

Collective Action for Sustainable Water Resource Management: Analytical Framework and Company Initiatives

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Abstract The water resource management is an important area for accomplishing the sustainability. During last one to two decades, there have been many innovations in managing the water resources at different levels and across different contexts. The present paper examines the innovation in sustainable water resource management at company or firm level. Based on the case-study analysis method, the paper examines the key learning from each of the selected ten (10) recent case-studies, selected from the different secondary open access sources. The findings offer a fresh perspective on the critical issues in identifying and managing the water resources sustainably.

Keywords: Sustainability; Water Resource Management; Collective Action

Introduction

The United Nations Sustainable Development Goal (SDG 6.0) calls for ensuring universal and equitable drinking water access to all around the world (UNDESA, n.d.). On the other side, there is a project that if we continue with the current rate of water consumption and pattern, 1.9 billion people will lack basic hygiene facilities and 1.6 billion people will lack drinking water by 2030 (UNDESA, *ibid.*).

Water scarcity can be considered as an endemic due to local physical water stress along with rising freshwater pollution. The climate change is further worsening the situation. As per an estimate, 10% of the global population lives in countries with high or critical water stress (UNESCO, 2023).

The continuously increasing water shortages are due to several factors. The demand for the water resources is on rise due to increasing population as well as industrial and economic development. The irresponsible water usage at different levels, which is often due to lack of awareness about the issue, also contribute significantly to the crisis. Larger industries and companies have great role to play in terms of encouraging responsible water use as well as employing practices that will reduce the industry cause pollution in the water.

Recent case-studies on the water resource management indicates that the collaboration and collective action is the

way forward towards sustainable water resource management. The Water Development Report 2023 (UNESCO, *ibid.*) indicates that during the period 2015 to 2018, the water use efficiency in the industrial sector by 15%. The report also suggests that under the situations when internal and unilateral action does not produce the desired outcomes, the industry turns towards the collective action.

In view of the increasing importance of collective action in sustainable water resource management, the current paper focuses on the following major research questions:

- i. What are some ways to engage in collective action for the sustainable water resource management (SWRM)?
- ii. How can we create collective action to accelerate the efforts for responsible use and preservation of water resource?
- iii. What are some key factors that drive the effective collective action towards SWRM?

We will explore the above questions through the analysis of selected case studies based on published sources. The paper aims to contribute towards further discussion and research on collective action for effective water resource management.

2. Literature Review

There is no uniform definition for Sustainable water management, however, it can be considered as the process of planning and action related to responsible use and preservation of water. As per the Water Foundation (WFO, 2020) sustainable water management implies using water in a way that meets the current needs for the without compromising the ability to meet the future needs. Realizing the sustainable resource management in practice can be possible when we work collaboratively and innovatively for solving the issue.

Nelson (2017) suggests that the partnership based collaborative efforts can be vital in improving business contribution to sustainability. More specifically, the partnership can be helpful in:

- A. Enhancing the impact of business in terms of realizing the responsible, inclusive and sustainable growth;
- B. Increasing the new private sector investment and innovation in sustainable development;
- C. Accomplishing systemic transformation of markets leading to better results for people and the environment; and
- D. Building trust and accountability business, governments and civil society.

The CEO Water Mandate suggests the collective action for sustainable water management at three different levels: Informative; consultative and collaborative (CEOWM, 2013). The collective action engagement at informative level may involve engaging interested parties for information sharing on responsible water resource management. Consultative level may include creating a network of interested groups to exchange knowledge and expertise that will help in responsible management of water resources. The collaborative level includes common agenda setting and action for jointly agreed objectives by the involved parties.

initiatives by businesses, Nelson (2017, *ibid.*, p. 5) and UNIDO (2013, as cited in UNESCO, 2023, p. 78) highlights the following three forms: Core business and its Value-Chain; Social cause and philanthropic investment; and multi-stakeholder initiatives for transformational initiatives. It is important to note that these are the indicative broader categories for partnerships towards sustainability; and a company can simultaneously participate at the different levels through the one or more partnership arrangements.

Based on the review of the literature, the conceptual framework of the paper for analyzing the selected cases of collective action for SWRM is presented in Figure 1.0.

3. Research Methodology

The present paper is exploratory approach of research based on analysis of the published cases of collective action in sustainable water resource management.

Following Wikfeldt (2017), we selected case-study approach for addressing the research questions. First, we have developed the conceptual framework for analyzing the cases related to the research theme. At the next level we searched on internet using the combination of key words: sustainable water resource management; case studies; collective action; best practices.

We found the most relevant cases to the research theme are available either separately or through some common platform. For the simplicity, convenience, time and scope of this research, we included only two (02) case-studies of collective action in SWRM from the different sources.

We have analyzed these case studies using the conceptual framework (Figure 1.0). Based on the analysis of the published information about the sources, we have presented the observations in the concluding section of the paper. The time and scope of the study is limited, however, it offers a perspective for further case-study based research

on collective action in SWRM and other sustainability related issues.

4. Case-Studies of Collective Action for SWRM

A. *Water reduction and recycling in refining (WBCSB, n.d)*

This case is about BP's Kwinana Refinery near Perth, Australia. There was significant reduction in river flows since 1970 due to increased water withdrawals for agriculture, industry and public water supply. The refinery implemented project focusing on Water Minimization with objective: Minimizing water use and increase re-use; Using lower quality water; and achieving zero discharge of process wastewater. The company initiated collective action with industrial partners, the local water company and regulator to recycle municipal wastewater. Refinery was able to lower water demands by 42%, including reduced potable water use by 93%, over the period of 1996 to 2014. The key learning from the case was that all partners working towards a common objective to develop legal, financial and technical solutions was instrumental in driving the success.

The analysis shows that the intervention was in form of core business operations and its value-chain; and it focused at collaboration level. The results helped in creating impact on SWRM and reducing the water use.

B. *Strategy and Action for SWRM (BASF, 2021)*

Badische Anilin- und Sodafabrik, abbreviated as BASF, is a Europe based multinational and largest producer of chemical globally. The company has integrated SWRM targets in its strategic objectives. The company aims to introduce SWRM at all sites in water stress areas, which covers 89% of BASF's total water abstraction. By the year 2021, the company has achieved 53.5% of the target in 2021 (2020: 46.2%). The company regularly assess the water situation in the catchment area. As per the 2021 company report, there was no any adverse impact on water quality and availability at any of the company sites. Subject to the local conditions and the requirements, the company work together with other stakeholders including local authorities, non-governmental organizations and other partners.

The case study shows that for the SWRM company mainly focuses on core operations and its' value chain. In terms of the level of the collective action, its' more between consultative and informative. Through the integrated approach to SWRM, the company has created business impact for the sustainability. The company partners selectively with the other stakeholders as per the local need, which implies that the collective action by the companies can be useful in the specific areas, which require collaboration. This also indicates that the nature of and extend of the SWRM issues, is a major determinant in creating the collective action.

5. Conclusions

The collective action plays an important role in planning and implementing interventions related to SWRM. The review of the literature shows that the collective action initiatives can be analysed using a conceptual framework focusing on form, level of intervention and impact of initiative. The analysis of two company case-studies indicated that for SWRM, the companies primarily look into its core operations and value-chains. The level of intervention vary in terms of informative, consultative and

collaborative, according to the situation and the issue. The partnership in the collective action also is context dependent. Primarily, the companies partner across value chain and selectively with the external stakeholders.

The conceptual framework can be further used to analyse the collective action cases. It can also be further improved with more extensive review and research.

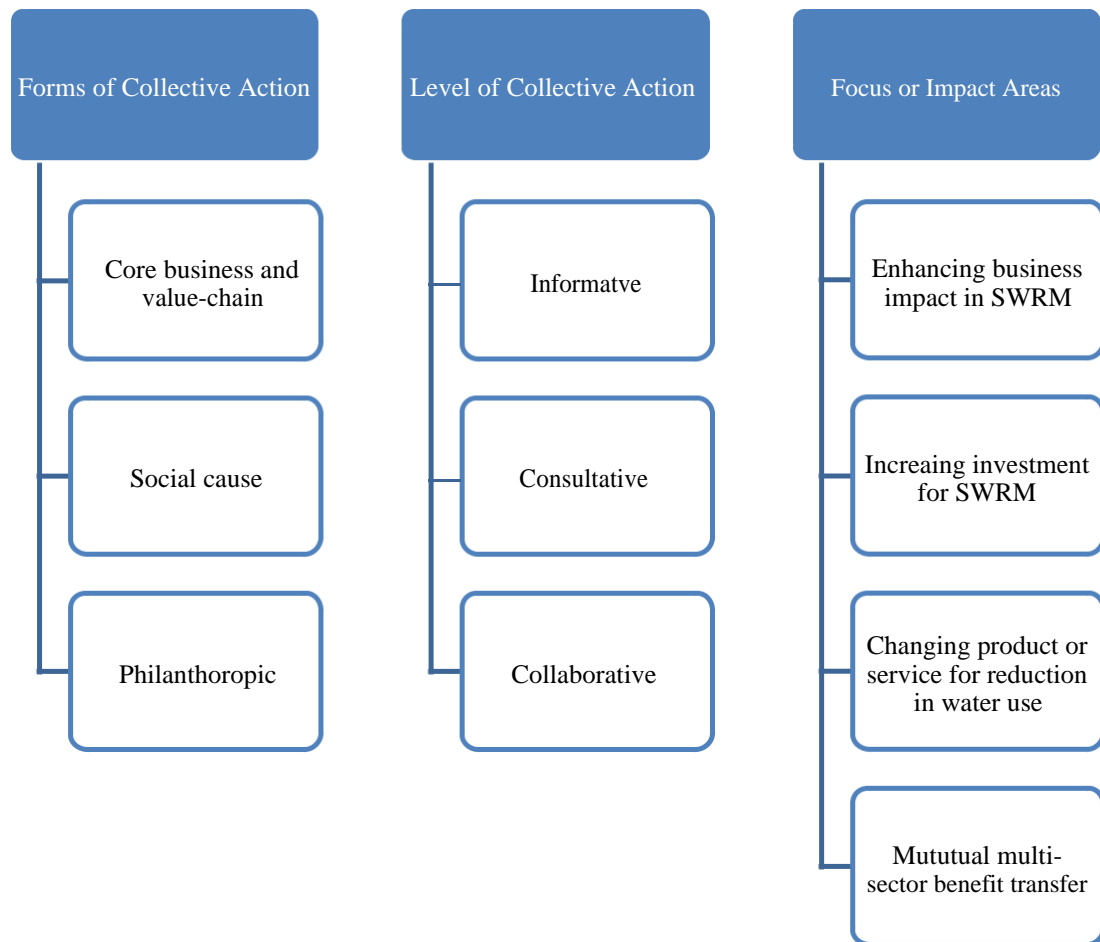


Figure 1. Conceptual framework of collective action for sustainable water resource management

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