

Evaluation of Different Bioenergy Crops and Production Models in the Tanzanian Lake Victoria Basin

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This paper is focussed on the Tanzanian Lake Victoria Basin (LVB), and its main aims include: (i) the identification of the bioenergy crops and the production models for liquid biofuels that are more suitable for the agronomic conditions at the Tanzanian LVB, and (ii) to assess the potential of the biofuel industry for the development of rural communities in this region.

According to the evaluation criteria included in this study (agronomic suitability, biofuel production costs, potential for small scale farmers' inclusion in production chain, environmental risks, and level of domestication and agronomic knowledge), sorghum, sunflower and cassava are the most suitable candidates for biofuel feedstocks.

According to the same evaluation criteria, jatropha is not the most suitable biofuel feedstock for the Tanzanian LVB, not only due to economical considerations such as low level of domestication, low yields and high costs, but also due to environmental and social concerns such as potential for invasiveness and as vector for cassava diseases. The same considerations can be extended to the whole Tanzanian context; however, most of the main biofuel companies in Tanzania have chosen jatropha as feedstock (associated to large plantation production models).

An explanation for this apparent incongruity might be that, due to the high demand for staple crops and edible oil, and the current low agricultural yields, it would be difficult to allocate edible feedstock to the biofuel industry, so the biofuel investors have preferably chosen a non-edible feedstock (jatropha).

Production models involving small scale farmers (outgrower schemes and independent smallholder's production) have the highest potential to enhance rural development. However, in the case of Tanzania, the production model chosen by the immense majority of the biofuel companies consists on large scale plantations. Hybrid models (combining both smallholders' production and plantation) are likely to present the best trade-off solution, reducing risks for both: biofuel companies and small scale farmers.

