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FARMERS' SATISFACTION TOWARDS DRIP IRRIGATION SYSTEM WITH SPECIAL REFERENCE TO ERODE DISTRICT, TAMIL NADU

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Abstract

Drip irrigation is a type of micro-irrigation system that has the potential to save water and nutrients by allowing water to drip slowly to the roots of plants, either from above the soil surface or buried below the surface. The goal is to place water directly into the root zone and minimize evaporation. Drip irrigation systems distribute water through a network of valves, pipes, tubing, and emitters. Depending on how well designed, installed, maintained, and operated it is, a drip irrigation system can be more efficient than other types of irrigation systems, such as surface irrigation or sprinkler irrigation. The natural resources are limited and under pressure due to rapidly increasing demands by human beings. The policies are needed for optimum use, preservation and protection of natural resources for today and the future. Sustainability of natural resources for which continuity of systems and processes remain diverse and fertile indefinitely has a great impact on production economics. related to education and training, that is, inexperienced staff, insufficient laws, poor planning, lack of or improper allocation and usage of funds for water resources and networks, and insufficient attention given to operation, maintenance and repair. A doubling in global food demand poses huge challenges for agricultural sustainability in terms of food production.

Keywords: *Micro -irrigation, Surface irrigation, pipes, emitters, tubing, water, soil.*

INTRODUCTION

Agriculture is the most and largest components India's economic structure. Nearly third fourth of the Indians depend s on agriculture and it contributes much towards India's economic developments. It is also true to say that agricultural developments contribute towards industrialization of the nation. **Drip irrigation** provides slow, even application of low-pressure water to soil and plants using plastic tubing placed in or near the plants' root zone. It is an alternative to sprinkler or furrow methods of irrigating crops. **Drip irrigation** can be used for crops with high or low water demands.

Need for the study

Drip irrigation is used in farms, commercial greenhouses, and residential gardens. Drip irrigation is adopted extensively in areas of acute water scarcity and especially for crops and trees

such as coconuts, containerized landscape trees, grapes, bananas, be eggplant, citrus, strawberries, sugarcane, cotton, maize, and tomatoes. Drip irrigation for garden available in drip kits are increasingly popular for the homeowner and consist of a timer, hose and emitter. Hoses that are 4 mm in diameter are used to irrigate flower pots.

Evaluation of the study

The natural resources are limited and under pressure due to rapidly increasing demands by human beings. The policies are needed for optimum use, preservation and protection of natural resources for today and the future. Sustainability of natural resources for which continuity of systems and processes remain diverse and fertile indefinitely has a great impact on production economics. related to education and training, that is, inexperienced staff, insufficient laws, poor planning, lack of or improper allocation and usage of funds for water resources and networks, and insufficient attention given to operation, maintenance and repair. A doubling in global food demand poses huge challenges for agricultural sustainability in terms of food production.

Limitations

- The accuracy of the information depends up on the respondents.
- The study is mainly based on the information given by the sample farmers.

METHODOLOGY

Methodology is the way to solve the research problems systematically. It may be understood as a science of studying how researcher has selected a particular place randomly for survey. By following the convenient sampling method, the researcher has selected sample of 150 farmers in Erode District, Tamil Nadu.

INCLUSION CRITERIA

- The study is restricted to Erode District coverage area only, so it may not be universally applicable.
- Due to the shortage of time & other constraints, the study has been limited to 150 respondents only.

DATA ANALYSIS AND INTERPRETATION

To study the "farmers" satisfaction towards Drip Irrigation system a sample of 150 farmers has been selected and their opinions about the various aspects are obtained. The data collected from the farmers were systematically applied and presented as tables under various headings in the following pages. They were also arranged in such way that detailed analysis can be made as to present suitable interpretation for the same.

Table 1
Demographic variables

S. No	Demographic variables	N	%
1	**Age in years**	28	19
	a)Below 30 years		
	b)31-35 years	34	22
	c)36-40 years	51	34
	d)Above 41 years	37	25
2	**Education Qualification**	42	28
	a)Illiterate		
	b) School Level	58	39
	c) Degree Level	26	17
	d) Professional level	24	16
3	**Number of members in the Family**	12	08
	a)Up t**o** 2 members		
	b) 3 members	46	31
	c) 4 members	52	35

	d) Above 4 members	40	26
4	**Number of Family members employed in agriculture**	71	47
	a)Up t**o** 2 members		
	b) 3 members	37	25
	c) 4 members	22	15
	d) Above 4 members	20	13
5	**Type of family**	57	38
	a) Nuclear		
	b)Joint	93	62
6	**Farmers usage period of drip irrigation in cultivation**	40	27
	a)2 years		
	b) 2-3 years	50	33
	c) 3-4 years	29	19
	d) Above 4 years	31	21

Sources: Primary Data

The above table shows that out of the total farmers, 34% of the farmers are coming under the age group of 36-40 years, 25% of the farmers belongs to the age group above 41 years, 22% of the farmers are coming under the age group between 31-35 years and remaining 19% of the farmers are coming under the age group of below 30 years.

The above table shows that out of the table farmers, 39% of the farmers are having school level,28% of the farmers are illiterate, 17% of the farmers are degree level and remaining, 16% of the farmers are professional level.

The above table shows that out of the total farmers,35% of the farmers have 4 members, 31% of the farmers have 3 members,26% of the farmers have above 4 members and remaining 8% of the farmers are having up to 2 members in their family.

The above table shows that out of the total farmers, 62% of the farmers belong to Joint family and remaining 38% of the farmers belongs to Nuclear family.

The above table shows that out of the total farmers, 33% of the farmers are using Drip Irrigation between 2-3 years, 27% of the farmers are using Drip Irrigation between 2 years, 21% of the farmers are using above 4 years and remaining 19% of the farmers are using 3-4 years.

Table 2
Number of Acres are Holding the Farmers

S. No	Holding Acres Of Land	No. of Farmers	Percentage (%)
1	Below 5 acres	45	30
2	5-10 acres	63	42
3	Above 10 acres	42	28
	Total	**150**	**100**

Sources: Primary Data

The above table shows that out of the total farmers,42% of the farmers are holding 5- 10 acres, 30% of the farmers are holding below 5 acres, and remaining 28% of the farmers are holding above 10 acres.

Table 3
Number of acres where land is cultivated using drip irrigation system

S. No	Drip using Acres	No. of Farmers	Percentage (%)
1	Below 2 acres	29	19
2	2 -4 acres	40	27
3	4 -6 acres	50	33
4	Above 6 acres	31	21
	Total	**150**	**100**

Sources: Primary Data

The above table shows that out of the total farmers,33% of the total farmers cultivate land at 4 -6 acres, 27% of the farmers cultivate land in 2 – 4 acres,21% of the farmers are cultivate land in above 6 acres and remaining 19% of the farmers are cultivate in land below 2 acres.

Table 4

Type of crop cultivation in drip irrigation system

S. No	Crop Cultivation System	No. of Farmers	Percentage (%)
1	Coconut	80	53
2	Banana	20	14
3	Turmeric	17	11
4	Others	33	22
	Total	**150**	**100**

Sources: Primary Data

The above table shows that out of the total farmers, 53% of the farmers' crop cultivation Drip Irrigation System in coconut, 22% of the farmers' crop cultivation in Drip Irrigation System in others, 14% of the farmers' crop cultivation in banana and remaining 11% of the farmers' crop cultivation in Drip Irrigation in turmeric.

Table 5

Type of setting in drip irrigation system

S. No	Setting Drip System	No. of Farmers	Percentage (%)
1	Open well	63	42
2	Bore well	45	30
3	Tank System	42	28
	Total	**150**	**100**

Sources: Primary Data

The above table shows that out of the total farmers, 42% of the farmers set Drip Irrigation System in open well,30% of the farmers set in Drip Irrigation System in bore well and remaining 28% of the farmers set Drip Irrigation in tank system.

Table 6

Knowing the drip irrigation system

S. No	Knowing Drip System	No. of Farmers	Percentage (%)
1	Dealers	41	27
2	Neighbour Farmers	59	39
3	Horticultural Department	28	19
4	Advertisement	22	15
	Total	**150**	**100**

Sources: Primary Data

The above table shows that out of the total farmers, 39% of the farmers known through Neighbour Farmers, 27% of the farmers known through Dealers, 19% of the farmers known through Horticultural Department and remaining 15% of the farmers known through advertisement.

Table 7

Most suitable method of low cost and low risk in drip irrigation cultivation

S. No	Suitable Method in Drip	No. of Farmers	Percentage (%)
1	Open well	96	64
2	Bore well	45	30
3	Tank System	09	06
	Total	**150**	**100**

Sources: Primary Data

The above table shows that out of the total farmers, 64% of the farmers felt that suitable method is Open well. 30% of the farmers' opinion Bore well and remaining 6% of the farmers felt that the most suitable method of low cost and low risk in Drip Irrigation cultivation in Open well.

Table 8

Mode of getting the drip irrigation instruments

S. No	Getting The Instruments	No. of Farmers	Percentage (%)
1	Company	30	20
2	Dealers	80	53
3	Agents	40	27
	Total	150	100

Sources: Primary Data

The above table shows that out of the total farmers, 53% of the farmers get the drip irrigation instruments through dealers, 27% of the farmers get the drip irrigation instruments from agents and remaining 20% of the farmers get drip irrigation instruments from the company.

Table 9

Yield of drip irrigation system

S. No	Yield of Drip Irrigation	No. of Farmers	Percentage (%)
1	High yield	75	50
2	Low yield	27	18
3	Normal yield	48	32
	Total	150	100

Sources: Primary Data

The above table shows that out of the table farmers, 50% of the farmers are receiving high yield from drip irrigation, 32% of the farmers are receiving normal yield and receiving 18% of the farmers are receiving low yield of drip irrigation system.

Weighted Score Ranking Analysis

Table 10

Problems faced by the farmers

S. No	Factors	Scores	Rank
1	High Initial Investment	210	VI
2	Damage due to climate conditions	212	V
3	High maintenance charges	227	III
4	Formalities in obtaining loan for Drip Irrigation	229	II
5	Power problems	262	I
6	Germination problems	225	IV

Sources: Primary Data

The above table shows that "Power problems" occupies the First place with the score of 262 points, "Formalities in obtaining loan for Drip Irrigation" has been ranked as Second place with the score of 229 points, "High maintenance charges" has been ranked as Third place with the score of 227 points, "Germination problems" has been ranked as Fourth place with the score of 225points, "Damage due to climate conditions" has been ranked as Fifth place with the score of 212 points, " High Initial Investment" has been ranked as Sixth place with the score of 210points,

CONCLUSIONS

The following conclusions are drawn from the study

- The study was conducted to analyze the Farmers Awareness and satisfaction towards Drip Irrigation in cultivation.
- Water is very important for all type of cultivation. Water savings are very important.

- The government should encourage the water savings. So the farmers can use the water properly and get maximum yield.
- The minor drawbacks of Drip Irrigation in cultivation are power problems, formalities in obtaining loan for Drip Irrigation etc.,
- The concerned authorities reduce the above problems faced by the farmers.

IMPLICATIONS

Estimates from the World Bank predict population growth to require global agricultural production to double in the next 30 years. This means that the world needs to grow more crops with less water. According to UNESCO, there is a strong, positive correlation between investment in irrigation technology, poverty alleviation and food security. Efficient irrigation is key to cultivating more crops to feed the world's undernourished. Agricultural water usage can be cut by at least 50 percent with proper irrigation systems. One of the most widely-recognized ways of dealing with this problem is drip irrigation, which has been primarily developed by Israel. Drip irrigation allows a controlled amount of water to slowly flow through tubes to the base of a plant through small emitters or pores in the tubes.

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