KNOWLEDGE AND ADOPTION OF SALT AFFECTED SOIL RECLAMATION PRACTICES FOLLOWED BY FARMERS FROM SANGLI DISTRICT

By

YASHWANT BALASAHEB PAWAR

A thesis submitted to the
MAHATMA PHULE KRISHI VIDYAPEETH
RAHURI-413722, DIST.AHMEDNAGAR
MAHARASHTRA, INDIA

in partial fulfilment of the requirements for the degree

of

MASTER OF SCIENCE (AGRICULTURE)

in

AGRICULTURAL EXTENSION

DEPARTMENT OF EXTENSION EDUCATION
POST GRADUATE INSTITUTE
MAHATMA PHULE KRISHI VIDYAPEETH,
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CANDIDATE'S DECLARATION

I hereby declare that this thesis or a part thereof has not been submitted by me or any other person to any other University or Institute for a Degree or Diploma

Place : MPKV, Rahuri

Date : 05/05 /2010 **(Pawar Y. B.)**

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C E R T I F I C A T E

This is to certify that the thesis entitled **KNOWLEDGE AND ADOPTION OF SALT AFFECTED SOIL RECLAMATION PRACTICES FOLLOWED BY FARMERS FROM SANGLI DISTRICT,** submitted to the Faculty of Agriculture, Mahatma Phule Krishi Vidyapeeth, Rahuri, Dist. Ahmednagar, Maharashtra State, India, in partial fulfilment of the requirements for the degree of **MASTER OF SCIENCE (AGRICULTURE)** in **AGRICULTURAL EXTENSION,** embodies the results of piece of *bonafide* research work carried out by **MR. YASHWANT BALASAHEB PAWAR**, under my guidance and supervision and that no part of the thesis has been submitted to any other University for degree or diploma or publication in other form.

The assistance and help received during the course of this investigation and sources of reference have been duly acknowledged.

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Place : MPKV, Rahuri **(R. S. Patil)**

Date : 05/05 /2010

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Place : MPKV, Rahuri
Date : / /2010 ***(Pawar. Y. B.)***

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ABBREVIATION

Dr.PDKV	:	Dr. Panjabrao Deshmukh Krishi Vidyapeeth
et al.	:	et alli (and others)
etc	:	et cetra (excetra)
Fig.	:	Figure
ha	:	hectare (s)
i.e.	:	id est (that is)
KKV	:	Konkan Krishi Vidyapeeth
MPKV	:	Mahatma Phule Krishi Vidyapeeth
No.	:	Number
pp	:	Pertaining page (s)
Rs.	:	Rupee (s)
viz.,	:	vide licet (namely)

ABSTRACT

STUDY OF KNOWLEDGE AND ADOPTION OF SALT AFFECTED SOIL RECLAMATION PRACTICES FOLLOWED BY FARMERS FROM SANGALI DISTRICT

By

Yashwant Balasaheb Pawar
(07/118)

A candidate for the degree
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Research Guide	**:**	**Dr. P. G. Khalache**
Department	**:**	Agricultural Extension
Major Field	**:**	Extension Education

Soil is the crucial national resource and therefore, no country can afford to neglect or waste of it. But now-a-days a salt affected soil problem is becoming more actute in canal command area of Maharashtra. In India, it is estimated that saline lands extents over 8.5 m ha in country while in Maharashtra it is 6 lakh ha with increase of 10 per cent every year due to water logging.

The present investigation was conducted with the view to study the knowledge and adoption of salt affected

soil reclamation practices of the respondent farmers having area under salt affected soil to study the personal, socio-economic profile and situational attributes of the respondents, to study the extent of adoption about the salt affected soil reclamation technology by the respondents.

The present study was conducted in Miraj, Wulwa and Palus tahsils of Sangli district. The 5 villages from each tahsils were selected on purposive basis i.e. maximum area under salt affected soil. In all 15 villages were selected for study. From each selected village 9 farmers were selected on the basis of maximum salt affected fields. Hence, in all three tahsils, 15 villages and 135 respondents were selected for the present study.

The data were collected with the help of well constructed and pre-tested interview schedule. The collected data were processed through primary and secondary tables and statistically analyzed.

The study reveals that majority of the respondents were from middle age group, educated upto secondary school level, used medium sources of information, having medium farm size, medium annual income, medium experience in farming, medium experience in salt affected soil cultivation, medium experience in soil reclamation, medium risk orientation, medium scientific orientation, medium level of knowledge, medium area under salt affected soils.

It was observed that medium level of adoption followed by the respondents.

It was observed that majority of the respondents were dependent on Agricultural Assistants of Agriculture Department, progressive farmers, TV, newspaper for source of information.

It was seen that the practices which were known to all of the respondents (100.00 per cent) were soil leveling, crop rotation. The practice which were known to majority of the respondents were crop rotation (72.52 per cent), balance use of chemical fertilizers (69.56 per cent), application of green manuring (68.08 per cent), application of gypsum (65.86 per cent), use of compost culture (56.24 per cent), irrigation management (45.14 per cent), avoid use of salty water in irrigation sources (42.28 per cent).

It was seen that 100.00 per cent of the respondents had completely adopted the practice like soil leveling. The practice which were adopted by large number of respondents were use of soil reclamant like gypsum application (41.44 per cent), following the crop rotation (43.64 per cent), application of green manuring (42.92 per cent) and irrigation management (31.82 per cent).

The major constraints faced by the respondents were the availability of soil testing facility, insufficient supply of soil reclamant, lack of skilled labour, high labour charges, high cost of chemical fertilizers, high cost involved in drainage system and soil testing, lack of knowledge about

the use of soil reclamant, lack of knowledge about agencies engaged in work related to soil reclamation.

The major suggestions made by the respondents for overcoming the constraints faced by them were Government should provide subsidy for land leveling, bunding and drainage system, all type of soil reclamant should be made available at cheaper rate, extension personnel should be made available the technical information in time, increase subsidy on drip irrigation system.

The major implications based on the findings of the study are the extension agencies need reorient their training programmes towards upgrading the farmers regarding the practices which were ignored by the respondents by giving training, organizing method and result demonstrations and arranging tours to the demonstrated farms, the various inputs should be supplied at subsidized rates through co-operative society or agro service centres. More guidance needs to be given to the respondents to reclaim the salty soil.

1. INTRODUCTION

Soil is the crucial national resource and therefore, no country can afford to neglect or waste of it. There are extensive areas on continents, but their extent and distribution has not been studied in detail. According to estimates of FAO and UNESCO, about 10 m ha of irrigated land are abandoned each year because of adverse effect of irrigation.

The salt affected soils occur in the arid and semiarid regions, where evapotranspiration greatly exceeds the precipitation salt affected soil occur in all the major physiographic regions of India. Salt released by weathering of silicates minerals are important original sources and are responsible for formation of such soils in India. However, the knowledge on the extent of salt affected soil is important because these soils are increasingly brought under intensive irrigation and salinity problem is becoming more acute in canal command area of Maharashtra. The judicious use of irrigation, fertilizers and inclusion of organic and/or inorganic amendment along/along with bioinoculants are the key factor for improvement of salt affected soils for their fertility and productivity (Sharma *et al.* 2004).

In India, it is estimated that saline lands extends over 8.5 m ha in country while in Maharashtra it is 6 lakh ha with the increase of 10 per cent every year due to water logging. In Sangli district 178 villages are having 42,758.662 ha salt affected soils. The Miraj tahsil having 14476.372 ha of

salt affected area. The tahsil Walwa having salt affected soil near about 18201.96 ha. While the tahsil Palus having salt affected area about 6825.37 ha.

Schoonover (1959) in his study of soil problem in India has listed various requirements for reclamation of saline and alkali soils. But it is observed that the farmer don't follow these practices as recommended.

1.1 Statement of the problem

It is experienced that all the farmers do not adopt the recommended salt affected soil reclamation practices at the same time and at the same speed. This raise the question like why some farmers adopt such practices quickly while others do not?

Those who are not adopting, what are the reasons for their non adoption? Are there any personal, social, economic and psychological components responsible for non adoption in addition to even though the natural and physical resources are available with the farmer? To ascertain the reason for this, **study of Knowledge and Adoption of Salt Affected Soil Reclamation Practices followed by Farmers from Sangli district** was planned and implemented with the following objectives.

1.2.1 Objectives of the study

1.2.1 General objective

The general objective of the present investigation is to study the extent of knowledge and adoption of salt affected soil reclamation practices followed by farmers from Sangli district.

1.2.2 Specific objectives

1. To study the socio-economic profile and situational attributes of the farmers.
2. To study the knowledge level and extent of adoption about the salt affected soil reclamation technology;
3. To study the relationship between selected socio-economic profile and situational attributes of the farmers and their extents of adoption.
4. To find out the information sources and extension contact availed by the respondents for salt affected soils reclamation.
5. To find out the constraints faced and suggestions made by the farmers about reclamation of salt affected soils.

1.3 Hypothesis of the study

There exists a relationship between the socio-economic profile and situational attributes of the respondents from salt affected soil tract and extent of adoption of salt affected soil reclamation practices.

1.4 Scope of the study

It is seen that the soils of western Maharashtra particularly from Sangli district are severely affected with the salts. This can be seen from the following Table 1.

Table-1: Tahsilwise salt affected area of Sangli district

Sr. No.	Name of tahsil	Salt affected area (ha)
1.	Walwa	18,201.96
2.	Miraj	14,476.372
3.	Palus	6,825.37
4.	Shirala	54.07
5.	Kadegaon	-
6.	Khanapur	-
7.	Tasgaon	3100.89
8.	Atapadi	-
9.	Kavatemahankal	-
10.	Jath	-
	Total	**42,768.662**

Source: Agriculture Department, Sangli district (2008-09)

This indicates the importance of the problem. This is because of the excess use of irrigation water for the crops used by the farmers. Now, farmers are helpless to get the solutions over it. They are also unable to exercise the soil reclamation measures recommended by the Department of Agriculture, Government of Maharashtra and other extension agencies due to lack of knowledge and skill in addition to the financial constraints. Hence to ascertain the reason over it is necessary to conduct a research study.

Thus, there was need to work on this (problem) research topic from various angles. In specific geographical areas, such study could provide useful data to device effective action programme for the farmer with salt affected soils.

Socio-economic and psychological characteristics of farmers influence their knowledge and adoption behaviour. Since extension education efforts aim at helping farmers with salt affected soil to produce desirable changes in their attitude towards recommended soil reclamation practices. It would also be useful to the Government, Extension workers, Agriculture Universities and those who are also engaged in a task of implementing salt affected soil reclamation programme. The study will be useful to the Government agencies for planning and implementation of different schemes related to recommended practices for reclamation of salt affected soil.

The study would also give certain guidelines to the scientists in social research to under take the similar studies in different areas for more generalization of the findings of the study.

1.5 Limitation of the study

The study is confined to 135 farmers having salt affected soil selected from 15 villages from Miraj, Walwa and Palus tahsils of Sangli district in Maharashtra. Hence, the findings of the present study will be applicable to only these localities having similar environmental, ecological and socio-economic conditions. Moreover as the study is local and of an exploratory type, the findings will have to be tested in other parts of the state to judge its validity on universal scale.

2. REVIEW OF LITERATURE

This chapter deals with the comprehensive review of literature which is directly or indirectly relevant to the objective of the study.

Comprehensive review of literature is an essential part of any scientific investigation, its main functions are to determine the previous work done, assist in delineation of problem area which provide basis of theoretical frame work, provide an insight into methods and procedure to be used, operational definitions of major concepts to help in interpretation of findings.

Considering the objectives the review of literature of present investigation has been presented under following sections.

2.1 Socio-economic profile and situational attributes of the farmers.

2.2 Knowledge level and extent of adoption about salt affected soil reclamation technology.

2.3 Relationship between selected socio-economic profile and situational attributes of the farmer and their extent of adoption.

2.4 Constraints in reclamation of the salt affected soil.

2.5 Suggestions made by the farmers to overcome these constraints.

2.1 Socio economic profile and situational attributes of the farmer

2.1.1 Age

Zade (1998) found that 56.67 per cent of the respondents were in middle age group of 36 to 50 years.

Wane (2000) found that 66.00 per cent of the respondents were in middle age group of 31 to 50 years.

Patil (2002) found that 68.50 per cent of the respondents were in middle age group of 32 to 55 years.

Shinde (2004) stated that 47.33 per cent of the respondents were in middle age group of 36 to 50 years.

Chavan (2005) revealed that 56.00 per cent of the respondents were in middle age group 36 to 50 years.

Thorat *et al.* (2005) expressed that 55.00 per cent of the respondents were in middle age group of 51 and above years.

Mane (2005) expressed that about 57.00 per cent of the respondents were in middle age group of 32 to 51 years.

Mane 2006) reported that 41.50 per cent of the respondents were in middle age group of 36 to 51 years.

Sasane *et al.* (2007) expressed that about 36.67 per cent of the respondents were in middle age group of 36 to 55 years.

Krishnamurthy *et al.*, (2007) reported that 65.00 per cent of the respondents were in middle age group of 41 to 50 years.

2.1.2 Education

Katkar (2000) reported that 40.00 per cent of the respondents were educated between 5^{th} to 10^{th} standard.

Chaugle (2000) reported that 39.50 per cent of the respondents were having education upto high school level.

Sawant (2002) observed that about 32.00 per cent of the respondents were educated upto secondary school level.

Chavan (2005) reported that 56.00 per cent of the respondents were having primary level of education.

Thorat *et al*. (2005) reported that 40.00 per cent of the respondents were educated upto secondary school level.

Mate (2006) reported that 55.00 per cent of the respondents were having primary level of education.

Krishnamurthy *et al*. (2007) reported that 28.30 per cent of the respondents were having primary and middle school (1st to 7th standard) level education.

Sasane *et al*. (2007) found that 49.17 per cent of the respondents were having secondary school level education.

2.1.3 Annual gross income

Pawar (1996) found that 72.00 per cent of the respondents were in medium annual income level Rs.47,097 to 91,824/-

Patil (2002) found that 68.40 per cent of the respondents were in medium annual income level Rs.22,001 to 52,000/-

Shinde (2004) found that 34.67 per cent of the respondents were in annual income range from Rs.50,001 to 75,000/-

Chavan (2005) reported that 64.00 per cent of the respondents were in medium annual income level i.e. Rs.1,00,001 to 4,00,000/-

Dhakane (2005) revealed that 58.67 per cent of the respondents were having annual income level from Rs.1,00,001 to 2,00,000/-

Thorat *et al*. (2005) reported that 40.00 per cent of the respondents were in annual income from Rs.50,000 to 1,50,000/-

Mane (2005) reported that 76.00 per cent of the respondents had medium annual income from Rs. 45,667 to 1,55,086/-

Mate (2006) revealed that 64.50 per cent of the respondents were having medium annual income from Rs.40,001 to 80,000/-

Sasane *et al*. (2007) found that 44.16 per cent of the respondents were having annual income from Rs.50,000 to 1,00,000/-

2.1.4 Farming experience

Kalbhor (1998) observed that 45.83 per cent of the respondents had high farming experience i.e. 21 years and above.

Deokate (1998) reported that nearly half (49.09 per cent)of the respondents had an experience of farming from 7 to 9 years.

Sawant (2002) found that 52.80 per cent of the respondents were having medium experience in farming i.e. 5 to 9 years.

Patil (2007) reported that 47.00 per cent of the respondents were having medium experience in farming i.e. 11 to 20 years.

2.1.5 Size of land holding

Wane (2000) found that 64.67 per cent of respondents were in medium size of land holding category (1.01 to 3.00ha).

Shinde (2004) found that 47.00 per cent of the soybean growers were in medium land holding category (2.01 to 4.00 ha).

Thorat *et al*. (2005) observed that about 45.00 per cent of the respondents were in the category of medium land holding (2.01 to 4.00 ha).

Mate (2006) reported that 55.50 per cent of the respondents were having land holding between 2.1 to 4.00 ha.

Sanane *et al*. (2007) found that 36.66 per cent of the respondents were having land holding between 1.01 to 2.00 ha.

Krishnamuthry *et al*. (2007) found that about 33.3 per cent of the respondents were having small land holding (2.5 to 5.0 acres).

Patil (2007) reported that about 65.00 per cent of the respondents were having medium size (2.01 to 6.00 ha) of land holding.

2.1.6 Source of information

Zade (1998) found that 62.57 per cent of the respondents had medium level of exposure to different sources of information.

Borse (2002) found that 54.55 per cent of the respondents were using medium sources of information.

Kolte (2002) reported that about 46.00 per cent of the respondents had medium level sources of information.

Sawant (2002) observed that about 57.00 per cent of the respondents had medium level of sources of information.

Chavan (2005) reported that 69.34 per cent of the respondents were using medium sources of information.

Mane (2005) reported that 65.50 per cent of the respondents were using medium sources of information.

Gadge (2005) reported that 49.17 per cent of the respondents were using medium sources of information.

Thorat *et al*. (2005) found that about 56.00 per cent of the respondents were using progressive farmers as their personal source of information.

Mate (2006) revealed that 70.50 per cent of the respondents were using medium sources of information.

Patil (2007) found that 64.00 per cent of the respondents were using medium sources of information.

Sasane (2007) found that 54.17 per cent of the respondents were always used progressive farmer as their personal source of information.

2.1.7 Scientific orientation

Supe and Salode (1975) observed that highest number of farmers i.e. 80.00 per cent had medium scientific orientation who takes part in national demonstration.

Khandikar (1996) stated that majority of the respondents (70.00 per cent) had medium scientific orientation.

Borkar and Chimurkar (1996) reported that, 50.41 per cent of the respondents were categorized in medium scientific ability category.

Kale (2000) reported that 63.00 per cent of the respondents had medium scientific orientation.

Perne (2005) reported that 64.61 per cent of the respondents had medium scientific orientation.

2.1.8 Risk orientation

Shinde (1997) found that 55.00 per cent of the respondents had medium level of risks orientation.

Jaiswal (2001) observed that 68.00 per cent of the respondents had medium risks orientation.

Borse (2002) reported that about 68.00 per cent of the respondents had medium level of risk orientation.

Bhosale (2003) found that about 65.00 per cent of the respondents had medium degree of risks orientation.

Dhakane (2005) found that 64.67 per cent of the respondents were having medium risk orientation.

Mane (2005) reported that 70.50 per cent of the respondents had medium risk orientation.

Mate (2006) revealed that 59.00 per cent of the respondents were having medium risk orientation.

Patil (2007) reported that 63.50 per cent of the respondents had medium risk orientation.

2.1.9 Experience in soil reclamation

Kharat (1996) observed that 35.48 per cent of the pomegranate farmers had high (7 years and above) and low level (upto 4 years) of experience in farming.

Pawar (2002) observed that 46.00 per cent of the respondents were having experience between 10 to 23 years.

Thorat (2003) reported that 49.00 per cent of mango growers were in the category of medium experience in mango cultivation i.e. 9 to 15 years.

Kharde (2003) found that 46.25 per cent grape growers had experience from 5 to 9 years.

Dhakane (2005) revealed that 60.68 per cent of the respondents were having medium experience in grape cultivation form 7 to 13 years.

Khaire (2005) revealed that 67.00 per cent of the respondents were having medium experience in fig cultivation i.e. 2 to 4 years.

Patil (2007) reported that 48.50 per cent of the respondents were having medium experience in groundnut cultivation i.e. 5 to 9 years.

2.1.10 Experience in salt affected soil cultivation

Pawar (2002) observed that 46.00 per cent of the tomato growers were having experience between 10 to 23 years.

Thorat (2003) reported that 49.00 per cent of respondents were in the category of medium experience in mango cultivation i.e. 9 to 15 years.

Kharde (2003) found that 46.25 per cent grape growers had experience from 5 to 9 years.

Dhakane (2005) revealed that 60.68 per cent of the respondents were having medium experience in grape cultivation from 7 to 13 years.

Patil (2007) observed that 48.50 per cent of the respondents were having medium experience in cultivating groundnut i.e. 5 to 9 years.

2.1.11 Attitude of farmers towards salt affected soil reclamation practices

Singh *et al*. (1978) in his study "what farmers think about improved farm implement" found out that 71.00 per cent of the farmers were having medium attitude towards improved farm implements.

Salunke (1994) reported that majority of the respondents (88.00 per cent) had medium attitude. Very few farmers (12.00 per cent) exhibited high attitude towards improved farm implements.

Patil *et al*. (1998) concluded that majority of the tractor owners (83.80 per cent) had high attitude towards cost of tractor. The same attitude is seen towards the cost of improved implements.

Anonymous (1999) found out that majority of the farmers (44.80 per cent) expressed medium attitude towards utilization of improved farm implements.

2.1.12 Knowledge

Aghav (1997) revealed that 48.61 per cent level of the respondents had medium level of knowledge followed by 27.97 per cent and 23.31 per cent belonged to high and low level of knowledge.

Khaire (2005) reported that a majority of the respondents had medium level (67.50 per cent) of knowledge, while 17.50 per cent of respondents had high level of knowledge and only 15.00 per cent of the respondents had low level of knowledge.

Chavan (2005) observed that 62.00 per cent of the respondents were found in the group of medium level knowledge, whereas about 20.00 per cent and 18.00 per cent of the respondents were having low knowledge level and high knowledge level, respectively.

Dhakane (2005) revealed that a majority (71.03 per cent) of the respondents had medium level of knowledge, while 15.34 per cent of them had low level of knowledge. Only 13.33 per cent of the respondent had high level of knowledge.

2.2 Level of adoption and its relationship with selected socio-economic profile and situational attributes of the farmers

2.2.1 Level of adoption

Girase *et al*. (1991) observed that 46.67 per cent of the respondents had medium level of adoption.

Nikhade *et al*. (1992) reported that 73.34 per cent of the respondents had medium category of adoption.

Dharmale (1993) observed that 62.50 per cent of the respondents had medium adoption level.

Pawar (1996) found that about 91.00 per cent of the respondents had medium level of adoption.

Zade (1998) observed that 57.33 per cent of the respondents had medium level of adoption.

Kubde *et al*. (1997) found that 57.33 per cent of the respondents had medium adoption index.

Waghmare *et al*. (2001) observed that 54.94 per cent of the respondents had low level of adoption.

Patil (2002) observed that 60.80 per cent of the respondents had medium level of adoption.

Patil (2007) observed that 65.50 per cent of the respondents had medium level of adoption.

Sasane *et al*. (2007) observed that 72.50 per cent of the respondents completely adopted saline soils reclamation practices.

2.2.2 Age and adoption

Khedkar *et al*. (1994) reported that there was non-significant relationship between age of the respondents and adoption of soil and water conservation practices.

Singh (1995) reported that there was non-significant relationship between age of the farmers and their response to amendment use for reclaiming alkali soils.

Pawar (1996) observed that there was non-significant relationship between age of the respondents and adoption.

Zade (1998) found that there was non-significant relationship between age of the farmers and adoption.

Jaiswal (2001) reported that there was non-significant relationship between age of the farmers and extent of adoption.

Asane (2003) found that there was non-significant relationship between the age of the farmers and adoption.

Dhapke (2004) found that there was non-significant relationship between the age of the respondents and adoption of soil and water conservation practices.

2.2.3 Education and adoption

Dharmale (1993) reported that education was significantly correlated with adoption behaivour.

Singh (1995) reported that education was significantly correlated with adoption behaivour.

Pawar (1996) observed that education has positive and highly significant relationship with adoption level.

Waghdhare and Dupare (1997) found that education was significantly correlated with the adoption level.

Adsul (1998) reported highly significant correlation between education of farmers and their adoption level.

Kubde *et al.* (1999) observed that education level has positive and significant correlation with the adoption.

Wane (2000) reported that education was significantly correlated with adoption level.

Jaiswal (2001) reported that there was significant relationship between education and extent of adoption.

Patil (2002) reported that education was significantly correlated with adoption level.

Dapake (2004) found that education has significant relationship with adoption level.

Patil (2007) reported that education was significantly correlated with adoption level.

Sasane *et al.* (2007) reported that education has significant relationship with adoption level.

2.2.4 Annual gross income and adoption

Sakharkar *et al.* (2007) found that there was significant association between annual income and level of adoption.

Khedkar and Ingle (1994) found that there was positive and highly significant relationship between annual income and adoption level.

Pawar (1996) found that annual income had positive and highly significant relationship with extent of adoption.

Adsul (1998) observed that there was a positive and statistically highly significant correlation between annual income and adoption of improved dryland cultivation practices by the respondents farmers.

Patil (2002) found that the relationship between the annual income and adoption of improved dryland farming practices by the dryland farmers was positive and statistically significant correlation.

Shinde (2003) reported that annual income was positively and significantly correlated with adoption level.

Dhapake (2004) reported that annual income had positive and significant relationship with extent of adoption.

Sasane *et al.* (2007) found that annual income had highly positive and significant relationship with extent of adoption.

Patil (2007) revealed that the relationship between annual income and adoption of groundnut production technology by the respondents was positive and significant.

2.2.5 Farming experience and adoption

Karale (1985) reported that there was positive and significant correlation between farming experience and level of adoption.

Takate (1987) observed that farming experience was significantly associated with the level of adoption of the respondents.

Kalbhor (1998) that farming experience had significant relationship with adoption level.

Deokate (1998) revealed that farming experience had significant relationship with adoption of jasmine cultivation technology.

Sawant (2002) found that farming experience had significant relationship with adoption level.

Patil (2007) found that there was a positive and significant relationship between farming experience and adoption level.

2.2.6 Size of land holding and adoption

Bhoite (1983) reported a significant relationship between the farm size and adoption of improved dryland farming technology.

Raghuwanshi and Jaulkar (1992) observed that size of land holding was significantly related to the adoption of improved farm technology.

Pawar (1996) found that size of land holding exhibited positive and highly significant relationship with adoption.

Zade (1998) reported that the land holding established a significant relationship with adoption level of the respondents.

Jaiswal (2001) found that land holding had significant relationship with extent of adoption level.

Patil (2002) found that there was a positive and statistically significant correlation between size of land holding and adoption of selected improved dryland farming practices by the respondent farmers.

Dhapake (2004) reported that there was positive and significant relationship between farm size and adoption level.

Patil (2007) found that land holding established positive and significant relationship with level of adoption.

2.2.7 Sources of information and adoption

Deshmukh *et al.* (1994) reported that significant association was observed between sources of information and extent of adoption of dryland farming technology.

Khedkar and Ingle (1994) found that sources of information established positive and significant relationship with level of adoption.

Zade (1998) observed that sources of information had positive and significant relationship with the adoption level.

Kubde *et al.* (1999) found that sources of information had positive and significant relationship with the adoption level.

Patil (2002) found that relationship between sources of farm information of dryland farmers and the adoption was statistically found to be positive and highly significant.

Dhapake (2004) found that the extension contact had positive and significant relationship with the adoption level.

Patil (2007) found that relationship between sources of information used by the respondents and the adoption level was positive and significant.

Sasane *et al.* (2007) reported that sources of information established positive and significant relationship with level of adoption.

2.2.8 Scientific orientation and adoption

Paturkar (1981) investigated that scientific orientation of the respondents was significantly associated with the adoption level.

Bavalatti and Sundraswamy (1990) found that scientific orientation has positive and significant relationship with adoption level of dry land farming practices.

Supe *et al.* (1990) found that scientific orientation of the farmers was significantly associated with adoption of high yielding varieties of jowar.

Khandikar (1996) observed that there was positive and highly significant correlation between scientific orientation and adoption of improved practices of rainfed cotton cultivation by the cotton growers.

Kale (2000) found that there was a positive and significant correlation between scientific orientation and adoption level.

2.2.9 Risk orientation and adoption

Nikhade *et al.* (1992) observed that farmers having high risk preference exhibit higher adoption of improved practices.

Waghdhare and Dupare (1997) found that risk preference was significantly correlated with adoption level.

Adsul (1998) observed that risk orientation had positive and statistically significant correlation with adoption of improved cultivation of pearl millets hybrids.

Jaiswal (2001) observed that significant relationship between risk preference and extent of adoption of soybean production technology.

Patil (2002) found that there was a statistically positive and highly significant correlation between risk orientation and adoption of improved dryland farming practices.

Mane (2005) found that there was positive and highly significant relationship between risk orientation and adoption level of respondents.

Patil (2007) observed that there was positive and significant relationship between risk orientation and adoption level of respondents.

2.2.10 Experience in soil reclamation and adoption

Karale (1985) reported that as the length of occupational experience increased the adoption level of improved groundnut cultivation technology was also increased.

Lainbika and Nikhade (1993) reported that farming experience of pineapple growers was significantly related with adoption of recommended practices of pineapple cultivation.

Hinge (1996) observed that there was positive and highly significant relationship between experience in tomato cultivation and level of adoption of tomato production technology.

Pawar (2002) found that there was significant relationship between experience in tomato cultivation and level of adoption of tomato production technology.

Kharde (2003) found that there was significant relationship between experience in grape cultivation and level of adoption of grape production technology.

2.2.11 Experience in salt affected soil cultivation and adoption

Karale (1985) reported that as the length of occupational experience increased the adoption level of improved groundnut cultivation technology was also increased.

Lainbika and Mikhade (1993) reported that farming experience of pineapple growers was significantly related with adoption of recommended practices of pineapple cultivation.

Hinge (1996) observed that there was positive and highly significant relationship between experience in tomato

cultivation and level of adoption of tomato production technology.

Pawar (2002) found that there was significant relationship between experience in tomato cultivation and level of adoption of tomato production technology.

Kharde (2003) found that there was significant relationship between experience in grape cultivation and level of adoption of grape production technology.

2.2.12 Attitude of farmers towards salt affected soil reclamation technology and adoption

Kadam (1984) observed significant association between the attitude of farmers and adoption of recommended practices of sugarcane cultivation.

Salunke (1994) in his study entitled "A study of farm implements utilization behaviour of farmers" reported that attitude of the farmers is positively and significantly associated with the adoption of improved farm implements.

Jalak (2003) in his study reported that there was significant relationship between attitude of the respondents and their level of adoption.

2.2.13 Knowledge and adoption

Sakharkar *et al.* (1992) found that the knowledge and adoption of improved practices by the farmer were significantly related with each other.

Deshmukh *et al.* (1997) observed that knowledge had significant positive relationship with adoption of

recommended package of practices of summer groundnut cultivation.

Zade (1998) reported that knowledge possessed by the respondents was found to be positively and significantly correlated with adoption.

Patil (2002) observed that relationship between the knowledge of dryland farmers about dryland farming practices and adoption was positively and significantly correlated.

Mane (2005) found that the correlation between knowledge and adoption level of the respondents about recommended soybean production technology was positive and significant.

Patil (2007) found that the correlation between knowledge and adoption level of the respondents about recommended groundnut production technology was positive and significant.

2.3 Constraints faced by the respondents in adoption of technologies

I.C.A.R. (1979) reported the most commonly cited reason for non adoption of dry farming practices were lack of knowledge about the practices and lack of proper guidance.

Bhaskaran and Praveena (1982) stated that high cost involved in adopting the practices, lack of knowledge about the practices and risk involved in adopting certain practices were the main reason for non adopting package of practices of Rabi and Jawar.

Pawar (1996) reported that the major constraints are non-availability of fertilizers (73.00 per cent) and pesticides

(72.00 per cent), lack of awareness about seed treatment (67.00 per cent), high cost of fertilizer (66.00 per cent), and pesticides (64.50 per cent) lack of knowledge about the use of plant protection measures (62.40 per cent), high labour charges (56.50 per cent), non availability of labour in time (54.00 per cent), and lack of advice from extension functionary (51.00 per cent).

Zade (1998) reported that lack of knowledge about plant protection measures (71.50 per cent), lack of knowledge about seed treatment (69.50 per cent), lack of knowledge about use of weedicide (63.00 per cent), and high rate of wage of labours (56.00 per cent), were the major constraints encounted by the respondents.

Mane (2005) reported that lack of labours (77.50 per cent), high cost of chemical fertilizer (54.50 per cent), lack of knowledge about seed treatment were the major constraints faced by the respondents.

2.4 Suggestions of the respondents

Pawar (1996) observed that most of the respondents (78.67 per cent) suggested that inorganic fertilizers need to be subsidized rate. Other suggestion were pesticides need to be at made available on subsidized rates (26.67 per cent), training need to be organized in plant protection (23.33 per cent), guidance should be given about application of fertilizer (18.00 per cent).

Shinde (1991) reported that most of the respondents (65.00 per cent) suggested that give financial assistance in the form of subsidy (65.00 per cent), easily available loan facility

(61.00 per cent), timely supply of fertilizer and pesticides (52.00 per cent).

Kolte (2002) concluded that a majority of the respondents suggestions included the providing fertilizer and pesticides at reasonable rates (69.50 per cent).

Mane (2005) concluded that a majority of the suggestions included in the providing chemical fertilizers at the subsidize rate (80.50 per cent), within time availability of pesticides (73.00 per cent) and insecticides (69.00 per cent).

3. METHODOLOGY

This chapter describes details of the research site, techniques used for selection of respondents and designing of interview schedule. It also includes the procedures and techniques followed in collection of data, measurements of variables, analysis techniques and statistical tools used for interpreting the results.

3.1 Location of the research site

3.1.1 Geographical location

The study was conducted in Sangli district lies between 16^0 45' and 17^0 22' latitude and 73^0 42' and 75^0 40' altitude.

Sangli district consist 10 tahsils. Out of these tahsils Miraj, Walwa and Palus tahsils were selected purposively sampling basis. The criteria followed were largest salt affected soil area in the selected tahsils. These tahsils are located on the southern side of the district.

3.1.2 Area and population

The total geographical area of Sangli district is 8572 sq. kms out of which the area under Miraj, Walwa and Palus thahsils are 925.10 sq.km, 772.83 sq. km and 465.54 sq. km, respectively.

According to 2001 census the, total population of Sangli district was 25,81,835. Out of these population 13,19,267 were male and 12,62,568 were female. Out of this

male population 11,37,867 were literate and 1,81,400 were illiterate. From the female population 8,44,405 were literate and 4,18,163 were illiterate. However the profiles of the population of sample tahsils are given in the Table 2.

Table-2: Demographic details of sample tahsils

Particulars	Miral tahsil	Walwa tahsil	Palus tahsil
Total population	7,54,760	4,27,326	1,57,117
Male population	3,88,364	2,20,569	81,420
Female population	3,66,396	2,06,757	75,697
Literate male population	3,06,197	1,70,128	71,649
Illiterate male population	82,167	50,441	9,771
Literate female population	2,39,896	1,93,762	52,987
Illiterate female population	1,26,500	12,995	22,710

Source: Census Report 2001

3.1.3 Soils and climate

Different types of soils are prevalent in Sangli district, the soils in Miraj, Palus and Walwa have varied in nature ranging from red lateritic to medium black and deep black. Lateritic soils are mainly observed on the elevated areas of mountain. Medium black soils are observed on the plains while deep black soils are observed along the river banks.

The total rainfall of the district in 2008 was 7165.1mm.

3.1.4 Irrigation facilities

About 1.54 lakh ha. area of Sangli district is under irrigation, out of which 72 per cent irrigation through well and 28 per cent through lift and canal irrigation. The ratio of net irrigated area to the area under cultivation was only 20 per cent.

Krishna and Warna are main rivers in this region.

3.1.5 Land utilization pattern

The information on the land use pattern of Miraj, Walwa, and Palus tahsils for the year 2008-2009 were collected and shown in the following Table

Table-3: Land utilization pattern of Miraj tahsil for the year 2008-09

Sr. No	Particulars of land utilization Pattern	Area (ha)
1.	Total geographical area	92,624
2.	Area under forest	1,079
3.	Uncultivated cultivable land	7,898
4.	Area not available for cultivation	10,910
5.	Net sown area	72,737
6.	Gross cropped area	91,833
7.	Area sown more than once a year	19,096
8.	**Salt affected area**	**14,476.37**

Source: Socio-economic review and district statistical abstract of Sangli district year 2008-2009

Table-4: Land utilization pattern of Walwa tahsil for the year 2008-2009

Sr. No	Particulars of land utilization Pattern	Area (ha)
1.	Total geographical area	78,781
2.	Area under forest	2,952
3.	Uncultivated cultivable land	9,124
4.	Area not available for cultivation	8,803
5.	Net sown area	57,902
6.	Gross cropped area	75,604
7.	Area sown more than once a year	17,702
8.	**Salt affected area**	**18,301,96**

Source: Socio-economic review and district statistical abstract of Sangli district year 2008-2009

Table-5: Land utilization pattern of Palus tahsil for the year 2008-2009

Sr. No	Particulars of land utilization Pattern	Area (ha)
1.	Total geographical area	74,467
2.	Area under forest	1,782
3.	Uncultivated cultivable land	6,834
4.	Area not available for cultivation	8,426
5.	Net sown area	57,425
6.	Gross cropped area	74,673
7.	Area sown more than once a year	17,248
8.	**Salt affected area**	**6,825.37**

Source: Socio-economic review and district statistical abstract of Sangli district year 2008-2009

3.1.6 Cropping pattern

The major crops grown in Miraj tahsil during the sample year of *Kharif* season are Jowar, bajara, soybean and other vegetables. Whereas during *rabi* season, the major crops grown are wheat, chickpea, tur, *rabi*, jowar and other vegetables.

Sugarcane, grapes and cotton are the major cash crops grown in Miraj tahsil.

In Walwa tahsils major crops grown during the sample year of *Kharif* season are rice, jowar, maize and soybean, while during the *rabi* season wheat, *rabi*, jowar, chickpea, tur and other vegetables.

The major cash crops grown in tahsil are sugarcane and turmeric.

The major crops grown in Palus tahsil during the *Kharif* season are jowar, soybean, maize, and other vegetables. Whereas, during *rabi* jowar and other vegetables.

The major cash crops grown in tahsils are sugarcane and grapes.

3.1.7 Transport and communication facilities

In Sangli district state transport buses and railway are the significant means of transportation. The state transport buses, corporation buses, trucks, tempos, private jeeps, autos are the major means of transportation. Major towns and villages are linked mostly by metal roads.

Total road length 9703 kms and railway track length of 173.96 kms is passing through the district. Pune-Bangalore (NH-4) highway also passes through the district.

Post offices and telephone facilities and mobile are available in almost all the villages. The radio and television means of communication are also spreading in the district. Now a days there is day by day increase in the use of internet facilities in the urban as well as rural areas.

3.1.8 Other facilities

The education institutes, hospitals, nationalized banks, credit co-operatives, cold storage facilities, co-operative dairy societies, lift irrigation societies, nagari sahakari path saunstha, mahil mandals, bachat gat, fair price shops, medical stores and other such mandals are also operating in the districts.

3.1.9 Livesock

As regards to the live stock, buffalo, bullocks and cows are reared by the farmers and other citizens. Sheep and goats are also reared by the villagers. The total live stock population in Miraj and Walwa tahsils are 16,5105 and 1,82,829 respectively.

3.2 Sampling procedure

3.2.1 Selection of tahsils

Miraj, Walwa and Palus tahsils were purposively selected on highest area basis among the other tahsils in Sangli district. As shown earlier in the introduction chapter the total salt affected area in Sangli district is 42,758.662 ha out of which Miraj, Walwa and Palus tahsils have 14,476.372 ha, 18,301.96 ha and 6,825.37 ha, respectively.

3.2.2 Selection of villages

The list of the salt affected soil villages of Miraj, Walwa and Palus tahsils was obtained from the respective Taluka Agriculture Officer. The 5 villages from each tahsil i.e. Miraj, Walwa and Palus were selected on purposive basis i.e. maximum area under salt affected soil. In all 15 villages were selected for the study.

3.2.3 Selection of respondents

The list of the farmers having salt affected soil area from the selected villages was prepared with the help of village level functionaries namely Talathi, Gramsevak and local leaders. From each selected village 9 farmers were selected on the basis of maximum salt affect fields. Hence, in all three tahsils, 15 villages and 135 respondents were selected for the present study. The details of the selected tahsils, villages and number of respondents from each village is shown as under in Fig. 1.

Sangli (10 tahsils)

Miraj		**Walwa**		**Palus**	
Sample villages	**No. of farmers**	**Sample villages**	**No. of farmers**	**Sample villages**	**No. of farmers**
Bedeg	9	Kameri	9	Nandhre	9
Miraj	9	Mirajwadi	9	Palus	9
Kavathepiran	9	Ashtha	9	Ankalkop	9
Kasbe Digraj	9	Walwa	9	Bhilwadi	9
Dudhgaon	9	Nerle	9	wasgade	9

Fig-1: Selection of villages and respondents

3.3 Designing of interview schedule

The structured interview schedule serves as a tool for collecting data. Keeping in view the objectives of study, and interview schedule was prepared, which includes relevant questions for seeking information in respect of independent and dependent variables. Efforts were also made to formulate a schedule with clear and easy questions. The schedule was prepared in local language (Marathi) in order to get accurate response from the respondents. The suitable questions regarding the knowledge and adoption of practices by the farmers having salt affected soil area were included in the schedule.

3.4 Pre-testing of the interview schedule

The interview schedule was tested prior to its finalization by the researcher. It was pre-tested by interviewing 15 farmers having salt affected soil from sample tahsils who were not included in the sample in order to know whether the farmers furnish the required information.

This pre testing of the interview schedule of 15 farmers having salt affected soil area helped the researcher to make modification and alternation in order to get spontaneous response from the respondents. After making the required changes in interview schedule it was finalized and used for data collection.

3.5 Procedure for data collection

The researcher personally interviewed the respondents included in the sample. The help of the local leaders and progressive farmers were sought for establishing

rapport with the sampled farmer having land with salt affected. The purpose and objective of the study were clearly explained to them and they were assured that the information furnished by them would be kept confidential and would be used for the research purpose only. The researcher attempted to contact the selected farmers at their home as well as at their farms during their convenient time to get information only after establishment of rapport with each other, the interviews were conducted and that is in a friendly and informal manner.

3.6 Duration of the study

The work of data collection was started from 20th December, 2008 to 20th January, 2009 which took the total period of 30 days.

3.7 Compilation of data

The information collected through interviews were transferred from the interview schedules to primary table and then to secondary table. The qualitative data were quantified. From the quantified data the frequency, per centages and different scores in order to find out the correlation between the dependent and independent variables were worked out for further needful.

3.8 Working of scores and grouping of respondents

As earlier mentioned, the qualitative data were converted into quantitative data giving scores wherever necessary. The scores obtained by each farmer respondent having salt affected soil area in respect of particular characteristics under the study were worked out.

The farmers respondents salt affected soil area were thus, classified logically into different categories on the basis of score obtained by them.

3.9 Measurement of variables

1. Independent variables

A. Personal variables

a. Age

b. Education

c. Farming experience

d. Sources of information

e. Experience in soil reclamation

f. Experience in salt affected soil cultivation

B. Economic variables

a. Annual income

b. Size of land holding

C. Situational variables

a. Irrigation sources

b. Area under salt affected soils

D. Psychological variables

a. Scientific orientation

b. Risk orientation

c. Attitude of farmers towards salt affected soil reclamation practices

d. Knowledge

2. Dependent variables

Adoption of salt affected soil reclamation practices.

The procedure followed for measuring socio-economic profile and situational attributes of the respondents are explained in details as below.

All the variables were classified into their respective categories on the basis of mean ± standard deviation.

3.9.1 Independent variables

1. Age

The chronological age of the respondent completed in a years at the time of interview was considered and the respondents were classified into the following groups by using mean ± SD.

Sr. No.	Category	Age (years)
1.	Younger	Upto 33
2.	Middle	34 to 57
3.	Older	58 and above

2. Education

According to the educational standards respondents were classified into the following category.

Sr. No.	Category	Level of education
1.	Illiterate	No education
2.	Primary	Up to 4^{th} standard
3.	Secondary	5^{th} to 10^{th}
4.	Higher secondary	11^{th} to 12^{th}
5.	College	Above 12^{th}

3. Annual gross income

It refers to the total annual income obtained from agricultural and other sources by all the family members of the respondent. According to the extent of income earned by the respondents, they were classified into following categories by using mean ± SD.

Sr. No.	Category	Annual income (Rs.)
1.	Low	Upto Rs. 92,551
2.	Medium	92,552 to 2,44,825
3.	High	2,44,826 and above

4. Farming experience

It refers to the number of year the respondents were engaged in farming occupation. According to this the respondents were grouped into three categories by using mean ± SD.

Sr. No.	Category	Experience in farming
1.	Low	Upto 13 years
2.	Medium	14 to 35 years
3.	High	36 and above

5. Size of land holding

It is the actual hectares of land possessed by the respondents under study. According to the extent of land possessed by the respondents, they were classified into following categories by using mean ± SD.

Sr. No.	Category	Land holding
1.	Small	Upto 2.00 ha
2.	Medium	2.01 to 4.00 ha
3.	Large	4.01 ha and above

6. Sources of information

It refers to the use of sources of agricultural information channels for seeking information about the various salt affected soil reclamation practices by the respondents.

The respondents were asked to record the consulting pattern used by them, considering three levels, i.e. whether used 'Always', 'Sometimes' or 'Never'. For always used two score was assigned, for sometimes used one score was assigned and for never used zero score was assigned. Thus, total score was worked out and the respondents were classified into following categories by using mean $\pm$ SD.

Sr. No.	Category	Source of information (score)
1.	Low	Upto 26
2.	Medium	27 to 44
3.	High	45 and above

7. Scientific orientation

It is the outlook of the respondents towards the salt affected soil reclamation practices. Five statements were made, and score two, one and zero was assigned for completely agree, partially agree and not agree respectively. Total score was calculated and respondents were grouped into the following three categories by using mean $\pm$ SD.

Sr. No.	Category	Scientific orientation (score)
1.	Low	Upto 4
2.	Medium	5 to 8
3.	High	9 and above

8. Risk orientation

For getting the information about risk orientation of the respondents the scale developed by Chorge (1985) was used to measure this variable. For each items 2 score was assigned if respondents completely agreed with statement, 1 score was assigned if the respondent partially agreed with the statement and 0 score was assigned if he did not agree. The total score was computed by summing up the scores of all statements and the respondents were classified into following categories by using mean $\pm$ SD.

Sr. No.	Category	Risk orientation (score)
1.	Low	Upto 6
2.	Medium	Between 7 to 10
3.	High	11 and above

9. Experience of soil reclamation practices

It refers to the number of years the respondents were engaged in reclaiming soil. According to this the respondents were grouped into three categories by using mean $\pm$ SD.

Sr. No.	Category	Experience in soil reclamation
1.	Less	Upto 3 years
2.	Medium	4 to 7years
3.	High	8 years and above

10. Experience in crop cultivations in salt affected soil

It refers to the numbers of years the respondents were engaged in cultivating different crops in salt affected soil.

According to this the respondents were grouped into three categories by using mean ± SD as given below.

Sr. No.	Category	Experience of crop cultivation in salt affected soil
1.	Low	Upto 6 years
2.	Medium	7 to 12 years
3.	High	Above 12 years

11. Attitude of the farmers towards salt affected soil reclamation practices

An attitude is a predisposition to act, a mental state that provides clues regarding the action that an individual is inclined to take at some future time.

In order to measure the attitude of respondents 9 statements are made regarding the soil reclamation technology. If respondents is fully agree 2 score is assigned, if respondents is partially agree with statement a score of 1 is assigned and '0' is assigned if he is disagree. The total score was computed by summing up the scores of all statements and the respondents were classified into following categories by using mean ± SD.

Sr. No.	Category	Attitude of farmers towards salt affected soil reclamation technology
1.	Low	Upto 7
2.	Medium	8 to 13
3.	High	14 and above

12. Irrigation sources

It refers to the number of available sources of irrigation to the respondents. For every source of irrigation *viz.*, pond, well, river, canal and tubewell total frequency and per centage were worked out and inference were drawn.

13. Area under salt affected soils

It is the actual hectares of salt affected land possessed by the respondents under study. According to the extent of salt affected land possessed by the respondents, they were classified into following categories.

Sr. No.	Category	Area (ha)
1.	Small	Upto 0.7
2.	Medium	0.8 to 1.5
3.	Big	1.6 and above

14. Knowledge

The level of knowledge of respondents about recommended practices for reclamation of salty soil was measured by scoring technique. Score two was assigned for knowing the practices 'completely' one score was assigned, for knowing the practices 'partially' and score zero was assigned for total lack of knowledge about the practices. Accordingly total score of every respondent were worked out and they were grouped into three categories by using mean $\pm$ SD.

Sr. No.	Category	Level of knowledge (score)
1.	Low	Upto 27
2.	Medium	28 to 35
3.	High	36 and above

3.9.2 Dependent variable

Dependent variable is a variable which vary with the change in independent variables. For the present study adoption was the dependent variable.

In the present study, the adoption level of the respondents in respect of selected salt affected soil reclamation technology was studied by computing the adoption score. In all 23 selected practices of soil reclamation technology were considered for the study. According to the extent of adoption the scores were assigned. For complete adoption of each technological practice score two was assigned and score one was assigned for the partial adoption of selected practices, while zero score was given for no adoption about the selected salty soil reclamation technology.

The respondents were then classified into three categories on the basis of mean $\pm$ SD as follows

Sr. No.	**Category**	**Adoption (score)**
1.	Low	Upto 19
2.	Medium	20 to 27
3.	High	28 and

3.9.3 Constraints

The respondents were exposed to questions whether they faced difficulties in reclaimation of salt affected soil. For each of the difficulties faced by the farmers one score was assigned and for no difficulty zero score was given. In this manner total score was calculated for each respondents and

frequency, per centage for every constraints was worked out for drawing the inferences of the study.

3.9.4 Suggestions

Suggestions were invited form the respondents to overcome the problem faced by them in the adoption of reclamation of salty soil. The suggestions were grouped on the basis of their constraints and are placed in the form of frequency, per centages for drawing the inferences of the study.

3.10 Statistical method used

In this study the statistical methods, such as frequency, per centages, mean, SD and Karl Pearson's correlation coefficient have been used.

3.10.1 Per centage

Per centage is used in descriptive analysis of data for making simple comparison.

3.10.2 Correlation coefficient

Karl Pearson's coefficient of correlation was used for measuring the relationship between two independent and dependent variables. It is represented by

$$r = \frac{\Sigma x Y = \dfrac{(\Sigma X)\qquad (\Sigma Y)}{n}}{\Sigma X^2 - \dfrac{(\Sigma X)^2}{n}\ \Sigma Y^2 - \dfrac{(\Sigma X)^2}{n}}$$

Where,

X = Independent variable
Y = Dependent variable
n = Total number of respondents

3.11 Operational definitions and term used

1. **Age –** It is chronologically completed years by the respondents at the time of interview.
2. **Education –** It is number of school grades completed by the respondents
3. **Farming experience –** It refer to the experience in the cultivating the different crops year after year in field.
4. **Sources of information –** It refers to the use of sources of agricultural information channels for seeking information about various selected salty soil reclamation practices by the respondent farmers.
5. **Experience in soil reclamation –** It refers to the number of years the respondents were engaged in reclaiming the salty soil.
6. **Experience of crop cultivation in salt affected soil -** it refers to the number of years the respondents were engaged in cultivating the salt affected soil.
7. **Annual income –** It refers to the total annual income obtained from agricultural and other sources by the respondent farmer.
8. **Size of land holding –** It is actual hectares of land possessed by the respondents.
9. **Scientific orientation -** It is the outlook of the respondents towards the salt affected soil reclamation practices.

10. **Risk orientation –** It refers to the willingness and ability to take risk.
11. **Attitude -** It refers to a predisposition to act, a metal state that provides clues regarding the action that an individual is inclined to take at some future time.
12. **Knowledge -** It is a body of general principle or laws of field of knowledge in respect of selected salt affected soil reclamation practices.
13. **Adoption –** Rogers (1962) defined adoption as the mental process through which an individual passes from first hearing about an innovation to final adoption.
14. **Constraints –** A constraints is a reason, cause or circumstance which compels a farmer to non adoption or partial adoption of advocated technology which ultimately results in poor yield.

4. RESULTS AND DISCUSSION

This chapter deals with the presentation of the results of the investigation and critical discussion of the results presented. The data collected from 135 respondents from 15 villages in Walwa, Miraj and Palus tahsils of Sangli district were compiled into primary Table. They were then transferred into secondary Table in view the objectives of the study. Appropriate statistical tests were used for drawing the inferences. The result of the investigation are presented and discussed in chapter under following heads.

4.1 Personal and socio-economic profile of the respondents

4.1.1 Age

The information pertaining to the age of the respondents was collected, tabulated and analyzed. The results are presented in Table 6 and Fig.3

Table-6: Distribution of the respondents by their age

Sr. No.	Age group (years)	Number of respondents (n=135)	Per centage
1.	Young (upto 33)	26	19.25
2.	Middle (34 to 57)	89	65.89
3.	Old (58 and above)	20	14.86
	Total	**135**	**100.00**

Mean = 45.155 **SD = 11.76**

The Table 4 and Fig. 3 revealed that 65.89 per cent of the respondents were from middle age group (34 to 57 years) 19.25 per cent of them were from young group i.e. upto 30 years. 14.86 per cent of the respondents were from the age

category at old age group (58 and above years). However, in the present study it was found that the average age of the respondents was 45 years, whereas minimum was 21 years and maximum was 69 years.

Thus, it can be inferred that large proportion of the respondents belonged to middle age group (i.e. 34 to 57 years). This finding is in line with the finding of Krishnamurthy *et al.* (2007) wherein they observed that 65.00 per cent of the respondents were in middle age group (i.e. 41 to 50 years.)

4.1.2 Education

The information pertaining to the education of the respondents was collected, tabulated and analyzed. The results are presented in Table 7 and Fig.4.

Table-7: Distribution of the respondents by their level of education

Sr. No.	Level of education	Number of respondents (n=135)	Per centage
1.	Illiterate	8	05.92
2.	Primary	26	19.24
3.	Secondary	61	45.24
4.	Higher secondary	21	15.54
5.	College	19	14.06
	Total	**135**	**100.00**

Mean = 8.785 **SD = 4.121**

Table 7 and Fig.4 revealed that 45.24 per cent of the respondents were educated upto secondary level, followed by primary level (19.24 per cent), higher secondary level (15.54 per cent) and college level (14.06 per cent). Only 5.92 per cent of the respondents were illiterate.

This clearly indicates that large proportion of the respondents had secondary education.

These findings are inline with the findings of Sasane *et al.* (2007) wherein he found that 49.17 per cent of the respondents were having secondary school level education.

4.1.3 Sources of information

The information regarding the different sources of information used by the respondents was collected, tabulated and analyzed. The results are presented in Table 8 and Fig.5.

Table-8: Distribution of the respondents by their level of sources of information used

Sr. No.	Level of sources of information(score)	Number of respondents (n=135)	Per centage
1.	Low (upto 26)	25	18.50
2.	Medium (27 to 44)	92	68.08
3.	High (45 and above)	18	13.42
	Total	**135**	**100.00**

Mean = 35.281 SD = 9.120

From Table 8 and Fig. 5 it can be revealed that a majority (68.08 per cent) of the respondents were using medium sources of information where as 18.50 per cent and 13.42 per cent of the respondents had used high and low sources of information respectively. From these observations it can be concluded that substantial proportion of the respondents had used various sources of information.

Further, frequency and per centage of the various sources of information used by the respondents were worked out and the findings are presented in Table 7.

Table-9: Distribution of the respondents by the types of sources of information used by them

(N=135)

Sr. No	Types of information sources	Always	Sometimes	Never
A	**Formal personal sources**			
1.	Gramsevak	32 (23.68)	49 (36.26)	54 (39.96)
2.	Agril. Asst. of agriculture dept.	56 (41.11)	41 (30.34)	38 (28.12)
3.	Agril. Asst. of sugar factory	16 (11.84)	26 (19.24)	93 (68.82)
4.	Agril. Asst. of Agril. University	14 (10.36)	25 (18.60)	98 (71.04)
5.	Circle Agril. Officer	8 (5.92)	19 (14.16)	108 (79.92)
6.	Taluka Agril. Officer	4 (2.96)	29 (21.46)	102 (75.48)
7.	Extension officer of panchayat samiti	10 (7.40)	32 (23.78)	93 (68.82)
8.	District supritendent A.O.	2 (1.48)	8 (5.92)	125 (92.60)
9.	Scientist from Agril. University	3 (2.32)	10	122

Table -9 Contd……

Sr. No	Types of information sources	Always	Sometimes	Never
B	**Informal personnel sources**			
1.	Neighbours	40 (29.70)	62 (45.88)	33 (24.42)
2.	Friends	38 (28.12)	44 (32.56)	53 (39.22)
3.	Relatives	44 (32.56)	49 (36.26)	42 (31.80)
4.	Progressive farmer	78 (57.82)	47 (34.78)	10 (7.40)
5.	Local leader	64 (47.36)	47 (34.78)	24 (17.86)
C	**Group sources**			
1.	Result demonstration	26 (19.24)	79 (58.46)	30 (22.30)
2.	Method demonstration	29 (21.56)	85 (62.90)	21 (15.54)
3.	Field tour	35 (25.90)	49 (36.36)	51 (37.74)
4.	Agril. Exhibition	11 (8.14)	33 (24.42)	91 (67.44)
5.	Group discussion	10 (7.4)	47 (34.88)	78 (57.72)
6.	Agril. Day	12 (8.90)	31 (22.94)	92 (68.08)

Table -9 Contd……

Sr. No	Types of information sources	Always	Sometimes	Never
D	**Electronic media**			
1.	Radio	58 (42.92)	36 (26.74)	41 (30.34)
2.	Television	88 (65.12)	44 (32.66)	3 (2.22)
E	**Printed Media**			
1.	Newspaper	99 (73.36)	10 (7.40)	26 (19.24)
2.	Agril. Magazine	21 (15.64)	37 (27.38)	77 (56.98)
3.	Leaflet	18 (13.32)	29 (21.46)	88 (65.22)
4.	Folder	32 (23.78)	23 (17.02)	80 (59.20)

(Figures in parentheses indicates per centages)

Table 9 revealed that a majority (41.44 per cent) respondents have used Agril. Assistants of Agril. Department as formal personal source of information. A majority (57.82 per cent) of the respondents had used progressive farmer as their informal personal source of information. It was observed that from group source 25.90 per cent of the respondents had used field tour as group source of information.

However, a majority (65.12 per cent) of the respondents had always used television as electronic media of information.

A majority (73.36 per cent) of the respondents had used newspaper as printed media for their source of information.

The finding is inline with the finding of Chavan (2005) wherein he found that 69.34 per cent of the respondents were using medium sources of information.

4.1.4 Annual income

The information about annual income of the respondents was collected, tabulated and analyzed. The results are presented in Table 10 and Fig. 6.

Table-10: Distribution of the respondents by their annual income

Sr. No.	Annual income (Rs.)	No. of respondents (n=132)	Percentage
1	Low (upto 92,551)	17	12.58
2	Medium (92,552 to 2,44,825)	96	71.14
3	High (2,44,826 and above)	22	16.28
	Total	**135**	**100.00**

The above Table 10 and Fig. 6 revealed that a majority (71.14 per cent) of the respondent had medium annual income (Rs.92,552 to 2,44,825). The high annual income (i.e. Rs.2,44,826 and above) respondents were 16.28 per cent. Where as only 12.58 per cent of them had low annual income (i.e. upto Rs.92,551).

This finding is inline with the findings of Pawar wherein he found that 72.00 per cent of the respondents were in medium annual income group.

4.1.5 Size of land holding

The information pertaining to the size of land holding of the respondents was collected, tabulated and analyzed. The results are presented in Table 11 and Fig.7.

Table-11: Distribution of the respondents by their size of land holding

Sr. No.	Size of land holding (ha)	No. of respondents (n=135)	Percentage
1	Small (upto 2.00)	13	9.72
2	Medium (2.01 to 4.00)	87	64.38
3	Big (4.01 and above)	35	25.90
	Total	**135**	**100.00**

Mean = 2.980 **SD = 0.937**

The above Table 11 and Fig.7 revealed that majority (64.38 per cent) of the respondents had medium size of land holding (i.e. 2.01 to 4.00 ha) while 25.90 per cent of respondents had big size of land holding (i.e. 4.01 ha above ha). only 9.72 per cent of them had small size of land holding (i.e. upto 2.00 ha). However, in the present investigation, it

was found that the average size of land holding of the respondents was 2.98 ha where as minimum was 1.80 ha and maximum was 5.00 ha.

The finding is inline with the finding of Patil (2007) where in he found that 65.00 per cent of the respondents were in the category of medium size of land holding (2.01 to 4.00 ha).

4.1.6 Farming experience

The information pertaining to the farming experience of the respondents was collected, tabulated and analyzed. The results are presented in Table 12 and Fig.8.

Table-12: Distribution of the respondents by their experience in farming

Sr. No.	Experience in farming (Years)	No. of respondents (n=135)	Percentage
1	Low (upto 13)	28	20.72
2	Medium (14 to 35)	86	63.64
3	High (36 and above)	21	15.64
	Total	**135**	**100.00**

Mean = 24.170 **SD = 11.410**

The above Table 12 and Fig.8 revealed that 63.64 per cent of the respondents had medium experience of farming i.e. 14 to 35 years, while 20.72 per cent of respondents had less experience of farming i.e. upto 13 years. Only 15.64 per cent of respondents had high experience of farming i.e. 36 years and above. However, in the present investigation it was found that the average experience in farming of the

respondents was 24 years, whereas minimum experience in farming was 3 years and maximum was 42 years.

This finding is inline with the finding of Sawant (2002) wherein he found that 52.80 per cent of the respondents were in the category of medium experience in farming.

4.1.7 Experience in salt affected soil cultivation

The information regarding the experience in salt affected soil cultivation of the respondents was collected, tabulated and analyzed. The results are presented in Table 13 and Fig.9.

Table-13: Distribution of the respondents by their experience in salt affected soil cultivation

Sr. No.	Experience in salt affected cultivation (Years)	No. of respondents (n=135)	Percentage
1	Low (upto 5)	27	19.98
2	Medium (6 to 9)	82	60.68
3	High (10 and above)	26	19.34
	Total	**135**	**100.00**

Mean = 7.214 SD = 2.477

The above Table 13 and Fig.9 revealed that 60.68 per cent of the respondent had medium experience i.e. 6 to 9 years in salt affected soil cultivation while 19.88 per cent of the respondents had less i.e upto 5 years. Only 19.34 per cent of the respondents had high experience i.e. 10 years and above in salt affected soil cultivation. However, in the present investigation it was found that average experience in salt

affected soil cultivation of the respondents was 7 years whereas minimum was 2 years and maximum was 12 years.

This finding is inline with the finding of Dhakane (2005) wherein he found that 60.68 per cent of the respondents had medium experience of 7 to 10 years.

4.1.8 Experience in soil reclamation

The information regarding the experience in soil reclamation of the respondents was collected, tabulated and analyzed. The results are presented in Table 14 and Fig.10.

Table-14: Distribution of the respondents by their experience in soil reclamation

Sr. No.	Experience in soil reclamation	No. of respondents (n=135)	Percentage
1	Low (upto 3)	34	25.16
2	Medium (4 to 7)	83	61.52
3	High (8 and above)	18	13.32
	Total	**135**	**100.00**

Mean = 4.777 **SD = 2.057**

The above Table 14 and Fig.10 revealed that 61.52 per cent of the respondents had medium experience i.e. 4 to 7 years in soil reclamation while 25.16 per cent of the respondents had less i.e upto 3 years. Only 13.32 per cent of the respondent had high experience i.e 8 years and above in soil reclamations. However, in the present investigation, it was found that average experience in soil reclamation of the respondents was 5 years whereas minimum was 1 year and maximum was 9 years.

The findings in inline with the finding of Khaire (2005) wherein he found that 67.00 per cent of the respondents had medium experience of 2 to 4 years.

4.1.9 Risk orientation

The information regarding the risk orientation was collected, tabulated and analyzed. The results are presented in Table 15 and Fig.11.

Table-15: Distribution of the respondents by their risk orientation

Sr. No.	Risk orientation (score)	No. of respondents (n=135)	Percentage
1	Low (upto 6 score)	42	31.18
2	Medium (7 to 10 years)	79	58.46
3	High (11 and above)	14	10.36
	Total	**135**	**100.00**

Mean = 7.637 **SD = 2.484**

The above Table 15 and Fig.11 revealed that a majority (58.46 per cent) of the respondent had medium risk orientation followed by 31.18 per cent and 10.36 per cent of them having less and high risk orientation respectively so far their farm business is concerned.

The finding is inline with the finding of Mate (2006) wherein he found that about 59.00 per cent of the respondents had medium degree of risk orientation.

4.1.10 Scientific orientation

The information regarding the scientific orientation was collected, tabulated and analyzed. The results are presented in Table 16 and Fig.12.

Table-16: Distribution of the respondents by their scientific orientation

Sr. No.	Scientific orientation	No. of respondents (n=135)	Percentage
1	Low (upto 4)	35	25.90
2	Medium (5 to 8)	60	44.50
3	High (9 and above)	40	29.60
	Total	**135**	**100.00**

Mean = 6.259 **SD = 2.161**

The above Table 16 and Fig.12 revealed that majority (44.50 per cent) of the respondent had medium scientific orientation followed by 29.60 per cent and 25.90 per cent of them having high and low risk orientation respectively so for their farm business is concerned.

The finding is inline with the finding of Borkar and Chimurkar (1996) wherein he found that about 50.41 per cent of the respondent had medium degree of scientific orientation.

4.1.11 Attitude of farmers toward salt affected soil reclamation practices

The information regarding the attitude of farmers toward salt affected soil reclamation technology was collected, tabulated and analyzed. The results are presented in Table 17 and Fig.13.

Table-17: Distribution of the respondents by their attitude towards salt affected soil reclamation technology

Sr. No.	Attitude towards salt affected soil reclamation technology (score)	No. of respondents (n=135)	Per centage
1	Low (upto 7)	30	22.30
2	Medium (8 to 13)	83	61.42
3	High (14 and above)	22	16.28
	Total	**135**	**100.00**

Mean=10.140 SD=3.255

The Table 17 and Fig.13 revealed that majority (61.42 per cent) of the respondents had medium attitude followed by 22.30 and 16.28 per cent of them having less and high attitude respectively.

The finding is inline with the findings of Singh *et al.* (1978) wherein he found that about 71.60 per cent of the respondents had medium degree of attitude.

4.1.12 Irrigation sources

The information pertaining to the irrigation sources of the respondent was collected, tabulated and analyzed.

The results are presented in Table 18 and Fig.14.

Table-18: Distribution of the respondents by their sources of irrigation

Sr. No.	Sources of irrigation	No. of respondents (n=135)	Per centage
1	Pond	14	10.46
2	Well	61	45.24
3	River	19	14.06
4	Tubewell	33	24.32
5.	Canal	08	05.92
	Total	**135**	**100.00**

Table 18 and Fig.14 revealed that 45.24 per cent of the respondents had well as a source of irrigation. Where as 24.32 per cent of the respondents used tubewell as source of irrigation. 14.06 per cent and 10.46 per cent of respondents had river and pond as a source of irrigation respectively. Only 5.92 per cent of the respondents had canal as a source of irrigation.

4.1.13 Area under salt affected soils

The information pertaining to the area under salt affected soils of the respondents was collected, tabulated and analyzed. The results are presented in Table 19 and Fig.15.

Table-19: Distribution of the respondents by their area under salt affected soils

Sr. No.	Area under salt affected soils(ha.)	No. of respondents (n=135)	Per centage
1	Small (upto 0.5)	56	41.44
2	Medium (0.6 to 1.3)	61	45.24
3	Big (1.4 and above)	18	13.32
	Total	**135**	**100.00**

Mean =0.938 SD=0.481

Table 19 and Fig.15 revealed that majority (45.24 per cent) of the respondents had medium area under salt affected soils (i.e. 0.6 to 1.3 ha) while 41.44 per cent of the respondents had small area under salt affected soils (i.e. upto 0.5 ha.) Only 13.32 per cent of them had big area under salt affected soils (i.e. 1.4 ha and above). However in the present investigation, it was found that the average area under salt

affected soils was 0.9 ha whereas minimum area under salt affected soils was 0.1 ha and maximum was 1.6 ha.

4.1.14 Knowledge

The information about the level of knowledge of selected salt affected soil reclamation technology possessed by the respondent was collected, tabulated and analyzed. The results are presented in Table 20 and Fig.16.

Table-20: Distribution of the respondents by their level of knowledge

Sr. No.	Level of knowledge (score)	No. of respondents (n=135)	Per centage
1	Low (upto 27)	27	19.98
2	Medium (28 to 35)	87	64.38
3	High (36 and above)	21	15.64
	Total	**135**	**100.00**

Mean=30.585 SD=3.889

The above Table 20 and Fig.16 revealed that 64.38 per cent of the respondents were having medium knowledge level regarding the selected salt affected soil reclamation technology while 19.98 per cent and 15.64 per cent of them had less and high level of knowledge about the selected salt affected soil reclamation technology, respectively.

The finding is inline with the finding of Patil (2007) wherein he found that about 64.50 per cent of respondent had medium level of knowledge.

Further, the information pertaining to practicewise knowledge of respondent about selected package of practices of

salty soil reclamation technology was collected and analyzed. The results are presented in Table 21.

Table-21: Distribution of the respondent by their practice wise knowledge of selected salty soil reclamation technology

(N=135)

Sr. No.	Practice selected	Complete knowledge	Partial knowledge	No knowledge
1	Soil leveling	135 (100.00)	-	-
2	Irrigation management	96 (72.52)	37 (27.48)	-
3	Use of soil reclamant			
	a) Gypsum	89 (65.86)	46 (34.14)	-
	b) Iron pyrites	37 (27.48)	93 (68.82)	5 (3.70)
	c) Compost, spent wash	39 (28.86)	92 (68.18)	4 (2.96)
4	Balance use of chemical fertilizer	94 (69.56)	36 (26.74)	5 (3.70)
5	Soil testing and use of soil reclamation technology as per result of soil testing	37 (27.48)	38 (28.12)	60 (44.40)
6	Use of compost culture	76 (56.24)	55 (40.70)	4 (2.96)
7	Use of trenches for proper water drainage	24 (17.76)	49 (36.26)	62 (45.98)
8	Use of drip irrigation	84 (62.26)	51 (37.74)	-
9	Water application as per plants requirement	48 (35.82)	63 (46.42)	24 (17.76)
10	Avoid use of salty water in irrigation sources	57 (42.28)	74(54.76)	4 (2.96)

Table-21 Contd.....

Sr. No.	Practice selected	Complete knowledge	Partial knowledge	No knowledge
11	Crop rotation	135 (100.00)	-	-
12	Selection of salt resistant crop	37 (27.38)	64 (47.46)	34 (25.16)
13	Use of subsurface trenches	22 (16.38)	29 (21.46)	84 (62.16)
14	Use of open trenches	27 (19.98)	46 (34.14)	62 (45.88)
15	Use of mole drainage system	28 (20.72)	53 (39.32)	54 (39.96)
16	Use of biodrainage technology	22 (16.38)	26 (19.24)	87 (64.38)
17	Application of green manuring	92 (68.08)	43 (31.92)	-
18	Use of micronutrient	54 (39.96)	37 (27.48)	44 (32.56)
19	Avoid use of rotavator	34 (25.26)	39 (28.86)	62 (45.88)
20	Deep ploughing by using subsoiler	52 (38.56)	58 (42.95)	25 (18.50)
21	Use of acidic fertilizer	32 (23.68)	39 (28.96)	64 (47.36)

(Figures in parentheses indicates per centages)

The data in Table 21 revealed that the practices which were know to all of the respondents (100.00 per cent) were *viz.*, soil leveling, crop rotation.

The practices which were know to the majority of the respondents were crop rotation (72.52 per cent), balance use of chemical fertilizer (69.56), application of green manuring (68.08 per cent), application of gypsum (65.86 per cent), use of compost culture (56.24 per cent), irrigation

management (45.14 per cent), avoid use of salty water in irrigation sources (42.28 per cent), use of drip irrigation (37.74 per cent).

The practices which were partially known to majority of farmer were *viz*., application of iron pyrites (68.82 per cent), application of compost and spent wash (68.18 per cent), water application as per plants requirement (46.42 per cent), selection of salt resistant crop (47.46 per cent), deep ploughing by using subsoiler (42.95 per cent).

The respondents were lacking in knowledge about some of the important selected practices known by them. Very few respondent were knowledge about soil testing and use of soft reclamation technology as per result of soil testing (27.48 per cent), use of trenches for proper water drainage (17.76 per cent), use of surface trenches (16.38 per cent), use of open trenches (19.98 per cent), use of mole drainage system (20.72 per cent), use of biodrainage technology (16.38 per cent), application of micronutrient (39.96 per cent), use of acidic fertilizer (23.38 per cent).

4.2 The level of adoption of respondent about the selected package of practices of salt affected soil reclamation technology

4.2.1 Adoption level

The information about the extent of adoption of selected salt affected soil reclamation technology adopted by the respondent was collected, tabulated and analyzed. The results are presented in Table 22 and Fig.17.

Table-22: Distribution of the respondents by their level of adoption

Sr. No.	Level of adoption (score)	No. of respondents (n=135)	Percentage
1	Low (upto 19)	17	12.68
2	Medium (20 to 27)	110	81.40
5	High (28 and above)	08	05.92
	Total	**135**	**100.00**

Mean = 23.325 SD = 3.529

The above Table 22 and Fig.17 indicate that the maximum number of respondent (81.40 per cent) had medium level of adoption, while 12.08 and 5.20 per cent of the respondent had low and high level of adoption, respectively.

The findings is inline with the finding of Nikhade *et al.* (1992) wherein he found that 73.34 per cent of the respondents were in the category of medium level of adoption.

4.2.2 Practicewise adoption level of respondents

The data regarding practicewise adoption of salty soil reclamation technology of the respondent are given in Table 23.

Table 23 revealed that the practice which were 100.00 per cent adopted by all the respondents were soil leveling.

Table-23: Distribution of the respondent by their practicewise adoption level of selected salty soil reclamation technology

(N = 135)

Sr. No.	Practice selected	Complete adoption	Partial adoption	No adoption
1	Soil leveling	135 (100)	-	-
2	Irrigation management	43 (31.82)	55 (40.60)	37 (27.48)
3	Use of soil reclamant			
	a) Gypsum	56 (41.44)	42 (31.08)	37 (27.48)
	b) Iron pyrites	31 (22.94)	57 (42.28)	47 (34.78)
	c) Compost, spent wash	35 (25.90)	59 (43.66)	41 (30.44)
4	Balance use of chemical fertilizer	29 (21.36)	37 (47.48)	69 (51.16)
5	Soil testing and use of soil reclamation technology as per result of soil testing	31 (22.94)	35 (25.90)	69 (51.16)
6	Use of compost culture	36 (26.64)	44 (32.66)	55 (40.70)
7	Use of trenches for proper water drainage	21 (15.64)	42 (31.08)	72 (53.28)
8	Use of drip irrigation	33 (24.42)	66 (48.84)	36 (26.64)
9	Water application as per plants requirement	38(28.22)	51 (37.74)	46 (34.04)
10	Avoid use of salty water in irrigation sources	39 (28.86)	57 (42.28)	39 (28.86)
11	Crop rotation	59 (43.64)	44 (32.66)	32 (23.70)
12	Selection of salt resistant crop	28(20.72)	47 (34.78)	60 (44.50)
13	Use of subsurface trenches	19 (14.06)	24 (17.76)	92 (68.18)
14	Use of open trenches	22 (16.20)	37 (27.48)	76 (56.34)
15	Use of mole drainage system	21 (15.64)	29 (21.46)	85 (62.90)
16	Use of biodrainage technology	14 (10.36)	18 (13.32)	103 (76.32)
17	Application of green manuring	58 (42.92)	46 (34.14)	31 (22.94)
18	Use of micronutrient	33 (24.52)	42 (31.08)	60 (44.40)
19	Avoid use of rotavator	18 (13.32)	26 (19.24)	91 (67.44)
20	Deep ploughing by using subsoiler	36 (26.64)	44 (32.66)	55 (40.70)
21	Use of acidic fertilizer	24 (17.76)	31 (22.94)	80 (59.30)

(Figures in parenthesis indicates per centages)

It was further observed that a majority of the respondents were followed use of soil reclamant like gypsum application (41.44 per cent), following the crop rotation (43.64 per cent), application of green manuring. The practices which were partially adopted by the respondent were irrigation management (40.60 per cent), application of iron pyrites (42.28 per cent), application of compost (43.66 per cent), use of compost culture (32.66 per cent), water application as per plants requirements (37.74 per cent), avoid the use of salty water in irrigation sources (42.28 per cent), selection of salt resistant crop (37.78 per cent), application of green manuring (34.14 per cent).

However, a majority of the respondent had not adopted some of the important salty soil reclamation practices. Those were particularly balance use of chemical fertilizer (51.16 per cent), soil testing (51.16 per cent), use of compost culture (40.70 per cent), use of trenches for proper water drainage (53.28 per cent), selection of salt resistant crop (44.50 per cent), use of subsurface trenches (68.18 per cent), use of open trenches (56.32 per cent), use of mole drainage system (62.90 per cent), use of biodrainage technology (76.32 per cent), use of micronutrient (44.40 per cent), avoid use of rotavetor (67.44 per cent), deep ploughing by using subsoiler (40.70 per cent), use of acidic fertilizer (59.30 per cent).

4.3 Relationship between the selected socio-economic profile and situational attributes of the farmers and their extent of adoption

In the present investigation an attempt was made to find out the nature of relationship between the selected attributes of the respondents and their adoption level.

The correlation coefficient (r) between adoption (dependent variable) with various independent variables *viz.*, personal, social, economic and physiological are presented in Table 24 and discussed in subsequent pages.

Table-24: Relationship between selected independent and dependent variables

Sr. No.	Independent variables	Coefficient of correlation (r) (n=135)
1	Age	-0.024^{NS}
2	Education	0.274**
3	Annual gross income	0.257**
4	Farming experience	0.174*
5	Size of land holding	0.345**
6	Area under salt affected soils	0.192*
7	Irrigation sources	0.243**
8	Source of information	0.380**
9	Scientific orientation	0.499**
10	Risk orientation	0.223*
11	Experience in soil reclamation	0.234**
12	Experience in salt affected soil cultivation	0.268**
13	Attitude of farmers towards salt affected soil reclamation practices	0.444**
14	Knowledge	0.681**

* Significant at 5 per cent level of significance
** Significant at 1 per cent level of significant
N.S. = Non significant

4.3.1 Age and adoption

Table 24 indicate that the relationship between age and adoption level of respondent was negatively non-significant (r= -0.024^{NS}) at 1 per cent level of significance.

It was observed that there was decrease in adoption level with increase in the age of the respondents. This means, age influences substantially the adoption of salt affected soil reclamation technology. Particularly, middle age and younger farmers had better adoption than the old farmers, possibly because of their desire to try new and more paying and low cost technologies and feeling to gain new experience.

This finding is inline with the findings of Dhapke (2004) wherein he found that there was non-significant relationship between age of respondents and adoption of soil and water conservation practices.

4.3.2 Education and adoption

The correlation coefficient (r=0.274) between education and adoption level of respondents showed in Table-24 indicate that there was positive and significant relationship at 1 per cent level of significance. It means the adoption level increases with an increase in the level of formal education of the respondents. This may be the case that the educated people could read the relevant literature and grasp modern techniques of agriculture. The level of education also helps to an individual to get him acquainted with the skills that are required for exercising the modern techniques of reclamation

of salty soil. This might have resulted in establishing a positive and significant relationship of education with adoption level.

The findings is in conformity with the findings of Dapake (2004) and Sasane *et al.* (2007).

4.3.3 Annual gross income and adoption

Table 24 revealed that the relationship between annual gross income and adoption of salt affected soil reclamation technology by the respondent was positive and significant (r=0.257) at 5 per cent level of significance.

Annual income determines the economic status of the farmers. They could afford to spend timely money on purchase of critical inputs in desired quantity and quality as required for the recommended practices. This indicates that higher the annual income, more will be the adoption of salty soil reclamation technology in time as and when required.

The findings were in line with the findings of Patil (2007) and Sasane *et al.* (2007).

4.3.4 Farming experience and adoption

There was a positive and significant relationship (r=0.174) between farming experience and adoption of salty soil reclamation technology at 5 per cent level of significance. Therefore, it can be stated that farmers with higher farming experience had more adoption of selected practices than the farmers with low farming experience.

Similar findings were reported by Sawant (2002) and Patil (2007).

4.3.5 Size of land holdings and adoption

There was a positive and significant relationship (r=0.345) between size of land holding and adoption of salt affected soil reclamation technology at 1 per cent level of significance. This might be the case that farmers with large size of land holding and sound economic position, they are likely to take higher risks, accept new ideas earlier and lead them to adopt recommended technology on their farm. Therefore, it can be stated that farmers with large size of land holding had more level of adoption than those having small size of land holding under cultivation.

Similar findings were recorded by Patil (2002) and Dhapake (2004).

4.3.6 Area under salt affected soils and adoption

Relationship between the area under salt affected soils and adoption was positive and significant (r=0.192) at 5 per cent level of significance as seen in the Table 24.

This might be the case that farmers with large area under salt affected soils, they are likely to take higher risks, accept new ideas earlier and lead them to adopt recommended technology on their farm. Therefore, it can be stated that farmers with large area under salt affected soils had more level of adoption than those having small area under salt affected soils.

4.3.7 Irrigation sources and adoption

Relationship between the irrigation sources and adoption was positive and significant (r=0.243) at 1 per cent level of significance as seen in the Table 24.

4.3.8 Sources of information and adoption

Relationship between the sources of information used by the respondents and the adoption level was positive and significant (r=0.385) at 1 per cent level of significance as seen in the Table 24.

It reveals that with an increase use of sources of information by the respondents, there was gain in the additional technical information of the respondents which lead them to increase in their adoption level. Higher the exposure and contacts with various sources of information enriches the knowledge of the respondents and also offer solutions to their problems. This ultimately results into higher adoption by them.

This findings is similar with the findings of Dhapake (2004), Patil (2007) and Sasane *et al.* (2007).

4.3.9 Scientific orientation and adoption

There was a positive and highly significant relationship (r=0.499) between scientific orientation and adoption of salt affected soil reclamation technology.

Similar findings were recorded by Paturkar (1981), Patil and Waghdhare (1989), Khandikar (1996).

4.3.10 Risk orientation and adoption

From Table 24, it can be seen that relationship between risk orientation and adoption level of the respondents was found to be positive and highly significant (r=0.223) at 1 per cent level of significance.

This indicates that those respondents who had high risk orientation are psychologically prepared to try the exercise of new innovations with a view to make progress in farming. These facts might stimulate them to adopt improved technology. Thus, this indicates that higher the risk orientation, higher will be the adoption of selected salt affected soil reclamation technology by the respondents.

The findings of the study is inline with those of the findings of Mane (2005) and Patil (2007).

4.3.11 Experience in soil reclamation and adoption

There was a positive and highly significant relationship (r=0.234) between experience in soil reclamation and adoption of salt affected soil reclamation technology at 1 per cent level of significance. It is believed that more experience in any occupation, better is the knowledge and mastery over skills and there by better adoption. Therefore, this indicate that higher is the experience in soil reclamation, more is the adoption of salt affected soil reclamation technology by the respondents.

Similar findings were recorded by Hinge (1996), Pawar (2007) and Kharde (2003).

4.3.12 Experience in salt affected soil cultivation and adoption

There was a positive and highly significant relationship (r=0.268) between experience in salt affected soil cultivation and adoption of salt affected soil reclamation technology at 1 per cent level of significance. It is believed that more the experience in any occupation better is the knowledge and mastery over skills and thereby better adoption. Therefore, this indicte that higher is the experience in salt affected soil cultivation, more is the adoption of the salty soil reclamation technology by the respondents.

The findings of the study is inline with that of the findings of Pawar (2002) and Kharde (2003).

4.3.13 Attitude of farmers towards salt affected soil reclamation practices and adoption

Attitude of the farmers and their level of adoption was found positively significant (r=0.444) at 1 per cent level of significance. This also confirmed by the facts noticed in the present study that large majority of the farmers exhibited favourable attitude towards the salt affected soil reclamation technology.

This findings is similar to findings of Salunke (1994) and Prasad (2000).

4.3.14 Knowledge and adoption

Table 24 revealed that (r=0.681) the correlation between knowledge and adoption level of the respondents related to the selected salt affected soil reclamation technology

was highly positive and statistically significant at 1 per cent level of significance.

Thus, this indicates that higher the knowledge more will be the adoption level of salty soil reclamation technology by the respondents.

Similar findings were recorded by Patil (2002), Mane (2005) and Patil (2007).

4.4 Constraints faced by the respondents in adoption of selected salt affected soil reclamation technology

The information pertaining to the constraints faced by the respondents in the adoption of selected salt affected soil reclamation technology is presented in Table 25.

Table-25: Constraints faced by the respondents in adoption of selected salt affected soil reclamation technology

Sr. No.	Constraints	Frequency	Per centage
A)	**Supply constraints**		
1	Insufficient supply of FYM	39	28.86
2	Shortage of irrigation water	23	17.02
3	Insufficient of supply of soil reclamant	58	42.92
4	Unavailability of soil testing facility	76	56.24
5	Insufficient supply of chemical fertilizer	51	37.74
6	Lack of skilled labour	56	41.44

Table-25 Contd.....

Sr. No.	Constraints	Frequency	Per centage
7	Unavailability of facility like drip irrigation	32	23.68
8	Lack of improved tools	46	34.04
9	Lack of salt resistant crop variety	38	28.12
B)	**Economic constraints**		
1	Insufficient capital	59	43.66
2	Unavailability of loan from banks in time	53	39.22
3	More labour charges	94	69.56
4	High cost of FYM	39	28.86
5	High cost of chemical fertilizer	89	65.86
6	High cost of soil reclamant	51	37.74
7	High cost of leveling and bunding	61	45.14
8	High initial investment in drip irrigation and spray irrigation	46	34.04
9	Soil testing is costly	63	46.62
10	High cost of drainage system	71	52.54
C)	**Technical constraints**		
1	Lack of information about availability soil reclamation	56	41.44
2	Lack of information about improved soil reclamation practices	52	38.48

Table-25 Contd.....

Sr. No.	Constraints	Frequency	Per centage
3	Lack of information about soil reclamant	69	51.06
4	Lack of knowledge about agencies engaged in work relates to soil reclamation	64	47.36
D)	**Extension constraints**		
1	Visits of extension personnel are not in time	36	26.64
2	Extension personnel have not proper knowledge about soil reclamation practices	17	12.58
3	Lack of availability of literature about soil reclamation technology in local language	31	22.94
4	Audio-visual aids are not used by extension personnel	28	20.72
5	Visits are not organized by the extension workers on progressive farmers field	22	16.28
6	Visits are not organized by the extension workers to the Agril. Universities and research centres	41	30.34
7	Results and method demonstration are not conducted by the extension personnel	24	17.76

A. Supply constraints

From Table 25, it is observed that a majority (56.24 per cent) of the respondents faced the problem of unavailability of soil testing facility.

The other major problems expressed by the respondents were, insufficient supply of soil reclamant (42.92 per cent), lack of skilled labout (41.44 per cent), lack of improved tools (34.04 per cent), lack of salt resistant crop variety (28.12 per cent), unavailability of facility like drip irrigation (23.68 per cent), shortage of irrigation water (17.02 per cent).

B) Economic constraints

It was observed that a majority (69.56 per cent) of the respondents complained about more labour charges.

The other major economic problems expressed by the respondents were high cost of chemical fertilizers 65.86 per cent), high cost of drainage system (52.54 per cent), soil testing is costly (46.62 per cent), high cost of leveling and bunding (45.14 per cent), insufficient capital (43.66 per cent), unavailability of loan from bank in time (39.22 per cent), high cost of soil reclamant (37.44 per cent), high ignition investigation in drip irrigation and spray irrigation (34.04 per cent), high cost of FYM (28.86 per cent).

C) Technical constraints

It was observed from Table 25 that a majority (51.06 per cent) of the respondents were lack of knowledge about use of soil reclamant.

Other major problems expressed by the respondents were lack of knowledge about agencies engaged in work related to soil reclamation, (47.36 per cent), lack of information about availability of improved soil reclamation practices (41.44 per

cent), lack of information about improved soil reclamation practices (38.48 per cent).

D) Extension constraints

From Table 25, it is observed that a majority (30.34 per cent) of the respondent were faced the problem of visits are not organized by the extension personnel to the agricultural universities and research centres.

The other major problems expressed by the respondents were visits of extension personnel are not in time (26.64 per cent), lack of availability of literature about soil reclamation technology in local language (22.94 per cent), audio-visual aids are not used by extension personnel (20.72 per cent), result and method demonstration are not conducted by extension personnel (17.76 per cent), visits are not organized by the extension workers on progressive farmers field (16.28 per cent), extension personnel have no proper knowledge about soil reclamation practices (12.58 per cent).

4.5 Suggestion made by the respondents for overcoming the constraints faced by them

Suggestions were invited from respondents to overcome constraints faced by them in adoption of salty soil reclamation technology. In all 11 suggestion made by the respondents are shown in Table 26.

Table 26 revealed that a majority (82.14 per cent), of the respondent were suggested that there should be providing subsidy for land leveling, bunding and drainage system.

Table-26: Distribution of the respondents by their suggestions to overcome the constraints faced in adoption of salt affected soil reclamation technology

Sr. No.	Suggestions	Frequency	per centage
1	All types of soil reclamants should be made available at rational (cheaper) rate	109	80.66
2	Soil reclamants should be supplied at proper time	52	38.48
3	Increase the subsidy on drip irrigation system	99	73.26
4	More information may be given about soil reclamation technology	61	45.14
5	Extension personnel should be made the technical information available in time	106	78.44
6	Extension personnel should arrange training programme for farmers	87	64.38
7	Providing subsidy for land leveling, bunding, drainage system etc.	111	82.14
8	Providing irrigation facility	46	41.44
9	Soil testing should be made available at rational (cheaper) rate	94	69.56
10	Under Government leadership, soil reclamation programme should be start and implement on large scale	99	73.26
11	On co-operative basis farmers come together and implement soil reclamation programme on large scale	88	65.12

Other major suggestion made by the respondent were all types of soil reclamant should be made available at rational rate (80.66 per cent), extension personnel should be made the technical information available in time (78.44 per cent), increase subsidy on drip irrigation system (73.26 per cent), under government leadership soil reclamation programme should be start and implement on large scale (73.26 per cent), soil testing should be made available at rational (cheaper) rate (69.56 per cent), on co-operative basis farmer come together and implement soil reclamation programme on large scale (65.12 per cent), extension personnel should arrange training programme for farmers (64.38 per cent), information may be given about soil reclamation technology (45.14 per cent), soil reclamant should be supplied at proper time (38.48 per cent).

5. SUMMARY, CONCLUSIONS AND IMPLICATIONS

This chapter deals with the summary of the findings of the study and their implications for the future line of action and research.

Though the soil is the crucial national resource and therefore no country can afford to neglect or waste of it. But now a days there is a day by day increase in salt affected soil due to various reasons. Salt released by weathering of silicates minerals are important original sources and are responsible for formation of such soil in India. However, the knowledge on the extent of salt affected soil is important because these soils are increasingly brought under intensive irrigations and salinity problem is becoming more acute in canal command area of Maharashtra. The judicious use of irrigation, fertilizers and inclusion of organic and or inorganic amendment alone along with bioinoculants are the key factor for improvement of salt affected soils for their fertility and productivity.

Schonover (1959) in his study of soil problem in India has listed the various technical requirements for reclamation of saline and alkali soils. But it is observed that the farmers don't follow these practices as recommended. This means that there is low adoption of recommended salt affected soil reclamation practices at farmers field. In view of this to find out reason for low adoption, the present study was attempted in this direction.

The research study entitled, **A study of knowledge and adoption of selected salt affected soil reclamation practices followed by the farmers from Sangli district** was planned with following specific objectives.

1. To study the socio-economic profile and situational attributes of the respondents.
2. To study the knowledge level and extent of adoption about the salt affected soil reclamation technology.
3. To study the relationship between selected socio-economic profile and situational attributes of the farmers and their extent of adoption.
4. To find out the information sources and extension contact availed by the respondents for salt affected soil reclamation
5. To find out the constraints and suggestions made by the farmers about reclamation of salt affected soils.

With the help of above objectives a hypothesis was formulated. is that “there exists a relationship between the socio-economic profile and situational attributes of the respondents from salt affected soil tract and extent of adoption of salt affected soil reclamation practices and it was tested in this study.

The methodology procedure consists of measurement of extent of adoption as dependent variable and selected characteristics of respondents as independent variables *viz.*, selection of research site, villages and

respondents. For the analysis of data statistical measures such as frequency, per centage, mean and coefficient of correlation were used.

The data were collected with the help of interview schedule, which was pretested before using it. The data collected from 135 respondents.

The data were presented and discussed by using the frequencies and per centages. The coefficients of correlation (r) were computed to find out the relationship between the selected characteristics of the respondents with their level of adoption of salt affected soil reclamation technology as dependent variable.

The summary of the important findings is given in following pages.

5.1 Socio-economic profile and situational attributes of the respondents

A majority of the respondent (65.89 per cent) were belonged to middle age group (34 to 57 years).

About 45.27 per cent of the respondents were secondary school educated.

About 41.44 per cent of the respondents were dependent on Agricultural Assistant of Agriculture Department for source of information. Whereas 57.82 per cent of the respondents depend on progressive farmers for source of information, where as 65.12 per cent and 73.36 per cent of them were used television and news paper as sources of their information, respectively. About 68.08 per cent of the

respondents were used medium sources of information for the adoption purpose.

A majority of the respondents (71.14 per cent) had medium annual income (Rs.92,552 to Rs.2,44,825).

A majority of the respondents (64.38 per cent) had medium size of land holding (2.01 to 4.00 ha).

About 63.64 per cent of the respondent had medium experience in farming (14 to 35 years).

About 60.68 per cent of the respondent had medium experience in salt affected soil cultivation (6 to 9 years).

About 61.52 per cent of the respondent had medium experience in soil reclamation (4 to 7 years).

A majority of the respondent (58.46 per cent) had medium risk orientation (7 to 10 score).

A majority of the respondent (44.50 per cent) had medium scientific orientation (5 to 8 scores).

A majority of the respondents (45.24 per cent) had well as the source of irrigation.

A majority of the respondents (45.24 per cent) had medium area under salt affected soils (0.6 to 1.3 ha).

About 64.38 per cent of the respondents had medium level of knowledge.

5.1.2 Level of adoption of the respondents about the selected salt affected soil reclamation technology

About 81.40 per cent of the respondents were from medium level of adoption.

5.1.2.1 Practicewise adoption level of the respondent

It was observed that all (100.00 per cent) respondents had completely adopted the practice like soil leveling.

The practices which were adopted by large number of respondents were use of soil reclamant like gypsum application (41.44 per cent), following the crop rotation (43.64 per cent), application of green manuring (42.92 per cent) irrigation management (31.82 per cent).

The practices which were adopted by considerably less number of respondents were avoid use of salty water in irrigation sources (28.86 per cent), water application as per plants requirements (28.22 per cent), deep ploughing by using subsoiler (26.64 per cent), use of compost culture (26.64 per cent), use of compost and spent wash (25.90 per cent), use of micronutrient (24.52 per cent), use of drip irrigation (24.42 per cent), use of iron pyrites (22.94 per cent), soil testing and use of soil reclamation technology as per result of soil testing (22.94 per cent), balance use of chemical fertilizer (21.36 per cent), selection of salt resistant crop (20.72 per cent), use of acidic fertilizer (17.76 per cent), use of open trenches (16.20 per cent), use of mole drainage system (15.64 per cent), use of

subsurface trenches (14.06 per cent), avoid use of rotavator (13.32 per cent), use of biodrainage technology.

5.1.3 Relationship between the socio-economic profile and situational attributes of the respondents with their level of adoption

Among the selected characteristics of the respondents, only age of the respondents exhibited negative and non-significant relationship with their adoption level. While, education, annual gross income, farming experience, size of land holding, scientific orientation, risk orientation, experience in soil reclamation, experience in salt affected soil cultivation, irrigation sources, area under salt affected soils exhibited significant relationship with their adoption level.

5.1.4 Constraints faced by the respondents in adoption in selected salt affected soil reclamation technology

The important supply constraints faced by the respondent were the unavailability of soil testing facility (56.24 per cent), insufficient supply of soil reclamant (42.92 per cent), lack of skilled labour (41.44 per cent), lack of improved tools (34.04 per cent), insufficient supply of FYM (28.86 per cent).

Major economic constraints faced by the respondents were high labour charges (69.56 per cent), high cost of chemical fertilizer (65.86 per cent), high cost of drainage system (52.54 per cent), soil testing is costly (46.62 per cent), high cost of leveling and bunding (45.14 per cent), insufficient capital (43.66 per cent), unavailability of loan from bank in time (39.22 per cent).

Major technical constraints faced by the respondents were lack of knowledge about use of soil reclamant (51.06 per cent), lack of knowledge about agencies engaged in work related to soil reclamation (47.36 per cent), lack of information about availability of improved soil reclamation practices (41.44 per cent).

Major extension constraints faced by the respondent were the visits are not organized by the extension personnel to the agricultural universities and research centres (30.34 per cent), visits of extension personnel are not in time (26.64 per cent), lack of availability of literature about soil reclamation technology in local language (22.94 per cent).

5.1.5 Suggestions made by the respondents for overcoming the constraints

The respondents made number of suggestion to overcome the constraints faced by them such as there should be providing subsidy for land leveling, bunding and drainage system (82.14 per cent), all type of soil reclamant should be made available at rational rate (80.66 per cent), extension personnel should be made available the technical information in time (78.44 per cent), increase subsidy on drip irrigation system (73.26 per cent), under government leadership soil reclamation programme should be start and implemented on large scale (73.26 per cent), soil testing should be made available at rational rate (69.56 per cent), extension personnel should arrange training programme for farmers (64.38 per cent), more information may be given about soil reclamation

technology (45.14 per cent), soil reclamant should be supplied at proper time (38.48 per cent).

5.2 Action implications

The researcher hopes that this research study would be highly useful in understanding the socio-economic profile and situational attributes and psychological characteristics of the respondents, their adoption level of selected salt affected soil reclamation technology and constraints faced by them while adopting the salt affected soil reclamation technology. Moreover, the results of this study will help to the extension workers and other associated with salty soil reclamation in performing their functions more effectively. On the basis of the results of the study following implications are drawn.

The research findings indicated that a majority of the respondent were ignorant about soil testing and use of soil reclamant as per result of soil testing, use of trenches for proper water drainage, use of subsurface trenches, use of biodrainage technology, use of open trenches, use of mole drainage system, avoid use of rotavator, use of acidic fertilizer so there was less adoption related to these aspects. The extension agencies, therefore, need to reorient their training programmes towards upgrading the farmers regarding these practices by giving training, organizing method and result demonstrations and arranging tours to the demonstrated farms. The study points out that a majority of the respondents were facing the problems *viz.,* unavailability of soil testing

facility, more labour charges, high cost of chemical fertilizer, high cost of drainage system, soil testing is costly, lack of knowledge about use of soil reclamant, lack of knowledge about agencies engaged in work related to soil reclamation, lack of information about availability of improved soil reclamation practices. It is therefore, proposed that these input supplied at subsidized rates through co-operative society or agro service centres. Guidance needs to be given to the respondents to reclaim the salty soil.

Some of the respondents have suggested to provide subsidy for land levelling, bunding, drainage system and all types of soil reclamants should be made available at rational (cheaper) rate and hence it is recommended that the more subsidy should be made available for this inputs by Government.

5.2.1 Research implications

The present study was of exploratory type, the findings will have to be tested to a greater depth in other parts of the state and also in India to judge its validity on universal scale. However, this study will be useful as a benchmark for further probe into the studies of similar types.

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_hmË_m \w bo H¥ {f {dÚmnrR>, amhþar$ $

{dñVma {ejUemñÌ {d^mJ
_wbmIV n«íZmdbr

gm§Jbr {Oëh`mVrb eoVH$-`m§À`m jmanS> O_rZ
gwYmaUm nÜXVr{df`r kmZ Am{U Adb§~ZmMm Aä`mg

==========

Aä`mgH$ _mJ©Xe©H$
lr. ndma `ed§V ~mimgmho~ S>m°.
nr.Or. lbMo
a{O.Z§. 07/118 {d^mJ
à_wI,
E_.Eñgr (H¥$fr) {dñVma
{ejUemñÌ {d^mJ,
{dñVma {ejUemñÌ {d^mJ _\w
H¥${d, amhþar - 413 722

^mJ -1

gd©gmYmaU _m{hVr :-

1) eoVH$-`mMo Zmd :

.....

2) Jm§d : ..... VmbwH$m :..... {Oëhm

:.....

3) d` :..... df}

4) ì`dgm`:

A) àmW[_H$:

~) Xwæ`_:$ $

5) {ejU:

6) Hw$Q>§w>~mMm AmH$ma :

A.H«$.	Hw$Qw>§~mVrb gXñ`	g§»`m
1.	nwéf	

2.	pñÌ`m	
2.	_wbo	
	EHw$U	

7. Hw$Q>w§~mVrb gXñ`mMm Vnerb:-

A. H« $	Hw$Qw>§~mVrb gXñ`§mMo Zm§d	gXñ`m~amo~a ZmVo	d` (dfo ©)	{ejU (B`ËVm)	ì`dgm`	dm[f©H$ CËnÝZ (én`o)
1.		ñd:V				
2.						
3.						
4.						
5.						
6.						
7.						
8.						

8) Hw$Q>w>§~mMo gd© _mJmªZr EHw$U dm{f©H$ CËnÝZ :-

A. eoVrnmgyZMo CËnÞ é.....

~. nwaH$ ì`dgm`mnmgwZMo CËnÝZ é.....

H$. godm joÌmnmgwZMo CËnÝZ é.....

S>. eoV _OwarnmgyZMo CËnÝZ é.....

B. EHw$U CËnÝZ é.....

9) EHw$U O{_Z YmaU joÌ : ..... hoŠQ>a:

..... Ama

A.H«$.	O[_ZrMm àH$ma	O_rZ (hoŠQ>a)
1.	~mJm`V joÌ	
2.	{Oam`V joÌ	
3.	nS>rH$ joÌ	
4.	jmanS> O{_Z	
	EHw$U	

10) ObqgMZmMo ñÌmoV

{dhra	ZXr	Vbmd	H$mbdm	Hw$nZ{bH$m	BVa

11. eoVr{df`H$ AZw^d :- ..... df©

12. jmanS> O_rZ gwYmaÊ`mMm Agbobm AZw^d :-

.....df©

13. jmanS> O{_ZrV bmJdS> H$aÊ`m~m~V Agbobm

AZw^d :- .....df©

14. Omolr_ {df`H$ _wë`_mnZ :-

A.H«$.	{dYmZ	nyU© gh_V	gmYmaU gh_V	Agh_V
1.	H¥${f VÌm§À`m gë`mZwgma jmanS> O{_Zr gwYmaUm			

	nÜXVtMm ñdrH$ma H$aUo AWdm ~Xb H$aUo `mo½` Amho.			
2.	eoVr{edm` Am{W©H$Ñï>`m {H$\ m`Vera Xwgam ì`dgm` hmVr KoUo \ m`X`mMo Amho.			
3.	Omo eoVH$ar gmYmaU eoVH$-`m§nojm OmñV YmoH$m nËH$aÊ`mg V`ma AgVmo Vmo Am{W©H$Ñï>`m `eñdr hmoVmo.			
4.	^mdr CXXrï> S>moi`mg_moa R>odyZ EImX`m I{M©H$ V§ÌmMm ñdrH$ma H$aUo `mo½` Amho.			
5.	~mOma^mdmMm {dMma Z H$aVm R>am{dH$ CËnmXZ H$aUo `mo½` Zmhr			
6.	BVa bmoH$ OmoIr_ KodyZ `eñdr Pmbo VaM AmnU OmoIr_ ¿`mdr.			
7.	eoVrMm H$moUVmhr ZdrZ {dMma H$mZmda Amë`mg Ë`mMo AZwH$aU àW_ H$aÊ`mg nwT>mH$ma ¿`mdm.			

15. jmanS> O_rZ gwYmaUm V§ÌkmZm~XX²>b _m{hVrMo ñÌmoV :

A.H«$.	_m{hVrMo ñÌmoV	g§nH©$		
		Zoh_r	AYyyZ-_YyZ	H$YrM Zmhr
A.	**{dñVmamg§~§YrV ì`ŠVrMo ñÌmoV**			
1.	J«m_godH$			
2.	eoVr ImË`mMm H¥${f ghmæ`H$			
3.	ghH$mar gmIa H$aImÝ`mMm H¥${f ghmæ`H$			
4.	H¥${f {dÚmnrR>mMm H¥${f ghmæ`H$			
5.	_§S>i H¥${f A{YH$mar			
6.	VmbwH$m H¥${f A[YH$mar			
7.	n§Mm`V g{_Vr {dñVma A{YH$mar			
8.	{Oëhm A{YjH$ H¥${f A{YH$mar			
9.	H¥${f {dÚmnrR>mMo emñÌk			
10.	H¥${f {dÚmnrR> {ñWV _m{hVr V§ÌkmZ H|$Đ			
11.	BVa			
~.	**ñWm{ZH$ ì`ŠVrMm ñÌmoV**			
1.	eoOmar			
2.	{_Ì_§S>ir			
3.	ZmVodmB©H$			

4.	àJVerb eoVH$ar			
5.	ñWm{ZH$ à{V{ZYr			
6.	BVa			
H$.	**JQ> g§nH©$ ñÌmoV**			
1.	n[aUm_ àmË`{jH$			
2.	H¥$Vr àmË`{jH$			
3.	eoVr{df`H$ ghb			
4.	{edma \o ar			
5.	eoVH$ar _oimdm			
6.	g_yh MMm© /JQ>MMm©			
7.	H¥${f {XZ			
8.	BVa			
S>.	**OZg§nH©$ ñÌmoV**			
1.	ao{S>Amo			
2.	XyaXe©Z			
3.	dV©_mZ nÌ			
4.	eoVr {Z`VH$mbrHo$			
5.	hñV n{ÌH$m			
6.	KS>r n{ÌH$m			
7.	BVa			
B.	**g§ñWmË_H$ ñÌmoV**			
1.	J«m_n§Mm`V			
2.	n§Mm`V g{_Vr			
3.	ghH$mar g§ñWm			
4.	H¥${f g§emoYZ Ho§$Ð			
5.	H¥${f {dÚmnrR>			
6.	H¥${f {dkmZ {XZ			
7.	BVa			

16. d¡kmZrH$ n[adV©Z{ebVm :-

A. H« $.	**d¡kmZrH$ n[adV©Z{ebVoMm Vnerb**	**d¡kmZrH$ n[adV©Z{ebVoMm H$m¡b**

		nyU© gh_V	A§eV: gh_V	Agh_ V
1.	^ygmYmaUoMo gwYmarV V§ÌkmZ \ m`Xoera Amho.			
2.	àJVerb eoVH$ar Zoh_r à`moJerb AgVmV.			
3.	amhUr_mZ C§MmdÊ`mgmR>r nma§nm[aH$ eoVrMm Ë`mJ Ho$bm nm{hOo.			
4.	gd©M eoVH$-`m§Zr gwYmarV V§ÌkmZ dmnaÊ`mMr JaO Zmhr.			
5.	^wgwYmaUoÀ`m V§ÌkmZm{df`r gd© _m{hVr OmUyZ KoÊ`mH$[aVm eoVH$ar {dÚmnrR>m§Zm ^oQ> XoUo JaOoMo Amho.			

17) jmanS> O{_Z gwYmaUm nÕVr{df`r eoVH$è`m§Mm Agbobm Ñ{ï>H$moZ :-

A.Z§.	{dYmZ	nyU© gh_V	gmYmaU gh_V	Agh_V
1	\$m`Xoera AmhoV			
2	nwaoem à_mUmV AmhoV			
3	eoVH$è`mg dmnaÊ`mg d g_OÊ`mg `mo½` Amho.			
4	gÜ`m ApñVËdmV Agboë`m {d{dY nÕVrMr H$m`©j_Vm			

	`mo½` Amho.			
5	Vr dmT>{dÊ`mMr JaO Amho			
6	{d{dY nÕVrMr qH$_V ~KVm Ë`mnmgyZ {_iUmam \$m`Xm A{YH$ Amho.			
7	`m nÕVr \$ŠV _moR>çm eoVH$è`m§ZmM \$m`Xoera AmhoV.(bhmZ eoVH$è`m§er VwbZm H$aVm)			
8	`m nÕtÀ`m dmnamda _moR>çm à_mUmda _`m©Xm `oVmV.			
9	`m nÕVtÀ`m dmnamZo CËnmXZmV dmT> hmoVo.			

^mJ -2

18. jmanS> O_rZ Agboë`m eoVH$-`m§Zo gXaMr O_rZ gwYmaÊ`mgmR>r _mhrV Agboë`m d AmË_gmV Ho$boë`m jmanS> O_rZ gwYmaUm V§ÌkmZm~XX²>bMr d nÜXVr {df`rMr _m{hVr. $

A. H«$.	jmanS> O_rZ gwYmaUm V§ÌkmZ/ nÜXVr	Vm§{ÌH$ kmZ			Adb§~Z		
		nwU©V:	A§eV:	Zmhr	nwU©V:	A§eV:	Z
1.	O_rZ gnmQ>rH$aU						
2.	nmUr {Z`moOZ						
3.	^wgwYmaH$m§Mm dmna						
	A. {Oßg_						
	~. Am`Z© nm`amB©Q>g						
	H$. gë\w arH$ A°{gS>						
4.	amgm`ZrH$ IVm§Mm g§VwbrV dmna						
5.	_mVr n[ajU d Ë`mà_mUo O_rZ gwYmaUm Cnm`m§Mm dmna						
6.	H§$nmoñQ> H$ëMaMm dmna						
7.	nmÊ`mMm {ZMam ì`d[ñWV hmoÊ`mgmR>r Ma H$mT>Uo						
8.	qR>~H$ qgMZ nÜXVrMm dmna						
9.	{nH$mÀ`m Oéarà_mUoM						

	nmUr XoUo						
10.	ObqgMZmÀ`m ñÌmoVmVrb nmUr ImadQ> Agë`mg Ë`m nmÊ`mMm dmna Q>miUo						
11.	{nH$m§Mr \o anmbQ> d {ZdS>						
12.	jma d MmonU`wŠV O_rZrg à{VHmaH {nH$m§Mr {ZdS>						
13.	O{_ZrImbrb {ZMam nÜXVrMm dmna						
14.	CKS>o Ma						
15.	_mob {ZMam nÜXVrMm dmna						
16.	~m`moS>o—ZoO V§ÌkmZmMm dmna						
17.	{hadi Mmam {nH$m§Mr bmJdS>						
18	gwú_ AÞÐì`m§Mm dmna H$amdm						
19	amoQ>°ìhoQ>aMm dmna H$ê$ Z`o						
20	g~gm°B©baZo ImobdQ> ZmJaQ> H$amdr						
21	Amåb`wŠV IVm§Mm dmna H$amdm.						

19) eoVH$è`m§Zm ^oS>gmdUmè`m AS>MUr

A.H«$.	AS>MUr	hmo`	Zmhr
A.	**nwadR>`m{df`H$ AS>MUr $**		
1.	eoUIVm§Mm Anwam nwadR>m		
2.	Anwam nmUr nwadR>m		

3.	^wgwYmaH$m§Mm ({Oßg_, Am`Z© nm`amB©Q>g) Anwam nwadR>m		
4.	_mVr n[ajU gw{dYm§Mm A^md		
5.	amgm`{ZH$ IVm§Mm Anwam nwadR>m		
6.	Hw$eb _Owam§Mm A^md gwYmarV Am¡Om§amMm A^md		
7.	qR>~H$ qgMZmgmaIm gw{dYm§Mm AZwnbãYVm		
8.	gwYmarV Am¡Om§amMm A^md		
9.	jma d MmonU`wŠV O{_Zrg à{VH$maH$ {nH$m§À`m gwYmarV OmVtMm A^md		
10.	BVa		
~.	**Am{W©H$ AS>MUr**		
1.	ñdVMo Anwao ^m§S>db		
2.	^wgwYmaUogmR>r ~°HmHS>o Ho boë`m _mJUrZwgma		
3.	aŠH$_ _§Oya hmoV Zmhr		
4.	_OwarMm OmñV Xa		
5.	eoUIVm§Mr OmñV qH$_V		
6.	amgm`{ZH$ IVm§Mr OmñV qH$_V		
7.	^wgwYmaH$m§Mr OmñV qH$_V		
8.	O_rZ gnmQ>rH$aUmMm d ~m§Y ~§XrñVrMm OmñV IM©		
9.	gwú_ ObqgMZ d Vwfma qgMZmg gwadmVrg bmJUmao ^m§S>db OmñV Amho		
10.	_mVr n[ajU I{M©H$ Amho		
11.	{Zmam nÜXVrg hmoUmam IM© OmñV Amho		
12.	BVa		
H$.	**Vm§{ÌH$ AS>MUr**		
1.	^wgwYmaUoÀ`m AmYw{ZH$ nÜXVrÀ`m CnbãYVo{df`r _m{hVr Zmhr		

2.	`m ZdrZ nÜXVr{df`r _m{hVrMm A^md		
3.	^wgwYmaH$m§À`m dmnam{df`r AkmZ		
4.	`m joÌmV ì`mnmar VËdmda H$m_ H$aUm-`m g§ñWm§{df`r _m{hVr Zmhr		
S>.	**{dñVma {df`H$ AS>MUr**		
1.	{dñVma g§~§YrV A{YH$m-`m§Mr ^oQ> doioda hmoV Zmhr		
2.	{dñVma g§~§YrV A{YH$m-`m§Zm `m g§X^m©V nwaogo kmZ Zmhr		
3.	ñWm{ZH$ ^mfoV `m g§~§YrV {bIrV gm{hË`mMm A^md		
4.	{dñVma H$m`©H$Ë`m©H$Sy>Z ÑH$lmì` _mÜ`_mMm Anwam dmna$		
5.	{dñVma H$m`©H$Ë`m©H$Sy>Z àJVerb eoVH$-`m§Mr ^oQ> KS>dyZ AmUbr OmV Zmhr		
6.	{dñVma H$m`©H$Ë`m©H$Sy>Z H¥ {f {dÚmnrBm§Mr ^oQ> KS>dyZ AmUbr OmV Zmhr		
7.	{dñVma H$m`©H$Ë`m©H$Sy>Z n[aUm_ VgoM H¥${f àmË`{jHo$ KoVbr OmV Zmhr		

20. Cnm` :-

darb AS>MUrda _mV H$aÊ`mgmR>r Cnm` gwMdm.

A.H«$.	Cnm`	hmo`	Zmhr
1.	gd© n«H$maMr ^wgwYmaHo$ `mo½` qH$_VrV CnbãY H$éZ X`mdoV		
2.	^wgwYmaHo$ doioda CnbãY H$éZ X`mdrV		
3.	qR>~H$ qgMZ gm{hË`mda g~{gS>r dmT>dmdr>$		

4.	Jma O_rZ gwYmaUm nÜXVr{df`r gImob _m{hVr CnbãY H$éZ X`mdr		
5.	{dñVma g§~§YrV A{YH$m-`m§Mr Vm§{ÌH$ _m{hVr dooioda X`mdr		
6.	{dñVma A{YH$m-`m§Zr eoVH - `m§À`m à{ejUmMr ì`dñWm H$amdr		
7.	`m g§~§YmV Vm§{ÌH$ _m{hVr CnbãY H$amdr		
8.	O_rZ gnmQ>rH$aU, ~m§Y~§{XñVr, {Zmam nÜXVrMm dmna B. gmR>r g~{gS>r XoÊ`mV `mdr		
9.	nmUr nwadR>`mÀ`m gmo`r CnbãY H$aÊ`mV `mì`m		
10.	_mVr n[ajU `mo½` qH$_VrV H$éZ XoÊ`mV `mdo		
11.	emgH$s` nwT>mH$mamZo jma O_rZ ^wgwYmaUoMm H$m`©H«$_ hmVr KodyZ Vmo _moR>`m à_mUmV am~{dÊ`mV `mdm		
12.	ghH$mar VËVdmMm AmYmao AZoH$ eoVH$-`m§Zr EH$Ì `odyZ _moR>`m à_mUmV ^wgwYmaUoMm H$m`©H«$_ am~dmdm		

7. VITA

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IN

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