

ABSTRACT

The world is facing a sustainability crisis due to depletion and degradation of environmental and natural resources faster than they can be generated. Many of these resources are not partitioned by private property rights, and are held as state property, common property, or as open-access. Common Property Resources (CPRs) have two distinct attributes: (1) limited or nontrivial exclusion (it is difficult to exclude multiple individuals or users from appropriating from the resource) and (2) subtractability (the resource features rivalry in consumption), meaning that appropriation by one reduces the overall resource availability and thus, subtracts from what can be appropriated by others. Examples include fisheries, grazing lands, irrigation systems, and ground water basins. Because no one has property rights or control over such resources, users of CPRs are frequently assumed to be caught in an inescapable dilemma - overexploitation of the resource. Thus, unlike the 'invisible hand' of Adam Smith in competitive markets, in the case of CPRs the self-interested behavior does not yield economic efficiency or optimal outcome or Pareto optimality.

This study sought to understand the evolution of management dynamics and operation of governance structures developed by resource users and other stakeholders in three large scale CPRs in Kenya. The objectives are to (1) examine the evolution of management dynamics. (2) Examine the management model applied and its functioning. (3) Explore the governance structures and challenges of implementing them. (4) Explore critical variables related to user groups, institutional arrangements and external environment in the resource system. (5) Suggest measures to improve on the management and governance of the resource system. In addition, the study gives a comparative analysis of the management models applied in the three CPR systems.

The general theoretical literature on CPRs has focused mainly on two basic but important conditions or categories. First, small scale communally owned and governed resources, in

terms of the physical or geographical size of the resource system with well-defined boundaries. Secondly, group or users size, characterized by small numbers with similar identities and interests. This study therefore, contributes to literature by using large scale CPR case studies in terms of physical size of resource system and number of users and examining the evolution and dynamics in the management model and governance structures.

A Qualitative Research (QR) methodology is adopted and analytical tools of institutional analysis and an empirical foundation based on field data applied. A survey research design is used. Both primary and secondary data was sourced and a pilot study was conducted to test reliability of research instruments. Data is documented, compiled and presented in form of tables, figures and general descriptions. Data analysis and synthesising is done by working through the data to arrive at a conclusion to answer the research questions and achieve the purpose of the study.

The study findings show that management and governance issues in the three CPRs have evolved over time both in terms of the scale and involvement of other stakeholders in decision-making process in the resource system. Specifically, the collaborations among state agencies, other stakeholders and resource users through their associations has enabled monitoring and enforcement not only be effective but also legitimate and consequently, lead to sustainable resource use. The management models used in the three CPR case studies are identified as the Partnership Fisheries Management (PFM) in Lake Victoria fishery, Participatory Irrigation Management (PIM) in Mwea Rice Irrigation Scheme and Holistic Management Framework (HMF) in Laikipia group grazing lands. The governance structures applied in the three CPRs are generally position, boundary, choice or authority, aggregation, information, payoff and scope rules. The degree of application of each set of rules however, depends on the nature of the resource system. They are designed, developed, implemented, monitored, enforced, sanctioned and arbitrated by the resource users, state lead agencies, departments and ministries

and other stakeholders or actors. Each of these actors are involved in varying degrees in the various phases depending on their role and interest in the resource system. The management and governance structures can be strengthened and improved by enhancing certain administrative, health, safety, environmental issues and increased state support and involvement in the resource system. The co-management model design which is applied in the three CPRs yield various benefits to the resource-dependent community, public, state and resource system because it incorporates state and local (resource users) managers in decision-making. However, the degree of participation of other stakeholders, challenges faced and other internal and external factors, depend on the nature of CPR, ownership and control of the CPR by resource users and the technical infrastructural investments required for the operation of the system. These results add to existing knowledge on Sustainable Development (SD)-environment nexus by providing facts to multidisciplinary environmental and natural resources scholars regarding the dynamics of large scale CPR systems. Provide an in depth understanding of CPR management issues for the formulation of national strategies for SD, fisheries, Arid and Semi-Arid Lands (ASALs), and irrigation farming. Lastly, they provide ways of responding to increasing challenges of shared water resources (Lake Victoria) in addition to strengthening of relations within the East African Community (EAC).

Key words: Actors, bio-physical and community attributes Common Property Resources, governance structures, institutions, large scale, management models, resource users, resource system.

