CASE STUDIES

ECOSYSTEM SERVICES

Valuation of ecosystem services is basically concerned with the functions or biophysical processes that take place within ecosystems, which in turn generates particular goods and services for humankind. Ecosystem services can simply be defined as the conditions and relationships through which natural ecosystems and the species that make them up, sustain and fulfill the needs of human life. The exact nature and magnitude of these services will depend on the type, size, complexity and physical characteristics, state, and management of the ecosystem in question. Valuation is the process of expressing a value for a particular action or object. Ecosystem valuation represents the process of expressing a value for ecosystem goods and services, thereby providing the opportunity for scientific observation and measurement. Despite a lack of direct markets, ecosystem services support other production processes and their absence has an impact on economic activities.

The main thrust of the project was to determine the ecosystem services values and demonstrate their influence on land use and wealth generation within Shompole group ranch. The aim is to explore the perceived and marketed values of ecosystem services and the significance of their influence on land use and poverty reduction among the Shompole Group Ranch community. The Shompole wetlands are strategically located to provide diverse environmental services locally, regionally, and internationally. The values of these ecosystem services are, however, not reflected in the local economies and by extension in the community's livelihoods. The study explored the linkages of ecosystem services, land use, and wealth creation as a basis of supporting local economic livelihoods. An important objective of valuing ecosystem services is to provide an improved basis for designing better land and resource use policies and management systems. But even as the values for ecosystem goods and services are calculated, the major challenge is to factor these values into the decision-making processes.

For the purpose of this study, the following ecosystem services with respect to Shompole Wetland were valued:

i. Water cleansing and detoxification service from river Ewaso-Ngiro to Lake Natron
ii. Flood and storm protection
iii. Biodiversity support and maintenance
iv. Nutrients storage and cycling

From the valuation of the services at the Shompole wetland that were conducted in this survey, the following are the service values:

a) Water cleansing ecosystem services - US$ 2,529,257,473 p.a.
b) Flood and storm protection to Lake Natron - US$ 11,819,091 p.a.
c) Habitat service provision to biodiversity - US$ 1,033,833 p.a.
d) Nutrients storage and cycling (for nitrogen only) - US$ 577,396 p.a.

Total value for the valued ecosystems services - US$ 2,542,687,793 p.a.

From the survey, it is evident that the main uses of the swamp's ecosystem goods and services are mainly to survive drought, to provide daily requirements such as water, and to avoid long-distance pastures for the weak animals. These are important economic activities for the local community and for the region. However, although the community perceives the swamp as important in their lives, they don’t look at those benefits in ecosystem economic terms. Failure to value the services of the swamp results in partial appreciation of the swamp mainly from direct goods and benefits, and mostly ignoring the functional services that have a long-term impact on the survival of the community in terms of drought resilience, water supply, and nutrient cycling which in turn sustains their means of wealth creation thereby improving their livelihoods and alleviating poverty.

The overall conclusion is that valuation of ecosystem services is very important for decision-making on management and conservation of natural habitats. In the past, the concept of ecosystems has not been properly understood by the decision-makers at various levels but through the valuation of ecosystem services, it is easy to understand why there is a need to have an integrated approach to conservation and environmental protection. It also demonstrates that wetlands and idle bushland are not wastelands but contribute functionally through ecosystem services to other life-supporting processes. The notion of the Kenya government to tax idle land is, therefore, misinformed as it can only accelerate the loss of natural land to agriculture and other conversion land uses which have lesser value than the provision of ecosystem services. Valuation of ecosystem services is a powerful economic tool of intervention on a majority of environmental matters such as preservation of indigenous forests, conservation of water catchment areas, protection of wetlands, and conservation of wildlife areas as the values easily catch the imagination of the resource custodians making it easy to change their attitudes positively towards making rational management and utilization decisions that will sustain ecosystems' functionality.