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A Study on Understanding the Adoption of Water Saving Technology: A Case Study of Drip Irrigation

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Abstract: ***Drip irrigation 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 crops, this will lead to wastage of water. But, Drip irrigation is a technology which will take the water directly to the root of the crops through the pipes. This technology will increase the productivity of the crops. The findings is about the factors that drives the adoption of drip irrigation in Erode district in Tamil Nadu, India. Despite many advantages in the drip irrigation many farmers in the district have not adopted to the drip irrigation, so the findings also analyses the reasons for the farmers to not adopt drip irrigation, including financial constraints, water scarcity, no subsidy from the government, damages by the animals, high maintenance cost, lack in technical skills, etc.,***

Keywords: Drip irrigation system, Precision agriculture, Technology Adoption, Constraints

I. INTRODUCTION

This paper will give the understanding on the factors influencing adoption and non-adoption of the water saving technology, drip irrigation in the Indian state of Tamil Nadu, Erode district. Previously farmers were traditionally irrigated their land by surface irrigation also called as flood irrigation. But drip irrigation is a technology which is invented to irrigate the farming land faster with less water as compared to the surface irrigation.

A. Drip Irrigation

The traditional form of irrigation in the agriculture is the surface irrigation, where water will flow through the ways of the crops. There will be a huge loss of water in this type of irrigation, because the water has to flow in the sand where there is a chances of evaporation before the water reaches the destination. Drip irrigation is a type of the micro irrigation, which plays a major role in water conservation and increasing the productivity of the crops by utilizing every single drop of the water. Drip irrigation is an advanced system which will irrigate the water directly through the crop with the help of motor and PVC pipes. Unlike the traditional irrigation methods, drip irrigation makes sure the water reaches till the root of the plant.

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The water will be flown through drippers drip by drip to the plants, where the soil will be wet for longer duration. 40 – 60 % of water will be saved by using drip irrigation. This system will help to manage the fast depleting of the ground water. The main benefits of this system are, fertilizers can be mixed and send through the pipes itself, that will reduce the wastage of the fertilizers. Labour cost will be reduced by using drip irrigation for the farmers and there is no need of field levelling for the irrigation. Drip irrigation will enhance the plant growth and yield. This will also reduce the weed growth in the field.

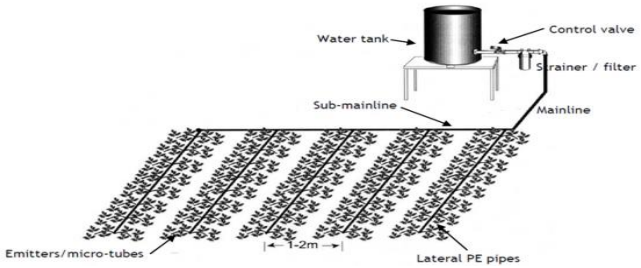

Fig 1: Block diagram of drip irrigation system

B. Agriculture in Erode district

Erode district is one of the top agricultural producing district in the state of Tamil Nadu. 39% of the total geographical area is cropped in the district. Erode district is the top most producer of turmeric in the state. Paddy, Banana, Sugarcane, Groundnut, cotton and turmeric are the major crops produced in the city. There are 1, 73,000 farmers cultivating in the district of which 85% of farmers are small and marginal farmers. The soil type of the district are mostly red sandy and red loamy soils. There are three major rivers in the district namely, Bhavani, Cauvery and Noyyal. The major source of irrigation in the district is through canals and followed by open well, bore well and tanks. Since 51% of the net irrigated area has the source of canals, most of the farmers are following the traditional ways of the irrigation.

C. Subsidy for drip irrigation

Initially farmers used to procure the drip irrigation system by their own, but later the demand for water started getting increased. Agriculture being the largest sector for the usage of water in Tamil Nadu, Government of Tamil Nadu has started a scheme for providing subsidy for the farmers. This scheme will encourage the farmers to adopt the drip irrigation system, so that the wastage of water will reduce.

This scheme was introduced in the financial year of 2008-2009 in Tamil Nadu, where farmers will get 50% subsidy who installs drip irrigation. Government also included sprinkler irrigation in this scheme. Farmers can get a subsidy up to 5 hectare of farming land in this scheme. Later in 2015-2016 under Pradhan Mantri Krishi Sinchayee Yojana "Per Drop More Crop" component, a flagship scheme of Government of India, A technology of micro irrigation again emerged in the state. This scheme will provide 100% subsidy for small and marginal farmers and 75% subsidy for other farmers. Out of these subsidy 40% of the subsidy will be offered by central government under PMKSY scheme and the rest will be borne by the state government of Tamil Nadu. The classification of farmers in the state are as follows, the farmer who holds a land of below 1 hectare (1 hectare = 2.5 acre) comes under marginal farmer, the farmer who holds 1-2 hectare of land comes under small farmers and the farmer who holds more than 2 hectare comes under medium and large farmers. The government also have reduced the GST for micro irrigation system from 18% to 12% to reduce the financial burdens for the farmers.

II. LITERATURE REVIEW

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 *et al* (2015) proposes that the use of precision farming will increase the productivity, decrease the production cost and minimize the environmental impact of farming. Crookston (2006) says that the 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) says that there are many benefits in precision farming which includes the increase of efficiency in farm management inputs, crop productivity increase, crop quality increase and the transport of the fertilizer reduces. V. M. Abdul Hakkim *et al* (2016) concluded precision farming is still only a concept in many developing countries like India. Farmers has to be supported by public sectors and private sector to promote the rapid adoption of the 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 is 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 the 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 levelling, this paper says that the farmers are not adopting 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 **et al* (2008) related the agriculture with the socio economic changes in the developing countries. This paper also discusses about the scope, present status and strategies for the adoption of precision agriculture in India and in some other developing countries. Khondoker A. Mottaleb (2018) discussed the perception and adoption of new agricultural technology in the developing countries, this paper bring 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) discusses the conservation technology adoption decisions in Florida, this paper also says that the high capital investment in the technology being the barrier for the adoption. Abdul Rehman *et al* (2016) discusses the importance of the adoption of the 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) proposes the analysis of ground water 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 the insights of the efficiency of the irrigation with micro irrigation. He says at the higher level of ground water, 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 the modern agriculture, which says the micro irrigation system is successful for the horticulture in any kind of weather condition. Which will also increase the yield of the crops, good fertilizer usage, no salinization, no disease for crops and the labour cost will also reduce. P. Suryavanshi *et al* (2015) proposed micro irrigation as a sustainable agriculture as micro irrigation increase the saving of water and good productivity of crops in the reduced cultivation cost. All the crops which is cultivated under the drip irrigation has the productivity gain compared to the 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 labour 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.

Khusro Moin *et al* (2018) discussed the prospects, potential and challenges of drip irrigation in India. This paper talk about the economic condition of water level in India and the comparative study of surface irrigation and the drip irrigation with the cost benefit analysis, productivity of crops, labour and efficiency level. This paper also analyses the adoption rate of drip irrigation in India and concludes the reason for farmers not to adopt the drip irrigation is the high initial cost occurred which is not suitable for the small and medium farmers. Parthsarthi A. Pandy *et al* (2016) have analysed the constraints in adopting the drip irrigation in the state of Gujarat, India, with the sampled farmers it is found that high initial cost is one of the main constraint for a farmer to adopt to the drip irrigation then followed by maintenance cost and then followed by the damage affected by the animals for the drip irrigation system. Namara *et al* (2001), the successful adoption of micro irrigation technologies requires three basic factors: (a) technology must be economically and technically viable; (b) farmer's awareness of the technology; and (c) farmers should be able to access the technology. With the above literature review, we can observe the constraints and reasons for the farmers to not adopt the drip irrigation in the different locations of India. Thus, the objective of this paper is to find the perception of farmers who have adopted to drip irrigation, the reason for adopting and to find the reason for the non-adoption of the drip irrigation from the farmers who have not adopted the technology.

III. METHODOLOGY

The exploratory type of research design was used, which included both questionnaire and interview with the farmers to understand the adoption of drip irrigation in Erode district. The information collected from the farmers were analysed with the help of statistical tools to understand the factors influencing adoption and non-adoption of drip irrigation. Interview was conducted with the farmers to understand the perception of the 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 Erode district, Tamil Nadu. Some of the adoption decision includes maximum use of available water, low labour cost, less usage of fertilizers, no water evaporation and many more. For non-adoption decisions high initial cost, less water source, more water source, High maintenance cost, lack in technical skills, getting damaged by animals are the main reasons that affect the adoption decision. So with these variables questionnaire was designed and data collection was carried out. Data collection was carried out in the district of Erode, Tamil Nadu in the tehsils of Sathyamangalam and Anthiyur. This area predominantly grow sugarcane, banana and turmeric. This questionnaire consist of basic demographic questions like Name, Age, Land holdings, Education and source of land holdings. Separate section for both adopted and non-adopted farmers.
Convenience sampling method was used to collect the data from the farmers for the sample size of 103 respondents. Where 50 respondents from Anthiyur taluk and 53 respondents from Sathyamangalam taluk.

A. Statistical analysis tool:

With the data collected analysis was done with the help of SPSS and Microsoft excel. For understanding the adoption factors, principal component analysis was used using SPSS software and for non-adopted farmers simple percentage analysis was done using Microsoft excel.

Principal component analysis:

It is used to perform the dimension reduction and to reduce the variables which doesn't fit for the study. This analysis gives the main factors which influences the farmers to adopt the technology.

IV. RESULT AND ANALYSIS

A. Demographic statistics

Table 1 consist of the demographic data collected from the farmers, including Age, Education and the land holdings of each farmers. It also includes the no of responses from each taluk and classification of land holding. Table 2 presents the data of the percentage of adopters of drip irrigation in the sample of 103 respondents. -

Table 1 also gives the understanding about the percentage of adopters in each category from the sampled respondents. Data was collected in two taluks of Erode districts, Anthiyur and Sathyamangalam. Out of 103 respondents 50 farmers from Anthiyur taluk and 53 farmers from Sathyamangalam taluk.

Variables	Number of respondents	Percentage of respondents	Number of Adopters	Percentage of Adopters in each category
Age				
18-30	4	3.88	1	25
31-40	22	21.35	14	63.63
41-50	33	32.03	13	39.39
51-60	31	30.09	14	45.16
60 and above	13	12.62	7	53.84
Education				
Secondary schooling	23	22.33	12	52.17
Higher secondary	25	24.27	13	52
Graduate	20	19.41	10	50
Post graduate	3	2.91	0	0
Uneducated	32	31.06	14	43.75
Classification of landholding				
Marginal (< 2.5 acres)	31	30.09	5	16.12
Small (2.5 to 5 acres)	43	41.74	23	53.48
Medium and large (> 5 acres)	29	28.15	21	72.41
Source of Water				
Open well	70	-	-	-
Bore well	103	-	-	-
Canal	1	-	-	-
Taluk				
Anthiyur	50	48.54	24	48
Sathyamangalam	53	51.45	25	47.16
Total	103		49	

Table 1: Demographic data of the sample size of 103 respondents

Maximum number of respondents lies under the age of 41 – 50, which is 33 out of 103 (32%), but the percentage of adopters in this age is only 39% which is 13 farmers. The maximum percentage of adopters is in the age category of 31-40, where 14 farmers out of 22 (64%) were adopted. Other age groups, 18-30, 51-60 and 60 and above have 4, 31 and 13 respondents with the adopter's percentage of 25%, 45% and 54% in the respective age category. Many researches has proven that farmers who are aged are not willing to adopt any kind of technology in agriculture, but drip irrigation is something which has got a very good reach in the country and this technology is not something which is introduced in 2000's. So farmers who are aged in current scenario are aware about the product before and willing to adopt to the technology. Most of the respondents are uneducated, which is 32 out of 103 respondents (31%). Of which 44% of the uneducated farmers have adopted to drip irrigation. Other than uneducated farmers the respondents includes 22% of farmers who have the education qualification of secondary schooling, 24% of farmers with the higher secondary schooling, 20% of farmers completed graduation and 3% of post-graduated farmers. Every education category has nearly 50% of adopters except Post graduated farmers. None of the three post graduated farmers have adopted to drip irrigation due to certain reasons.

From the sample 28% of the respondents are medium and large farmers (>5 acres), 42% of small farmers (2.5 – 5 acres) and 30% of marginal farmers (< 2.5 acres). Medium and large farmers have the large number of adopters with 72% and small farmers have 53% of adoption rate and marginal farmers have only 16% of adoption rate. There are three main sources of water for farmers in this geography. They are Open well, Bore well and canal. Farmers having bore well either save the pumped water in the tanks or in the open well itself. And farmers will have multiple sources of water with the combination of bore well and open well, open well and canal and so on. In the sampled farmers, 70 people have the source of water from open well, all the 103 farmers have bore well and 1 farmers have access to canal facility. The data was mostly collected in the area where farmers don't have the access to canal, because the farmers who have the access to canal will not adopt to drip irrigation since they have the sufficient amount of water from the canal most of the time.

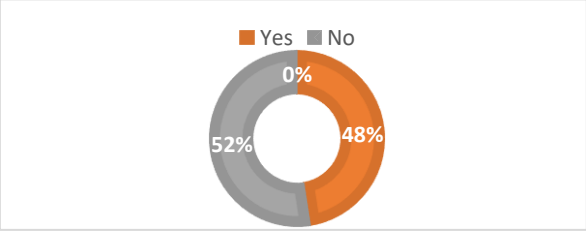

Figure 2: Adoption rate of the 103 respondents in the two tehsils

Figure 2 represents the number of respondents adopted to drip irrigation and number of respondents not adopted to drip irrigation. From the sampled respondents of 103 farmers 49 farmers (48%) have adopted to drip irrigation and 54 farmers (52%) have not adopted to drip irrigation.

B. Drip irrigation adopters

There are 49 farmers who adopted to drip irrigation in the data collection of which 24 farmers from Anthiyur taluk and 25 farmers from Sathyamangalam taluk. Out of 49 adopters 43% of farmers are medium and large farmers who has the land holdings of more than 5 acres, 47% of adopters are small farmers who holds 2.5 to 5 acres of farm land and rest 10% of farmers are marginal farmers with less than 2.5 acres of land. Table 1 clearly represents that the medium and large farmers are most likely to adopt to drip irrigation, where 21 out of 29 medium and large farmers have adopted to drip irrigation with the adoption rate of 72%.

Satisfaction towards drip irrigation	Total	Percentage
Highly dissatisfied	0	0
Dissatisfied	2	4.08
Neutral	12	24.48
Satisfied	11	22.44
Highly satisfied	24	48.97
Total	49	

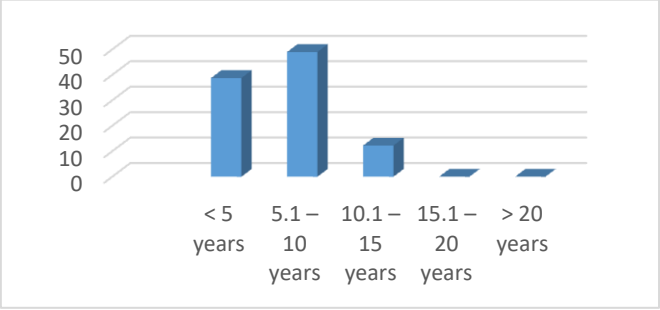

Figure 3: Drip irrigation adopted year for the adopted farmers

Figure 3 presents the data of the years before the farmers have adopted to drip irrigation. Where 19 farmers out of 49 adopted (39%) have adopted to drip irrigation within 5 years, 24 farmers (49%) adopted before 5.1 to 10 years and 6 farmers (12%) have adopted to drip irrigation 10.1 to 15 years before the data was collected. Table 2 represents the satisfaction level of adopted farmers towards drip irrigation, where 24 farmers (49%) told they are highly satisfied with the drip irrigation, 11 farmers (22%) told they are slightly satisfied, 12 farmers (25%) told they are neither satisfied nor dissatisfied and only 2 farmers (4%) told they are slightly dissatisfied. None of the farmers have expressed that they are highly dissatisfied towards drip irrigation. So Table 2 clearly shows that the drip irrigation gives a lot of benefits to the farmers that's why the majority of the adopted farmers have satisfied with the drip irrigation system.

Principal component analysis

The following factors influencing the decision for adoption of drip irrigation are got from the interview conducted with farmers before data collection. The factors are, PE1 - Maximum use of available water, PE2 - efficient use of fertilizer, PE3 - low labour cost, PE4 - low operational cost, PE5 - less evaporation, PE6 - no soil erosion, PE7 - recycled water can be used, PE8 - distribution of water will be good, PE9 - field levelling not required and PE10 - no disease for crops. A principal component analysis with varimax rotation gave the following results for factors influencing the adoption of drip irrigation.

Table 2: Satisfaction level of drip irrigation for the adopted farmers

Rotated Component Matrix

	Component			
	1	2	3	4
PE1		.820		
PE2				
PE3			.793	
PE4	-.701			
PE5	.727			
PE6	.683			
PE7			-.546	
PE8		-.782		
PE9	.826			
PE10				.723

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 9 iterations.

Total Variance Explained

Table 3: Rotation component matrix from the variables

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.506	25.063	25.063	2.506	25.063	25.063	2.416	24.155	24.155
2	1.627	16.273	41.337	1.627	16.273	41.337	1.557	15.572	39.727
3	1.404	14.041	55.378	1.404	14.041	55.378	1.398	13.981	53.708
4	1.165	11.648	67.026	1.165	11.648	67.026	1.332	13.318	67.026
5	.889	8.886	75.911						
6	.732	7.316	83.227						
7	.567	5.668	88.895						
8	.511	5.106	94.002						
9	.377	3.766	97.767						
10	.223	2.233	100.000						

Extraction Method: Principal Component Analysis.

From the principal component analysis 10 factors were brought down to 4 components. The percentage variance determined to find the influence of each components. The factors affecting the adoption of drip irrigation in Erode district are as follows, Component 1 is Land characteristics which includes less water evaporation in drip irrigation, Soil erosion will not be there in drip irrigation and field levelling is not required in drip irrigation system to irrigate the land. In drip irrigation the water is directly sent to the root of the water through the tubes. So, field levelling is not required and hence the water evaporation also will not be there in the farmland which adopted to drip irrigation. Component 2 is maximum use of available water is one factor which influencing the adoption of drip irrigation. Component 3 is the low labour cost, the cost of labour for redirecting the water to the crops is not required in the drip irrigation system, hence the cost for the labour is reducing which influencing the farmers to adopt to drip irrigation and the last component is Fertilizer usage which includes the less and efficient consumption of fertilizer and disease will not affected for crops. In drip irrigation fertilizers can be directly sent to the crops through the tubes. So, the usage of fertilizers is low and since the fertilizers reaches the root of the crops the chances of crops getting affected by disease is also getting reduced.

These are the factors which influencing the farmers in Erode district, Tamil Nadu to adopt to drip irrigation.

C. Drip irrigation non – adopters

Figure 2 represents the percentage of farmers adopted to drip irrigation which also indicated the number of farmers not adopted to drip irrigation also. 54 farmers out of 103 respondents in the data collection has not adopted to drip irrigation.

Table 5 represents the classification wise and taluk wise non-adopters. 26 farmers out of 54 non-adopters are marginal farmers who holds less than 2.5 acres of land. 20 farmers in small landholding and 8 farmers in medium and large landholdings. Maximum number of non-adopters are from the category of marginal farmers, 84% of marginal farmers have not adopted to drip irrigation. Out of 54 non-adopters 26 farmers are from Anthiyur taluk and 28 farmers are from Sathyamangalam taluk.

Table 4: Principal component analysis variance

Variables	Number of respondents	Percentage of respondents	Number of Non - Adopters	Percentage of Non - Adopters in each category
Classification of landholding				

Marginal	(< 2.5 acres)	31	30.09	26	83.87
Small	(2.5 to 5 acres)	43	41.74	20	46.51
Medium and large	(> 5 acres)	29	28.15	8	27.58
Taluk					
Anthiyur		50	48.54	26	52
Sathyamangalam		53	51.45	28	52.83
Total		103		54	

Table 5: Non-adopters classification includes land holding classification and the tehsil

From the interview conducted from the farmers before framing the questionnaire factors affecting the farmers not

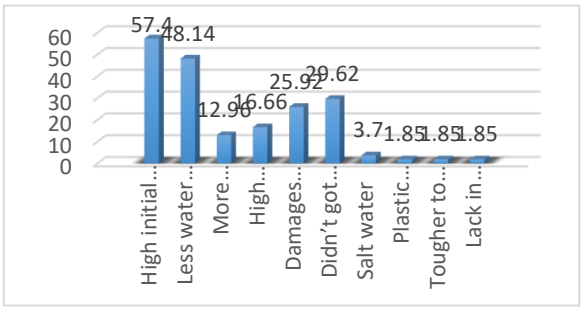

Figure 4: Factors influencing the farmers not to adopt drip irrigation

to adopt drip irrigation is also found. The reasons for farmers not to adopt drip irrigation are high initial cost, less water source, more water source, high maintenance cost, chances of getting damages by animals, farmer not getting subsidy from the government, salt in their water content, plastic affecting soil content, tougher for farmers to use drip irrigation and farmers lack in technical skill. Table 6 presents the reasons for farmers not to adopt drip irrigation from the data collected.

Farmers reasons for non – adoption	**Total farmers**	**Percentage**
High initial cost	31	57.40
Less water source	26	48.14
More water source	7	12.96
High maintenance cost	9	16.66
Damages by animals	14	25.92
Didn't got subsidy from government	16	29.62
Salt water	2	3.70
Plastic affecting soil content	1	1.85
Tougher to use	1	1.85
Lack in technical skill	1	1.85

** Each farmers will have multiple reasons for non - adoption*

Table 6: Reason for non-adoption from the 54 respondents

Each farmers will have multiple reasons for non-adopting to drip irrigation. 57% of farmers (31 farmers) have not adopted to drip irrigation because of high initial cost, 26 farmers (48%) have not adopted to drip irrigation system because of less water source and 16 farmers out of 54 (30%) have not adopted to drip irrigation because they didn't got subsidy from the government and 14 farmers have not adopted because the pipes are getting damaged by the animals. Next major factors which is being a constraint for adoption are High maintenance cost and 7 out of 54 farmers have more water source, so they didn't adopted to drip irrigation.

Type of irrigation using by non - adopters	**Total**
Surface irrigation	50
Sprinkler irrigation	22

**Each farmer will use multiple type of irrigation*

Table 7: Irrigation adopted by non-adopters in percentage

Satisfaction towards current irrigation	**Total**	**Percentage**
Highly dissatisfied	0	0
Dissatisfied	7	12.96
Neutral	8	14.81
Satisfied	27	50
Highly satisfied	12	22.22
Total	54	

Table 8: Satisfaction towards current adopted irrigation of the non-adopted farmers

Table 7 and 8 shows the source of irrigation that the non-adopted have and satisfaction towards the same. Usually farmers will have multiple sources of water for irrigation, 50 farmers are following surface irrigation to irrigate their crops and 22 farmers are irrigating their crops by sprinkler irrigation. All 22 farmers irrigating through sprinkler irrigation are from Sathyamangalam taluk, because this area

mostly export flowers and sprinkler irrigation is an ideal type of irrigation for flowers. Table 8 shows the satisfaction level of non-adopters towards their current way of irrigation. 12 farmers out of 54 (22%) are highly satisfied with their current type of irrigation, 27 farmers (50%) of farmers have slightly satisfied to the current type of irrigation, 8 farmers (15%) are neither satisfied nor dissatisfied and 7 farmers (13%) are slightly dissatisfied to their current form of irrigation.

Planning to adopt drip irrigation	**Total**	**Percentage**
Yes	16	29.62
No	17	31.48
Maybe	21	38.88
Total	54	

Table 9: Future drip irrigation adoption plan of the non-adopted farmers

Table 9 represents the future adoption plan of farmers who not adopted to drip irrigation, where 16 farmers out of 54 (30%) are planning to adopt to drip irrigation. 17 farmers (31%) are not planning to adopt to drip irrigation and 21 farmers (39%) are in confusion state whether to adopt to drip irrigation or not to adopt drip irrigation.

V. DISCUSSION AND CONCLUSION

Drip irrigation system as a precision farming technology is available from long ago. However there hasn't been a study conducted to find the perception of farmers towards adoption of drip irrigation system in India. It is important to find the factors that influencing the farmers to adopt drip irrigation and for the farmers who doesn't want to adopt the drip irrigation. So the data collection was done from both the farmers who adopted and not adopted drip irrigation in Erode district, Tamil Nadu. 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 adopt to drip irrigation system because of it helps for the maximum use of available water, evaporation of water will be very less as compared to other type of irrigation, labour 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 influences farmers includes no field levelling required for drip irrigation, disease will not be affected for crops and no soil erosion. Most of the farmers as highly satisfied towards drip irrigation and large farmers in terms of landholding are most likely to adopt drip irrigation.

Majority of the non-adopters are marginal and small farmers who have very less amount of land holding. High initial cost is the main reason for the farmers to not adopt the drip irrigation as the marginal and small farmers have very less amount of land holding, so their revenue will also be less which cannot afford the drip irrigation system. Water resource is also being one of the major reason for the non-adoption of drip irrigation, as the farmers have very less water source in many areas. Government also need to support the farmers in terms of providing subsidy to farmers as many farmers told they have not adopted to drip irrigation system because they didn't get the subsidy from the government. So government's encouragement also needed for the farmers, which will finally reduce the wastage of the water in the state. Being all the farmers who have not adopted to drip irrigation aware of most of the benefits of drip irrigation, awareness is not at all a problem for non-adoption of the technology.

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