Community development*. 3(2):153.
- *Land, K.C. 1969. Principles of path analysis, Edger F. Borgatta (Ed.) Sociological methodology, Jossey Ban, San Fransisco, pp. 37.
- Lianbika, B. and Nikhade, D. M. 1993. Adoption behaviour of pineapple grower in Mizoram. *Maharashtra J. Extn. Educ.*, 12:25-29.
- Likert, R.1932. A technique for the measurement of attitude. *Arch. Psychol.* 140.

- MacIver, R.M. and Page, C.H. 1949. *Society*. Rinehart and Co., New York.
- Madhu Mohan, A. 1983. A study of awareness and attitude of beneficiaries towards IRDP in Chittor district of Andhra Pradesh, Tirupati. M.Sc. (Agri.) Thesis, Shri. Vankateshwara Agril. College, APAU, Hyderabad.
- Mahajan, B.S. 1980. A study of factors affecting adoption of agricultural technology and accerring socio-economic consequences in Jayakwadi command area in Maharashtra. Ph.D. Thesis, Divn. of Agril. Extn., IARI, New Delhi.
- Mahajan, B.S. 1991. Impact of sericulture training programme on adoption of sericulture technology by the farmers. Agresco Report, MAU, Parbhani : 1-15.
- Mahajan, B.S. 1993. Evaluation of first line demonstration programme. Agresco Report, MAU, Parbhani : 37-56.
- Mahajan, N. and Bajaj, S. 1983. Impact of Nutrition Education imparted to rural housewives under the Applied Nutrition Programme. *Indian J. Extn. Educ.*, 19(3&4):91-93.
- Mahendra Kumar and Singh, S. 2004. Attitude of farmers towards Minikit Demonstration Programme sponsored by IFFCO in Sikar district of Rajasthan. *Rural India*, 67(5): 95-96.
- Mavi, K.S., Chauhan, J.P.S. and Das, B.C. 2006. Impact of self employment progamme on dairy farming in Fatehgarh Sahib district of Punjab. *Rural India*, 70(3):47-48.
- Meena, B. 1999. Training programmes of Krishi Vigyan Kendras in Rajasthan: An analytical study. Ph.D. Thesis (unpub), IARI, New Delhi.
- Meenal, R. and Rajan, R.K. 2007. Impact of socio-economic characters of sericulturists on knowledge, adoption and cocoon production in Tamilnadu. *Indian J. Seric.*, 46(1):49-51.

- Mehata, P.G., Sawant, P.S. and Nirban, A.J. 1989. Knowledge of farmers in respect of selected agricultural practices of rice and mango crops. *Maharashtra J. Extn. Edn.*, **8**:167-170.
- Mehta, B.C. and Joshi, P. 1993. Impact of IRDP on income of tribal beneficiaries (a case study on tribal sub-plan area in Rajstan). *J. Rural Dev.*, **12**(2):145-164.
- Mehta, P.G. and Dalvi, V.B. 1990. Profile and constraints of cashewnut growers from Konkan region. Paper presented at National level seminar on changing scenario of rainfed horticulture in rural areas. MAU, Parbhani (M.S).
- Misra, M. 1999. Training and HRD for sustainable agricultural development. *Indian J. Extn. Educ.*, **35**(1&2):56-69.
- Mohammad Ajaz-ul-Islam, Masoodi, N.A. and Masoodi, T.H. 2004. Knowledge and adoption of Agroforestry practices among farmers in North Kashmir. *Asian J. Extn. Educ.*, **23**(2):46-51.
- Mohod, R. S., Kulkarni, S. Y., and Shinde, P. S. 1997. Impact of National Watershed Development Programme on agricultural production. *Maharashtra J. Extn. Educ.*, **16**:74-77.
- More, D.H. 1987. A study of impact of Training and Visit system in Purna command area of Parbhani district on agricultural development. M.Sc. (Agri.) Thesis, MAU, Parbhani (M.S.).
- More, M. R., Jadhav, S. N. and Pendke, M. S. 2000. Impact of training programme of KVK on knowledge and adoption of cotton cultivation practices by farmers. *Maharashtra J. Extn. Educ.*, **19**:335-337.
- Nagabhushanam, K. 2003. Analysis of profile characteristics of watershed farmers. *Mysore J. Agric.Sci.*, **37**(1):75-81.
- Naidu, K.K. and Singh, V. 1990. Impact of DPAP on psycho-social dimensions. *J. Rural Dev.*, **9**(3):531-547.

- Nandanwakar, A.K. 1991. Impact of integrated child development services programme on beneficiary women and children. M.Sc. (Agri.) Thesis, MAU, Parbhani (M.S.).
- Narayana Gowda, K. 1992. Consequences of watershed development programme. An analysis of Chravati Watershed, Ph.D. Thesis (unpub), UAS, Dharwad (Karnataka).
- Narayanagowda, K., Reddy, G.R.S., Gangadharappa, N.R. and Rajanna, M.D. 2006. Adoption of Agro-forestry and Silvi-pasture practices by farmers in watershed areas. *Mysore J. Agric.Sci.*, **40** (3):402-410.
- Narkar, G.S., Wattamwar, V.T. and Ajotikar, M.V. 2004. Correlates of adoption of recommended package of practices of kagzilime by the growers. *Maharashtra J. Agril. Uni.*, **29**(2): 191-192.
- Narkhede, M.B. and Ingle, P.O. 2004. Impact of Nalganga Irrigation Project on beneficiaries. *Asian J. Extn. Edun.*, **23**(1):148-156.
- Nevase, S.V. 1991. A study of impact of Training and Visit System on contact and non-contact farmers in Rahuri taluka of Ahmadnagar district. M.Sc. (Agri.) Thesis (unpub), MPKV, Rahuri (M.S.).
- *Newcomb, T.M. 1950. *Social Psychology*. New York. The Dryden Press.
- Nimje, N.R., Sinha, R.R. and Chaudhari, D.P. 1991. Adoption of social forestry programme by the farmers. *Maharashtra J. Extn. Educ.*, **10**(1):99-100.
- Oatey, M. 1970. The economics of training with respect to the firm. *British J. Indus. Relation*, **8**(1):1-21.
- Ojha, S.N. 1984. An analysis of achievements and operational problems of Training and Visit system of agricultural extension in the

- tribal Ranchi (Bihar). M.Sc. (Agri.) Thesis (unpub), IARI, New Delhi.
- Olowu, T. A., Iloka, A. I. And Ekpere, J. A. 1988. Farmers characteristics and adoption of improved Cassava varieties. *Indian J. Extn. Educ.*, **24**(1&2):21-26.
- Pagar, H.P. 1996. A study on adoption of recommended Agro-Forestry practices by farmers in Marathwada region. M.Sc. (Agri.) Thesis (unpub), MAU, Parbhani.
- Pal, R.S. 1970. A critical study of farmers' training and education programme in relation to the change in their behaviour components. Ph.D. Thesis (unpub), IARI, New Delhi.
- Palande, R. S., Shirke, V. S. and Sawant, G. K. 2001. Impact of National Watershed Development Programme on working condition of beneficiaries. *Maharashtra J. Extn. Educ.*, **20**:125-127.
- Palande, R.S and Tripathi, S.L. 1990. Attitude study of IRD beneficiaries. *Maharashtra J. Extn, Educ.*, **9**:325-327.
- Palkar, V.A., Chorge, K.V. and Patil, V.G. 2004. Knowledge and benefits of Vanrai Bandharas as perceived by the rural people. *Asian J. Extn. Educ.*, **23**(2):173-177.
- Pandhare , S.P. 2005. Evaluation of Krishi Vigyan Kendra under SAU. Ph. D. Thesis (unpub), MAU Parbhani (MS).
- Panjabi, N.K., Paul, N. and Intodia, S.L. 2002. Attitude of beneficiaries towards social forestry programme in Udaipur district of Rajstan. *Maharashtra J. Extn. Educ.*, **21**(2):18-20.
- Panwar, M.P. 1990. A comparative study of knowledge and adoption of improved agricultural technology among the contact and non-contact farmers of Training and Visit system in Nasvwiabani block of Sehore, (M.P.) M.Sc. (Agri.) Thesis (unpub), JNKVV, Jabalpur. (M.P.)

- *Parson's, T. 1954. Essays in sociological theory. Glencoe : The Free Press : 275.
- *Parson's, T. and Shils, B.A. 1965. Towards a general theory of action, Harvard University Press, Cambridge, Massachusetts,.
- Patel, J.B., Bharati, M., Vyas, H.U. and Patel, K.F. 2006. Attitude of beneficiaries and non-beneficiaries towards watershed management technology. *Rural India*, **69**(12):227-228.
- Patel, K.F. 1982. Dynamics of adoption of potato cultivation technology in the intensive potato growing district of Gujarat State (Kaira district). Ph.D. Thesis, MAU, Parbhani.
- Patel, R.B. 1989. Image and impact of Training and Visit System. Thesis Abstract, Gujrat Agril. Uni., Ahmadabad, **15**(1):11-12.
- Patel, R.C., Saiyad, A.S. and Chauhan, N.B. 2003. Adoption of watershed management technology by beneficiaries in watershed area of Kheda district. *Rural India*, **66**(6-7).
- Pathan, K.G. and Mangnale, V.S. 2004. Agriculture. In: Intellectuals Sandharbh Maharashtra. Intellectual book bureau, Bhopal. pp131.
- Patil, M.V. 1986. A study of adoption of water management practices followed by the farmers in Krishna Canal area. M.Sc. (Agri.) Thesis (unpub), MPAU, Rahuri (M.S.).
- Patil, N., Manjunath, L. and Hirevenkanagoudar, L.V. 2006. (a) Extent of participation, benefits derived and suggestions offered by participant farmers of the watershed development programme. *Karnataka J. Agric. Sci.*, **19**(4):872-876.
- Patil, N., Manjunath, L., Hirevenkanagoudar, L.V. and Bhat, A.R.S. 2006. (b) Socio economic profile and knowledge level of participant farmers about watershed development programme. *Karnataka J. Agric. Sci.*, **19**(4):867-871.

- Patil, P.S. 2000. A study on adoption of banana production technology under drip irrigation. M.Sc. (Agri.) Thesis (unpub), MAU, Parbhani (M.S.).
- Patil, S.S. 2004. Impact of training programme on knowledge and adoption of biofertilizers. M.Sc. (Agri.) Thesis, MAU, Parbhani (M.S.).
- Phadtare, S.R. 1985. Impact of Lab to Land programme on adopted farmers of Kolhapur district. M.Sc.(Agri.) Thesis (unpub), MPKV, Rahuri (M.S.).
- Pimparikar, Y.K. 1994. A study of impact of watershed development project on the programme beneficiaries of Adgaon village. Ph.D. Thesis (unpub), MAU, Parbhani (M.S.).
- Pimparikar, Y.K. and Shetay, S.G. 1993. A study on evaluation of watershed development programme. AGRESCO Report, Dept. Extn. Edun., MAU, Parbhani (M.S.)
- Prakash, A. and Brar, D.S. 2006. Knowledge and adoption level of farmers of Haryana under Crossbreeding Programme. *Indian J. Extn. Educ.*, 1(1):16-18.
- Pulikken, S.J. 2001. Knowledge and attitude of farmers towards Jawahar well scheme. M.Sc.(Agri), Thesis (unpub) P.D.K.V., Akola.
- Rade,V.M., Desai, B.R. and Girase, K.A. 1990. Constraints in adoption of recommended kharif groundnut production technology. *Maharashtra J. Extn. Educ.*, 9:146-152.
- Ramsey, C.E., Polson, R.A. and Spencer, G. 1959. Value and adoption of practices. *Rural Sociology*, 24(1):35-47.
- Ray, A.K., Sirohi A.S., Sinha, B. P. and Vijayaragavan, K. 1982. Impact of Training and Visit system of extension on Tribal farms in Hoogly district-A case study. *Indian J. Extn. Educ.*, 18(1&2):59-65.

- Reddy, B.S. and Reddy, T.S.P. 2006. Impact of the training programme conducted to farmers in the command area of the Srisailem Right Branch Canal (SRBC). *Internat. J. Agric.Sci.*, **2(1)**:239-240.
- Reddy, D. R., Sasidhar, P. V. K. and Reddy, B. L. 2001. Attitude of farmers towards Dryland Agricultural Technology. *J. res. ANGRAU*, **29(1)**:31-33.
- Reddy, M.V. and Reddy, S.V. 1988. Relationship between selected characteristics of contact farmers and their knowledge and adoption of improved paddy cultivation practices. *Indian J. Extn. Educ.*, **24(3&4)**:39-42.
- Reddy, M.V. 2001. Relationship between number of technologies developed at NARP station of ANGRAU and their adoption. *J. Res. ANGRAU*, **29(1)**:42-46.
- Reddy, R. P. 1989. Impact of farmers Training Programme on knowledge level and adoption behavior of trained and untrained farmers. *Maharashtra J. Extn. Educ.*, **8**:85-90.
- Reddy, T.S.P., Prabhakar, K and Reddy, G.P. 2006. A study on knowledge, attitude and differential innovation decision process of rice farmers towards eco-friendly technologies. *J. Res. ANGRAU*, **34(3)**:52-55.
- Rogers, E.M. 1961. Characteristics of agri. Innovators and other categories Wooster OLLIO. Agri. Exp. Station, Research Bull., 882.
- Rogers, E.M. 1962. *Diffusion of innovation*, New York, The Free Press of Glencoe.
- *Rulon, P.J. 1939. A simplified procedure for determining the reliability of a test by split-halves. *Harvard Educ. Rev.*, **9**: 99-103.

- Sahana, S., Nanjappa, D. and Suresha, S.V. 2005. Knowledge of the farmers about the functioning of Raita Samparka Kendras. *Mysore J. Agric.Sci.*, **39**(3):415-420.
- Sanoria, Y. C. and Sharma, D. K. 1983. Comparative analysis of adoption behaviour of beneficiaries of Farm Development Programme. *Indian J. Extn. Educ.*, **19**(1&2):84-86.
- Santhi, P., Muthu, S. and Sankaran, V.M. 2007. Attitude of rural womenfolk towards technology transfer. *Indian J. Social Res.*, **48**(3):269-276.
- Satheshkumar, R. 2006. Knowledge and extent of benefits of horticultural development programme derived by the beneficiaries. M.Sc. (Agri.) Thesis (unpub), MAU, Parbhani (M.S.).
- Satyanarayana, M., Chandargi, D.M. and Mankar, D.M. 2002. Profile of Swarnjayanti Gram Swarozgar Yojana beneficiaries. *Maharashtra J. Extn. Educ.*, **21**(2):48-50.
- Sawant, R.C. 1994. A study of beneficiaries of IRDP in Nanded district. M.Sc. (Agri), Thesis (unpub), MAU, Parbhani.
- Sawsakde, D.S. 1998. Extent of benefit of Agricultural Development Schemes available by tribal farmers. M.Sc.(Agri) Thesis (unpub), PDKV., Akola (M.S.).
- Saxena, A.K. and Gour, S. 1999. Utility of Krishi Vigyan Kendra training programme. *Maharashtra J. Extn, Educ.*, **18**:61-63.
- Sayanolla, K.R. 2002. A study of impact of Jankidevi Bajaj Gram Vikas Sansthan on the beneficiary farmers of Maval and Khed taluka of Pune district. M.Sc. Thesis (unpub), MPKV, Rahuri (M.S.).
- Sharma, D.D. and Parmar, Y.S. 2005. Farmers response on Agro-forestry. *Rural India*, **68**(12): 235-237.

- Sharma, G.R.K. and Khan, N.A. 2001. Effectiveness of training programmes in improved sheep rearing practices. *J. res. ANGRAU*, **29**(1):47-49.
- Sharma, S.L. and Premi, M.K. 1986. *Population and development*. In: Development socio-cultural dimensions., Rawat Publi, Jaipur. pp 73.
- Shashidara, K.K., Bheemappa, A., Hirevenkanagoudar, L.V. and Shashidar, K.C. 2007. Adoption of drip irrigation management practices by the plantation crop growers. *Karnataka J. Agric. Sci.*, **20**(1):79-84.
- Sheoran, V. K. and Ram Kumar. 1988. Correlates of adoption of dairy innovations of IRDP beneficiaries. *Indian J. Extn. Educ.*, **24**(1&2):71-73.
- Shetay, S.G., Mahurkar, D.S. and Wangikar, S.D. 1990. A study on the adoption of ber technology. National level seminar on changing scenario of rainfed horticulture in rural areas. Marathwada Agril. University, Parbhani(M.S.)
- Shinde, V.G., Kulkarni, R.R. and Dikle, R.N. 1997. Correlates of benefits of Dairy Development programme availed by dairy farmers. *Maharashtra J. Extn. Educ.*, **16**:152-156.
- Shirsat, R.D. 1992. A study of factors affecting adoption of improved dairy management practices by cattle owner's, M.Sc (Agri.) Thesis (unpub), MAU, Parbhani (M.S.).
- Shrivastava, K.K. and Lakhera, M.L. 2003. Impact analysis of mushroom training programme. *Maharashtra J. Extn. Educ.*, **22**(2):22-27.
- Singh, G. and Khurana, G. S. 2006. Relationship between extent and level of adoption of recommended plant protection measures and

- selected socio-personal characteristics of the cauliflower growers of Punjab. *Indian J. Soc. Res.*, **47**(2):175-180.
- Singh, S., Singh. S. and Singh, K.B. 1989. Impact of Training and Visit system on the adoption of agricultural technology in Nepal. *Maharashtra J. Extn, Educ.*, **8**:285-290.
- Sinha, R.R., Kubde, V.R. and Dhattrak, R.N. 1984. Management of agriculture and rural development programme-an experiment of Maharogi Seva Samiti, Dattapur, dist. Wardha. *Maharashtra J. Extn. Educ.*, **3**:97-101.
- Sitadevi, K., Ponnarasi, T. and Saravanan, M. P. 2007. An impact analysis of technological training on women self help groups. *Inernat. J. Agric. Sci.*, **3**(2):61-65.
- Snehalatha, M. and Reddy, M.N. 1997. Impact of Thrift and Credit Groups on decision making process of rural women. *Maharashtra J. Extn. Educ.*, **16**:120-123.
- Sood, S.M. 1970. Attitude of rural women in Delhi territory towards selected aspects of Educational Programmes for improvement in nutrition and extent of their adoption of these practices. M.Sc.(Agri) Thesis , IARI, New Delhi.
- Srinivasa, G., Rahmathulla, G.S. and Rajan, R.K. 2007. Training programme in sericulture: Their evaluation and impact on extension personnel and sericulturists. *Indian J. Seric.*, **46**(1):26-31.
- Suneetha, R. 2007. Is DWCRA programme empowering the rural women. *Kurukshetra*, **55**(5):17-20.
- Supe, S.V. 1969. 'Measurement of values towards farming', Measurement in Extension Research Instruments Developed at IARI., Edited by K.N.Singh, IARI., New Delhi.

- Surekha, S. Hemalatha, B. and Nagaraja. 1997. Attitude of farmers towards watershed development. *Maharashtra J. Extn. Educ.*, **15**:115-117.
- Surve, R.N. 2002. A study on attitude of the farmers towards National Agricultural Insurance Scheme . M. Sc.(Agri) Thesis (unpub), MAU, Parbhani.
- Suryanarayana, R. 1985. An evaluative study on selected agriculture programmes of Integrated Tribal Development Agency in Srikakulum district of Andhra Pradesh. M.Sc. (Agri) Thesis (unpub), APAU, Hyderabad.
- Suryawanshi, P.D. 2002. Knowledge level of farm woman about Rural Development Prorammes with special references to women development progagmmes. M. Sc.(Agri) Thesis (unpub), MAU, Parbhani.
- Suryawanshi, P. D. and Chole, R. R. 2005. Knowledge of farm women about rural development programme. *Indian J. Soc. Res.*, **46**(2):101-108.
- Suryawanshi, P. D., Khalache, P. G. and Ahire, M. C. 2007. Knowledge level of Devdasi farm women about Government Welfare Programme in Westen Maharashtra. *Internat. J. Agric. Sci.*, **3**(2):252-256.
- Tapre, S.A. and Ingle, P.O. 2004. Evaluation of Beekeeping Vocation. *Indian J. Exten. Edun.*, **40**(1&2):138-140.
- Tarde, V.J., Thorat, D.R. and Pharate, D.N. 2002. Extent of knowledge regarding the development schemes sponsored by government. *Maharashtra J. Extn. Educ.*, **21**(2):33-32.

- Tawade, A.D. 1991. A study on the extent of adoption of recommended technology of pomegranate by the farmers in the Parbhani district. M.Sc. (Agri.) Thesis, MAU, Parbhani.
- Tawade, N.D. and U.P. Deshpande. 1990. Profile of beneficiaries of soil conservation cum horticultural development scheme. *Indian J. Extn. Edn.*, 26(3-4):59.
- Tayde, V.V., Gawande, S.A. and Shinde, P. S. 2003. Impact of Sprinkler Irrigation Scheme on its beneficiaries. *Maharashtra J. Ext. Edun.* 22:148-150.
- Tayde, V.V. 2006. Empowerment of rural women in Marathwada region of Maharashtra state. M.Sc. (Agri.) Thesis, MAU, Parbhani (M.S.).
- Thakkar, K.A., Chole, R.R. and Patel, B. P. 1990 Attitude of contact farmers towards Training and visit system. *Agril. Extn. Rev.* MAU, Parbhani, 24-27.
- Thombre, B. M. 1993. A critical analysis of Integrated Child development Services for the welfare of mother and child in Marathwada. Ph. D. (Agri.) Thesis, MAU, Parbhani (M.S.).
- *Thurstone, L.L. 1946. Comment, *American J. Sociol.*, 52: 39-50
- Tiwari, M. and Vashishth, P. 2007. Impact of training on empowerment among rural women. *Indian J. Soci. Res.*, 48(8):357-361.
- Umale, P.B., Bhople, R.S. and Sagane, M.A. 1991. Adoption of Agro-forestry by farmers. *Maharashtra J. Extn. Educ.*, 10:145-148.
- Vashishtha, R.N., Vashishtha, P., Sonkar, S. and Singh, V. 2006. Participation of women in Social Forestry in Uttar Pradesh. *Rural India.*, 69(4):80-81.
- Vasoya, B.P., Hayal, K.G. and Popat, M.N. 1983. Attitude of contact farmers towards Trainig and Visit system. *Maharashtra J. Extn. Edn.*, 2: 9-14.

- Vinod Prakash. 2007. Adoption extent of potato respondents about potato production technology. *Inernat. J. Agric. Sci.*, **3**(1):223-227.
- Vipin Kumar. 1998. Self help group dynamics of Kerala Horticulture Development Programme. Ph.D. Thesis, IARI, New Delhi.
- Waghmare, R.R., Kulkarni, R.R. and Thombre, B.M. 1988. A study of the awareness of Horticultural Development Programme amongst the fruits and vegetable growers. *Maharashtra J. Extn. Educ.*, **8**:117-121.
- Waman, G.K., Desai, B.R. and Patil, R.P. 2003. Constraints faced by the tribal farmers in adopting improved agricultural practices. *Tribal Res. Bull.*, **26**(1):40-42.
- Wankhade, V.D. 1997. Knowledge level of woman beneficiaries of ICDS. M.Sc.(Agri) Thesis (unpub), PDKV., Akola.
- Wayazade, M.R. 1992. Evaluation of rainfed farming project Manoli watershed. Thesis Abstract, PKV, Akola (M.S.), **18**(2):88-89.
- Weber, M. 1947. *The theory of social and economic organization* . Translated by Pearsons, T. New York, The grow well collier publishing company.
- Wilson, M.C. and Gallup, C. 1955 Extension teaching methods, Extn. Ser. Cir. No. 495 USDA of Agril. Redial. Extn. Service.
- Yadkikar, D.R. 1991. Behavioural impact of KVK in Maharashtra. An analytical study. Ph.D. Thesis (unpub), MAU, Parbhani (M.S.).
- Yavalkar, P. B., Nikhade, D. M. and Bhople, R. S. 1991. Correlates of adoption of plant protection recommendation of Kolsi by Orange growers- A path analysis. *Maharashtra J. Extn. Educ.*, **2**:216-221.

* Originals not seen



Appendices

APPENDIX-I

**DEPARTMENT OF EXTENSION EDUCATION
MARATHWADA AGRICULTURAL UNIVERSITY, PARBHANI**

Date:

From :

Dr. S.D.Wangikar

Professor,

Department of Extension Education

MAU, Parbhani.

Dear Sir,

I am glad to inform you that one of my students Shri. S.G.Puri, majoring in Extension Education has taken up a research project entitled "EVALUATION OF AGRICULTURAL POLYCLINICS- AN INDEPTH STUDY" in partial fulfillment of his Doctoral degree programme.

It is proposed to develop indicators to measure attitude of the respondents towards activities of Agricultural Polyclinic. It is a pleasure for us to inform that you have been selected as an expert judge in view of your knowledge in this field. We are enclosing herewith attitude statements. So please tick mark () against the statement indicating your judgement in one of the columns of the continuum. You may also add or delete some of the statement.

We request your kind co-operation in returning the schedule as early as possible.

With regards.

Yours sincerely,

(S.D.Wangikar)

To,

Attitude towards Agricultural Polyclinic programme:

Please mark (✓) in the appropriate columns based on your valuable judgment.

Sr. No.	Statements	Responses				
		MR	R	UD	SR	NR
1	2	3	4	5	6	7
1	Due to Agricultural Polyclinic the unemployment problem is going to be solved.					
2	Agricultural Polyclinic gives the opportunity to the farmers to develop rapport with officers of agriculture department					
*3	Agricultural Polyclinic helps farmers by providing additional income					
4	Agricultural Polyclinic gives more opportunity for peoples participation in planning development programme in agriculture					
5	With introduction of Agricultural Polyclinic, large proportion of farmers grow rich.					
*6	Agricultural Polyclinic plays a vital role in increasing subsidiary business.					
7	The government subsidy has helped the farmers in adopting Agricultural Polyclinic activities/practices.					

1	2	3	4	5	6	7
8	Financially weak farmers are getting benefits from Agricultural Polyclinic.					
9	Agricultural Polyclinic programme is constantly supplying the information needed by farmers on agriculture development.					
*10	Training programme of Agricultural Polyclinic helps in increasing farming knowledge of the farmers.					
*11	Skills develop in adoption of activities/practices due to training given on Agricultural Polyclinics					
*12	Landless labour, small and semi medium landholders are getting benefits from Agricultural Polyclinic programme.					
13	There is no possibility of misutilisation of benefits to the farmers.					
14	Subsidiary business recommended through Agricultural Polyclinic is more profitable than agriculture.					
15	The basic intension of government is to improve social and economic conditions of farmers through Agricultural Polyclinic.					

1	2	3	4	5	6	7
16	Rural industrialization and employment generation will be there due to Agricultural Polyclinic.					
17	Due to Agricultural Polyclinic, farmers will get a definite and assured income.					
*18	Agricultural Polyclinic plays catalytic role in doing natural farming.					
19	Implement such type of Agricultural Polyclinic by other states where not operate.					
*20	Farmers are more curious due to training given at Agricultural Polyclinic					
21	Due to Agricultural Polyclinic, there is chance to bring second green revolution.					
*22	Agricultural Polyclinic officers take less interest to develop rapport with rural masses					
*23	Under Indian situation, Agricultural Polyclinic is not appropriate as it involves large amount of expenditure of government.					
*24	Untill now, there is no progress noticed through Agricultural Polyclinic.					

1	2	3	4	5	6	7
*25	It is sheer wastage of money to continue Agricultural Polyclinic.					
26	For the sake of subsidy, people take loan and generally it is mis-used.					
27	Agricultural Polyclinic is not running well as the officials have not time to supervise the programme					
28	There is little work and more propaganda made about Agricultural Polyclinic.					
29	Only big farmers are getting benefits from Agricultural Polyclinic.					
30	Many farmers have not availed Agricultural Polyclinic benefits due to lack of proper publicity.					
*31	There is lack of co-ordination between other offices (for loan and subsidy) and Agricultural Polyclinic.					
32	Benefits of the Agricultural Polyclinic are reaching to the concerned target group					
*33	Beneficiaries under this programme are more subsidy oriented than development oriented.					
*34	The inputs supplied under this programme are not of good quality.					

1	2	3	4	5	6	7
35	The procedure involved in getting the input recommended in Agricultural Polyclinic is cumbersome.					
36	Activities/practices extended through Agricultural Polyclinic are successful only on irrigated land.					
37	Adoption of Agricultural Polyclinic activities/practices is difficult and ridiculous job.					
38	It is not proper to implement Agricultural Polyclinic activities/practices before making provision for marketing facilities.					
39	Only those families who have more family labours will have benefit of Agricultural Polyclinic programme					
40	Due to inadequate irrigation facility it is difficult to implement Agricultural Polyclinic recommendations.					
41	Due to Agricultural Polyclinic production of vermicompost and HaNPV will increase and create marketing problem.					

1	2	3	4	5	6	7
42	More production will be brought in market, so farmers will not get good price.					

* At final selection these statements were selected.

Abbreviations used in above table:

MR: Most relevant, **R:** Relevant, **UD:** Undecided,

SR: Somewhat relevant, **NR:** Not relevant

APPENDIX-II

Procedure followed in computation of benefit index

Sr No	Itemes	Before Partici- Pation	Benefit Yes/No	After Partici- pation	Procedure	
					Index=After /BeforeX100	Benefit= 100 -index
1	Waste land (ha)	2.00	Yes	0.00	$0/2 \times 100 = 0$	$100 - 0 = 100$
2	Income from all sources (Rs)	2.7lakh	Yes	3 lakh	$3/2.7 \times 100 = 111.11$	$100 - 111.11 = -11.11$
3	Production cost/expenditure on farming and allied business (Rs)	75000	Yes	70000	$70000/75000 \times 100 = 93.33$	$100 - 93.33 = 6.67$
4	Contour development on essential land to develop contour (ha)	3.00	Yes	1.00	$1/3 \times 100 = 33.33$	$100 - 33.33 = 66.67$
5	Possible area coverage under irrigation through farm ponds and improved irrigation systems (ha)	10.00	Yes	8.00	$8/10 \times 100 = 80$	$100 - 80 = 20$
6	Expenditure on fertilizer cost (Rs)	30000	No	30000	$30000/30000 \times 100 = 100$	$100 - 100 = 0$
7	Expenditure on insecticide/ pesticide (Rs)	10000	No	10000	$10000/10000 \times 100 = 100$	$100 - 100 = 0$
8	Expenditure on agricultural produce storage (Rs)	8000	Yes	3000	$3000/8000 \times 100 = 37.5$	$100 - 37.5 = 62.5$
9	Seed requirement for sowing (kg/ha)	3	Yes	2	$2/3 \times 100 = 66.67$	$100 - 66.67 = 33.33$

$$\text{Average benefit index} = \frac{\text{Sum of nine items benefit}}{\text{Number of items}} = \frac{300.24}{9} = 33.36$$

APPENDIX-III

Judges' opinion about the activities of Agricultural Polyclinic

Below given are 15 activities of Agricultural Polyclinic. These activities differ in the degree of ease in adoption by the farmers. Please consider each activity listed below. First determine whether the activity in your opinion, lies to the left or right of the mid point. Then you decide the exact position and tick mark ($\sqrt{\quad}$) in the appropriate column. Please check each of the practice below.

Note: While checking the activities, please do not consider factors like economic conditions of the farmers, facilities available to them etc.

Sr. No.	Activities	Very Difficult	Difficult	Neither difficult nor easy	Easy	Very easy
1	Land utilization					
2	Contour development					
3	Farm pond preparation					
4	Use of improved Irrigation systems					
5	Nadep compost Utilization					
6	Vermicompost Utilization					
7	Insect/pests diagnostic facilities utilization					
8	Use of HaNPV					
9	Use of Trichocard					
10	Use of Neemark					
11	Soil testing					
12	Utilization of improved implements					
13	Use of Trichocard					
14	Use of Neemark					
15	Use of Seed germination testing lab					

Shri. /Dr. _____

APPENDIX-IV

Procedure followed in computation of adoption index

Sr. No.	Activities	Procedure	
		Adoption index = (Practices actual used) -----X weightage (Practices recommended or potential to be used)	
1.	Possessed land utilization (ha)	2.40/2.40 X 2 =	2
2.	Contour development (ha)	1/2 X 3 =	1.5
3.	Farm pond preparation (No.)	1/2 X 3 =	1.5
4.	Use of improved irrigation systems (ha)	0.40/1 X 3 =	1.2
5.	Nadep compost utilization (ha)	1/ 2.40 X 3 =	1.24
6.	Vermicompost utilization (ha)	0.40/2.40 X 3 =	0.49
7.	Insect/pests diagnostic facilities utilization (ha)	2/ 2 X 3 =	3
8.	Use of HaNPV (lit/ ha)	0/ 0 X 3 =	0
9.	Use of Trichocard (cards/ha)	0/ 0 X 3 =	0
10.	Use of Neemark (ha)	1/ 1 X 2 =	2
11.	Soil testing (ha)	2.40/ 2.40 X 3 =	3
12.	Utilization of improved implements (ha)	2.40/ 2.40 X 3 =	3
13.	Use of cold storage (zero energy) (kg)	0/ 0 X 4 =	0
14.	Use of shade net and green house (ha)	0/ 0 X 4 =	0
15.	Use of seed germination testing lab (No. of seed sample)	1/ 2 X 3 =	1.5
Total			20.43

$$\text{Adoption Index of activities/practices} = \frac{20.43}{45} \times 100 = 45.40$$

APPENDIX- V

DEPARTMENT OF EXTENSION EDUCATION

MARATHWADA AGRICULTURAL UNIVERSITY, PARBHANI

INTERVIEW SCHEDULE

Name of Scholar: Puri S.G.

Research Guide: Dr. S.D. Wangikar

EVALUATION OF AGRICULTURAL POLYCLINICS - AN INDEPTH STUDY

SECTION-I

A) Personal information:

1. Respondents' name:

2. Village: Taluka: Dist:

3. Age(years) :

4. Education :

5. Occupation :

i. Farming :

ii. Farming + labour :

iii. Farming + subsidiary
occupation :

iv. Farming + business :

v. Farming + service :

6. Land holding (hectare)

i. Irrigated :

ii. Dryland :

iii. Fallow land :

iv. Total land :

7. Annual income (Rs.) :

8. Social participation : yes/No

Sr. No.	Institutions	Members	Office bearers	Period
1	Gram panchayat			
2	Panchayat samiti			
3	Zilla parishad			
4	Agril. Produce market committee			
5	Multipurpose co-operative society			
6	Political party			
7	Farmers association			
8	Bhajani mandal			
9	Youth organization			
10	Milk co-operative society			
11	School committee			
12	Other			

9. Extension contact :

For getting guidance related to farming did you contact extension personnel? Yes/No

If yes, state the frequency of contact

Sr.No.	Contact	Frequently	Occasionally	Never
1	Extension officer			
2	Agril. Officer			
3	Gramsevak			
4	Scientists from Agril. University			
5	Local leader			
6	Progressive farmers			
7	Others			

10. Risk orientation :

Please state the degree of your agreement with each of the statements given below

Sr. No.	Statements	Responses				
		SA	A	UD	D	SD
1	A farmer should rather take more of a chance in making a big profit than to be content with a smaller, but less risky profit.					
2	A farmer who is willing to take greater risks than average farmer, usually do better financially.					
3	It is good for a farmer to take risks when he knows his chance of success is fairly high.					
4	Trying an entirely new method in farming by a farmer involves risk, but it is worth it.					
5	A farmer should grow large number of crops to avoid greater risks involved in growing one or two crops.					
6	It is better for a farmer not to try new farming methods unless most others have used them with success.					

Abbreviations used in above table:

SA : Strongly agree, A: Agree, UD: Undecided, D: Disagree,

SD: Strongly Disagree

11. Economic motivation :

Please state the degree of your agreement with each of the statements given below

Sr. No.	Statements	Responses				
		SA	A	UD	D	SD
1	A farmer should work towards larger yields and economic profits.					
2	A most successful farmer is the one who makes the most profit.					
3	A farmer should try any new farming idea, which may earn him more money.					
4	A farmer should grow cash crops to increase monetary profits in comparison to growing of food crops for home consumption.					
5	It is difficult for the farmers' children to make good start unless he provides them with economic assistance.					
6	A farmer must earn his living but the most important thing in life cannot be defined in economic terms.					

Abbreviations used in above table :

SA : Strongly agree, A: Agree, UD: Undecided, D: Disagree,

SD: Strongly Disagree

12. Attitude towards Agricultural Polyclinic programme:

Please state your opinion about the following statements

Sr. No.	Statements	Responses				
		SA	A	UD	D	SD
1	Agricultural Polyclinic helps farmers by providing additional income					
2	Agricultural Polyclinic plays a vital role in increasing subsidiary business					
3	Training programme of Agricultural Polyclinic helps in increasing farming knowledge of the farmers.					
4	Skills develop in adoption of activities/practices due to training given on Agricultural Polyclinics					
5	Landless labour, small and semi medium landholders are getting benefits from Agricultural Polyclinic programme.					
6	Agricultural Polyclinic programme plays catalytic role in doing natural farming.					
7	Farmers are more curious due to training given at Agricultural Polyclinic					
8	Agricultural Polyclinic officers take less interest to develop rapport with rural masses					

9	Under Indian situation Agricultural Polyclinic is not appropriate as it involves large amount of expenditure of government.					
10	Untill, now there is no progress noticed through Agricultural Polyclinic.					
11	It is sheer wastage of money to continue Agricultural Polyclinic.					
12	There is lack of co-ordination between other offices (for loan and subsidy) and Agricultural Polyclinic.					
13	Beneficiaries under this programme are more subsidy oriented than development oriented					
14	The inputs supplied under this programme are not of good quality					

Abbreviations used in above table :

SA : Strongly agree, A: Agree, UD: Undecided, D: Disagree,

SD: Strongly Disagree

SECTION-II

B. Knowledge of respondents about Agricultural Polyclinic programme :

Please give the information about Agricultural Polyclinic programme in respect of following points by tick mark (✓) on the answers

1. Who has started the Agricultural Polyclinic programme?
1.Maharashtra govt 2.Central govt. 3.Agril.university
2. When the Agricultural Polyclinic programme was started?
1.1997-98 2.2000-01 3.2005-06
3. Agricultural Polyclinic programme is linked with which department?
1. State agril depts. (T.S.F)/Nursary
2. Zilha parishad 3. Agril. University
4. Which type of staff is working on the Agricultural Polyclinic programme?
1. State Agril.Depts. (T.S.F)/Nursary staff
2. Separate permanent establishment 3. Separate temporary establishment
5. Who are the beneficiaries of this programme?
1. Small farmers 2. Backward class farmers
3. All farmers
6. How many Agricultural Polyclinics are working in our district?
1. One 2. Two 3. More than two
7. Which is the major aim to start the Agricultural Polyclinic programme
1. Training organization 2. Demonstration
3. Training, demonstration and diagnostic services
8. Which type of gin is utilized for training demonstration to remove lint from cotton seed on Agricultural Polyclinic?
1. Liliput gin 2. Hand gin 3. Machine gin

9. Which type of demonstration is organized to demonstrate the full utilization rain water in field?
1. Contour development
 2. Bunding
 3. Trenches
10. On which officer rests the responsibilities to organize training programme?
1. Taluka Agril. Officer
 2. Circle Agril. Officer
 3. Krishi Sevak
11. Which type of watershed model (farm pond) is prepared and demonstrated on Agricultural Polyclinic.
1. PKV Watershed model
 2. Vasant bandhara
 3. Bhumigat bandhara
12. On which type of fertilizer, production training is given on Agricultural Polyclinic?
1. Organic fertilizer
 2. Major chemical fertilizer
 3. Minor chemical fertilizer
13. Which type of agro services are given on Agricultural Polyclinic to control insect pest and diseases?
1. Insect pest and diseases diagnosis and control measures
 2. Free supply of chemicals to control insect pest and diseases
 3. Insect pest and diseases sample identification from other institution (University)
14. Which type of production technology is produced on the Agricultural Polyclinic to control insect pest?
1. Biological insect pest control
 2. Chemical insect pest control
 3. Natural insect pest control
15. On which product training is given to produce a product from Neemseed
1. Neemark
 2. Neemseed oil
 3. Neemseed powder
16. On which rate, available and produced products are sold in small quantity on Agricultural Polyclinic?
1. Decided prices
 2. Market rate
 3. Free of cost

17. Which type of agricultural services are given to proper utilization of farmland and water on Agricultural Polyclinic?
 1. Soil and water testing
 2. Land development and providing irrigation facilities
 3. Providing farm land
18. Which type of information providing facilities are available on Agricultural Polyclinic?
 1. Library/measum
 2. Internet
 3. Telephonic contact
19. On which type of irrigation system utilization, more information is provided on Agricultural Polyclinic
 1. Flood irrigation
 2. Pot system
 3. Sprinkler and drip irrigation system
20. On which technology, thorough information is given based on high technology at Agricultural Polyclinic?
 1. Green house, cold storage
 2. Hybrid seed production
 - 3 Manufacturing of implements
21. How many days training course is organized on Agricultural Polyclinic
 1. One or two days
 2. Three days
 3. Five days
22. Which service is provided for farmers seeds on Agricultural Polyclinic
 1. Seed germination testing
 2. Seed purity testing
 3. Moisture percentage in seed

C. Benefits availed from Agricultural Polyclinic activities/practices.

Please state the availed extent of benefits from Agricultural Polyclinic in following items

Sr. No.	Items	Before Participation	Benefit		After Participation
			Yes	No	
1	Waste land (ha)				
2	Income from all sources (Rs)				
3	Production cost/expenditure on farming and allied business (Rs)				
4	Contour development on essential land to develop counter (ha)				
5	Possible area coverage under irrigation through farm ponds and improved irrigation systems (ha)				
6	Expenditure on fertilizer cost(Rs)				
7	Expenditure on insecticide/pesticide(Rs)				
8	Expenditure on agricultural produce storage (Rs)				
9	Seed requirement for sowing(kg/ha)				

D. Adoption of activities/practices extended through Agricultural polyclinic

Please state the how much potential to adopt Agricultural Polyclinic activities/practice and their level of adoption.

Sr. No.	Activities	Adoption	
		Potential	Extent
1.	Possessed Land utilization (ha)		
2.	Contour development (ha)		
3.	Farm pond preparation (No.)		
4.	Use of improved irrigation systems (ha)		
5.	Nadep compost utilization (ha)		
6.	Vermicompost utilization (ha)		
7.	Insect/pests diagnostic facilities utilization (ha)		
8.	Use of HaNPV (lit/ ha)		
9.	Use of Trichocard (cards/ha)		
10.	Use of Neemark (ha)		
11.	Soil testing (ha)		
12.	Utilization of improved implements (ha)		
13.	Use of cold storage (zero energy) (kg)		
14.	Use of shade net and green house (ha)		
15.	Use of Seed germination testing lab (No. of seed sample)		

E. Constraints faced by the respondents while adopting the agricultural practices recommended through the Agricultural polyclinics.

Please tick mark (✓) which of the following constraints you faced while adopting Agricultural Polyclinics activities/practices.

1. Insufficient irrigation facilities
2. Small land holding to develop contour
3. Vermiculture and vermicompost are not easily available
4. More time required to fill NADEP pits and watering to them
5. Not getting soil test at proper time
6. Unavailability of produce produced by Agricultural Polyclinic to purchase them
7. Small land holding to prepare PKV watershed model (farm pond)
8. Diagnostic services regarding insect pest and diseases are not gets at proper time
9. Unavailability chemicals in market at proper time
10. More distance of Agricultural Polyclinic to attend the programmes and getting information's
11. Agricultural Polyclinic staff are not meets at proper time to get information
12. Activities/practices extended through Agricultural Polyclinic are beyond the capacities
13. Can not read the information on advanced technology due to illiterate
14. Improved implements are not easily available at market
15. By utilization of shed net and cold storage ('Zero' energy) no more benefits are getting

16. Unavailability of training and demonstration seen on utilization of shed net, green house and cold storage ('Zero' energy) based on high technology on Agricultural Polyclinic
17. Unavailability of financial help through Agricultural Polyclinic
18. Trainings given on Agricultural Polyclinic was short duration period
19. Cannot understand information given in training on Agricultural Polyclinic
20. Demonstrations was not given due to which full information was not gets on Agricultural Polyclinic
21. Irrigation facilities are not available
22. Seed germination testing facilities are not available at proper time



Thesis Abstract

risk orientation, annual income, economic motivation, land holding, education, attitude, extension contact and social participation, were positively and significantly related with adoption of activities/practices. In multiple regression analysis of knowledge, 58.70 percent variation was explained by the selected set of 10 independent variables. Variables like attitude, annual income, risk orientation and education contributed positively and significantly to the knowledge. Further it was seen that set of selected 10 variables included could explain the variation in benefits availed of respondents to the extent of 56.00 percent. The education, risk orientation, land holding, age and annual income could positively and significantly contribute to the benefits availed. The contribution of independent variables in adoption was 79.70 percent and the variables like extension contact, benefits availed, knowledge and annual income contributed positively and significantly to the adoption level. Path analysis of knowledge showed that direct effect was exerted by risk orientation followed by attitude, where as highest total indirect effect was caused by risk orientation. Variables namely land holding, extension contact and occupation through annual income and economic motivation through risk orientation exerted substantial indirect effect on knowledge. Path analysis results of benefits availed had shown that highest direct effect was exerted by education, followed by risk orientation. And highest total indirect effect was caused by annual income. Highest substantial indirect effect on benefits availed was exercised by economic motivation and attitude through risk orientation. In respect of adoption, highest direct effect was exerted by benefits availed followed by knowledge. The highest total indirect effect was caused by benefits availed, followed by knowledge on adoption. And highest substantial indirect effect on adoption of activities/practices extended through Agricultural Polyclinic was exerted by Knowledge routed through benefits availed. Path analysis results indicated that the variables like benefits availed, knowledge, education, risk orientation, attitude, annual income and land holding were crucial variables. It is observed that lack of financial support from Agricultural Polyclinic was the main constraint perceived by majority of the respondents followed by not undergoing any training or demonstration of high tech agriculture based on shed net, green house and low cost green house. Other important constraints like Vermicompost and Vermiculture were not easily available, scarcity of irrigation facilities, training courses organized by the Agricultural Polyclinic were of short duration, more time required to fill up and for watering of NADEP pits, soil and water testing was not carried out at proper time were faced by majority percentage of respondents. Such type of programmes may be implemented on wider scale reaching to overall areas within the state and in other states, the implementing agencies, working officers and staff may work with more commitment and zeal to reach to the beneficiaries and persuade them. Efforts need to be made to increase the functional and resource literary of the respondents by way of providing them opportunities to participate in social activities and encouraging them to do so and may organize farmers rallies, special training programmes, demonstrations and provide them effective diagnostic services with literature and disseminate the information about Agricultural Polyclinic programme on mass media like television, radio, films and newspapers. Financial support should be provided through Agricultural Polyclinic and keeping close liaisons with Zilla Parishad, state and central agricultural department and banking sectors for providing requisite loan or financial support

प्रबंध सारांश

विद्यार्थ्यांचे नांव : पुरी एस.जी.
नोंदणी क्र. : ११पी/२००५अ

मार्गदर्शकाचे नाव : डॉ. एस.डी. वांगीकर
प्राध्यापक

शिर्षक: कृषि चिकित्सालयाचे मुल्यांकन- परिपूर्ण अभ्यास

महाराष्ट्र राज्य सरकारने कृषि चिकित्सालय हा कार्यक्रम १९९७-९८ मध्ये सर्व तालुका / जिल्ह्यामध्ये टप्प्या-टप्प्याने चालू केलेला आहे. हा अभ्यास मराठवाडा विभागाच्या परभणी, नांदेड व उस्मानाबाद जिल्ह्यामधील कृषि चिकित्सालय व त्यांच्या शिफारशी व कार्याबद्दलचे शेतकऱ्यांचे ज्ञान, मिळवलेला फायदा व अवलंबन आणि शेतकऱ्यांचे वैयक्तिक, सामाजिक, आर्थिक आणि मानसीक वैशिष्ट्याशी असलेला संबंध तसेच अवलंबनामध्ये आलेल्या अडचणी पहाण्यासाठी केलेला होता. वरील उद्दीष्टे विचारात घेवून निवडलेल्या जिल्ह्या मधून दोन तालुके व त्या तालुक्यामध्ये असलेले व सर्वात प्रथम चालू झालेले दोन कृषि चिकित्सालय निवडले होते. कृषि चिकित्सालयाच्या फायदा घेतलेल्या शेतकऱ्यांच्या यादी मधून २५ शेतकऱ्यांची निवड प्रत्येक कृषि चिकित्सालयामधून सहज निवडीच्या nth पध्दतीनुसार निवडण्यात आलेले होते. प्रत्येक कृषि चिकित्सालयापासून २५ असे एकूण ६ कृषि चिकित्सालयामधून १५० शेतकरी अभ्यासासाठी घेतले होते. सदर अभ्यासासाठी एक्स-पोस्ट फॅक्टो संशोधन पध्दतीचा अवलंब करण्यात आला. निवडलेल्या शेतकऱ्यांकडून खास तयार केलेल्या मुलाखत परिशिष्टाद्वारे त्यांच्या घरी किंवा शेतावर वैयक्तिक भेट देऊन माहिती गोळा करण्यात आली होती. एकूण संख्या आणि टक्केवारी, सरासरी आणि योग्य पध्दती पासून ढळणारा (स्टॅंडर्ड डेव्हियेशन), कोईफिशियंट ऑफ कोरेलेशन, मल्टीपल रिग्रेशन आणि पाथ अॅनॉलीसीस हे या सांख्यिकीय तंत्राचा वापर करून माहितीचे विश्लेषण करून निष्कर्ष काढण्यात आलेले होते. ह्या अभ्यासामधून असे निष्कर्ष निघालेले होते की ज्या मध्ये बहुसंख्य शेतकरी ह्यांचा मध्यम प्रकारचा विस्तार संबंध तसेच आर्थिक प्रवर्तन आणि अनुकूल दृष्टीकोण होता. भरपूर प्रमाणात शेतकरी हे मध्यम वयातील मध्यम जमिन धारणाचे व वार्षिक उत्पन्नासह मध्यम सामाजिक सहभाग व मध्यम जोखीम पत्करणारे होते आणि अर्थपूर्ण टक्केवारी मध्ये शेतकऱ्यांचे शिक्षण हे उच्च माध्यमीक पातळीचे होते व त्यांचा मुख्य व्यवसाय शेती हा होता. ज्ञानाबद्दल असे दिसून आले की, एकूण बाविस पैकी बारा शिफारशी / कार्याची बहुसंख्य शेतकऱ्यांना माहिती होती आणि बहुसंख्य शेतकऱ्यांचे सर्व शिफारशी / कार्याविषयी एकूण ज्ञान हे मध्यम प्रकारामध्ये होते. फायदा मिळवून देणाऱ्या नऊ पैकी तिन शिफारशी / कार्याचा बहुसंख्य शेतकऱ्यांनी फायदा घेतला व एकत्रीत शिफारशी / कार्याच्या फायदा घेण्यामध्ये लक्षणीय शेतकरी हे मध्यम गटामध्ये होते. संबंधात्मक अभ्यासामधून असे दिसून आले की, जोखीम पत्करणे, वार्षिक उत्पन्न, आर्थिक प्रवर्तने, जमीन धारणा, दृष्टीकोण, शिक्षण, विस्तार

संपर्क आणि सामाजिक सहभाग यांचा शेतकऱ्यांच्या ज्ञाना सोबत सकारात्मक संबंध होता. वार्षिक उत्पन्न, जमिन धारणा, शिक्षण, जोखीम पत्करणे, विस्तार संपर्क, आर्थिक प्रवर्तन, दृष्टीकोण आणि सामाजिक सहभाग यांचा सकारात्मक संबंध शेतकऱ्यांना फायदा मिळवण्याबरोबर होता. अवलंबनाच्या बाबतीत, फायदा मिळवणे, ज्ञान, आर्थिक प्रवर्तन, वार्षिक उत्पन्न, जमिन धारणा, शिक्षण, दृष्टीकोण, विस्तार संपर्क आणि सामाजिक सहभाग यांचा संबंध सकारात्मक कृषि चिकित्सालयांच्या शिफारशी / कार्याच्या अवलंबनबरोबर होता. मल्टीपल रिग्रेशन अभ्यासामध्ये ज्ञानासाठी निवडलेल्या दहा व्हेरीअबलच्या संचामध्ये ५८.७० टक्के तफावत दिसून आली. दृष्टीकोण, वार्षिक उत्पन्न, जोखीम पत्करणे आणि शिक्षण यांचा ज्ञान वाढवण्यामध्ये सकारात्मक सहभाग होता. तसेच निवडलेल्या दहा व्हेरीअबलच्या संचांनी ५६.०० टक्के तफावत फायदा मिळवण्यासाठी दर्शविली. शिक्षण, जोखीम पत्करणे, जमिनधारणा, वय आणि वार्षिक उत्पन्न हे फायदा मिळवण्यासाठी सकारात्मक सहभागी होते. अवलंबनामध्ये निवडलेल्या व्हेरीअबलाचा ७९.७० टक्के सहभाग होता. या पैकी विस्तार संपर्क, फायदा मिळवणे, ज्ञान आणि वार्षिक उत्पन्न यांचा अवलंबनामध्ये सकारात्मक सहभाग होता. पाथ अॅनॅलिसिस मध्ये असे दिसून आले की, जोखीम पत्करणे याचा सर्वात जास्त थेट परिणाम ज्ञान वाढवण्यासाठी उपयोगात आला, तसेच जोखीम पत्करणे यांचाच सर्वात जास्त अप्रत्यक्ष परिणाम ज्ञान वाढवण्यासाठी झाला. जमिन धारणा, विस्तार संपर्क आणि मुख्य व्यवसाय यांनी वार्षिक उत्पन्नमार्फत आणि आर्थिक प्रवर्तन यानी जोखीम पत्करणे मार्फत ज्ञान वाढवण्यासाठी दुय्यम अप्रत्यक्ष परिणाम केला. फायदा मिळवण्यामध्ये सर्वात जास्त थेट परिणाम शिक्षणाचा होता त्याखालोखाल जोखीम पत्करणे यांचा होता आणि वार्षिक उत्पन्नाचा सर्वात जास्त एकूण अप्रत्यक्ष परिणाम झाला. फायदा मिळवण्यामध्ये सर्वात जास्त दुय्यम अप्रत्यक्ष परिणाम आर्थिक प्रवर्तन आणि दृष्टीकोण यांनी जोखीम पत्करणामार्फत केला.

कृषि चिकित्सालयाच्या शिफारशी / कार्य यांच्या अवलंबनामध्ये सर्वात जास्त थेट परिणाम करण्यासाठी फायदा मिळवणे हे व्हेरीअबल उपयोगात आले होते. तसेच अवलंबनामध्ये सर्वात जास्त एकूण अप्रत्यक्ष परिणाम हा फायदा मिळवणे यांच्यामुळे झाला आणि सर्वात जास्त दुय्यम अप्रत्यक्ष परिणाम होण्यासाठी ज्ञानाचा फायदा मिळवणे मार्फत उपयोग झाला. पाथ अॅनॅलिसिसच्या निष्कर्षामधून असे अनुमान निघते की फायदा मिळवणे, ज्ञान, शिक्षण, जोखीम पत्करणे, दृष्टीकोण, वार्षिक उत्पन्न आणि जमिनधारणा हे महत्वाचे व्हेरीअबल होते.

कृषि चिकित्सालयाच्या शिफारशी / कार्याचे अवलंबन करण्यामध्ये कृषि चिकित्सालयाकडून आर्थिक मदत मिळत नाही ही महत्वाची अडचण बहुसंख्य शेतकऱ्यांना आली होती, या खालोखाल उच्च तंत्रज्ञानावर आधारित शेडनेट, हरितगृह व कमी खर्चाचे शितगृह यांचे वापराचे प्रशिक्षण व प्रात्यक्षिक पहावयास मिळाले नाही. तसेच गांडूळ खत व गांडूळ बिज सहज उपलब्ध होत नाहीत, अपूरी सिंचन सुविधा, कृषि चिकित्सालयामार्फत दिले जाणारे प्रशिक्षण कमी कालावधीचे होते, नाडेप संखदाक भरण्यासाठी व त्याला पाणी देण्यासाठी वेळ लागतो, योग्य वेळी माती व पाणी तपासून मिळत नाही, या काही महत्वाच्या अडचणी बहुसंख्य

शेतकऱ्यांना कृषि चिकित्सालयाच्या शिफारशी / कार्याच्या अवलंबनामध्ये आल्या होत्या. राज्यामध्ये व राज्याबाहेर ज्या ठिकाणी अशा प्रकारचा कार्यक्रम उपलब्ध नाही, त्या ठिकाणी अशा प्रकारचा कार्यक्रम विस्तारीत स्वरूपामध्ये राबविला जावा, कृषि चिकित्सालय ज्यांचे मार्फत चालते त्यांनी तसेच कार्य कारणारे अधिकारी व कर्मचारी यांनी अधिक जबाबदारीने, बांधिलकिने तसेच उत्साहाने कार्य करुन जास्तीत जास्त शेतकऱ्यापर्यंत शिफारशी / कार्य पोहचवून त्यांच्या उपयोगात आणावेत. शेतकऱ्यांना सामाजिक कार्यात सहभागी होण्याची संधी देऊन आणि त्यांना प्रोत्साहन देऊन तसेच शेतकरी मेळावे, विशेष प्रशिक्षण वर्ग आयोजन, प्रात्यक्षिके आणि परिणामकारक चिकित्सक सुविधासह शेती साहित्यांचे वाटप आणि कृषि चिकित्सालयाबद्दल माहिती समूह संपर्काच्या माध्यम जसे की, दुरदर्शन, आकाशवाणी, वृत्तपत्रात प्रसारीत करुन शेतकऱ्यांचे व्यवहारीक आणि साधन साहित्याची आवड वाढवण्याचा प्रयत्न होणे आवश्यक आहे.