Profile Study of Beneficiaries under IAMWARM in Tiruchirappalli District of Tamil Nadu

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Abstract

The Irrigated Agriculture Modernization and Water Bodies Restoration and Management (IAMWARM) project, implemented in Tamil Nadu in 2007, aimed to enhance irrigation services and promote the adoption of modern water-saving technologies. This study, conducted in the Ponnaniyar sub-basin of Tiruchirappalli district, focused on analyzing the profile of beneficiaries under IAMWARM. An ex-post facto research design was employed, with 120 farmers selected from five villages through proportionate random sampling. The study examined various socio-economic and behavioural variables, including age, education, landholding size, farming experience, information utilization, economic motivation, scientific orientation, innovativeness, risk orientation, and training received. The findings revealed that a majority of the beneficiaries were middle-aged, had marginal landholdings, and demonstrated medium levels of farming experience, information source utilization, economic motivation, scientific orientation, and innovativeness. The results also highlighted key constraints faced by beneficiaries, such as poor socio-economic status, fragmented landholdings, inadequate access to credit, and rising labour costs. Beneficiaries suggested improvements, including timely distribution of subsidies, better communication about subsidy availability, and training programs for farmers and labourers on innovative technologies. The study underscores the importance of addressing these challenges to further enhance the effectiveness of IAMWARM and improve the socio-economic status of its beneficiaries.

Keywords: *IAMWARM, Socio-economic Impact, Agriculture Modernization, Landholding, Training Programs*

1. INTRODUCTION

The Irrigated Agriculture Modernization and Water-bodies Restoration and Management (IAMWARM) project is a 6-year initiative in Tamil Nadu aimed at enhancing irrigation practices and water management for farmers. It focuses on expanding the area under irrigated agriculture and promoting efficient water use, thereby enabling farmers to increase both crop yield and income per unit of water used. With Tamil Nadu's average annual rainfall at just 925 millimetres and a per capita water availability of 900 cubic meters, much lower than the national average of 2,200 cubic meters, water scarcity is a significant challenge in the state.

Tamil Nadu's geography is divided into 17 river basins and 127 sub-basins, many of which are water-stressed. The state relies heavily on its 70 major reservoirs, 40,000 tanks, and 3 million wells, with agriculture consuming 75% of the available water. Approximately 30% of the net irrigated area (30 lakh hectares) is served by canals, 21% by tanks, and 49% by wells, with the remainder supported by streams and springs. The irrigation infrastructure, essential for supporting these irrigated areas, requires modernization to enhance its efficiency.

The IAMWARM project, with an outlay of Rs. 2,547 crores, was implemented from April 2007 to March 2013 (extended to September 2014). It was executed by the Water Resources Organization (WRO), Public Works Department (PWD), and the Tamil Nadu government. The project covered 63 sub-basins and 6.25 lakh hectares of irrigated land. The focus was on modernizing irrigation systems, rehabilitating water bodies (such as tanks), improving water delivery, and enhancing the efficiency of operation and maintenance.

Key activities included repairing canals to minimize wastage, rehabilitating tanks, enhancing groundwater recharge in over-exploited areas, and addressing environmental concerns through assessments and pilot studies. The project was supported by multiple coordinating departments, including Agricultural Engineering, Animal Husbandry, Fisheries, and Agricultural Marketing.

2. MATERIALS AND METHODS

This study evaluates the profile of beneficiaries under the Irrigated Agriculture Modernization and Water-Bodies Restoration and Management (IAMWARM) project in Tiruchirappalli district, Tamil Nadu. A descriptive research design with an ex post facto approach is adopted to examine the socio-economic characteristics and behavioural aspects of IAMWARM beneficiaries. Primary data are collected through structured surveys and interviews with 120 beneficiaries, while secondary data are sourced from government reports and relevant literature. Key variables such as age, education, landholding, farming experience, information source utilization, economic motivation, scientific orientation, innovativeness, risk orientation, and training received are operationalized and measured using established scoring procedures. The data analysis involves percentage analysis, cumulative frequency, standard deviation, mean scores, zero-order correlation coefficients, and multiple linear regression to assess the influence of these variables on the socio-economic profile of the beneficiaries. The study aims to offer valuable insights into the characteristics of IAMWARM beneficiaries, identify constraints affecting their progress, and recommend strategies to improve the implementation and impact of the scheme.

3. RESULTS AND DISCUSSION

Profile Study of Beneficiaries under IAMWARM. The following were the profiles of IAMWARM beneficiaries reported by them during the survey. The results are displayed in below tables.

Table-1: Distribution of beneficiaries according to their age (n=120)

Sl. No	Category	Number	Per cent
1	Young age	15	12.50
2	Middle age	71	59.20
3	Old age	34	28.30
	Total	**120**	**100.00**

Table-2: Distribution of beneficiaries according to their education (n=120)

Sl. No	Category	Number	Per cent
1	Illiterate	4	3.33
2	Functional literate	24	20.00
3	Primary School	27	22.50
4	Middle School	38	31.67
5	Higher Secondary	18	15.00
6	Graduate	9	7.50
	Total	**120**	**100.00**

Table-3: Distribution of beneficiaries according to their land holding (n=120)

Sl. No	Category	Number	Per cent
1	Landless labourers	40	33.33
2	Marginal farmers	68	56.67
3	Small farmers	12	10.00
	Total	**120**	**100.00**

Table-4: Distribution of beneficiaries according to their Farming Experience(n=120)

Sl. No	Category	Number	Per cent
1	Low	38	31.67
2	Medium	55	45.83
3	High	27	22.50
	Total	**120**	**100.00**

Table-5: Distribution of beneficiaries according to their Information Source Utilization (n=120)

Sl. No	Category	Number	Per cent
1	Low	30	25.00
2	Medium	59	49.17
3	High	31	25.83
	Total	**120**	**100.00**

Table-6: Distribution of beneficiaries according to their Economic Motivation (n=120)

Sl. No	Category	Number	Per cent
1	Low	19	15.83
2	Medium	66	55.00
3	High	35	29.17
	Total	**120**	**100.00**

Table-7: Distribution of beneficiaries according to their Scientific Orientation (n=120)

Sl. No	Category	Number	Per cent
1	Low	28	23.34
2	Medium	51	42.50
3	High	41	34.16
	Total	**120**	**100.00**

Table-8: Distribution of beneficiaries according to their Innovativeness (n=120)

Sl. No	Category	Number	Per cent
1	Low	29	24.17
2	Medium	58	48.33
3	High	33	27.50
	Total	**120**	**100.00**

Table-9: Distribution of beneficiaries according to their Risk Orientation (n=120)

Sl. No	Category	Number	Per cent
1	Low	26	21.67
2	Medium	60	50.00
3	High	34	28.33
	Total	**120**	**100.00**

Table-10: Distribution of beneficiaries according to their Training Received (n=120)

Sl. No	Category	Number	Per cent
1	Low	40	33.33
2	Medium	51	42.50
3	High	29	24.17
	Total	**120**	**100.00**

4. CONCLUSION

The study reveals that a significant proportion of the beneficiaries displayed characteristics conducive to active agricultural participation. 59.20% of the beneficiaries were middle-aged, indicating that this group, due to their physical Vigor and decision-making capabilities, plays a crucial role in farming. In terms of education, 31.67% of the beneficiaries had a middle school education, which suggests limited access to higher education. The majority, 56.67%, were marginal farmers, owning land between 2.5 to 5 acres, pointing to the prevalence of small landholdings in the area. Regarding farming experience, 45.83% of the farmers had medium experience, with middle-aged farmers being the key contributors. When it comes to information source utilization, 49.17% of the farmers were in the medium category, implying they had access to crucial agricultural information. Furthermore, 55.00% of the farmers displayed medium economic motivation, reflecting their interest in adopting financially viable agricultural practices. 42.50% showed medium levels of scientific orientation, benefiting from training and exposure to new farming techniques. As for innovativeness, 48.33% exhibited medium levels, suggesting a willingness to experiment with new ideas. A notable 50.00% had a medium risk orientation, indicating that they were open to calculated risks in farming. Lastly, 42.50% of the beneficiaries received medium levels of training, which further enhanced their agricultural knowledge and skills. These findings underscore the importance of supporting middle-aged, marginal farmers who are motivated, informed, and capable of making a positive impact on agricultural development.

5. ACKNOWLEDGEMENT

6. ABBREVIATIONS

IAMWARM- Irrigated Agriculture Modernization and Water Bodies Restoration and Management

7. CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this research study.

8. FINANCIAL STATUS

This research was conducted without any external funding. The authors confirm that all expenses were borne personally, and no financial support was received from any organization or institution.

9. ETHICS STATEMENT

This study was conducted in adherence to ethical research practices. Informed consent was obtained from all participants, ensuring their voluntary participation and confidentiality of their responses. The research respects the cultural and social sensitivities of IAMWARM beneficiaries and complies with institutional and governmental ethical guidelines.

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