IRRIGATION STRUCTURES, NATURAL RESOURCE CONSERVATION AND SUSTAINABLE AGRICULTURAL GROWTH IN WEST BENGAL, INDIA

ABSTRACT

It is well-recognized that the agrarian nature of the rural economy, coupled with policy biases and institutional constraints, has contributed to low productivity and sluggish growth of the Indian agriculture sector. Furthermore, input-intensive farming practices have led to biodiversity losses, groundwater depletion, and soil degradation, posing serious concerns to sustainability of the sector, especially in the rainfed areas. Given this backdrop, this study examines the inter-linkages amongst irrigation structure, natural resource conservation and sustainable growth of the agriculture sector in West Bengal, India where majority of the rural households depend on farming and allied activities for their livelihoods. The specific research objectives of the study include examining the changes in irrigation structures, understanding their implications for the agriculture sector, and assessing the role of the local level institutions in management and use of irrigation facilities and conservation of natural resources. The study uses data and information collected from both primary and secondary sources and applies mixed methods to address the research objectives. In addition, the study also carries out detailed analysis of selected irrigation structures for deeper understanding of the underlying issues at the local level. The study begins with a bibliometric analysis of the existing literature on the issues relating to integrated natural resource management for developing the perspective of a transdisciplinary approach through integration of international experiences with the national and local context. The subsequent analysis portrays significant changes in irrigation and farming practices in West Bengal with considerable implications for water resource management and sustainability. It is also found that efficient local level institutions in conjunction with active participation of the farming community are crucial for conservation and management of natural resources towards sustainable and inclusive farming practices. The study, therefore, suggests that initiatives should be taken for guiding the farmers towards appropriate farming practices for judicious use of water and other natural resources. A bottom-up approach to policy making and decentralized framework based on community participation in resource management would be crucial in this regard.

Keywords: Irrigation structure, integrated natural resource conservation, sustainable agriculture, rainfed, policies, institutions, transdisciplinary analysis, West Bengal