Sustainable Water Management in Semi-Arid India:
Learning from the *Gond* and *Kohli* Indigenous Communities

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B.Arch., M. Arch. (Landscape)
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Abstract

Water scarcity over the last decade has resulted in an urgent need to evaluate present and past water management practices for sustainable development especially in arid and semi-arid regions. These practices are further challenged by climate change in these regions which account for one-third of the earth’s land area across the world. The starting point for this research is a socially constructed problem: the progressive degradation of natural resources and the lack of recognition of the impact of existing social, cultural, and organizational institutions on their management. Although worldwide multi-disciplinary literature recommends involving Indigenous groups in sustainable natural resource management, in order to effect a sustainable approach there is a clear need for a framework for their effective engagement. The discipline of sustainable landscape planning represents a practical field of knowledge and expertise that offers to understand human relationships to land and resources, and the long-term viability of these relationships with emphasis on sustainable ecological practices.

This research will focus on case studies found in the Gond and Kohli communities of the semi-arid region in central India, who together developed an efficient water harvesting and management system that has functioned efficiently for hundreds of years. However, since the 19th century, when the British assumed direct and indirect control of India and even after Independence in 1947, the common people were deprived of any kind of participation in the water management process which affected water availability. There have been a limited number of attempts by non-government organizations to revive the traditional systems through community participation. However, these attempts have lacked widespread application and the problem of water scarcity has become critical.

The aim of this thesis, therefore, is twofold: first, to understand how the Government institutional structures and the Indigenous community-based organisations manage water resources in the Indian context today; and, secondly, to evaluate community-based water management systems in order to develop an integrated framework where the two share responsibility for managing natural resources. The research adopted a constructivist approach using a case-study methodology. The three sites of Aashti, Mendha, and Rajapur villages in the State of Maharashtra, India, were studied to understand their respective institutional structures and their community participation in water resource management process. The study used archival literature to evaluate the historical management procedures, and carried out analysis of current policy documents to critique the opportunities and constraints provided by them. Further,
the study conducted open-ended interviews with a variety of stakeholders to understand the complexities involved in a specific context. Analysis of interview data helped to obtain stakeholders’ views about the current processes and organisations.

Given these aims, the thesis is structured in two parts. The first attempts to provide some basic theoretical principles of sustainability based on a review of the relevant literature. This research critically examines the concept and principles of sustainable water management which are currently widely advocated, and attempts to understand the principles of decentralised institutions. These sustainability principles, along with principles of Indigenous community participation, are used as a tool for developing an analytical framework of sustainable water resource management for this research. The second part relates to an understanding of the accomplishments of selected case study communities in decentralised, grass-roots initiatives in water management in India. Using the analytical framework developed, the study compares current water management institutional structures across the three case studies in this semi-arid region of India.

It is anticipated that this thesis will contribute towards future recommendations for the effective integration of Indigenous communities into the management processes and institutional frameworks necessary for sustainable water management in semi-arid regions. Through this research it is hoped to improve Government understanding about Indigenous knowledge, to reinstate and facilitate community participation and develop empowerment structures to enhance the sustainability of the case study villages and their resources.
Declaration

NAME: Namrata P. Vishwasrao

PROGRAM: Ph.D in Architecture

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution to Namrata P. Vishwasrao and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

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I would like to take this opportunity to express my gratitude to the people whose advice, helpful criticism, wisdom and support, has been of considerable assistance in the planning and execution of this study without which this thesis would not have been possible.

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<td>Constitutional Amendment Act</td>
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<td>CBWM</td>
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<td>CES</td>
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<td>GoI</td>
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