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A STUDY ON EXTENT OF PARTICIPATION AMONG BENEFICIARIES IN THE IAMWARM PROJECT IN TIRUCHIRAPPALLI DISTRICT OF TAMIL NADU INDIA

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ABSTRACT

The study examined the extent of participation among beneficiaries in the Irrigated Agriculture Modernization and Water Bodies Restoration and Management (IAMWARM) project, implemented in Tamil Nadu in 2007 to enhance irrigation service delivery and promote modern water-saving technologies. Conducted in the Ponnaniyar sub-basin of Tiruchirappalli district, an ex-post facto research design was employed. Using proportionate random sampling, 120 respondents were selected from five villages in one randomly chosen block. The findings revealed that the majority of beneficiaries demonstrated medium levels of participation across various project activities, including training programs, adoption of innovative technologies, and involvement in decision-making processes. Education, information source utilization, economic motivation, risk orientation, and innovativeness were significantly correlated with participation levels. Constraints that limited participation included poor socio-economic status, high labour costs, inadequate credit facilities, and waterway management conflicts. Beneficiaries highlighted the need for timely subsidies, enhanced communication about subsidy availability, and increased awareness of farmer organizations to improve participation. Suggestions also included more field demonstrations, follow-up activities, and training on modern agricultural technologies. The study emphasizes the importance of addressing socio-economic barriers and fostering active engagement among beneficiaries to maximize the success and sustainability of agricultural development programs.

***Key words*:** IAMWARM project, Irrigation service delivery, Modern water-saving technologies, Socio-economic impact and Beneficiary engagement

Introduction

The Tamil Nadu Irrigated Agriculture Modernization and Water-Bodies Restoration and Management (TN-IAMWARM) Project was initiated in 2007 with financial assistance from the World Bank to address the water scarcity issues and modernize irrigation infrastructure in Tamil Nadu. The primary goal of the project was to enhance water-use efficiency, increase agricultural productivity, and improve the socio-economic conditions of farmers through integrated water resource management.

One of the major focuses of the TN-IAMWARM Project was the rehabilitation of traditional water bodies such as tanks, ponds, and canals, which historically served as the main water source for irrigation in Tamil Nadu. However, with time, these water bodies deteriorated due to poor maintenance and climate change impacts, leading to water scarcity. The project aimed to restore these structures, thereby improving groundwater recharge, ensuring efficient water delivery, and promoting climate-resilient crops.

The project also adopted a multi-disciplinary approach by involving various sectors such as agriculture, horticulture, animal husbandry, and fisheries to ensure holistic development. The inclusion of these sectors allowed farmers to diversify their income sources, reduce

dependence on rainfall, and use water resources efficiently. Additionally, Water User Associations (WUAs) were strengthened under the project, allowing farmers to actively participate in decision-making processes, water management, and technology adoption. This community-driven approach ensured the long-term sustainability of water management practices.

The IAMWARM project also introduced modern irrigation technologies such as drip and sprinkler irrigation to minimize water usage and increase agricultural yield. The promotion of climate-resilient crops was another key focus, which ensured that farmers could withstand adverse climatic conditions while maintaining productivity. Training and capacity-building programs were organized to educate farmers about the benefits of advanced agricultural technologies, sustainable farming practices, and water conservation methods.

Several studies, including research by Kumar et al. (2021) and Singh *et al.*, (2020), confirmed that the participatory approach of the IAMWARM project significantly increased crop yield and improved water management. Additionally, these studies emphasized the role of financial assistance, capacity building, and credit facilities in ensuring farmer participation. The successful implementation of the IAMWARM project in Tamil Nadu has set a model for other states to follow for enhancing water resource management and agricultural productivity.

In summary, the TN-IAMWARM project has proven to be a transformative initiative in modernizing agriculture in Tamil Nadu. Its holistic approach towards water management, integration of various sectors, and empowerment of Water User Associations has not only enhanced agricultural productivity but also improved the socio-economic conditions of the farming community. However, sustained efforts in capacity building, credit facilities, and technological integration are crucial to ensure long-term benefits from the project.

Materials and Methods

This study assesses the extent of participation of beneficiaries in the Irrigated Agriculture Modernization and Water-Bodies Restoration and Management (IAMWARM) scheme and its effects on their agricultural practices in Tiruchirappalli district, Tamil Nadu. A descriptive research design with an ex post facto approach is adopted, focusing on understanding the beneficiaries' involvement in the scheme's various activities. Primary and secondary data collection methods are employed for this study. Primary data are gathered through structured surveys and interviews with 120 IAMWARM beneficiaries, while secondary data are sourced from government reports and existing literature.

Table 1: Distribution of beneficiaries according to their extent of participation in IAMWARM. (n=120).

S. No	Category	Number	Per cent
1	Low level of participation	32	26.67
2	Medium level of participation	49	40.83
3	High level of participation	39	32.50
Total		120	100.00

Variables, including socio-demographic factors such as age, education, farm size, cropping patterns, family structure, and extent of participation in IAMWARM activities, are operationalized and measured using established scoring procedures. Data analysis involves percentage analysis, cumulative frequency, standard deviation, mean scores, zero-order correlation coefficients, and multiple linear regression to assess participation levels and identify associated constraints. The study aims to provide insights into the extent of beneficiaries' participation in the IAMWARM scheme and offer recommendations for improving engagement to enhance the scheme's overall effectiveness.

Results and Discussion

The following profiles represent the extent of participation of IAMWARM beneficiaries, as reported by them during the survey. The data reveals varying levels of involvement in the IAMWARM activities. The results are displayed in the Table 1.

The study's results highlight that 40.83% of beneficiaries exhibited a medium level of participation in the IAMWARM project, while 32.50% demonstrated high levels of involvement. This participation primarily included attending training sessions, adopting modern water management technologies, and engaging in decision-making processes. The moderate participation level can be attributed to the beneficiaries' socio-economic factors such as education, income, and access to information.

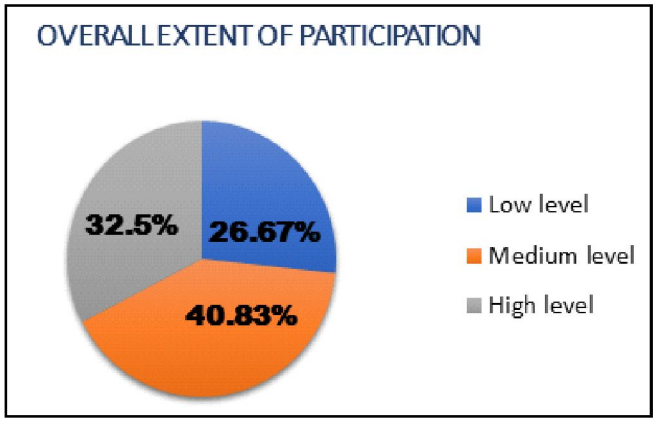

Fig. 1: Distribution of Participation levels in the study.

According to Patel *et al*., (2023), in similar participatory irrigation projects, it was observed that when farmers had access to training and financial support, their participation improved significantly. The same pattern emerged in this study, where beneficiaries who received better support from extension services showed higher involvement in project activities.

However, the study also revealed several constraints that hindered participation, including limited access to credit, high labor costs, and poor water management systems. These constraints created financial and operational barriers for small-scale farmers, reducing their active participation.

To address these issues, the study recommends improving access to credit, reducing labour costs through mechanization, enhancing communication about government support programs, and promoting community-driven water management practices. Furthermore, regular follow-ups and practical demonstrations are essential to maintain a high level of participation.

The study emphasizes that increased awareness and capacity-building initiatives among farmers can significantly boost participation, ultimately improving the effectiveness and sustainability of the IAMWARM project.

Conclusion

The study revealed that the participation of IAMWARM beneficiaries varied across three categories—low, medium, and high. About 40.83% of beneficiaries fell under the medium participation category, indicating they were partially involved in training programs, decision-making processes, and adopting new irrigation technologies. This group showed interest but faced challenges such as limited technical knowledge and financial constraints.

A significant 32.50% of beneficiaries reported high participation, meaning they were actively engaged in all project activities. This included attending workshops, utilizing modern water-saving technologies, and being part of Water User Associations (WUAs). Their high involvement significantly enhanced their agricultural productivity.

However, 26.67% of beneficiaries showed low participation, primarily due to socio-economic challenges such as low literacy, lack of credit facilities, and insufficient support from extension services. This group required targeted interventions, such as capacity-building programs, easy access to loans, and improved communication about project benefits.

The study emphasized that by reducing barriers such as high labour costs, poor water management, and limited financial resources, the IAMWARM project could significantly increase participation. Enhanced outreach, regular follow-ups, and collaborative approaches among stakeholders would empower beneficiaries, ensuring sustainable agricultural modernization and improved water resource management.

Application of the Research

This research provides practical insights for policymakers to improve participation in IAMWARM by identifying influencing factors and addressing gaps. It enables better resource allocation, tailored training programs, and effective monitoring systems. Successful practices from high-participation areas can be replicated, promoting sustainable agriculture and irrigation management. Ultimately, the findings support informed decision-making to enhance the program's impact and achieve its objectives efficiently.

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Abbreviations

IAMWARM- **I**rrigated **A**griculture **M**odernization and **W**ater Bodies **R**estoration and **M**anagement

Conflict of Interest

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

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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