

MINI PROJECT REPORT ON
A STUDY ON IMPACT OF DRIP IRRIGATION IN ERRAVALLI

Project Report submitted in partial fulfilment for the award of the degree of
“MASTER OF BUSINESS ADMINISTRATION”

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CERTIFICATE

This is to certify that the Mini project report entitled “**A study of the impact of Drip irrigation in Erravalli**” has been submitted by **Chevella Ajay kumar** bearing roll no **20MG201210** of the first year of Master of Business Administration.

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DECLARATION

I **chevella Ajay kumar** hereby declare that the project on “ **A study on the impact of Drip irrigation in Erravalli** ” submitted by me to the School of Business Management, ANURAG UNIVERSITY, Hyderabad is a bonafide work undertaken by me and it is not submitted to any other University or Institution. This is a genuine analysis work undertaken by me and it has not been published anywhere either.

Chevella Ajay kumar

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A STUDY ON IMPACT OF DRIP IRRIGATION IN ERRAVALLI

Abstract

The drip irrigation system is one of the water-saving technology which is used for the potential usage of the available water. The traditional form of irrigation is surface irrigation, where water will flow in the land to reach the destination of the plants, this will lead to wastage of water. But, Drip irrigation is a technology that will take the water directly to the root of the crops through the black pipes. This technology will increase the productivity of the crops. The findings are about the impact of drip irrigation in terms of resource use and yield cost of cultivation and farmer profits in Erravalli(v), Telangana, India. Despite many advantages in drip irrigation many farmers in the village have not used drip irrigation, so the findings also analyze the reasons for the farmers to not use drip irrigation, including financial constraints, water scarcity, damages by the animals, high maintenance costs, lack in technical skills, etc.,

CHAPTER-I

1.1 Introduction

This study will give an understanding of the factors influencing the use and not using of the water-saving technology, drip irrigation in the Indian state of Telangana, Erravalli village. Previously farmers were traditionally irrigated their land by surface irrigation also called flood irrigation. But drip irrigation is a technology which is invented to irrigate the farming land faster with less water as compared to surface irrigation.

Drip irrigation, also known as trickle irrigation or micro-irrigation, or localized irrigation, is an irrigation method that allows water to drip slowly to the roots of plants, through a network of valves, pipes, or emitters. Drip Irrigation prevents soil erosion, saves water and fertilizer can also be supplied by this irrigation system. Labor costs will be reduced by using drip irrigation for the farmers and there is no need for field leveling for the irrigation. Drip irrigation will enhance plant growth and yield. This will also reduce weed growth in the field.

1.2Need of the study

The purpose of the study statement helps the subject assess the importance of the drip irrigation system in Agriculture. It helps in identifying the gap between before and after the adoption of drip irrigation in Erravalli.

1.3Scope of the study

My project is composed of two parts the examination of drip irrigation systems, and the application of drip irrigation technology in agriculture. The scope of my study is limited only to Erravalli village. Only farmers who are full-time engaged in agriculture are considered for the study.

1.4Objectivity

The research needs identified guide this study that seeks to study the impact of micro-irrigation in terms of water conservation, sustainability of agriculture, and commercial agriculture including the economics of irrigation and agriculture.

1. To understand the factors for adoption and non-adoption of drip irrigation
2. To study the impact of micro-irrigation on the economics of agriculture in the regions of adoption understudy
3. Coverage of drip irrigation under cultivation compared to previous years
4. Awareness of drip irrigation among farmers

1.5Research methodology

The exploratory type of qualitative research design was used, which included both questionnaires and interviews with the farmers to understand the adoption of drip irrigation in Erravalli. The interview was conducted with the farmers to understand the perception of drip irrigation in the same district before the study. So with the context of the interview and from the secondary sources, the variables are found to understand the factors for adoption and

non-adoption of drip irrigation in Erravalli, Telangana. So with these variables questionnaire was designed and data collection was carried out. This area predominantly grows cotton, maize, and paddy. This questionnaire consists of basic demographic questions like Name, Age, Landholdings, Education, and source of landholdings. The data collection analysis was done with the help of Microsoft excel.

1.6Source of the data

For the study, both secondary and primary information was collected from different sources.

Primary source:

A qualitative research design is used. Questionnaires, surveys, case studies, and interviews methods are used for the data collection process. The questionnaire has been constructed and collected through google forms.

Secondary source:

The secondary data is collected from various research papers, books, and various websites. Different papers, journals, books, referrals are referred to get the required information.

1.7Limitations

This study has some limitations and it is so that the limitations are spelled out clearly.

1. The major limitation of this study is its design. The survey was used to collect perception data. Perception data lends itself only to a limited amount of analysis. The use of perception data makes it more difficult to establish causality.
2. This study is focused only on the drip irrigation system and other irrigation systems are not considered for this project.
3. This study is limited to farmers who are full-time engaged in Agriculture in Erravalli, Telangana.

CHAPTER- II

REVIEW OF THE LITERATURE

The literature related to technology adoption in agriculture is many. However, the adoption of drip irrigation depends on some specific demographical, geographical, and many other considerations like government subsidies and all. So, the proposed study incorporates some relevant literature according to the objective of the study.

Yahasaswini Sharma (2015) proposes that the use of precision farming will increase productivity, decrease the production cost and minimize the environmental impact of farming.

Crookston (2006) says that precision farming is one of the top 10 revolutions in the history of agriculture and precision farming is doing the right management practices in the right location, right time, and right rate.

Mulla et al (1996) say that there are many benefits in precision farming which include the increase of efficiency in farm management inputs, crop productivity increase, crop quality increase, and the transport of the fertilizer reduction.

V. M. Abdul Hakkim et al (2016) concluded precision farming is still only a concept in many developing countries like India. Farmers have to be supported by public sectors and the private sector to promote the rapid adoption of precision farming among the farmers.

U.K. Shanwad et al (2014) also proposed that there are many opportunities in India for the adoption of precision farming, but certain guidance has to be given for the farmers from the public and private sector and government associations. This paper concludes that the adoption of precision farming also depends on the reliability of the product, supports given by the manufacturer of the product, and the benefits of the product to the farmers.

V. C. Patil et al (2014) investigated the relevance of precision farming to Indian agriculture, he said that precision farming technology looks promising as a future farming tool, but using the precision farming tools in Indian agriculture effectively has to be realized.

Nathan Larson et al (2015) investigated the adoption of water-saving technologies in the case of laser leveling, this paper says that the farmers are not adapting to the technology because of financial constraints and if the cost can be subsidized the adoption rate will be higher. This also says that the adoption also depends on the size of the farmer according to their landholding size.

Pinaki Mondal (2008) related agriculture with the socio-economic changes in the developing countries. This paper also discusses the scope, present status, and strategies for the adoption of precision agriculture in India and some other developing countries. Khondoker A.

Mottaleb (2018) discussed the perception and adoption of new agricultural technology in developing countries, this paper brings the role of poverty among the farmers in the rural areas of developing countries for the decision of adoption of the technology.

Gary D. Lynne et al (1995) discuss the conservation technology adoption decisions in Florida, this paper also says that the high capital investment in the technology is the barrier for the adoption.

Abdul Rehman et al (2016) discuss the importance of the adoption of modern agricultural technology, this paper brings the two main importance for the adoption of the modern agricultural technology first obtaining high yield and second obtaining the highest economic profit.

Anik Bhaduri et al (2006) propose the analysis of groundwater irrigation in India, there are two major findings in his paper. First, the expansion of groundwater irrigation is mainly due to demand conditions-the pressure of the population and not necessarily dependent on surface irrigation recharge. Secondly, the gross irrigated area, which reflects the intensification of irrigated land use, is largely explained by the conditions of supply, such as groundwater recharge, and is evident in districts without a canal.

The research of Zakir Aliyev (2017) has insights into the efficiency of irrigation with micro-irrigation. He says at the higher level of groundwater, a good yield of agriculture crops can be achieved through micro-irrigation as compared to surface irrigation.

Neşe Üzen et al studied the role of micro-irrigation in modern agriculture, which says the micro irrigation system is successful for horticulture in any kind of weather condition. This

will also increase the yield of the crops, good fertilizer usage, no salinization, no disease for crops and the labor cost will also reduce.

P. Suryavanshi et al (2015) proposed micro-irrigation as sustainable agriculture as micro-irrigation increase the saving of water and good productivity of crops in the reduced cultivation cost. All the crops which are cultivated under drip irrigation have the productivity gain compared to surface irrigation, the research also says that micro-irrigation reduces the usage of fertilizer, less electricity consumption.

Alam et al (2006), the advantages of drip irrigation are water savings, the quality of plant growth, and the increase in yield and reduction in labor costs.

D. Suresh Kumar et al (2010), the drip irrigation method has a significant impact on the saving of resources, cultivation costs, and crop yield and farm profitability. The physical water and energy productivity of the flood irrigation method is significantly high.

CHAPTER-III

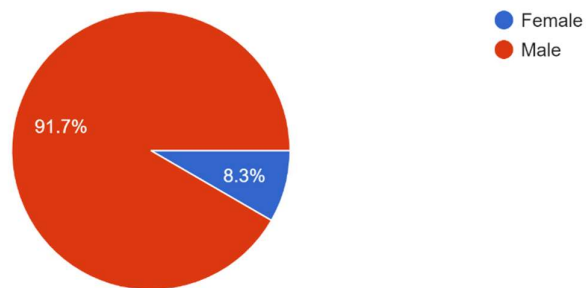
DATA ANALYSIS

Table 3.1: Frequency Analysis for Gender of the respondents:

Sl.no	Gender	Frequency	Percentage (%)
1.	Male	54	91.7
2.	Female	5	8.3
Total		59	100

Graph no. 3.1: Graphical representation of Gender of respondents

GENDER OF THE FARMER ?
60 responses



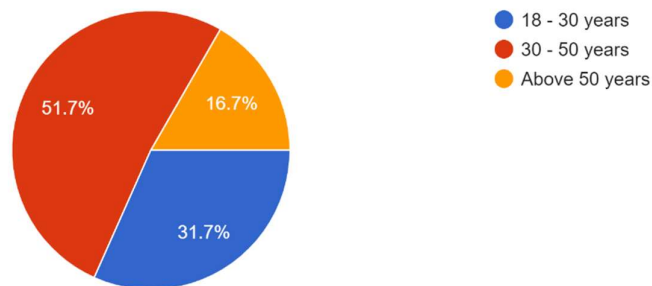
Interpretation: Above table 3.1 indicates that 91.7% of respondents are male and 8.3% of respondents are female. Therefore, the majority is male 91.7% of people responded to the questionnaire respectively.

Table 3.2: Frequency analysis for the age of the farmer.

Sl.no	Age	Frequency	Percentage (%)
1	18 - 30 years	18	31.7
2	30 – 50 years	32	51.7
3	Above 50 years	9	6.7
Total		59	100

Graphical no. 3.2: Graphical representation of the age of the farmer

AGE OF THE FARMER ?
60 responses



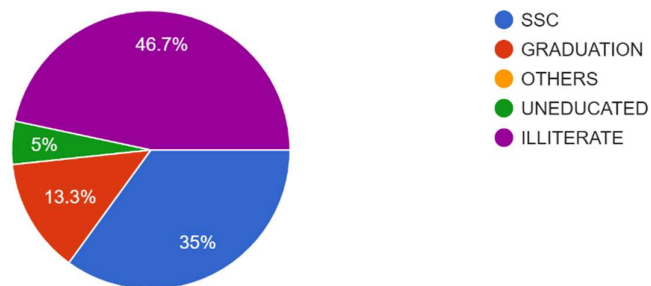
Interpretation: The above table indicates the age of the farmers, so from the above responses we can observe that 31.7 % from 18-30 years, 51.7 % from 30-50 years, and 16.7 % from the more than 50 years old.

Table 3.3: Frequency analysis of the education of the farmer

Sl.no	Education	Frequency	Percentage (%)
1	SSC	13	35
2	GRADUATION	5	13
3	UNEDUCATED	19	5
4	OTHERS	1	0.3
5	Illiterate	22	46.7
Total		59	100

3.3: Graphical representation of the education of the farmer

EDUCATION LEVEL OF THE FARMER ?
60 responses



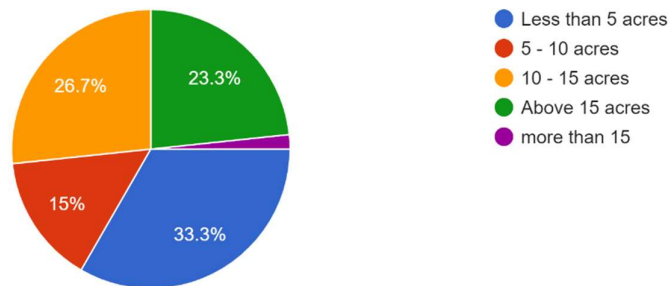
Interpretation: The above table indicates the education of the farmer so from the above responses we can observe that 35 % SSC, 13.3 % graduation, uneducated 5 %, and illiterates 46.7 %. It gives us an idea that many farmers are illiterate.

Table 3.4: Frequency analysis of the land holdings

Sl.no	Landholdings	Frequency	Percentage (%)
1	Less than 5 acres	10	33.3
2	5-10 acres	13	15
3	10-15 acres	18	26.7
4	Above 15 acres	18	25
Total		59	100

Graph no.3.4: Graphical representation of the land holdings

HOW MUCH LAND DO YOU HAVE ?
60 responses



Interpretation: The above table indicates that respondents are given 33.3 % less than 5 acres, 15 % for 5 – 10 acres, 26.7 % for 10 – 15 acres, 23.3 % for above 15 acres. So the respondents have shown that the farmers are having less than 5 acres.

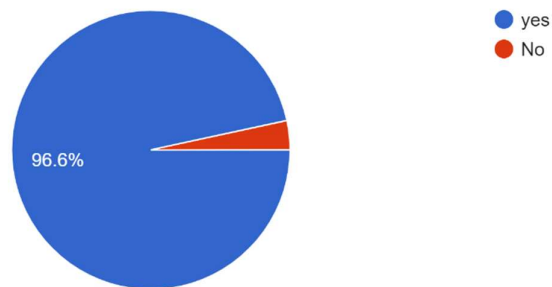
Table 3.5: Frequency analysis on usage of drip irrigation system

Sl.no	Usage of drip irrigation system	Frequency	Percentage (%)
1	Yes	57	96.6
2	No	2	3.4
Total		59	100

Graph no.3.5: Graphical representation on the usage of drip irrigation system

Do you use drip irrigation system in farming?

59 responses



Interpretation: The above table 3.5 indicates 96.6 % of farmers are using the drip irrigation system and the remaining 3.4% are not using the drip irrigation system. The data concludes there is more number of farmers using the drip irrigation system.

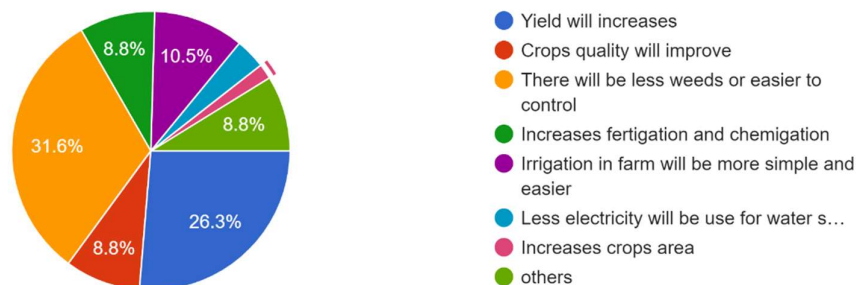
Table 3.6: Frequency analysis on the adoption of drip irrigation system in agriculture

Sl.no	Reasons for adoption	Frequency	Percentage (%)
1	Yield will increases	15	26.3
2	Crops quality will improve	5	8.8
3	There will be fewer weeds or easier to control	16	31.6
4	Increases fertigation and chemigation	9	8.8
5	Irrigation on-farm will be more simple and easier	6	10.5
6	Less electricity will be used for water supply	2	3
7	Increases crops area	1	2.2
8	others	5	8.8
Total		59	100

Graph no.3.6: Graphical representation on the adoption of drip irrigation system in agriculture

If yes, what reasons are for adoption of drip irrigation in agriculture?

57 responses



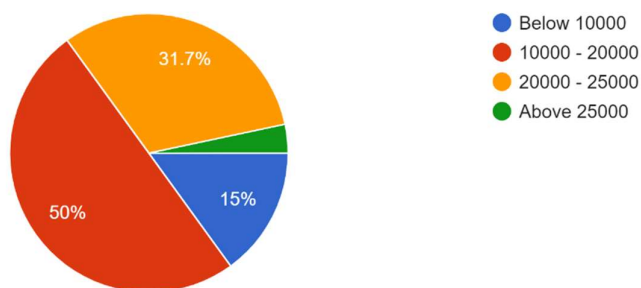
Interpretation: The above table 3.6 indicates that the 26.3 % Yield will increase, 8.8 % Crops quality will improve, 31.6 % There will be fewer weeds or easier to control, 8.8 % Increases fertigation and chemigation, 10.5 % Irrigation in a farm will be more simple and easier, 3 % Less electricity will be used for water supply, 2.2 % Increases crops area and 8.8 % others. The data concludes that there is more adoption of drip irrigation systems is to easier to control and for fewer weeds.

Table 3.7: Frequency analysis on the cost of cultivation

Sl.no	Cost of cultivation	Frequency	Percentage (%)
1	Below 10000	9	15
2	10000 – 20000	29	50
3	20000 – 25000	19	31.7
4	Above 25000	2	3.3
Total		59	100

Graph no.3.7: Graphical representation of the cost of cultivation

COST OF CULTIVATION PER ACRE
60 responses



Interpretation: The above table 3.7 indicates 15 % Below 10000, 50% 10000- 20000, 31.7 % 20000 – 250000 and 3.3 % for above 25000 cost of cultivation. Mostly the farmers are spending 10000 – 20000 for the cost of cultivation.

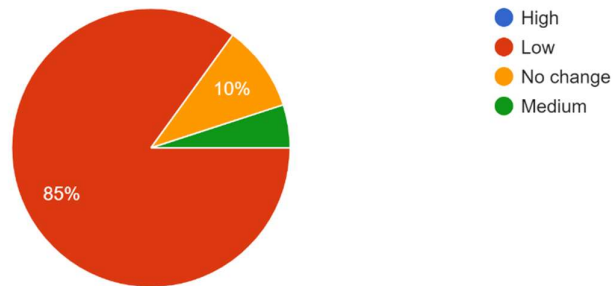
Table 3.8: Frequency analysis on the cost of drip irrigation when compared to other irrigation systems

Sl.no	Cost of irrigation	Frequency	Percentage (%)
1	High	-	-
2	Low	50	85
3	No change	6	10
4	Medium	3	5
Total		59	100

Graph no.3.8: Graphical representation of the cost of drip irrigation when compared to other irrigation systems.

COST OF DRIP IRRIGATION WHEN COMPARED TO OTHER IRRIGATION SYSTEM ?

60 responses



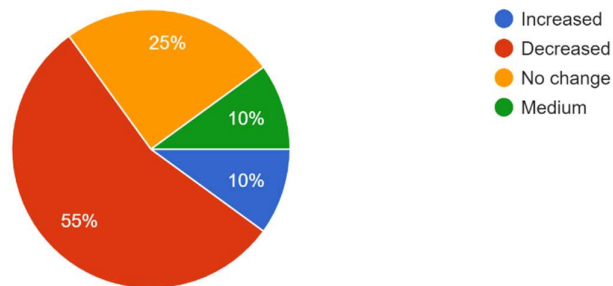
Interpretation: The above tables conclude that 85 % is for low, 10 % no change, 5 % medium, and 0 % for high. The data concludes that there will be a low cost of drip irrigation when compared to other irrigation systems.

Table 3.9: Frequency analysis on time spent in a field

Sl.no	Time spent on a farm	Frequency	Percentage (%)
1	Increased	6	10
2	Decreased	33	55
3	No change	15	25
4	Medium	5	10
Total		59	100

Graph no.3.9: Graphical representation of time spent in a field.

TIME SPENT IN FEILD ?
60 responses



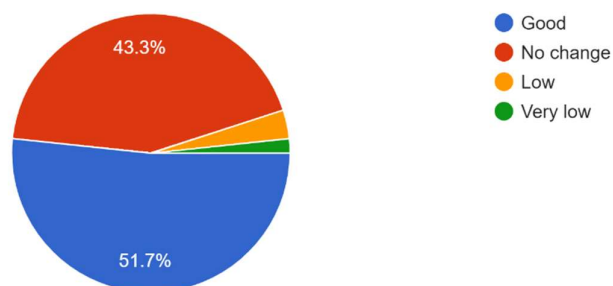
Interpretation: The above 3.9 concludes that 10 % increased, 55 % decreased, 25 % no change , 10% medium. The data concludes that there will be a decrease in time spent in a field.

Table 3.10: Frequency analysis on the relation with other farmers

Sl.no	Farmer relations	Frequency	Percentage (%)
1	Good	30	51.7
2	No change	26	43.3
3	Low	3	5
4.	Very low	-	-
Total		59	100

Graph no.3.10: Graphical representation of the relation with other farmers

RELATION WITH OTHER FARMERS ?
60 responses



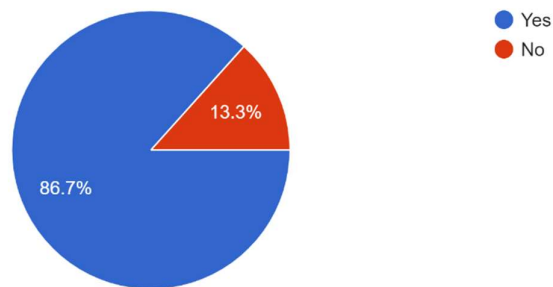
Interpretation: The above table 3.10 says that drip irrigation has resulted in maintaining good relations with other farmers. The respondents have given 51.7 for good relations.

Table 3.11: Frequency analysis on crop diversification

Sl.no	Crop diversification	Frequency	Percentage (%)
1	Yes	51	86.7
2	No	8	13.3
Total		59	100

Graph no.3.11: Graphical representation on diversification of crops.

AFTER DRIP IRRIGATION DO YOU DIVERSIFIED YOU CROPS ?
60 responses



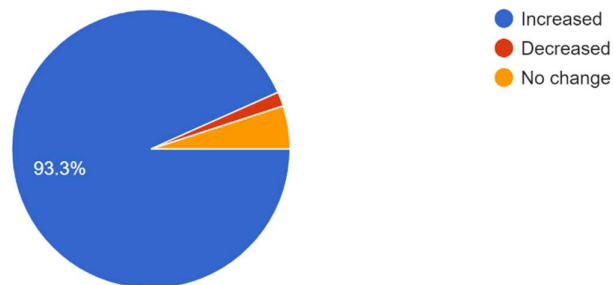
Interpretation: The above table concludes 86.7 % for yes and 13.3 % for No has been given for the respondents for diversification of crops after drip irrigation system.

Table 3.12: Frequency analysis on the change in the yield of crops.

Sl.no	Change in yield	Frequency	Percentage (%)
1	Increased	55	93.3
2	Decreased	1	1.7
3	No change	3	5
Total		59	100

Graph no.3.12: Graphical representation of change in the yield of crops.

CHANGE IN YEILD OF CROPS
60 responses



Interpretation: The above table 3.12 clearly says that there is a 93.3 % increase, 5 % decrease and no responses for no change is for 1.7 %. It resulted that there will be an increase in the yield of crops.

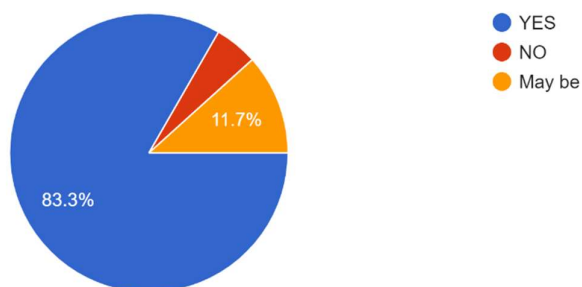
Table 3.13: Frequency analysis on the recommendation of drip irrigation.

Sl.no	Recommendations	Frequency	Percentage (%)
1	Yes	49	83.3
2	No	3	5.6
3	May be	7	11.7
Total		59	100

Graph no.3.13: Graphical representation on recommendations of drip irrigation.

WILL YOU RECOMMEND DRIP IRRIGATION?

60 responses



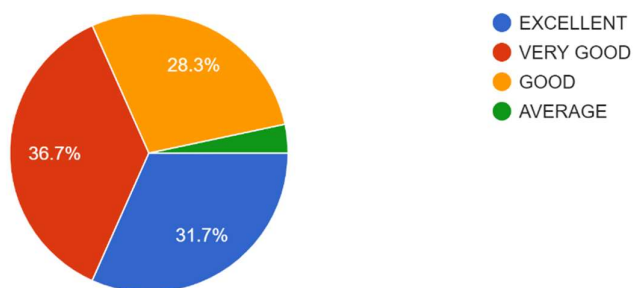
Interpretation: The above table 3.13 clearly shows that there is 83.3 % for yes, 11.7 % for responses for maybe and there is no response for no. so it resulted in many farmers are recommending drip irrigation.

Table 3.14:Frequency analysis on the opinion of the farmers

Sl.no	Recommendations	Frequency	Percentage (%)
1	Excellent	18	31.7
2	Very good	20	36.7
3	Good	19	28.3
4	Average	2	0.6
Total		59	100

Graph no.3.14: Graphical representation of the opinion of the farmers

YOUR OPINION ABOUT DRIP IRRIGATION SYSTEM ?
60 responses



Interpretation: The above table indicates 37.7 % excellent, 36.7 % very good, 28.3 % good and 0.6 % Average. Most of the respondents are given a very good opinion about the drip irrigation system.

CHAPTER-IV

FINDINGS, SUGGESTIONS, AND CONCLUSION

4.1 FINDINGS

- The study reviews the application of technology in the drip irrigation system in Erravalli, Telangana.
- Many farmers are not using drip irrigation due to the lack of availability of water resources.
- Most of the respondents are adopted drip irrigation to increase the yield of crops
- And I also found that drip irrigation helps in maintaining good relations among the farmers.
- It is also found that farmers are diversifying their crops after adopting the drip irrigation system in their farms which results in a good sign.
- The most important factors time and cost of irrigation have also been reduced on a larger scale.

4.2 SUGGESTIONS

The whole Erravalli village should divide into various zones and all the borewells are connected to their respective zone office from where water and fertilizers can be distributed. All the farmers should maintain unity among the farmers. It is much better to build the zone offices near to the lakes.

4.3 CONCLUSION

A drip irrigation system as a precision farming technology is available since long ago. However, there hasn't been a study conducted to find the perception of farmers towards the adoption of a drip irrigation system in India. It is important to find the factors that influence the farmers to adopt drip irrigation and for the farmers who don't want to adopt drip irrigation. So the data collection was done from the farmers who adopted drip irrigation in Erravalli, Telangana. The sampled areas are contributing well in terms of agricultural production for the district as well as for the state. The major finding of the research was the

farmers are willing to adapt to drip irrigation system because it helps for the maximum use of available water, evaporation of water will be very less as compared to other types of irrigation, labor cost will be low and use of fertilizer will also be low as the fertilizers are directly sent through the pipes to the roots instead of throwing in the land. Other main factors which influence farmers include no field leveling required for drip irrigation, the disease will not be affected for crops, and no soil erosion. Most of the farmers are highly satisfied with drip irrigation and large farmers in terms of landholding are most likely to adopt drip irrigation. Being all the farmers who have not adopted drip irrigation aware of most of the benefits of drip irrigation, awareness is not at all a problem for non-adoption of the technology. Finally, I can conclude Drip irrigation has changed the irrigation system and also positively influenced the life of farmers in Erravalli village

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