



# A STUDY ON THE CHARACTERISTICS OF THE RESPONDENTS AND KNOWLEDGE OF IRRIGATION MANAGEMENT PRACTICES

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## Abstract

A Study was conducted in Kanyakumari district to find out the knowledge of irrigation management practices. The study reveals that 53.67 per cent were found to possess medium level of knowledge. Age showed a positive and significant relationship towards their knowledge. “Neerindramaiyathu Vulagu” said the ancient Tamil saint Thiruvalluvar. Without water the world does not live and the earth cannot exist only as a dead planet like others in the solar system. Water and land are the two important assets of any country and proper utilization of them can bring prosperity to living society. A future gain in irrigation depends on increasing water use efficiency, rather than increasing water supply. This means using more efficient, low-cost and locally-adapted technologies to reduce water loss. Small-scale irrigation can help farmers to increase yields. Drip irrigation can cut water use by 70 per cent on high-value fruit and vegetable crops. The present study was undertaken to study the extent of knowledge level of the respondents on irrigation management practices.

**Key words:** knowledge, age, education, occupation

## Introduction

Neerindramaiyathu Vulagu” said the ancient Tamil saint Thiruvalluvar. Without water the world does not live and the earth cannot exist only as a dead planet like others in the solar system. Water and land are the two important assets of any country and proper utilization of them can bring prosperity to living society. A future gain in irrigation depends on increasing water use efficiency, rather than increasing water supply. This means using more efficient, low-cost and locally-adapted technologies to reduce water loss. Small-scale irrigation can help farmers to increase yields.

## Methodology

The study was carried out in kanyakumari district. There are four taluks in Kanyakumari district viz; Agastheeshwaram, Thovalai, Kalkulam and Villavancode. All the four taluks were identified for collection of data. One block from each taluk was selected randomly and the selected blocks were Agastheeshwaram, Thovalai, Thiruvatar and Killior from Agastheeshwaram, Thovalai, Kalkulam and Villavancode taluk respectively. From each block, one village was randomly selected. Thus a total of four villages viz; Theroor, Vellamadam, Arumanai and Karungal were selected for data collection from Agastheeshwaram, Thovalai, Thiruvatar and Killior blocks respectively. The lists of farmers in the selected villages were obtained from village extension workers concerned. The respondents were selected by random sampling. The required numbers of respondents (300) were selected from four villages by identifying equal number of respondents (75) from each of

the villages. The data were collected from 300 farmers. To find out the knowledge level and adoption of irrigation management practices a well structured interview schedule was used for the data collection. The irrigation management practices recommended by State Agricultural Department were chosen to test the knowledge and adoption of the respondents. The knowledge test consisted of 15 items and this was translated in to vernacular language for final data collection. The data were collected from the selected farmers through personal interview method. To assess the knowledge level, a score of two was given for every correct response and a unit score was assigned to every incorrect response.

## Result and Discussion

### Overall knowledge level on irrigation management practices

The overall knowledge level of respondents on irrigation management was assessed and the findings are given in Table 1.

It may be observed from Table 1 that majority of the respondents (53.67 per cent) were found to possess medium level of knowledge and 28.33 per cent of them had low level of knowledge. The remaining 17.66 per cent of the respondents had high level of knowledge on various dimensions of irrigation management. These results may be due to more extension agency contact, mass media exposure and high educational status of the respondents. The result is in accordance with the outcome of the study of Jeyashree (2004).

## Socio-economic and psychological characteristics of the respondents

In this section the findings on characteristics like age, education, occupation, farm size, farming experience, annual income, cropping intensity, irrigation intensity, productivity, source of irrigation, method of irrigation, social participation, extension agency contact, innovativeness, risk orientation, scientific orientation, economic motivation and mass media exposure of the respondents are presented and discussed.

### Age

The results on distribution of respondents according to their age are presented in Table 2. It may be seen from the Table 2 that more than fifty per cent of the respondents (50.33 per cent) were old aged, followed by middle aged (33.67 per cent) and young aged (16.00 per cent) respondents. The reason for more number of respondents belonging to old age category might be due to the nature of sample selected for the study. This finding is in agreement with the findings of Abiramasundari (2002) and Thamban (2003).

### Education

The results on distribution of respondents according to their education are presented in Table 3.

It may be observed from the Table 3 that more than thirty per cent of the respondents (36.33 per cent) had attained education upto higher secondary level followed by collegiate (32.33 per cent), middle school (26.67) and high school (4.67 per cent) education. It may be inferred from the above finding that cent per cent of the respondents had formal education. This may be due to the presence of number of educational institutions in the study area. This result is in line with the findings of Binduchandran (1997), Senthilkumar (2001) and Jeyashree (2004).

### Occupation

The results on distribution of respondents according to their occupation are presented in Table 4.

It could be observed from the Table 4 that majority (53.33 per cent) of the respondents had agriculture as their main occupation and the remaining 46.67 per cent had agriculture and allied occupation. This may be due to the availability of opportunities and resources in the study area. This finding is in line with the findings of Babykumari (1998), Senthilkumar (2001), Jeyashree (2004), Venkatachalam (2005), Vignesh (2006) and Flora (2007).

### Farm size

The results on distribution of respondents according to their farm size are given in Table 5.

It could be observed from the Table 5 that more than fifty per cent of the respondents (56.67 per cent) were medium farmers followed by small farmers (30.00 per cent) and big farmers (13.33 per cent). This may be due to the fact that the land has been fragmented too much resulting in medium size

holdings. This is in accordance with the findings of Sangeetha (1997), Jeganarayanan (1999), Jeyashree (2004) and Venkatachalam (2005).

### Farming experience

The results on distribution of respondents according to their farming experience are given in Table 6

It could be seen from the Table 6 that majority of the respondents (62.00 per cent) had high level of farming experience, followed by 27.33 per cent of the respondents with medium level of farming experience and 10.67 per cent of the respondents with low level of farming experience. The reason for most of the respondents belonging to high level of experience category might be due to their traditional involvement in cultivation. Most of the respondents were old and middle aged, and it justified with their high level of farming experience. This result is in line with the findings of Vijayalayan (2001), Jeyashree (2004), Punitha (2005) and Venkatachalam (2005).

### Annual income

The results on distribution of respondents according to their annual income are presented in Table 7

It may be seen from the Table 7 that about two-thirds of the respondents (65.33 per cent) had high level of annual income followed by medium (24.67 per cent). Only 10.00 per cent had low level of annual income. This may be due to the fact that more than forty per cent of the respondents were engaged in agriculture and some other occupations like business and other services and hence they earned higher income. This result in line with the findings of Jeyashree (2004), Punitha (2005), Venkatachalam (2005) and Santhi (2006).

### Cropping intensity

The results on distribution of respondents according to their 'cropping intensity is presented in Table 8

It may be seen from the Table 8 that more than half of the respondents (54.67 per cent) had high cropping intensity followed by low cropping intensity (25.33 per cent). Only 20.00 per cent had medium cropping intensity. This may be due to the intensive utilization of the available area. This is in line with the findings of Balasubramaniam (2005), Saravanan (2005), Vignesh (2006) and Rao *et al.* (2008).

### Irrigation intensity

The results on distribution of respondents according to their irrigation intensity is presented in Table 9

It may be seen from the Table 9 that around two-thirds of the respondents had high irrigation intensity (65.67 per cent) followed by low irrigation intensity (32.66 per cent). Only 1.67 per cent had medium irrigation intensity. This may be due to the intensive utilization of the available water. This is in line with the findings of Balasubramaniam (2005), Saravanan (2005) and Vignesh (2006).

It may be seen from the Table 10 that more than half the proportion of the respondents had high productivity (57.67 per cent) followed by medium productivity (29.67 per cent). Only 12.66 per cent had low productivity. This may be due to the proper irrigation of the crop by the farmers. This result is in line with the findings of Badawi (2004), Goud (2005), Venkatachalam (2005), Vignesh (2006).

The results on distribution of respondents according to their productivity for banana is presented in Table 11. It may be seen from the Table 11 that more than sixty per cent of the respondents had high productivity (65.33 per cent) followed by medium productivity (24.67 per cent). Only 10.00 per cent had low productivity. This may be due to the proper irrigation of the crop by the farmers. This result is in line with the findings of Badawi (2004), Goud (2005), Venkatachalam (2005), Vignesh (2006). The results on distribution of respondents according to their productivity for tapioca is presented in Table 12. It may be seen from the Table 12 that more than half the proportion of the respondents had medium productivity (55.67 per cent) followed by high productivity (33.66 per cent). Only 10.67 per cent had low productivity. This may be due to the failure of monsoon. This result is in line with the findings of Chaudhary (2000), Lakshmi (2003), Balasubramaniam *et al.*, (2005) and Saravanan (2005).

### Source of irrigation

The results on distribution of respondents according to their source of irrigation are presented in Table 13.

It may be seen from the Table 13 that more than half of the respondents (52.00 per cent) had irrigation from canal followed by 25.33 per cent had irrigation from both canal and bore well. Only 22.67 per cent had irrigation from bore well. This may be due to more dependence on canal water. This is in line with the findings of Jeyashree (2004), Balasubramaniam (2005), Saravanan (2005) and Vignesh (2006).

### Method of irrigation

The results on distribution of respondents according to their method of irrigation are presented in Table 14. It may be seen from the Table 14 that nearly half of the respondents (47.67 per cent) had flooding irrigation followed by both flooding and controlled irrigation (32.33 per cent). Only 10.00 per cent followed controlled irrigation and also supplementary irrigation. This may be due to the reason that more than half of the respondents used canals as their source

of irrigation. Hence most of the farmers adopted flooding method of irrigation. This is in line with the findings of Jeyashree (2004), Karpagam (2004) and Saravanan (2005).

### Social participation

The results on distribution of respondents according to their social participation are presented in Table 15. It may be seen from the Table 15 that more than half of the respondents (60.33 per cent) had low level of social participation followed by medium level of social participation (31.00 per cent). Only 8.67 per cent had high level of social participation. The reason for more than fifty per cent of the respondents belonging to low level of social participation might be due to lack of tangible benefits in becoming members of the social organizations and participating in the activities frequently. This is in line with the findings of Saravanan (2005).

### Extension agency contact

The results on distribution of respondents according to their extension agency contact are presented in Table 16. It may be seen from the Table 16 that more than half of the respondents (57.33 per cent) had high level of contact with extension agency, followed by medium (27.67 per cent) and low levels (15.00 per cent). Higher levels of extension agency contact might be due to better educational status. This is in line with the findings of Jeganarayanan (1999), Kavitha (1999), Kavitha (2001), and Senthilkumar (2001).

### Innovativeness

The results on distribution of respondents according to their innovativeness are presented in Table 17.

It may be observed from the Table 17 that more than half of the respondents (64.33 per cent) had high level of innovativeness followed by medium level of innovativeness (23.67 per cent). It may be due to the fact that most of the respondents had higher secondary and college education. This result is in line with the findings of Janakirani (2004), Balasubramaniam (2005), Goud (2005) and Saravanan (2005).

### Conclusion

This study clearly shows that majority of the farmers possess medium level of knowledge about irrigation management practices. Study has clearly indicated that the significant gain in knowledge on irrigation management is because of the of the trainings they have attended.

**Table 1 Distribution of respondents according to their knowledge level on irrigation management practices**

S.No	Category	Number of respondents	Per cent
1	Low	86	28.67
2	Medium	161	53.67
3	High	53	17.66
	Total	300	100.00

**Table 7: Distribution of respondents according to their annual income**

S. No.	Category	Number of respondents	Per cent
1.	Low	30	10.00
2.	Medium	74	24.67
3.	High	196	65.33
	Total	300	100.00

**Table 2 Distribution of respondents according to their age**  
(n=300)

S. No.	Category	Number of respondents	Per cent
1.	Young	48	16.00
2.	Middle	101	33.67
3.	Old	151	50.33
	Total	300	100.00

**Table 3 Distribution of respondents according to their education**  
(n=300)

S. No.	Category	Number of respondents	Per cent
1.	Middle school	80	26.67
2.	High school	14	4.67
3.	Higher secondary	109	36.33
4.	Collegiate	97	32.33
	Total	300	100.00

**Table 4: Distribution of respondents according to their occupation**  
(n=300)

S. No.	Categories	Number of respondents	Per cent
1.	Agriculture	160	53.33
2.	Agriculture and allied occupation	140	46.67
	Total	300	100.00

**Table 5: Distribution of respondents according to their farm size**  
(n=300)

S. No.	Category	Number of respondents	Per cent
1.	Small farmers	90	30.00
2.	Medium farmers	170	56.67
3.	Big farmers	40	13.33
	Total	300	100.00

**Table 6: Distribution of respondents according to their farming experience**

S. No.	Category	Number of respondents	Per cent
1.	Low	32	10.67
2.	Medium	82	27.33
3.	High	186	62.00
	Total	300	100.00

**Table 8: Distribution of respondents according to their cropping intensity**

S. No.	Category	Number of respondents	Per cent
1.	Low	76	25.33
2.	Medium	60	20.00
3.	High	164	54.67
	Total	300	100.00

**Table 9: Distribution of respondents according to their irrigation intensity**  
(n=300)

S. No.	Category	Number of respondents	Per cent
1.	Low	98	32.66
2.	Medium	5	1.67
3.	High	197	65.67
	Total	300	100.00

**Productivity The results on distribution of respondents according to their productivity for paddy is presented in Table 10**  
(n=300)

S. No.	Category	Number of respondents	Per cent
1.	Low	38	12.66
2.	Medium	89	29.67
3.	High	173	57.67
	Total	300	100.00

**Table 11: Distribution of respondents according to their productivity for Banana**  
(n=300)

S. No.	Category	Number of respondents	Per cent
1.	Low	30	10.00
2.	Medium	74	24.67
3.	High	196	65.33
	Total	300	100.00

**Table 12: Distribution of respondents according to their productivity for tapioca**  
(n=300)

S. No.	Category	Number of respondents	Per cent
1.	Low	32	10.67
2.	Medium	167	55.67
3.	High	101	33.66
	Total	300	100.00

**Table 13: Distribution of respondents according to their source of irrigation**  
(n=300)

S. No.	Category	Number of respondents	Per cent
1.	Canal	156	52.00
2.	Bore well	68	22.67
3.	Canal+ Bore well	76	25.33
	Total	300	100.00

**Table 14: Distribution of respondents according to their method of irrigation**  
(n=300)

S. No.	Category	Number of respondents	Per cent
1.	Flooding	143	47.67
2.	Controlled	30	10.00
3.	Flooding + controlled	97	32.33
4.	Supplementary irrigation	30	10.00
	Total	300	100.00

**Table 15: Distribution of respondents according to their social participation**

S. No.	Category	Number of respondents	Per cent
1.	Low	181	60.33
2.	Medium	93	31.00
3.	High	26	8.67
	Total	300	100.00

**Table 16: Distribution of respondents according to their extension agency contact**

S. No.	Category	Number of respondents	Per cent
1.	Low	45	15.00
2.	Medium	83	27.67
3.	High	172	57.33
	Total	300	100.00

**Table 17: Distribution of respondents according to their innovativeness**

S. No.	Category	Number of respondents	Per cent
1.	Low	36	12.00
2.	Medium	71	23.67
3.	High	193	64.33
	Total	300	100.00

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