International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Community-Driven River Resource Management: Perspectives from the Meenachil River Basin

Vinumol Devassy

Guest Lecturer, Department of Sociology, Loyola College of Social Sciences, Thiruvananthapuram, Kerala.

Abstract

Rivers are an integral part of the socio-economic life and culture of humans and are under threat, starving for survival in the contemporary era. River management, though emerging decades ago, is still incomplete as it has not achieved the desired results for which it was envisioned. Incorporating a proper mix of interventions from various stakeholders is a significant step in managing this resource effectively. The participatory approach has been recommended as the most sustainable strategy for resource management. However, ensuring public participation in managing this resource remains a challenge, as there is no established model for implementing a participatory approach in river management. This study explores the initiatives taken by communities concerning Meenachil River management and examines how these efforts have contributed to creating environmental consciousness among the community. The findings reveal that planned and conscious methods of understanding nature and diligently implementing them in the field have significantly raised environmental awareness. This underscores the necessity for basin-scale management of the river and highlights the need for more citizen-centric river management strategies.

Keywords: river management, sustainability, people's participation, community

Rivers are the cradles of human civilization. They are the arteries of the earth. Being the most significant source of freshwater, they help sustain life on Earth. From the various reports, it is evident that rivers and lakes are the world's most degraded and threatened ecosystems (Lovgren,2021). Degradation of these water resources has been happening worldwide at an alarming rate since 1950 (Sendzimir and Schmutz.S, 2018). Industrialization and urbanization being the primary reasons, pollution, water abstraction, over-extraction of natural resources, de-siltation, river channelization, encroachment, damming etc, added to their degradation.

Rivers once an integral part of the socio-economic life and culture of the Indians, are under threat and starving for survival. Changing climatic behaviour influences the weather patterns and it has resulted in the shortage of water in some areas and droughts and floods in other areas. More than half of the wetlands have disappeared. According to the World Wildlife Fund report, 1.1 billion people around the globe lack access to water, and a total of 2.7 billion are water-scarce for at least one month of a year. Around 2.4 billion people are vulnerable to diseases like cholera, typhoid, and other waterborne illnesses due to inadequate sanitation which is happening because of the unavailability of freshwater. Diarrheal diseases alone have become the reason for the death of over 2 million people each year, mostly children. All these point out the water-stressed conditions all over the globe. As per the consumption rate, the situation will get worse and is projected that by 2025, two-thirds of the world's population may face water shortages.

(Lovgren,2021).

As per the Composite Water Management Index report of the NITI Ayog in 2018, more than 600 million people in India face high to extreme water crisis in India. About three-fourths of the households do not have drinking water on their premises. Concerning the water quality Index, India is placed 120th among the 122 countries worldwide with nearly 70 per cent of the water being contaminated.

River management policies and programs are initiated and are successfully managed in some parts of the world, yet in some other regions mismanagement of these rivers creates havoc. It is understood that taking into account the dynamics of natural forces -like climate change and subsequent changes in temperature and hydrological conditions as well as social dynamics like decision-making, cultural connections with rivers, main energy sources and technologies could reveal a distinct overarching pattern of river use and management. This understanding can contribute to developing future strategies and plans with lower ecological impacts. To have a proper mix of interventions from the various stakeholders is a significant step in managing the resources. Thus, the participatory approach has been appreciated and recommended as the most effective and sustainable approach to managing resources. Policies related to river management uphold this approach.

Ensuring public participation in managing this resource is a challenge. Rather than the policies by the government and the bureaucrats i.e., from the top, the movement should begin from the bottom that is from the people. This movement combined with the political will would bring out the desired results. There is not even an example or model for implementing the participatory approach at the field level. It is impossible a single model everywhere also as the river has a deep socio-cultural link with the populations nearby. However, analysing different approaches would benefit the upcoming project in its efficiency. In Kerala, though the government has various programmes concerning river management, the programmes along the Meenachil River basin top the list due to the huge public participation. The movement which has a beginning from the public has become a silent revolution in the region. The various initiatives have multiple collaborations with technical teams which include Climate experts, educational institutions, schools, also with NGOs and other volunteers who have a genuine interest in it. They have become citizen reporters and now working towards becoming contributors to the scientific field by providing data on the rain and flood levels in the area. Thus had its beginning in citizen science which is the need of the hour. Trying to make the data more reliable and scientific their efforts are huge. This can be replicated in other areas too as our scientific community lacks data for better predictions.

Thus, a movement has been ongoing in the Meenachil River basin of the Kottayam district where the involvement of the people is much identified. Therefore, it is important to study, analyze and understand the various strategies adopted in the area and how it has enhanced people's consciousness level towards river management, as the role of citizens/public is widely appreciated in the process. The study found that dedicated people can bring in more innovative ideas, and it could help the scientific community in the long run. The activities though initiated by a few attracted others and there was an increase in the number of volunteers. The result-oriented activities could ensure the participation of the public in the process. Media and technology could enhance their involvement. Forming a community with climate scientists and other knowledgeable individuals and having discussions on the matters raised could bring a significant percentage of the population to the forefront as environment warriors who made the group a forum of citizen reporting, and thus, they are paving the way for citizen science which is the next step in the involvement of public participation.

Gaps in the Knowledge

River science/river management, though emerged decades before, is still incomplete in the sense that it has not been able to make the desired results for which it was envisioned. Various initiatives have been declared at different points in time to manage/conserve the degraded rivers few of them were able to create a sustainable outcome. Marginal participation of common people was found to be the reason behind this. There is a dearth of studies that focus on the outcome of the initiatives and the consciousness level of people as well. Some initiatives have enhanced the consciousness level of the people and made them active participants in the same. Thus, there is a need to identify those programs and how this could help sustainably manage the river as a whole. Thus, the chances of replicating the same would make the conditions of the river better and would help in developing a framework for more citizen-centric developmental activities.

Through this paper, the case of the Meenachil River in the Kottayam district is considered. The activities carried over the region in connection with river management could impact the area's residents, and both national and state governments have recognized it by awarding them. Kerala is not able to perform well in the Composite Management Index of the NITI Ayog concerning water management and would have to look thoroughly into the activities, which could increase the consciousness level of the people.

The relevance of this study lies in the fact that, though climate change is global, the impacts and adaptation measures are local. Tackling different challenges due to climate change requires collective action – governments, the private sector, and communities – should work together to prioritize risk reduction. Thus, it is significant to understand and analyze the steps taken by the communities concerning river management and how far it has created an environmental consciousness among the community especially those residing on the river banks. In the words of a climate scientist-Meenachil team is a working model for climate and environmental action. Understanding those activities and identifying those communities of people and their functioning would help in building up an environment-conscious generation which is an asset for the future.

Methodology

A qualitative approach was chosen for the research. In-depth interviews were done with the various stakeholders and the field experiences of the researcher were added to it. Thus, their experiences and narrations of them were taken for analysis and interpretations were made.

Observation and Results

As the solutions to the global climatic change lie at the local level, to reduce substantial economic losses and damage to lives and biodiversity, the community needs a transformational climate action. It requires political will and administrative implementation at all levels, from panchayats to state and national levels. This raises the need for a collective effort involving citizens, institutions and infrastructural redesign to reduce extreme risks. Thus, river management requires a brilliant combination of all stakeholders. The researcher found out that planned and conscious methods of knowing nature and diligently implementing it in the field had resulted in raising the consciousness level of the people. The activities of the Meenachil

River Protection Council include:

- Meenachil River-Rain Monitoring Network -Measuring daily rainfall and measuring the flood level of the river at various points.

- 'Save Meenachilar' WhatsApp group for citizen reporting is another major platform of the Meenachil River Protection Council. Members use this platform to share relevant information about various happenings in the region and also from the world associated with river and river basin management.
- CLAP- Climate Action Program at schools- An Alliance among Schools and Colleges for Climate Resilience- conduct activities which raise environmental consciousness-
- Meenachil River Watch Groups- regional groups for monitoring the river and its premises. They would report illegal activities like sand mining, illegal fishing etc in the region in the volunteer WhatsApp Group which is an active platform where follow-up actions are taking place, and also to the concerned authorities.
- Green Audit and Popular Study Tour- To study and understand the environment and its present situation studies and trips are being conducted under the leadership of the Meenachil River Protection Council.
- Meenachil River Rejuvenation Campaign- a voluntary association for the rejuvenation of Meenachil River

All these small- and large-scale activities have successfully cultivated a sense of belonging among the people living around the basin. This has encouraged a shift toward the sentiment of 'My River, My Responsibility.' The study delivers an important message: nature, which sustains all human life, operates according to its inherent engineering system. All living beings, except humans, live in harmony with this system. However, with their knowledge and ambition, humans have consistently attempted to reshape nature according to their desires, often with detrimental effects. This has caused irreparable damage to the environment. Rivers, as the primary sources of freshwater for humans, must be preserved with utmost care. Despite the degradation that rivers have suffered, opportunities remain for humans to reconnect with them. Reconnecting requires a deep understanding of these ecosystems. Initiatives taken by the Meenachil River Protection Council have successfully instilled a sense of value not only among its members but also within the wider society. For example, educating people about rainfall in their area and monitoring river water levels has sparked curiosity and encouraged further learning about nature. Focusing on activities in educational institutions, such as colleges and schools, is a particularly impactful step. This approach helps cultivate a generation imbued with environmental values. Regional groups organized at various locations within the Meenachil River basin report on the river's condition, including incidents of waste dumping, encroachment, and other harmful practices. These actions contribute to the development of a value system that promotes conscious efforts toward the sustainable development of the socio-ecological system.

The collected data underscores the need to disseminate more knowledge about river management among those residing along riverbanks and beyond. It reinforces the importance of adopting a basin-scale approach to river management and emphasizes the necessity of citizen-centric initiatives (Scaini, 2021). Facilitating discussions and ensuring that management processes are more participatory is a critical and timely requirement.

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