

## Good Practice Assessment for Bioenergy Projects

### General data

1. Name of Assessor: Dr Helen Watson
2. Institution: University of KwaZulu-Natal
3. Date of Assessment: November 30 2009
4. Name of Project: Bagamoyo (SEKAB Bioenergy) Tanzania
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6. Place of Project: Razaba Estate, Bagamoyo, Tanzania. The 15 000 ha Estate is located on an old, uplifted and dissected coastal plain. Its topography rises gradually from the coast to 30-40 m.a.m.s.l. It is largely gently undulating to rolling, with extensive plains, low lines of hills, bottomlands and shallow valleys. It is bounded by coastal mudflats to the east, the Wami River and Sadani Game Reserve to the north, and the Ruvu River to the south-east. It is surrounded by three villages and four sub-villages with a total population of six thousand (ORGUT Consulting AB, 2008).
7. Characteristics of Project: SEKAB was founded in 1985 in Sweden and is currently one of Europe's largest producers of bioethanol. SEKAB BioEnergy Tanzania was formed to develop large scale bioethanol/bioelectricity plants in Tanzania. The feedstock for these plants was to be sugar cane grown on 400 000 ha in the Rufiji, Kilwa and Bagamoya districts. Razaba Estate in the Bagamoyo District was selected as the first pilot project site in order to "(a) develop a state-of-the-art role-model project that demonstrates sustainability best practice, for rollout within the cluster development; (b) demonstrate commercial viability of bioethanol production in the country; and (c) establish the necessary supporting infrastructure (maintenance, logistics, capacity building, policy framework etc.) for the National Platform" (SEKAB Bioenergy Tanzania – Company Profile, 2009, pg.5).

A seed nursery was established in 2007 on 240 ha of agricultural land leased from the Prisons Department in Bagamoyo in preparation for planting on Razaba Estate. In 2008, sugar cane was planted on 500 ha of the Estate. The company intended expanding this to 15 000 ha by 2012 by which time the ethanol plant would be constructed and ready for production. The company intended to develop outgrower capacity which was expected to cover an additional 5 000 ha within ten years. No further planting took place in 2009 and on the 23<sup>rd</sup> of October 2009 SEKAB sold its subsidiaries in Tanzania to EcoDevelopment in Europe AB. (SEKAB, 2009)

Tick if project is an initiative from:

Private  community  government  NGO  other

**8. State how do you know the project**

information from investor/promoter  field trip  a) and b)  other

specify other \_\_\_\_\_

**9. After reading the characteristics of the project (in Annex) please assess the following principles according to the scale:**

- 1 The project does not consider this principle (0%)
- 2 The project covers this principle partially <30%
- 3 The project covers partially this principle in 30-70%
- 4 The project covers partially this principle in <70%
- 5 The project fully covers the principle (100%)

Principle	Name	Score
1.	<b>Good agro-ecological and forestry practices (biodiversity, soil)</b>	2

**Comments**

Prior to 1974 the Estate was traversed by pastoralists on their way to markets in Dar es Salaam and used for seasonal grazing. Elephants migrated into the area during the two wet seasons. In 1974 it was given to the Revolutionary Government of Zanzibar to establish a cattle ranch. ORGUT Consulting AB (2008) report that inhabitants were compensated and settled outside the area. However, no indication of the number of inhabitants is given. Developing the ranch involved clearing forests and wetlands, establishing roads, housing and a primary school. It had 7000 head of cattle and employed 300 people. Nevertheless, it was abandoned in 1994 because of difficulties of keeping cattle year round in an area infested with tsetse flies. (ORGUT Consulting AB, 2008).

After 1994, pastoralists and elephants resumed their use of the area. (ORGUT Consulting AB, 2008). Hence, converting the area to a sugar cane monoculture could have potentially led to conflict with the elephants and definitely led to a decrease in biodiversity.

The soils are old, dissected sand dunes and are mostly grey, erodible sandy soils. Alluvial sands and clays predominate near the rivers. The soils are generally poor in organic matter, potassium and phosphorus (ORGUT Consulting AB, 2008).The application of fertilizers to the sugar cane crop and the mulch left behind after harvesting would potentially improve the structure, fertility and erodibility of the soils.

**2. Not affecting water supply and quality**

2

**Comments**

The Estate's mean annual rainfall ranges between 800-1000 mm therefore in order to get economically viable yields, irrigation needs to provide an additional 700-800mm of water per annum. The water is extracted from the Wami River. Most of the irrigation to be supplied was of the sub-surface drip type with PVC main lines and polyethylene laterals, and drains from the farm into ponds allowing for the water to be recycled. The ponds would further ensure that leakage of nutrients and other substances back into the river was minimized (ORGUT Consulting AB, 2008). However, damming the water draining from the area planted up in 2008 suggested that salinity could be a problem.

Although the water table is generally high, there is not enough information about the ground water either as a potential source of irrigation water or as a recipient of additional surface water (ORGUT Consulting AB, 2008).

Communities surrounding the Estate are totally dependent on the Wami and Ruvu Rivers for water. In normal years there is enough water in the Wami River for irrigation without detrimental down stream effects. However, in dry years there is not enough water for both irrigation and ecosystem needs between late July and early November (ORGUT Consulting AB, 2008).

**3 No land use change that detrimentally affects food security**

4

**Comments**

Once converted to sugar cane, pastoralists would once again be denied access to the land for seasonal grazing which could potentially have a detrimental effect on their food security.

ORGUT Consulting AB (2008) report that surrounding communities cultivate rice in close proximity to the Estate. However, there are no historic or contemporary reports of this activity within the Estate. The conversion of the Estate land to sugar cane therefore would not detrimentally affect food security. However, the envisaged outgrower activity could have potentially involved converting land currently used for food crops. The effect of this however needs to be weighed against the potential increase in food security that would have arisen due to (a) more money being available to purchase fertilizers and other inputs giving better food crop yields, and (b) bigger markets to supply food crops to.

**4 Community participation (from planning)**

5

**Comments**

The Environmental and Social Impact Assessment of SEKAB BioEnergy Tanzania's proposed development of the Estate was carried out in 2008 by the Swedish company ORGUT Consulting AB in association with Tanzania's Ardhi University. They estimated that six thousand people were living in three villages and four sub-villages surrounding the Estate. One thousand households were visited to elicit community views on the proposed development. The community were well informed about it. Most had already benefited from employment in the planting of the seed

nursery the previous year and the planting actually on the Estate in 2008. While recognising the benefits of employment, improved roads, improved marketing opportunities, and skills acquisition enabling outgrower participation, there were concerns that workers from elsewhere brought in by SEKAB to construct the bioethanol/bioelectricity plant and to harvest the cane, would cause an increase in crime, overdrinking, prostitution, and AIDS, and would stretch social services, food and facilities.

**5 Women's participation (from planning)**

4

**Comments**

A substantial number of women had been involved in the establishment of the seed nursery and the subsequent planting of sugarcane on the Estate. During the Environmental and Social Impact Assessment, most household respondents were women.

**6. Skills transfer (management, business, agriculture)**

4

**Comments**

The bioethanol/bioelectricity plant SEKAB BioEnergy Tanzania envisaged building in Bagamoyo required feedstock from 20 000 ha for optimal production. Razaba Estate is only 15 000 ha. The company intended to implement a comprehensive skills transfer programme so that outgrowers would be able to provide the 5 000 ha feedstock deficit.

**7. Community inclusion in business or economic model  
(Contract with investor or NGO).**

4

**Comments**

During the Environmental and Social Impact Assessment designated senior representatives from the following were interviewed :- Bagamoya District Council Authority, Village Governments, Ministry of Energy and Minerals, Ministry of Natural Resources and Tourism, Ministry of Agriculture and Food Security, Ministry of Regional Administration and Local Planning, Ministry of Planning and Economic Empowerment, Office of the Vice President – Division of the Environment, National Environment Management Council, District Commissioner, District Executive Director, District Agricultural Extension Officer, District Administration Officer, District Land Officer. Without exception, they had been informed of SEKAB BioEnergy Tanzania's proposed development by representatives of the company and invited to suggest how the sectors they were representing could be involved in the development.

3

**8. Added value in the community  
(individual, money, assets, land, co-products)**

**Comments**

- Employment on the Estate.
- Opportunity to learn how to cultivate, harvest and supply sugar cane to the bioethanol/bioelectricity plant as an outgrower.
- Potentially more money available to purchase fertilizers and other inputs giving better food crop yields.
- Potentially bigger markets to supply food crops to.

**9. Improvement in services and infrastructure (energy supply, health)  
reinvestment of revenue within the community**

3

**Comments**

SEKAB BioEnergy Tanzania intended improving roads to and within the Bagamoya District.

At present the communities surrounding the Estate use kerosene for lighting and wood for cooking. They harvest wood from natural woodlands and forests within the district and produce charcoal to sell. Although capable of regenerating rapidly, the natural woodlands and forests throughout most of the district are already depleted or degraded. Once the bioethanol/bioelectricity plant was operational, SEKAB BioEnergy Tanzania intended supplying inhabitants of the Bagamoya District will affordable electricity.

**10. Compliance with National policies and/or guidelines  
for bioenergy projects in place**

4

**Comments**

Tanzania established a National Biofuels Task Force in 2006 “to prepare enabling policy and a regulatory environment for sustainable biofuels development” (Sawe, 2008). This task is still in progress. The Force however, did play an active role in ensuring that a full Environmental and Social Impact Assessment of SEKAB BioEnergy Tanzania’s proposed development was carried out and submitted to the National Environment Management Council.

**11. Compliance with Local programmes, regulations  
and/or plans in place**

4

**Comments**

As noted in (7) above, a wide range of high level district representatives were given the opportunity to give their input about the proposed development. The onus was on them to ensure this compliance.

**12. Respect Land rights and avoid displacement**

3

**Comments**

As noted in (1) above people living on the Estate were compensated to move in 1974 to make way for a cattle ranch. The land was not reoccupied after the ranch was abandoned in 1994. However, while no displacement of people actually living there would be involved, pastoralists using the land for seasonal grazing would be displaced.

**Overall assessment**

42

Out of 60

**Additional comments on the project:**

The reason given by SEKAB for selling its subsidiaries in Tanzania to EcoDevelopment in Europe AB in October 2009 is that it was unable to secure any land in addition to the Razaba Estate. Uninhabited land close to abundant surface water was required for the Bagamoya bioethanol/bioelectricity plant as well as the sugarcane plantings planned in the Rufiji and Kilwa districts. Some claim that SEKAB “ran into problems” because it did not adequately consult with the Kilombero Sugar Company which has a long history of producing sugar in Tanzania and plans to develop a bioethanol/bioelectricity plant. Several others attribute SEKAB’s “failure” in Tanzania the coinciding of the global recession and the anti-biofuels media hype towards the end of 2008. The “food versus fuel” debate was particularly vicious and misinformed in the Swedish media.

The proposed development on the Razaba Estate has been extremely difficult to evaluate. The field visit revealed excellent farming practices and enormous capital outlays to conserve water. The Environmental and Social Impact Assessment Report reveals very extensive and thorough consultation. Because the project never came to fruition, using the COMPETE assessment I have had to rate it on the basis of what they intended to do rather than what they did. Hence, the fairly good overall score despite the fact that the project “failed”.

**References**

ORGUT Consulting AB, 2008: Environmental and Social Impact Statement of the Proposed Bioethanol Production from Sugar Cane on the Former Razaba Ranch, Bagamoyo District, Tanzania.

Sawe, E.N., 2008: Bioenergy policies in Tanzania, ppt presentation at COMPETE International Workshop on Bioenergy Policies for Sustainable Development in Africa, November, Bamako, Mali, [www.compete-bioafrica.net](http://www.compete-bioafrica.net).

SEKAB, 2009: SEKAB Bioenergy Tanzania – Company Profile.