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Community Participation in Water Management: A Vital Role

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Abstract: *This study explores the role of community participation in water management and its impact on sustainable development in rural areas, specifically in Terdal block, Bagalkot district, Karnataka. Community participation is crucial for effective water management, leveraging local knowledge, and promoting equitable access. Data collected from 50 respondents using random sampling reveals that 78% suggest increasing opportunities and improving coordination to support water management.*

Key words: *Water Management, Community Participation and Sustainable Development.*

1. INTRODUCTION:

Community participation in water management is very important, as the communities are the primary user and know better about the available water at their locality. Many indigenous practices of water conservation and management with strong participation of community in construction, repairing and maintenance work would enable the development of a social bounding amongst the farmers and maintain the equal distribution of water. Participation of community in water management process generates a sense of responsibility and commitment towards the work. Furthermore, when a water resource is managed collectively then the responsibility of management in terms of cost is shared amongst them. Almost all the traditional water management system across India was practiced collectively by the water user. Such systems were found successful in terms of management and distribution of the resource. For instance, the traditional water conservation and management system of Himachal Pradesh is found successful (Sharma and Kanwar, 2019). Similarly, many traditional water management system practices by the communities of north-eastern states of India such as Zabo, Dong are still relevant and is considered a sustainable system of water management. Further, the present study demonstrate that the local community who have jointly owned the source are able to manage the water resource properly and distributing it equally amongst themselves. Community participation is significant in water management because it can solve the water related conflict in the society. Further, the participation of people is essential because it can give scope to the people to know about the importance of judicious use of water. Local community living near or within the resource area supposed to have greater knowledge and understanding of the resources and easily identify their constraints and opportunities (Agrawal and Angelson, 2020). The local community can contribute a lot to a sustainable use of the particular resource when they are made part of it. Community participation in water resource management can give scope to empower the local people and make them accountable to manage their available water resource. Isager, Theilade and Thomson (2024) argued that water resource management without genuine local participation has not only become a subject of failure but also resulted in conflict and violence. According to Agrawal and Angelsen 2019, excluding the local community in water project can intensify the illegal activities related to it. This suggests that community participation is very essential in water management.

Local communities play a vital role in conservation and management of natural resources like water and land. Since time immemorial people across the world are participating in resource management formally and informally. There are large number of evidences which reflects on the public efforts in environmental conservation as a whole and water conservation and management in particular. A different level of planning has been made to incorporate the public in development related projects and resource conservation. The Dublin statement of World Water Forum (WWF) has clearly stated that public participation in water resource management and conservation is very essential. They are

considered as a best user and manager of the resource. Further, Dublin statement had mentioned the importance of women participation in resource management. It stated that participation of women is essential for mainstream development.

2. Research Methodology:

This study investigates the role of community participation in water management and its impact on sustainable development in rural areas, focusing on Terdal block, Bagalkot district, Karnataka. Using a random sampling method with 50 respondents is a standard approach for gathering a representative sample in a rural context. This approach allows for a representative sample of the rural community, providing insights into their perspectives on community participation in water management.

3. Community Participation:

Community participation involves the active engagement of individuals within a community in various activities and decision-making processes. It's a process where people are actively involved in shaping their community, rather than just being recipients of decisions made elsewhere. According to Habraken (2000) participation has two definitions with opposite meanings; participation can either represent assigning a certain decisive role to the users, where they share the decision making responsibility with the professionals. The other type of participation is where there is no shift of responsibility between users and professionals but instead, only the opinion of the user is considered while making a decision.

Community participation involves the active engagement of individuals within a community in various activities and decision-making processes. It's a process where people are actively involved in shaping their community, rather than just being recipients of decisions made elsewhere. In a very simple term, community participation means involvement of local community, social workers, and professionals in any developmental process and tries to bridge the gap between traditional and modern knowledge and methods to conserve the natural resources to achieve a common goal for long-term sustaining.

3. Water Management:

Water management encompasses the planning, development, distribution, and management of water resources to ensure their efficient and sustainable use, while also minimizing potential damage to life and property. This involves a multifaceted approach that considers various aspects of water, including quantity, quality, and its use across different sectors like domestic, agricultural, industrial, and environmental.

Elements of Water Management:

- **Planning and Development**: This involves assessing water resources, identifying potential uses, and developing infrastructure (e.g., dams, reservoirs) to support water storage and distribution.
- **Water Distribution**: Ensuring equitable access to water for various needs, including drinking, irrigation, and industry, requires effective distribution systems and infrastructure.
- **Water Quality Management**: Protecting water quality through measures like wastewater treatment and pollution control is crucial for maintaining its suitability for different uses.
- **Water Conservation**: Practices like rainwater harvesting, drip irrigation, and efficient water use in industries help conserve water resources and reduce waste.
- **Integrated Water Resources Management (IWRM)**: This holistic approach recognizes the interconnectedness of different water uses and emphasizes the importance of balancing economic, social, and environmental needs.
- **Climate Change Adaptation**: Water management strategies must be adapted to the impacts of climate change, such as changing precipitation patterns and increased droughts.

Water Management Practices:

- **Rainwater Harvesting**: Collecting and storing rainwater for later use can reduce reliance on traditional water sources and supplement groundwater.
- **Wastewater Treatment**: Treating wastewater before discharge or reuse helps protect water quality and makes it suitable for various applications.

- **Drip Irrigation**: Delivering water directly to plant roots reduces water loss through evaporation, improving irrigation efficiency.
- **Dam Management**: Dams can be used for water storage, hydropower generation, and flood control.
- **Water Pricing and Allocation**: Using economic mechanisms to incentivize water conservation and ensure its equitable distribution among users.

Challenges in Water Management:

- **Population Growth and Urbanization**: Increased demands for water in rapidly growing urban areas pose challenges for water supply and management.
- **Climate Change**: Changes in precipitation patterns, increased droughts, and rising sea levels can significantly impact water availability and quality.
- **Pollution**: Industrial and agricultural runoff, as well as improper wastewater disposal, can contaminate water resources.
- **Water Conflicts**: Competition for water resources can lead to conflicts between different users and regions.
- **Inadequate Infrastructure**: Older or poorly maintained water infrastructure can result in leaks, reduced efficiency, and water quality problems.

Importance of Water Management:

- **Human Health**: Safe and clean water is essential for human health and well-being.
- **Agriculture**: Water is vital for crop production and food security.
- **Industry:** Water is used in a wide range of industrial processes, from manufacturing to power generation.
- **Environment**: Healthy ecosystems depend on clean and sufficient water resources.
- **Economy**: Water management plays a crucial role in supporting economic development, as it affects agriculture, industry, and tourism.

4. Role of Community Participation in Water Management:

Community participation plays a vital role in sustainable water management by leveraging local knowledge, fostering ownership, and promoting equitable access to water resources. When communities are actively involved in decision-making processes, it leads to more effective and sustainable water management practices.

Benefits of Water Management:

- **Enhanced Effectiveness and Relevance:**
  - ⇨ Community participation ensures that water management interventions are tailored to local needs and context.
  - ⇨ Local knowledge and traditional practices are integrated into water management strategies, improving their relevance and effectiveness.
- **Promoting Equity and Social Justice**:
  - ⇨ Community participation helps ensure that water resources are distributed fairly and equitably, addressing the needs of all community members.
  - ⇨ It empowers marginalized groups and provides them with a voice in decisions that affect their access to water.
- **Fostering Environmental Stewardship**:
  - ⇨ Active community engagement promotes a sense of responsibility towards water resources and encourages sustainable water management practices.
  - ⇨ Communities can be actively involved in activities like rainwater harvesting, water conservation, and watershed management, leading to improved water security and environmental protection.
- **Strengthening Governance and Accountability**:
  - ⇨ Community participation fosters transparency and accountability in water management.
  - ⇨ It encourages dialogue and collaboration between communities, local governments, and other stakeholders, leading to more effective and inclusive governance.
- **Building Resilience and Sustainability**:
  - ⇨ By leveraging local knowledge and promoting community ownership, water management interventions become more resilient to environmental changes and uncertainties.

⇨ Community participation ensures that water management practices are sustainable in the long term, contributing to the well-being of both present and future generations.

Community participation is not just a desirable element in water management; it is a fundamental requirement for achieving sustainable, equitable, and effective water resource management.

5. Results:

Table: 1 Any Water Management Committees Formed in your village

Sr. No	Water Management Committees Formed in your village	No. of Respondents	Percentage
1	Yes	48	96
2	No	02	04
	Total	50	100.0

Table 1 reveals that amongst the participants, 96 percent are aware the different Committees in their village and 04 percent are not aware. Majority of participant are aware the several water management Committees in their village.

Table: 2 Are satisfied with Gram (Village) level water governance system

Sr. No	Opinion of the Respondents	No. of Respondents	Percentage
1	Low satisfied	11	22
2	Medium satisfied	26	52
3	High satisfied	13	26
	Total	50	100

Table 2 reveals that 52 percent of respondent's opinion is they Medium satisfied with Gram (Village) level water governance system and 26 percent of respondents opinion is they High satisfied with Gram (Village) level water governance system and 22 percent of respondents opinion is they low satisfied with Gram (Village) level water governance system .

Table: 3 Allocation of water resource in your village

Sr. No	Opinion of the Respondents	No. of Respondents	Percentage
1	Drinking water	13	26
2	Irrigation	23	46
3	Hydropower	07	14
4	Agro industries	06	12
5	Non-agricultural industries	01	02
	Total	50	100

Table 3 reveals that 26 percent of the water used for Drinking purpose and 46 percent of respondents are agree to Irrigation purpose water most used and 14 percent of the water used for Hydropower purpose and 12 percent of the water used for Agro industries purpose 02 percent of the water used for Non- agricultural industries purpose.

Table: 4 Are you aware about water conservation?

Sr. No	Opinion of Respondents	No. of Respondents	Percentage
1	Yes	50	100
2	No	00	000
	Total	50	100

Table 4 reveals that 100 percent of respondent's opinion is they aware about water conservation. It shows that in rural area of Terdal block, Bagalkot district people aware the water conservation.

Table: 5 What type of Techniques you used for water conservation and management

Sr. No	Opinion of Respondents	No. of Respondents	Percentage
1	Traditional methods	29	58
2	Modern methods	14	28
3	Both methods	07	14
	Total	50	100

Table 5 reveals that 58 percent of respondent's opinion is they used traditional methods of water conservation and 28 percent of respondents opinion is they used Modern methods of water conservation and management and 14 percent of respondents opinion is they used both methods such as traditional and Modern methods of water conservation and management.

6. Conclusion:

Community participation in water management is very important, as the communities are the primary user and know better about the available water at their locality. Many indigenous practices of water conservation and management with strong participation of community in construction, repairing and maintenance work could develop a social bonding amongst the farmers and maintain the equal distribution of water. Participation of community in water management process generates a sense of responsibility and commitment towards the work. In the rural areas water management committee formed by villagers needs to register with government so that the committee can function smoothly. Government should encourage and generate the awareness amongst the people of other parts of state regarding the long term benefit of community participation in resource conservation and management.

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