



**The Economic Valuation of the Proposed  
Tana Integrated Sugar Project (TISP),  
Kenya**

Client

Nature Kenya

Consultants

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June 14<sup>th</sup>, 2008

## 1.0 Executive Summary

The purpose of the economic valuation of Tana Sugar Integrated Project was to provide further insights on the costs and benefits of the project in the light of conservation issues raised by various stakeholders. Despite the project feasibility study and EIA study reports, a number of sustainability concerns remain unanswered, particularly the impacts of the project on ecosystem health, true resource costs of the projects as well as disruption of the livelihood systems of the local pastoral and sedentary communities. In order to undertake the CBA, the team of consultants perused available literature (such as feasibility studies, EIA study reports, etc), undertook limited field visits to appreciate the biophysical and social characteristics of the project site.

In the course of CBA, the team was faced with usual conceptual problems regarding natural resource valuation, especially those elements that could not be quantitatively determined. The Tana Delta is within the coastal forests of Eastern Africa biodiversity hotspots. It is home to four endemic species including the critically endangered Tana Red Colobus, one of 25 primates faced with extinction globally. Other endemic species include Tana Crested Mangabey, Tana River Cisticola and Tana River Caecilian. Major alteration in the delta, such as conversion of floodplains and forests into agriculture, coupled with massive change in environmental flows is likely to result in irreversible loss of ecosystem services.

Our analysis, after considering all the cost components indicated or specified in the project document, we obtain NPV value of Kshs 1,239,352,270 with the discounting rate being 15%. When the discount rate is varied to 20%, the NPV reduces to Kshs. 928,871,990 which is about 30% of the value declared in the feasibility report documents. On the contrary, the results of the project CBA by Mumias Company shows that the NPV value computed for the project feasibility documents is Kshs.3,176,875,000. This estimation suggests that the benefits of the project have been overstated by nearly 70%. Furthermore, the CBA by Mumias Sugar Company does not include a number key concerns. First, the project feasibility study and EIA study reports assumes that irrigation water will be abstracted at zero cost. The project intends to abstract 28m<sup>3</sup>/second (a third of river water volume) from Tana River. This position is contrary to the provision of Water Act of 2002 rules which states that water extracted from the environment for such use should be chargeable at Kenya cents 75/m<sup>3</sup>/second. The inclusion of water cost would raise the project cost, thus significantly diminishing the viability of the project. Given the current legal tariffs for water and the projected water use, the project cost could eventually rise by Kshs 660 million annually. In order to capture the true resource costs and adequately communities for the use of water, the project proponent must include the cost of water in conformity with the laws of the land. The second outcome of the CBA shows that the project feasibility studies and EIA study reports states that the opportunity cost of land is Kshs 22.5/Hectare/year, but this value should be captured per year as foregone value during the project life (20 years). The project site is a floodplain characterised by rich fluvisols supporting diverse

biodiversity resources such as pasture. Under the current activities, the opportunity cost of land is about Kshs 20,000/hectare/year. The opportunity cost of land has been understated by 800%.

Third, the sugar project will be located in the dry season grazing area. The conservation of the grazing area into farmland will lead to loss of livelihood of the pastoral communities. There is no viable alternative dry season grazing area. Also, the loss of an important pastureland will increase pressure on remaining pasture leading to environmental degradation. If the project proceeds, the pastoralists will lose their livelihoods in perpetuity. Most pastoralists are conservative, thus they will not gainfully participate in the sugar economy. Therefore, to assess the real net benefits of the project, loss of livelihoods and losses associated with the degradation of ecosystem services must be fully factored into the CBA calculus and will undoubtedly escalate the cost of the project, thus lowering its viability.

Fourth, despite the reported contribution of the project towards employment, sugar production, ethanol and electric power as well as general improvement of infrastructure and services, the project will lead to loss of biodiversity, disruption of the socio-economic life of the rural communities and pollution. Some of these costs of the projects defy valuation especially loss of biodiversity and ecosystem service therein, and effect of chemical pollution.

The key recommendations emanating from this study are: (1) the project will lead to irreversibility of ecological consequences as exemplified by the loss of biodiversity, environmental pollution and disruption of the livelihood of the rural communities and exploitation of water resources. Therefore, in the light of expected negative impacts of the project, the costs of the project outweigh the benefits. The ecologically friendly activities such as pastoralism, fishing, small-scale farming, timber harvesting, honey production, medicine and tourism should therefore be encouraged. (2) In the event that the project must proceed, then the true project costs should be captured including the costs of water, land, loss of livelihood by the pastoral and fishing communities, loss of biodiversity and pollution.

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