



Brief on Tana River Delta Biodiversity

Nature Kenya submission to NEMA

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Tana River Delta: A special place

The Tana Delta is a vast seasonal wetland complex. Its habitats, wildlife and people have adapted their lives to the extremes of drought and flood. The seasons themselves vary dramatically from year to year. A series of drought years, in which ponds dry up and the grasslands are eaten bare, may be followed by a great flood such as the 1997-98 El Niño floods that washed away the tarmac road, destroyed the irrigation dykes, and filled the Delta south of the river with three metres of water.

Intangible environmental services provided by this vast wetland system include: regulating the hydrological cycle, including catchment, storage and release of rainwater; moderating the climate, including reducing the severity of droughts and floods; protecting the soil from erosion, stabilizing the shoreline and reducing the impact of storm surges; slowing global warming by the absorption of carbon dioxide and release of oxygen; and providing a range of habitats for terrestrial, aquatic and marine biodiversity.

Economic use of the Tana Delta by traditional economic systems includes: Dry season and drought refuge grazing for enormous herds of cattle from Tana River, Lamu, Ijaara, Malindi and other districts; major fisheries for the local and export market; and growing of subsistence crops, cash crops and fruit trees. New economic uses include tourism, with lodges, boat rides and a wildlife conservancy all currently under development.

A Key Biodiversity Area

The special importance of the Tana Delta for biodiversity conservation includes: Habitats such as Borassus Palm savannah on flooded grassland, which is not included in any protected area; coastal *Hyphaene coriacea* palm woodland, protected only in a few Forest Reserves such as Witu Forest; fragments of coastal and riverine forests with many rare and endemic plants; seasonally flooded acacia woodland providing nesting sites for waterbirds from all over Kenya; sand dunes along the coastline with their specialized vegetation; mudflats and sandbanks where migratory birds feed and rest; and mangrove forests with eight mangrove species and especially fine stands of *Heritiera littoralis*, *Xylocarpus granatum* and *Bruguiera gymnorrhiza*.

Large assemblages of water birds qualify the Tana Delta as an Important Bird Area and for listing under the Ramsar Convention. A 1992-3 study recorded 22 different species of water birds that occurred in the Tana Delta in significant numbers – 1% or more of the biogeographic population. (The list of species is given in the Appendix.) A brief survey in 2008 indicates that similar numbers are still found in the Tana Delta despite an increasing human population. The vast numbers of migratory and resident waterbirds are particularly dependent on the seasonally flooded grasslands and Borassus Palm savannah that cover some 70,000 ha in the heart of the Tana River Delta.

Over 1,000 hippos and crocodiles are estimated in the river and associated lakes, there are herds of buffalo, topi, zebra and other wildlife in the palm woodland on the edge of the Delta, and at least four globally endangered birds are found in the Tana Delta (see Appendix). The Tana River Red Colobus, one of the world's most endangered primates, is found in some riverine forest fragments. Marine turtles nest along the beaches, and three different species of true eels have been recorded from the Tana River. The mangrove forests play an important economic role, sheltering fish and shellfish nurseries that nourish the rich fisheries of Ungwana (Formosa) Bay.

There are 320 plant taxa in the Lower Tana River; 58 of them tree species, of which two are considered Critically Endangered in a global sense. Twenty one per cent of the plants are of conservation concern. The area hosts seven plants on the IUCN Red list of threatened species (see

Appendix). The discovery of several trees of *Cassipourea gummiflua* in 2005 was only the second time this species has been recorded in coastal Kenya and possibly only the third time in Kenya. Three shark species listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix 1 have been recorded in the Tana Delta. The sharks enter estuaries occasionally, and their populations are greatly impacted by habitat degradation. A further two fish species in the Delta are Red-listed as data deficient (see Appendix). Three important amphibians include the endemic Tana River caecilian, *Boulengerula denhardti* and the near-endemic mud-dwelling caecilian *Schistometopum gregorii*. Reptiles in the Delta include the near-endemic Tana writhing skink *Lygosoma tanae* and the Ngatana or mabuya-like writhing skink *Lygosoma mabuiiformis*.

Serious detrimental impacts of current development proposals:

Nature Kenya welcomes efforts by the Kenya Government to bring development to all parts of the country. However, we think that the Tana Delta Integrated Sugar Project as **currently designed and proposed** is ill-advised, will destroy 20,000 hectares of a key biodiversity area, damage priceless environmental assets, and may lead to communal conflicts. The current Environmental Impact Assessment was hurriedly produced and lacks vital information. Our main objections to the proposed project are as follows:

Water. The EIA states that during low-flow seasons, over one-third of River Tana's water will be used to irrigate the sugar project – even without taking into account other competing proposed projects. This does not leave enough water to service the project staff, downstream users, fish nurseries, livestock, wildlife and environmental sustenance. According to the submissions by the Kenya Wetland Forum:

2.3.2. (1) Given that the EIA study report at page 298 states conclusively that the water demand will be higher than the water resource available it follows that the proposed irrigation option is not viable and therefore the project cannot proceed or be implemented.

Land. There is a dispute between the local people's right to Trust Land and the land allotted to TARDA (as well as the land bought by competing sugar projects). Since land has been the source of inter-communal conflicts in other parts of the country, we advise that the land issue be settled to the satisfaction of all parties before a large-scale project is contemplated.

Livestock. Vast herds of livestock use the Tana Delta as dry-season grazing and drought refuge. The project documents we have seen do not set out clearly how the rights and livelihoods of the pastoralist communities will be addressed. The proposal to use Galana Ranch for livestock production needs to be funded and implemented, and we do not see how the dry land of Galana Ranch will provide alternative dry-season grazing.

Costs and Benefits. The project proponents estimate that the value of the irrigated sugar project and sugar and ethanol production will be over Ksh.3 billion. A study commissioned by Nature Kenya estimates the project value at only Ksh.1.2 billion, however, once all the direct costs are considered. In contrast, the value of farming, fisheries, livestock, tourism and other incomes derived from land and wildlife is already more than Ksh.3.5 billion. This does not include the value of environmental services provided by the Tana Delta.

Recommendations:

- A. That the Tana Integrated Sugar Project as currently proposed be **rejected**.
- B. That NEMA takes the lead, in collaboration with other government agencies, in defining and gazettement a conservation area and considers listing the Tana River Delta under the Ramsar

Convention on Wetlands of International Importance, for which it unquestionably qualifies. At least 130,000 ha of the most critical parts of the Tana River floodplain and Tana River Delta should be designated as national protected areas. This will set the stage for any permitted developments in the remaining area of the Delta, which will need to be designed to ensure the integrity of the protected areas.

- C. A Conservation and Development Master Plan for the Tana Delta should be developed prior to any development. This Plan to be drawn up in consultation with other Government agencies and stakeholders. The Plan to include an economic assessment of the local, national and global environmental values of the Tana Delta.
- D. That TARDA and Mumias Sugar Company together with NEMA and other stakeholders take the brilliant opportunity to create a truly “Green” development by supporting the gazettement and management of large parts of the Delta as conservation areas, and tailoring development activities to small schemes that will directly benefit the local people, and maintain the hydrological and ecological integrity of one of Kenya’s most important natural assets.

Appendix to Nature Kenya Comments on the Tana Delta Integrated Sugar Project and EIA

Water birds found in globally important numbers in the Tana Delta (more than 1% of biogeographic populations):

Great White Pelican
Pink-backed Pelican
Cattle Egret
Yellow-billed Egret
Great Egret
African Open-billed Stork
African Spoonbill
Greater Flamingo
Spur-winged Goose
White-fronted Plover
Lesser Sandplover
Little Stint
Curlew Sandpiper
Marsh Sandpiper
Sooty Gull
Slender-billed Gull
Gull-billed Tern
Caspian Tern
Lesser Crested Tern
Saunders' Tern
Whiskered Tern

Waterbirds known to nest in Tana Delta heronry:

African Darter
Black-crowned Night Heron
Black Heron
Common Squacco Heron
Little Egret
Yellow-billed Egret
Great Egret
Grey Heron
Purple Heron
African Open-billed Stork
Sacred Ibis
Glossy Ibis
African Spoonbill

Globally-threatened Birds:

Lappet-faced Vulture (vulnerable)
Southern Banded Snake Eagle (near threatened)
Malindi Pipit (near threatened)
Basra Reed Warbler (endangered)
Tana River Cisticola (data deficient)

Regionally-threatened birds:

African Darter
Great Egret
Saddle-billed Stork
Scaly Babbler

Threatened plants

Megalochlamys tanaensis (Critically Endangered)
Cynometra lukei (Critically Endangered),
Oxystigma msoo (Vulnerable)
Angylocalyx braunii (Vulnerable)
Dalbergia vaciniifolia (Vulnerable)
Chytranthus obliquinervis (Vulnerable)
Diospyros greenwayi (Vulnerable)
Pavetta linearifolia (Vulnerable)

Threatened fish

Pristis pectinata (CITES Appendix 1)
Pristis zijsron (CITES Appendix 1)
Anoxypristis cuspidate (CITES Appendix 1)
Pardiglanis tarabini (IUCN Red List – data deficient)
Synodontis manni (IUCN Red List – data deficient)

Important amphibians

Tana River caecilian, *Boulengerula denhardti* (Endemic)
Schistometopum gregorii (Near Endemic)

Reptiles

Tana writhing skink *Lygosoma tanae* (Near-Endemic)
Lygosoma mabuiiformis

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