

Environmental impact assessment: for whose needs?

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ABSTRACT

Tanzania, like many other developing countries, is keen to attract foreign investments to foster the country's socioeconomic development. However, the competition among developing countries to attract foreign investment preference has in many cases sacrificed policies geared towards sustainable development for short-term economic gains. With the intention of conserving the global environment, the multinational financing institutions have made it mandatory that all development projects should be subjected to EIA before they can be funded. Is this sustainable? This case study suggests that an effective (and sustainable) EIA regime is dependent on, among other things:

- the government's political will;
- effective environmental legislation;
- institutional support;
- proper development objectives; and
- trained personnel.

Unfortunately, many of these factors are not in place in Tanzania (and probably not in place in most developing countries). This has led in many cases to frustration on the part of environmental impact assessors, governmental advisors and the public at large. Because of economic considerations some projects have been given a go ahead despite negative assessment and public outcry. In some cases, projects have been assessed positively even though the negative impacts are obviously overwhelming, which may be due to the fact that the investor is paying for the assessment and thus may influence the outcome of the assessment process. This case study examines the prawn project, which was subjected to EIA, rejected by the review team and approved for implementation by the government. The paper poses a question: For whose needs is the EIA conducted? The investor? The government? The assessor? The environment? The public?

See Topic 9

**UNEP EIA Training
Resource Manual**

Reviewing

INTRODUCTION

The Rufiji River delta is the largest block of mangrove forest (mangroves) on the eastern African coast. The delta is linked to the interior river system by an extensive flood plain about 130km long and more than 20km wide. It is also linked to a system of ocean currents and coral reefs.

The mangroves provide a unique ecosystem that displays dynamics of a flood plain and delta system as expressed by changes in mud and silt deposition, major fresh water outlets, and the creation of oxbow lakes, local flooding patterns, salt water intrusion etc. The mangroves provide an inter tidal fishery, serve as nursery grounds and breeding areas for the prawn industry for the locals and produce large quantities of mangrove poles for export.

Mangroves protect the coastline from waves and currents and thus prevent coastal erosion. Through their retention of sediments brought downstream by rivers, they extend the coastland into the ocean. As they are highly productive elements of the marine ecosystem, mangroves generate large quantities of detritus, which form the basis of a complex marine food web thus making them a unique ecosystem that is rich in floral and fauna biodiversity in both freshwater and saline environments. The delta has been utilized over the years by the Rufiji people basically relying on fishing, mangrove poles and rice farming for their sustenance. The present population living in the delta is 35 000 people.

The African Fishing Company Ltd (AFC), a subsidiary of Tannol Holding Ltd. of Korea, intends to develop a prawn farm covering about 6,000ha of surface water, with grow out ponds on 10 000ha of land. The proposed location of the prawn farm is within the Rufiji delta and the downstream end of the flood plain. The proposed farm will consist of production ponds plus water pumping stations, and supply and drainage canals. Staff quarters, and storage facilities for the materials and supplies will be built close to the farm. The target species for shrimp aquaculture is *Penaeus monodon*. AFC plans to employ semi-intensive production methods at farm level management.

The proposed development is planned to be accomplished in eight years with the first year of operation targeted to build 500ha of ponds. The ponds will be of 6ha x 1m average depth in size. There will also be some smaller ponds of the size of 0.1m x 1.0ha built for research and development purposes. A hatchery is proposed at Bwenjuu Island in the Mafia Island Marine Park where brood stock will be stocked at a density of 10 to 12 prawns per m² and will be fed with feed meals. There will be 2.3 crops of prawn per year with an annual production of about 2680 to 4600kg/ha. The annual feed is estimated to be between 6624 and 8280kg/ha. The estimated labour requirements are as follows: construction 250-500 people; farm operation about 6000 people; the hatchery 500 people; at the processing plant 1200 people. Other project components include:

- deep sea fishing in the Exclusive Economic Zone (EEZ) of the Tanzania coastal waters with a total fleet of six vessels;
- the provision of fish meal plant at Mwanza to recycle waste from the processing units and a feed mill at Mbegani for production of feed stuff from cereals and other unwanted fish and additives; and
- the provision of training and education for personnel.

NATURE AND SCOPE OF ISSUES

Policy and legal issues

In licensing the project the following pieces of legislation were contravened:

The National Land Policy of 1995 and Land Ordinance of 1923 were contravened by transferring right of occupancy to the developer without recognizing the customary rights of smallholders. The Forest Ordinance of 1997 and the Forest Ordinance Cap 389 of 1957 were contravened by allowing the developer to establish the prawn farm in the forest reserve. All mangrove forests are forest reserves. Allowing the developer to establish a hatchery at Bwenjuu Island has violated the Marine-Park and Reserve Act No. 29 of 1994. The project also falls within the licensed area to CANOP for the purpose of oil exploration. Other legislation contravened includes: the Water Utilization (Control and regulation) No. 110 of 1981 and international conventions such as CITES Convention (because of the existence of two endangered species in the area i.e. the Dugong and the Nile Crocodile) and the Ramsar Convention (because the Delta is a contiguous wetland which is part of the international landing sites for migratory birds). There also other development projects within the area e.g. The Mangrove Management Project, The Rufiji Delta and Floodplain Environmental Management and Biodiversity Conservation of Forest, Woodland and Wetland, The Rufiji Basin Management and Irrigation Project and The WWF Coastal Forest Project.

Environmental issues

Loss of mangrove forest is estimated to be 1200ha. There is loss of biodiversity in mangrove areas as a result of destruction of breeding sites and nursery grounds for fish and other intertidal fauna, destruction of rare species of mangroves such as Rhizophora, together with the threat to endangered Dudong and Nile crocodile and over-exploitation of wild fish stock by increased human population. Self generated pollution and eutrophication in ponds, rivers and the ocean will come from effluents containing antibiotics and toxic chemicals. Other impacts will be the acidification and salinization of agricultural lands, disposal of wastes in Kioboni and Bumba rivers and associated water borne diseases and formation of complex land uses e.g. a town within the mangroves forest

reserve and flood plain. There are no suitable soils within the reserve for housing, sanitary landfill, oxidation ponds/lagoons, septic tanks etc.

Socio-cultural issues

The project will result in loss of agricultural land, displacement and resettlement of local people, increased social conflicts between those who are for the project and those against it, increased government costs for provision of infrastructure and social services and changes in cultural values.

Economic issues

Calculations indicate that the project will make a net loss of US\$ 24.9 million in year one and a net forex gain of US\$ 120 million in the fifth year. However, the government has given a tax exemption and forex retention holiday of 5 years, and the experience world-wide has shown that such projects fail in their fifth year which means the government will not realize anything. Using the overall risk of 30% the estimated foregone benefits in Rufiji delta area ranges between US\$ 72-107 million which exceeds the adjusted income benefits of the project which is US\$ 21 million.

Process and procedural context

Unfortunately, there is no legal requirement for EIA in Tanzania. There is neither environmental policy nor environmental law. However, there is a National Environmental Management Council which advises the Government on environmental issues and the Division of Environment under the Vice President's Office, which looks after policy issues. The National Environmental Management Council has developed EIA guidelines.

The Investment Promotion Centre has the sole responsibility of approving all foreign projects. Its mandate is to assess economic viability. In this particular case, maybe because of public pressure, the government required an EIA before it approved the project. The developer had to produce an EIS for evaluation. Furthermore, the developer intends to borrow money from international financing bodies, in which case he has to show the environmental impact of the proposed project.

The EIS was sent to the Environment Management Council for Evaluation. The Council constituted a team of 11 experts, with three foreign experts from the USA, Zimbabwe and Germany. The reviewers prepared a report, and the NEMC also organized a public hearing, which drew participants from the Rufiji people, experts in different fields, and politicians. Written comments were received from within and outside the country. The Councillors mostly represented the Rufiji people. Thirty-two participants gave verbal comments on the project during the public hearing and 18 written comments were also read during the public hearing. The EIA review

team raised numerous questions about the EIA and the recommended mitigation measure. These views were supported in public hearings.

MITIGATION MEASURES

Mangrove forest

The EIA proposed a no-net loss of mangroves by suggesting that the project replant mangroves in other areas. This was found to be unrealistic by the review team as the mangrove species respond differently to ecological requirements and other environmental factors and they are site-specific. Also there are not enough bare saline areas or clear cut mangrove areas in the Delta for replanting to compensate for the mangroves cut in the prawn farm project. The project does not give alternatives to meet the objectives of the mangrove management project. However, the EIA report admits the serious negative impacts of construction of canals, roads and other prawn farm project activities.

Fisheries and marine environment

The EIA does not cite the fact that there are no alternative sites for hatchery and grow out ponds. The EIA proposes that the use of DDT and antibiotics should be minimized without suggesting alternatives and thus there was no guarantee in the management submission in response to the EIA. The EIA also reports that AFC is committed to implement the mitigation plan. However, there are no funds budgeted to implement the plan. It was also observed that unless there are screens at pump intakes there would be a massive killing of fish and other aquatic zooplankton. Besides, there are no funds set aside for this measure.

Land use

There are no mitigation plans to avoid a town growing in the mangrove forest reserve. The septic tanks and/or oxidation pond necessary for the treatment of domestic waste requires suitable soil, which is not available in the delta. The ponds and other related structures will most likely be inundated during spring tides at equinoxes. There is no mitigation plan for this. There is a provision of 1m high levees above the surface which is not enough to mitigate the inundation impact since the spring tides could be as high as 1.5m.

Social benefits that are proposed for the locals who will be affected do not have financial commitment. Nor are there funds set aside for resettlement of the displaced families. No funds have been set aside set for land acquisition. And finally there are no alternative sites for the project.

Water resources

The drainage canals at the hatchery will be directed into small sedimentation basins before discharging by an overflow into coastal waters; no treatment is proposed. The EIA proposes, as a mitigation measure, that the pond sediments be stored in specified areas and allows rainfall to leak in and percolate to the ground. Also the EIA proposes that the pond sediments could be used for road construction or other repair work. The review team and the public hearing questioned the proposal because impact on ground and surface water was not analyzed. There is no proposed mitigation measure for an increase in waste matter, which will be disposed of in the Kiomboni and Bumba rivers. The contamination of the two rivers by the excessive use of lime will raise the pH of the rivers which serve as potable water for the local residents.

Agriculture

No specific mitigation measure is proposed by the EIA despite the fact that there is a possibility that polluted water from the prawn farm will leak into agricultural fields.

Wildlife

The EIA does not look at alternative usage of the Delta e.g. wild life protection for ecohunting and ecotourism. There are no mitigation measure against possible poaching of Dugong and Nile Crocodiles, which are already in alarmingly low numbers.

Socio-cultural

The EIA report uses cautionary words (non-committal) to address the socioeconomic benefit of the project to the local people e.g. such words as 'the proponent will support to a certain extent a dispensary, health centres, schools and water.' However, no financial commitment is made. The EIA does not provide mitigation measures to cover the cost of displacing and resettling people, costs of infrastructure and services for resettled people, loss of boat tract in one of the sites, and the decline of food security through the decline of agricultural land. However, the EIA proposes to discourage clearance of vegetation for agricultural purposes (i.e. after the project has cleared thousands of hectares for ponds).

There will be increased hygiene risks through water borne diseases and increased demand (with its environmental and social consequences) for fuel-wood, drinking water, farmland and settlement areas. The EIA gives vague statements such as 'insurance that local cultural pattern will be maintained'.

MONITORING PLAN

There were no comprehensive baseline studies done which could have been used in the monitoring activity. The roles of the developer, the government, local residents and other stakeholders are not clearly defined in the monitoring plan. Besides this, monitoring activity is neither costed nor budgeted for.

RESULTS AND IMPLICATIONS

The EIA review-team and the public hearing concluded that the EIA report was highly biased in favour of the project. It was proposed that the project be rejected on the following grounds:

- The project is planned to be located in a Mangrove Forest Reserve and Mafia Island Marine Park. Millions of dollars have already been spent on both projects.
- The plan is to discharge untreated effluents into the rivers that drain into the Mafia channel and Bwenjuu Island reefs.
- This will release untreated effluents containing silt, suspended solids from the remains of feed and pond sediments, dissolved chemicals from fertilizers, prawn feed, medicines (including antibiotics) and other nutrients.
- There are conflicts with existing and planned land use plans for the Rufiji basin and Mafia Islands.
- The proposal has many negative socioeconomic impacts on both the vicinity of the proposed site and beyond.
- The EIA is unsatisfactory, given so many uncertainties in the form of the size of the project, the newness of technology that is expected to be used and the relatively unknown baseline conditions.
- The EIA, which looks very much like a polished project proposal, is biased.

The Environment Management Council advised the government that:

- The project should be rejected, and proper land-use plan and baseline studies should be carried out in the Rufiji basin in order to harmonise the various competing interests in the area.
- A moratorium should be declared on all commercial mariculture in Tanzania until the government establishes proper guidelines for the development of commercial aquaculture in the country.

- Large scale aquaculture should not be conducted in ecologically sensitive areas like mangroves.
- The letter of offer allocating part of Bwejuu Island to the AFC should be revoked, since this offer contravenes the National Policy (1995) and the Mafia Island Management Plan and legislated under the Marine Parks and Reserves Act No. 29 of 1994.

Against all these recommendations the government approved the project without consulting the National Environment Management Council. In whose needs was EIA carried out? That is the question.

LESSONS LEARNED

- EIA can not have any meaning, unless there is a strong government commitment in a form of a policy and environmental law.
- Lack of awareness of the importance of avoiding unnecessary environmental degradation hampers the success of the EIA regime.
- As long as EIA remains the responsibility of the developer, objective EIA will take time to come by. This leaves a loophole for influencing the EIA in the proponent's favour. Using experts from abroad is not a solution; this is because the local experts know the local environment better and they are the ones who have to perform the monitoring. In these circumstances the use of foreign experts is not sustainable.
- Lack of harmonized institutional arrangement with a clear and properly co-ordinated flow of events guarantees a continued contradiction in approval processes.
- Financial institutions should not only be concerned with seeing EIA reports but should also be interested to ensure that the recommendations are implementable and that the local capacity to monitor the implementation is in place.
- Some funds, such as those of GEF, could be used to commission EIA initially to ensure an unbiased report.

LIST OF RELEVANT PUBLISHED PAPERS AND OTHER SOURCE MATERIAL

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Key words

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