Chapter 15
Environmental Governance for Promoting and Application of Integrated Water Resources Management

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ABSTRACT

Water crisis has been ranked amongst the top 10 global challenges with estimates predicting up to a 40 percent fall in freshwater resources by 2030. On top of that, water demand has far outpaced current population growth and experiencing water scarcity due to rising average global temperatures exacerbated by climate change. Hence, the environmental and sustainable management of water resources is a global imperative, and Integrated Water Resource Management (IWRM) has emerged as a key paradigm to address the multifaceted challenges associated with water management. This chapter discusses the dynamic interplay between IWRM and environmental governance through capacity developments emphasising their pivotal roles in promoting sustainable water resource management. In terms of the governance process, it is only possible to promote and apply IWRM through a well-defined policy for capacity development, ensuring transparency and accountability in water management and addressing inequality, gender biasness supported by available tools under Global Water Partnership (GWP).

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1 INTRODUCTION

Water is a finite and indispensable resource, essential for life, livelihoods, and the well-being of our planet. Every human has the right to have access to clean water. According to the UN, water crisis has been ranked amongst the top 10 global challenges with estimates predicting up to a 40 percent fall in freshwater resources by 2030 (United Nations, 2018). On top of that, water demand has far outpaced current population growth with half of the global population experiencing severe water scarcity. It is only expected to increase due to rising average global temperatures exacerbated by climate change (United Nations, 2015). As a result, the availability of water globally is becoming more disproportionate and less predictable with some countries experiencing drought such as Ethiopia, Sudan, Eritrea, Afghanistan, China (provinces along the Yangtze river basin), Pakistan (Southwest Baluchistan, South Punjab, and Southeast Sindh), Iran and Somalia (Anderson et al., 2021; Ashraf et al., 2021; Liu et al., 2023; Rafiq et al., 2023) and others with intense storms such as Bangladesh, Philippine, Vietnam, Pakistan, Brazil (north-east) (Das et al., 2020; Yuen et al., 2024; Takagi 2019; Cotrim et al., 2022). The scarcity as well as abundance of rainfall, both negatively impacting and threatening the health and well-being of humans for sustainable socio-economic and environmental development. The escalating need for water in countries with limited water resources, combined with the rising occurrence of declining water quality in numerous areas, has placed further strain. Hence, the environmental and sustainable management of water resources is a global imperative, and Integrated Water Resource Management (IWRM) has emerged as a key paradigm to address the multifaceted challenges associated with water management. The term 'water governance' has gained momentum all over the world due to inception of integrated water resources management (IWRM) which focuses on effective, efficient and sustainable water management. Absence of water governance, laws and policy lead to conflicts in water abstraction, water sharing and allocation, management of water pollution and mitigation measures for floods. The foremost obstacles to water governance are poorly defined roles and responsibilities, improper coordination among ministries and agencies related to water supply and distribution, lack of accurate information between central and sub-national governments. Lack of awareness about water policy and poor involvement of water users' associations, and participation in water related projects are major obstacles to water governance. Good water governance is the driving force behind successful water management.

Water resource management agencies should be urged to embrace this comprehensive approach to water resource management. It suggests utilising contemporary technology such as geographic information systems (GIS), remote sensing, and data analytics to facilitate the adoption of IWRM. India uses GIS and remote sensing to

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