## World Academy of Science, Engineering and Technology International Journal of Environmental and Ecological Engineering Vol:17, No:11, 2023

## Restoration of a Forest Catchment in Himachal Pradesh, India: An Institutional Analysis

Authors: Sakshi Gupta, Kavita Sardana

Abstract: Management of a forest catchment involves diverse dimensions, multiple stakeholders, and conflicting interests, primarily due to the wide variety of valuable ecosystem services offered by it. Often, the coordination among different levels of formal institutions governing the catchment, local communities, as well as societal norms, taboos, customs and practices, happens to be amiss, leading to conflicting policy interventions which prove detrimental for such resources. In the case of Ala Catchment, which is a protected forest located at a distance of 9 km North-East of the town of Dalhousie, within district Chamba of Himachal Pradesh, India, and serves as one of the primary sources of public water supply for the downstream town of Dalhousie and nearby areas, several policy measures have been adopted for the restoration of the forest catchment, as well as for the improvement of public water supply. These catchment forest restoration measures include; the installation of a fence along the perimeter of the catchment, plantation of trees in the empty patches of the forest, construction of check dams, contour trenches, contour bunds, issuance of grazing permits, and installation of check posts to keep track of trespassers. While the measures adopted to address the acute shortage of public water supply in the Dalhousie region include; building and maintenance of large capacity water storage tanks, laying of pipelines, expanding public water distribution infrastructure to include water sources other than Ala Catchment Forest and introducing of five new water supply schemes for drinking water as well as irrigation. However, despite these policy measures, the degradation of the Ala catchment and acute shortage of water supply continue to distress the region. This study attempts to conduct an institutional analysis to assess the impact of policy measures for the restoration of the Ala Catchment in the Chamba district of Himachal Pradesh in India. For this purpose, the theoretical framework of Ostrom's Institutional Assessment and Development (IAD) Framework was used. Snowball sampling was used to conduct private interviews and focused group discussions. A semi-structured questionnaire was administered to interview a total of 184 respondents across stakeholders from both formal and informal institutions. The central hypothesis of the study is that the interplay of formal and informal institutions facilitates the implementation of policy measures for ameliorating Ala Catchment, in turn improving the livelihood of people depending on this forest catchment for direct and indirect benefits. The findings of the study suggest that leakages in the successful implementation of policy measures occur at several nodes of decision-making, which adversely impact the catchment and the ecosystem services provided by it. Some of the key reasons diagnosed by the immediate analysis include; ad-hoc assignment of property rights, rise in tourist inflow increasing the pressures on water demand, illegal trespassing by local and nomadic pastoral communities for grazing and unlawful extraction of forest products, and rent-seeking by a few influential formal institutions. Consequently, it is indicated that the interplay of formal and informal institutions may be obscuring the consequentiality of the policy measures on the restoration of the catchment.

**Keywords:** catchment forest restoration, institutional analysis and development framework, institutional interplay, protected forest, water supply management

Conference Title: ICWRPM 2023: International Conference on Water Resources, Protection and Management

**Conference Location :** Singapore, Singapore **Conference Dates :** November 27-28, 2023