

Potential Application of Payment of Ecosystem Services (PES) Mechanisms in the Kenyan Highlands Areas

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Ecosystems Destructions and Nature's Revenge in Kenya

Years of destruction of ecosystems and natural areas especially forests have led to biodiversity loss in Kenya causing many problems related to reduced supply of environmental services like water and hydro electricity in the country. The height of these destructive activities was the 1990s when encroachment into water catchment areas by communities surrounding them, illegal and politically inspired allocation of conservation areas to politicians and businessmen across the country and general neglect of conservation ideals in forest areas was the norm. Today, the impacts of these destructive practices are now being experienced across the country through water and electricity rationing across the country.

To respond to an angry mother nature's actions like droughts, the government is currently undertaking short terms interventions such as digging boreholes across the country including in urban areas and rationing water and hydro power to address the issue of water shortage. Political talk have also focused on the possibility of reclaiming and reforesting the country water towers. However, adoption of more creative and sustainable approaches such as Payment of Ecosystem Services (PES) in maintaining, conserving and restoring the water towers as a strategy has not been suggested despite its efficacy in many of Kenyan water catchment areas especially in the highlands. The PES mechanism is important because it would not only secure the water towers in offering sustainable and increased water and sustained supplies for both domestic and industrial use. It also offer communities living adjacent to catchments areas with sustainable livelihoods options such tree planting while protecting them as supplier of hydrological flow in this water scarce country.

The PES Mechanism

With no on-going or planned PES mechanism known by the author for analysis as a case study, this write-up confines itself to the potential that exists on how the PES mechanism can work in Kenya's central highland where the mount Kenya and the Aberdares mountain range are located.

The PES mechanism works on the logic of "compensating land users who adopt practices that generate environmental services", (Pagiola, et al, 2005). So, the compensation is arranged as a deal offered to up stream land users (ecosystem service providers) by down stream land users (ecosystem service users) for the formers to continue generating the environmental services to the later. Conceptually, this is done because ordinarily, up stream land users prefers to undertake destructive practices such as deforestation rather than conservation thus imposing costs to down stream land users. With most of the upstream land users being generally poor people, a PES mechanism worked in collaboration with consumers of the environmental services such as clean water can provide conservation incentives and livelihood alternatives to the poor community living in the adjacent to the water catchment areas (Pagiola, et al, 2004).

Selected PES Mechanism Potential in Kenyan Highland Areas

Even without going into detailed operational mechanics of a particular PES scheme, several PES mechanisms can be envisaged in Kenya. The potential range from national wide arrangements in hydro-electricity generation whose water are sourced from the Mount Kenya and the Aberdare mountain ranges to local based mechanism in commercial irrigation agriculture dependent on water from upstream water from rivers flowing from mount Kenya. An elaboration of the possible arrangements follows below:

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- (a) Most hydro-electricity supply in Kenya is dependent on water flow into the “seven folks dams” along the river Tana whose source is the Mount Kenya. Water shortage from the river and its tributaries coming from the Aberdare ranges have caused some of the dams to be closed down to allow accumulation of adequate water levels into the dams to enable generation of electricity. This closure has also precipitated electricity rationing across the country starting August 2009. For constant supply of water through maintenance of watersheds can be worked out through a mechanism arranged by the by the Kenya Electricity Generating Company (Kengen) and the Kenya Power Lighting Company (KPLC) what distributes electricity to consumers and also involving communities living adjacent to the water catchment areas of Mount Kenya and the Aberdares. A small levy charged to electricity consumers to “paid out” to the conservation community at the source of the river Tana as incentives to them to conserve the water sheds through tree planting and the surrounding biodiversity could be considered. Even at the local, small scale electricity generation stations owned by Kengen that supply electricity into the national grid can work out an appropriate compensation mechanism with communities at the mouth of the small tributaries of the Tana River. If well designed, electricity users would be charged small levies to enhance conservation of water towers to help end the huge financial losses they suffers periods of electricity rationing. Such a mechanism can be funded by the government or even aid donors.
- (b) Provision of water to the city of Nairobi provides the other opportunity for working out a successful PES mechanism because of the huge market it presents for this vital environmental service. The Ndaka-ini dam situated about 60 kms north of Nairobi supplies more than 70 % of water consumed in the City of Nairobi. The water is dependent on the water constant supply from river emanating from the Aberdare Mountain ranges in Central Kenya. However, years of destruction of the Aberdares Mountain ranges have caused reduced water supplies to the Ndaka-ini dam leading to constant water rationing in Nairobi. This has led to campaign by major companies headquartered in Nairobi to save the Aberdare especially through fencing of the entire Aberdare to prevent encroaching into the mountain by local communities who used to undertake destructive activities such as illegal logging, forest cultivation, poaching, etc. However, a PES scheme can also work out well by working with the same communities especially around the Ndaka-ini dam on the conservation of adjacent areas of the dams. This could work by way of the Nairobi Water and Sewerage Company designing a compensation arrangement with the Ndaka-ini and surrounding community for a conservation compensation pay package to encourage them conserving the ecosystem by charging a small fee to Nairobi water Consumers. Indeed, such an arrangement can be worked out by all regional water and sewerage companies of various towns in the Mount Kenya and Aberdare area where community biodiversity groups already exist.
- (c) Lastly, another important potential application of the PES mechanism exists in the area of commercial irrigation along rivers emanating from leeward side of the Mount Kenya in Kieni, Nyeri district. These rivers supply water to this semi-arid section of mount Kenya and have overtime seen huge competition for water resources in the areas. A PES arrangement would provide upstream land users along the rivers being engaged in activities to conserve the mountain watershed by the commercial flowers and horticulture firms who are involved in cut throat water abstraction activities for farming purposes in the area.

References

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