Veritas: A Multidisciplinary Journal of Social Sciences and Humanities
ISSN: 3107-748X (Online)

An Analytical Study on the Sustainability of the Jal Jeevan Mission in Rural Virudhunagar District

Lt. Dr B. Ajantha
Assistant Professor & Associate NCC Officer
Research Department of English
Sri S. Ramasamy Naidu Memorial College, Sattur
Madurai Kamaraj University, Madurai

Abstract

The Jal Jeevan Mission (JJM) was launched to provide safe and adequate drinking water through functional household tap connections to all rural households in India. While significant progress has been made in coverage, the long-term sustainability of water supply systems remains a critical concern. The study analytically examines the sustainability of the Jal Jeevan Mission in the rural areas of Virudhunagar District, Tamil Nadu. The research paper focuses on key dimensions of sustainability, including infrastructure maintenance, institutional mechanisms, financial viability, community participation, and water supply reliability. Primary data were collected from selected rural households and local stakeholders using structured questionnaires, supplemented by secondary data from government reports and official records. The study employs descriptive and analytical tools to assess the effectiveness of existing sustainability practices and to identify challenges faced at the grassroots level. The findings of the research paper reveal that while access to tap water has improved substantially, issues related to regular maintenance, source sustainability, and local institutional capacity continue to affect long-term outcomes. The study highlights the need for strengthened community involvement, capacity building of local bodies, and improved monitoring mechanisms to ensure the sustained success of the Jal Jeevan Mission. The research paper offers policy-relevant insights for enhancing rural water supply sustainability.

Keywords: *Jal Jeevan Mission, Sustainability, Rural Drinking Water, Virudhunagar District, Water Governance*

Introduction

Access to safe and sufficient drinking water is essential for public health, socio-economic progress, and the preservation of human dignity. In recognition of this, the Government of India introduced the Jal Jeevan Mission (JJM) in 2019, intending to ensure functional household tap connections for all rural households. The mission emphasises source sustainability, water quality, and community ownership as key pillars of rural water supply. Tamil Nadu, including the Virudhunagar District, has experienced rapid implementation of this programme.

Experiences at both the global and national levels show that the mere creation of infrastructure does not ensure long-term water security. The sustainability of rural water supply schemes depends on multiple interrelated factors, including technical reliability, financial viability, institutional strength, environmental protection, and social acceptance. In this context, the present study undertakes an analytical examination of the sustainability of the Jal Jeevan Mission in the rural areas of Virudhunagar District.

ISSN: 3107-748X (Online)

Statement of the Problem

Despite the significant expansion of household tap water connections under the Jal Jeevan Mission, many rural water supply systems continue to face persistent challenges, including irregular water supply, depletion of water sources, inadequate maintenance, insufficient cost recovery, and limited community participation. In Virudhunagar District, where semi-arid climatic conditions and heavy dependence on groundwater prevail, concerns regarding the long-term sustainability of Jal Jeevan Mission infrastructure are particularly pronounced. Therefore, a systematic and analytical assessment is essential to determine whether the mission can ensure the provision of reliable and sustainable drinking water services over the long term.

Objectives of the Study

The study is undertaken with the following objectives:

- To examine the current status of Jal Jeevan Mission implementation in rural Virudhunagar District.
- To analyse the technical and environmental sustainability of JJM water supply systems.
- To assess the financial and institutional sustainability of the Jal Jeevan Mission.
- To evaluate community participation and user perceptions regarding sustainability.
- To identify key challenges affecting the long-term sustainability of the programme.

Research Questions and Hypotheses

Research Questions

- To what extent are Jal Jeevan Mission water supply systems sustainable in rural Virudhunagar District?
- What technical, financial, and institutional factors influence sustainability under JJM?
- How does community participation affect the sustainability of rural water supply schemes?

Hypotheses

- There is a significant relationship between regular system maintenance and the sustainability of JJM water supply schemes.
- Higher levels of community participation positively influence the sustainability of the Jal Jeevan Mission.
- Financial constraints significantly affect the long-term sustainability of JJM infrastructure.

Review of Literature

Rural drinking water sustainability has received considerable attention in development and public policy literature. Chambers (1988) underscored the crucial role of community participation in ensuring the long-term success of rural development initiatives. Similarly, Briscoe and de Ferranti (1988) pointed out that many rural water supply schemes tend to fail because of weak institutional frameworks and inadequate cost recovery mechanisms.

Mukherjee and van Wijk (2003) point out that the long-term sustainability of rural water supply systems is closely linked to factors such as local ownership, transparent financial practices, and adequate technical capacity at the village level. Similarly, in the Indian context,

ISSN: 3107-748X (Online)

Reddy and Reddy (2012) observe that despite substantial capital investment, many drinking water programmes continue to face serious challenges due to weak operation and maintenance mechanisms.

Recent research on the Jal Jeevan Mission highlights its transition from a supply-driven model to a demand-driven, community-managed approach. Kumar et al. (2021) note that although the mission has significantly expanded access to drinking water, critical sustainability issues, particularly groundwater depletion and inadequate capacity at the Panchayat level, continue to persist. Similarly, Narayanan and Suresh (2022) stress the importance of embedding source sustainability measures and systematic water quality monitoring within rural water governance systems to ensure the long-term success of the programme.

The present study builds upon this literature by providing a district-level analytical assessment of sustainability under the Jal Jeevan Mission.

Methodology

Research Design

The study adopts a descriptive and analytical research design.

Sources of Data

- **Primary Data:** Collected through structured questionnaires administered to rural households benefiting from JJM.
- **Secondary Data:** Obtained from government reports, district statistical handbooks, academic journals, and policy documents.

Sample Design

A multi-stage random sampling method was adopted for the study. Villages were selected from all eleven blocks of Virudhunagar District, and households having functional tap water connections were chosen for the survey.

Tools for Analysis

- Percentage analysis
- Weighted average scores
- Chi-square test

Variables and Indicators for Sustainability Analysis

Key Sustainability Dimensions and Indicators

Dimension	Variables	Indicators
Technical	Infrastructure condition	Frequency of breakdowns, water pressure
Environmental	Source sustainability	Groundwater level, source protection
Financial	Cost recovery	User charges, O&M funds
Institutional	Governance	Panchayat involvement, VWSC functioning
Social	Community participation	Awareness, user involvement

ISSN: 3107-748X (Online)

Data Analysis and Interpretation

Household Perception on the Sustainability of JJM

Aspect	High (%)	Moderate (%)	Low (%)
Regularity of supply	42	38	20
Water quality	47	35	18
Maintenance response	31	40	29
Community involvement	28	34	38

The analysis shows that although most households view water quality and the regularity of supply positively, the responsiveness to maintenance issues and the level of community participation are comparatively low. These shortcomings pose challenges to the overall sustainability of the programme.

Findings of the Study

The Jal Jeevan Mission has made notable progress in providing households with improved access to drinking water. However, the technical sustainability of the water supply systems faces challenges due to irregular maintenance and pressure on water sources. Financial sustainability also remains a concern, as user charges are often insufficient and operation and maintenance funds are limited. In addition, community participation in water governance is relatively low in many villages, which further affects the long-term effectiveness of the programme.

Recommendations

To enhance the effectiveness of the Jal Jeevan Mission, it is essential to strengthen the capacity of Village Water and Sanitation Committees through targeted training and development programs. Regular testing of water quality should be conducted, with the results made publicly available to ensure transparency and build trust among community members. Implementing clear and affordable user charge mechanisms can help maintain financial sustainability while encouraging responsible usage. Additionally, promoting community ownership through awareness campaigns and active participation initiatives will foster a sense of responsibility and ensure the long-term success of the water supply systems.

Conclusion

The Jal Jeevan Mission marks a significant step forward in India's rural water sector. Although it has effectively increased access to household tap connections in rural areas of Virudhunagar District, the long-term success of the program relies on overcoming technical, financial, and institutional challenges. Moving from a focus solely on infrastructure to a governance approach centred on sustainability is crucial to provide safe and reliable drinking water for future generations.

Works Cited

ISSN: 3107-748X (Online)

- Briscoe, John, and David de Ferranti. *Water for Rural Communities: Helping People Help Themselves*. World Bank, 1988.
- Chambers, Robert. *Rural Development: Putting the Last First*. Longman, 1988.
- Kumar, Ramesh, et al. "Jal Jeevan Mission and Rural Water Security in India." *Economic and Political Weekly*, vol. 56, no. 34, 2021, pp. 45–52.
- Mukherjee, Nilanjana, and Christine van Wijk. *Sustainability Planning and Monitoring in Community Water Supply and Sanitation*. IRC, 2003.
- Narayanan, S., and R. Suresh. "Governance Challenges in India's Rural Drinking Water Programmes." *Journal of Rural Development*, vol. 41, no. 2, 2022, pp. 157–170.
- Reddy, V. Ratna, and M. Gopinath Reddy. *Drinking Water Management in India*. Springer, 2012.

Acknowledgement

The author gratefully acknowledges the financial support extended by the **Indian Council of Social Science Research (ICSSR), New Delhi**, under the **ICSSR Collaborative Empirical Research Project on Jal Jeevan Mission (JJM)**. The support provided by the Council made this research possible. The author also expresses her sincere gratitude to all the participants, officials, and institutions who extended their cooperation during the course of the study. *The views and interpretations presented in this paper are those of the authors alone and do not necessarily reflect the views of the Indian Council of Social Science Research (ICSSR).*