



Improved Energy Crop and Agroforestry Systems for Sustainable Development in Africa

Policies and Strategies for Sustainable Energy Crop and Agroforestry Systems in Africa
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Biofuels in Africa - Opportunities

- Key challenge in Africa – Access to modern energy services
- Biofuels (from energy crops) are seen by many to offer Africa an all time opportunity for meeting growing needs of energy, especially raising modern energy access in rural areas
 - Biofuels envisaged to reduce dependence on imported fossil fuels
 - Biofuels to provide significantly employment opportunities; e.g of Brazil ethanol program
 - Biofuels seen as the solution to providing productive energy in rural areas
 - Biofuels promoted as a mitigation option to the challenges of global warming
 - Biofuel to help with problems of air pollution
 - Biofuel program for land reclamation
 - Biofuels to improve food productivity

Biofuels in Africa - Concerns

- Acknowledged: biofuels concerns/risks and uncertainties for investments
- Concerns
 - Biofuels seen as a competitor to food supply and hence impacts on food prices; tortilla prices in Mexico?
 - Biofuels might become a great incentive for genetically modified foods
 - Land use/tenure issues and impact on farming systems
 - Biofuels and environmental issues
- Investment concerns
 - Biofuels industry not quite proven
 - Returns on investments; fluctuating oil prices (break even oil prices)
 - Land allocation for energy crops; e.g problems in Uganda
 - Mixed signals on biofuel promotions - Life Cycle Analysis
 - Social economical issues

International biofuel strategizing

- Significant effort for strategizing on biofuels from International community, including;
 - UN – Energy: Sustainable Bioenergy: A Framework for Decision Makers
 - The UNIDO Biofuel Strategy
 - Biofuels Initiative of UNCTAD
 - The International Bioenergy Partnership (IBEP)
 - The Global Bioenergy Partnership (GBEP)
 - The Global Village Energy Partnership (GVEP)
 - Also FAO, UNEP and WTO on bioenergy standards
- African countries could use these initiatives as templates for developing own strategies and policies

Regional biofuel strategizing: SADC

- SADC biofuel strategy
 - SADC region believed to have “the largest untapped potential of biofuels in the world”, (Erhard Seiler, Chief Executive, Southern African Biofuels Association)
 - In 2004 SADC Food, Agriculture and Natural Resources (FANR) released a study on the feasibility of the production of biofuels in the SADC region
 - SADC Biofuel strategy completed in 2005, acknowledging need for considerable investment for successful implementation of biofuel initiatives
 - ☞ Call for all SADC nations to develop strategies which would make the sub region more self reliant in energy production
 - ☞ South Africa the first SADC country to respond and start biofuel strategy process

African countries biofuel strategizing

- Very few countries in Africa have developed strategies or policies on biofuels
- Only SADC region has had marked success, following regional initiative
 - SADC countries that have initiated the strategy/policy process are (4 out of 14)
 - ☞ Malawi
 - ☞ Mozambique
 - ☞ Zambia
 - ☞ South Africa
 - Senegal only non-SADC country in Africa to started the biofuel strategy/policy

South Africa Biofuel Strategy

- Cabinet approval late 2005, first draft late 2006.
- Strategy under discussion, envisaged to evolve to a policy
- Policy to re-energize the agricultural sector and pave the way for a home-grown biofuels industry
- Biofuel initiative expected to create some 55,000 jobs and contribute to economic growth

Pertinent issues on biofuel policies/strategies

- Critically important for countries to have in place biofuel strategies/policies to provide the required guidance
- Need for appropriate strategies/policies for sustainable energy crop and agroforestry systems in Africa, cognizant of national circumstances
 - Right conditions for biofuel initiative for supporting sustainable energy, environment, forestry, water and land use/agriculture, etc
 - Important for a country to specialize in crops in which it has a competitive advantage, sustainable and which have favorable energy yields
 - Need for biofuels strategy/policy to be developed in consistency with existing policies and legislation on water resources, land use, forestry, agriculture etc
 - Need for benefits from biofuel initiatives to clearly stand out and pass the sustainable development test

Pertinent issues on air pollution and GHG emissions

- Biofuels on pollution and GHG emission
 - Air pollution benefits
 - ☞ Air pollution benefits in comparison with fossil diesel, non blended gasoline
 - ☞ Indoor air quality benefits (kitchen killer problem)
 - GHG emission reduction
 - ☞ Life cycle analysis in determining net energy consumption and GHG emission (growing, transporting and processing biofuels)
 - ☞ Where forests are cleared for energy crops it is very unlikely that the GHG emission reduction will be realized
 - ☞ Perennial energy crops will have a higher potential of GHG emission reduction

Pertinent issues on land use

- Biofuel initiatives should not result in deeper poverty for poor farmers
 - Avoid large-scale farming operations taking over the most productive land to grow biofuel crops, crowding out subsistence farmers that use older agricultural techniques and lack the ability to compete on the world market
 - Use of degraded land for energy crops could help in the rehabilitation of soils
- Questions to be addressed:
 - Which land is most suitable, and how should it be used?
 - Could the cultivation of land for biofuels encroach upon food production or create pressure on arable land, thus perhaps jeopardizing the livelihood of small-scale and subsistence farmers?

Pertinent issues on land ownership

- Rather than biofuel production resulting in the concentration of land ownership and land access into fewer hands, agroforestry should be encouraged to current owners of land
- Favouring small scale biofuel initiatives is more likely to have higher social economic returns than large scale biofuel initiatives
 - Encourage energy crop production by the small farming sector, by using intercropping practices
 - Development of agroforestry that includes different types of plants (trees and bushes) as well as species

Pertinent issues on water

- Ensuring that any production of energy crops does not result in
 - Degradation/contamination of water sources
 - Depletion of water sources
 - Water use conflicts (e.g diversion of water away from food production)
- Standing regulations on water sources and use to be followed, including robust EIA before embarking on any large scale energy crop projects

Pertinent issues on biodiversity

- “Important to match crops with local conditions” (Achim Steiner, UNEP)
- Energy crops may in some locations will be alien crops
 - Risks of being invasive species to be properly investigated
 - Investigate promotion of locally grown energy crops, e.g sorghum is common in most places on the African continent
 - Need of clear guidelines on genetic modification (GM crops)
 - Avoid clearing of large areas of natural forests/habitats to pave way for energy crop farming
 - The problem of clearing of natural forests in Southeast Asia for oil palm plantations

Pertinent issues on food security

- Biofuel initiative and the “Food, Feed, Fuel” challenge
- The Mexico tortilla experience - US corn production to ethanol
 - In 2000 - 6% of U.S corn into ethanol
 - In 2005 - 14% of US corn into ethanol
 - In 2006 - 20% of US corn into ethanol
 - For 2007 – projection at 27%
 - Tortilla prices increased significantly and resulting in price capping
- Concern is impacts of diversion of crop production away from food and to production of biofuels
 - Likely to happen in Africa due to lack of surplus food production in almost all countries
 - Likely to happen if more profitable to sell food crops to biofuel producers
- Regulation on food prices? Energy crops market?

Biofuels - way forward

“Bioenergy holds out enormous opportunities..., especially in the developing world - but there are dangers too, and we want to be very clear about them”

Gustavo Best, FAO Senior Energy Coordinator

Thank you for your attention

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