Selected case studies

CASE STUDY 9

The contribution of forest products to dryland household economies: Kenya
(Ngugi et al. 2011 [154])

Summary

An ethnobotanical survey was undertaken in the Kiang'ombe forests found in the Mbeere District of Kenya, using an amalgamated method of participatory rural appraisal (PRA), participatory environmental valuation (PEV), household surveys, group discussions, and forest walks with informed locals. The use of PEV in this region, where no formal forest use records exist, was important when assigning monetary value to elements of biodiversity essential to survival, but presumed to be "free for the taking". Assigning monetary values gives credence to non-monetary values that are recognised by locals, but otherwise ignored as they do not enter "formal markets". PEV is a recommended method when estimating the value of forest resources in a non-monetary environment ("non-cash economy").

The average annual forest value to a household was found to be KSh. 16,175.6 (USD 256.80), approximately 55.4 % of the average household income. There were ten forest uses found, with the service most depended upon being the supply of building materials and medicine. Medicine had the highest average annual household value, at KSh 2953 (USD 47).

Context

Kiang'ombe hill forest is under Trust Land tenure, and as such exposed to over exploitation, with unequal access to products and benefits by the adjacent communities because of poor management and lack of control by the local county council. The forest is surrounded by an increasing population which is encroaching on it with heightened pressure. As a result, there are anthropogenic disturbances such as subsistence cultivation, charcoal production, and frequent forest fires which are set annually in preparation for the rains.

There is a need for better management planning, but it can only be effective if the needs of the local community are respected. This can be achieved either by maintaining current uses, or providing alternatives. Any action requires determining which forest services and products have the most value to the local community. This study thus aimed to estimate the value of the forest to the local community by valuing plant products extracted from it and activities held within it, both of which contribute to the household economy.

Method overview

This study uses participatory environmental valuation; a form of contingent valuation where people state how much they value a good or service using an item of value that can easily be translated into a monetary amount. This was particularly appropriate to the study context because of the lack of formal forest-use records, and the fact that some of the surveyed activities are officially banned.

Thirteen villages across three locations around Kiang'ombe Hill were selected. Participants were asked to identify and rank forest uses along the importance they had to them, and then assign a number of counters to reflect these values to them. Participants were also requested to identify the priced good associated with the counters, its average lifespan, and its market price. The household survey questionnaire used is published as an annex of the paper.

In addition, a household wealth ranking was undertaken during group discussions with village elders to check for differences in forest use across different wealth groups. This wealth ranking assessment relied on livelihood analysis and household survey for plant usage and annual family earnings. Data gathered during direct interviews was used to estimate average household resources.

Results

Participants chose the value of a bicycle in the local economy (KSh 3000, ~USD 47.6), with a discount rate of 3 % and lifespan of 5 years, to measure the value they attach to each forest use. The main value of the forest to participants was associated with medicinal products (6 – 9 % of annual household income), then fuel wood, building material, bee farming, veterinary medicine, food, timber, fibre, weaponry, stimulants, and thatch. There were a few variations across wealth groups, but the overall tendency remains the same.

Valuation results are represented for each wealth group, but do not show any change in the level of dependence on the forest based on wealth status.

Issues (theory and practice)

Participatory environmental valuation technique allows villagers to express the value of forest products within the context of their own perception, needs, and priorities rather than through conventional cash-based techniques. Its strength is that it relies on local knowledge.

However, wealth ranking was found to be a flawed technique, because of personal relationships between people assisting with the ranking and the interviewees. The most accurate method was found to be accompanying resource users into their fields, to observe the parts of plants gathered and gauge the volume of harvest. This method can be time consuming however, and becomes increasingly challenging when there is an increase in participants involved.

Participants were not willing to value the use of the forest for rituals and cultural ceremonies. They stated was that it was the realm of the community sages and therefore the value of such services was above their wisdom.

Conclusions and recommendations

Dependency upon the forest by locals cannot be ignored if forest management plans are to be suc- cessful. Understanding forest income-dependence is important in guiding plans for forest product use at all levels of governance. It is also very important to find win-win solutions, such as conservation strategies that involve local people and provide for sustainable livelihoods. For instance, local communities could cultivate more of the useful trees for household use and sale, whilst forest management activities could be developed to support indigenous tree planting for reforestation. In addition, governments could help build partnerships with local communities and NGO's, so as to reduce population pressure on the forest. This could be done by focusing on improved health and nutrition for improved family planning as well as improved education of local populations for forest conservation.

The original publication includes a figure showing wealth levels and forest resource dependence per household near Kiang'ombe hill forest. This figure could be used to inform prioritizing action over current forest uses. The most important use of the forest is for medicinal purposes – therefore, action could be taken to ensure sustainability of this use, or to provide suitable alternatives that would be acceptable to and preferred by the local community.

CASE STUDY 10

South East Asia: The values of land resources in the Cardamom Mountains in Cambodia
(Soussan & Sam 2011 [156])

Objective of the study

Ecosystems in the Mekong region contain biodiversity resources of global significance and provide services to both locals and non-locals. This study attempted to value all ecosystem services provided by a smaller area of the Mekong region, the Central Cardamom Mountains in Cambodia. This area contains globally threatened species and high levels of endemism, and its services include: carbon sequestration, non-timber forest products, and watershed protection functions. This study identified the role and value of land resources to livelihoods of local communities, and aimed to generate evidence to support sustainable land management policies and investments, based on existing and potential contributions to national development and poverty reduction.

Method overview (including aggregation method)

This study used the 6-step methodology (detailed in Chapter 2) to assess the value of sustainable land management and the cost of land degradation. It also informed potential action by identifying sustainable land management policies and options that would contribute to the maintenance of ecosystem integrity and land resource values of the Cardamom Mountains and comparable areas in Cambodia. This study involved assessing the distribution and inherent quality of land resources, analysing the role of these resources in the livelihoods of local communities and wider ecosystems services functions, and assessing the main degradation pressures on these resources.

Economic valuation of **timber** (provisioning service) was based on the benefit transfer approach from recent studies in the same region. Two alternatives were taken for valuation: the value of the stock of timber available if forests were clear-felled, and the value of the timber services provided by the forest through sustainable harvesting and thus for a longer period of time.