



Role of Bioenergy in Africa's future : Linkage With Productive Sector

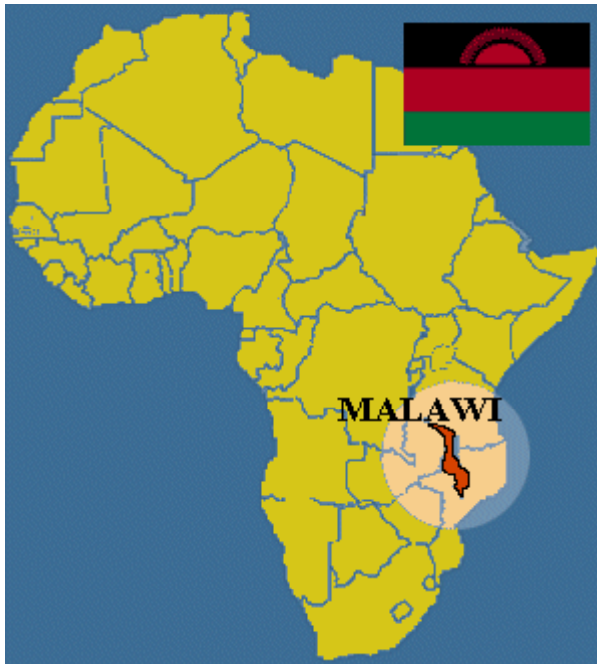
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BACKGROUND



Source: <http://nocameranointervention.wordpress.com/2009/01/13/sms-texts-fight-malnutrition/>

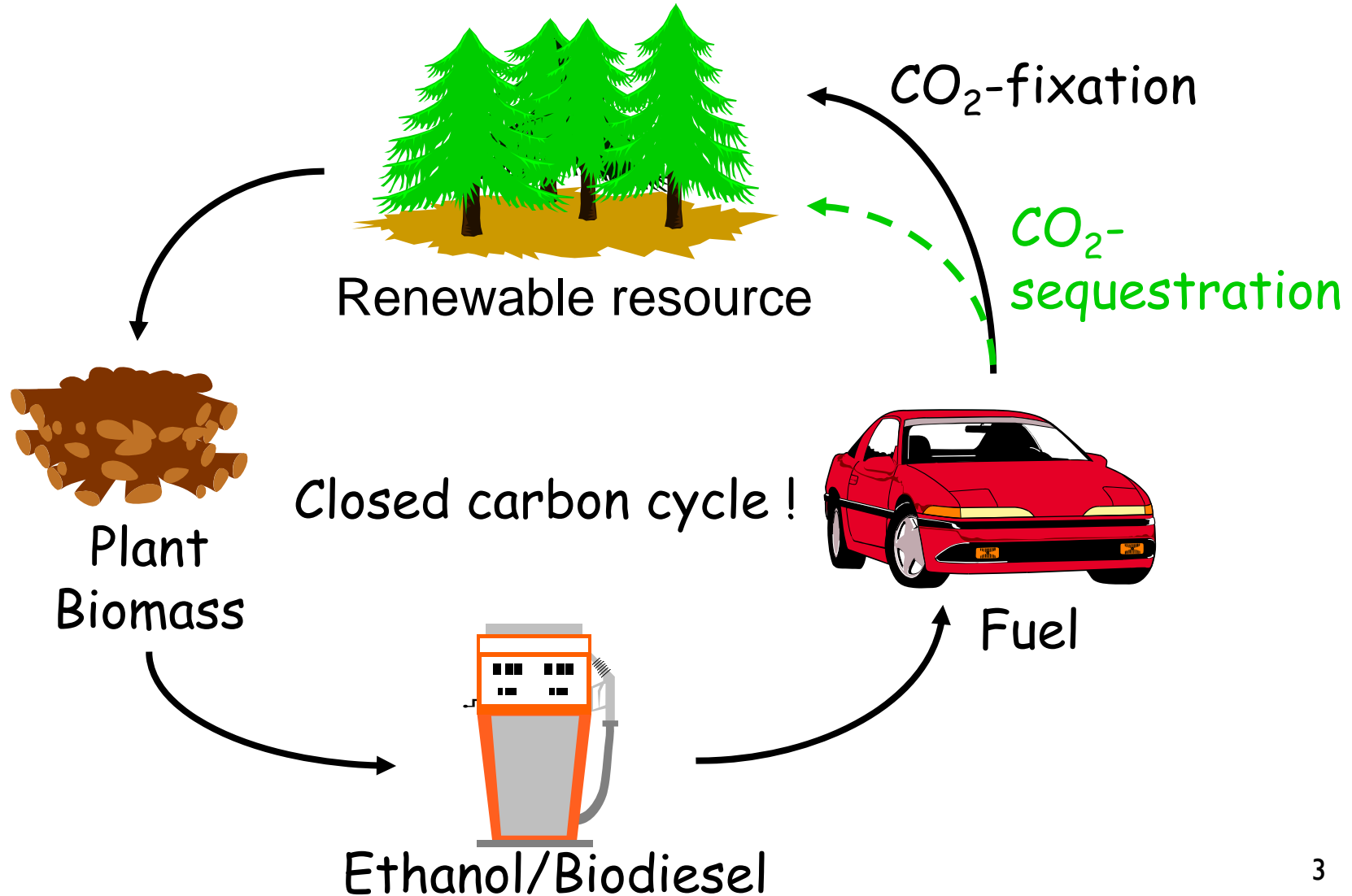
Source: www.lonelyplanet.com/maps/africa/malawi/



Why consider bioenergy in Africa?



Alternative fuel





Linkage With Productive



- Bioenergy production and utilisation technologies:
 - What are the target sectors?
 - Who are the target groups ?
 - How do these advanced technologies integrate with indigenous technology?
 - What are the required support services?



Productive Sectors in an African context:



Linkage With Productive Sector



- *Agriculture: Case of Malawi*
- Provides 80% of employment
- Source of over 80% of forex
- Contribute substantially to energy security-
Agricultural residues
- **Sector is in serious danger due to**
 - Unsustainable land husbandry practices
 - Deforestation
 - Climate change



Linkage With Productive Sector



- *Agriculture: Case of Malawi*
- Requires energy for cultivation
- Post- harvest processing of crops
- Storage of *Agricultural* products
- Transportation of *Agricultural* inputs and products
- Preparation of meals



Linkage With Productive Sector



- Forestry: Case of Malawi-
- Source of livelihood and materials rural industries
- Source of traditional medicine
- Source of firewood- Only 2% of 13 million people have access to electricity
- Fuel for burning bricks
- Processing of Agricultural produce e.g. curing of tobacco



Linkage With Productive Sector



- Problems with current use of Forests
 - Deforestation (13% loss between 1990-2005)
 - Bush burning
 - Over harvest of resources: e.g curing of 1 acre of tobacco requires about 3 acres of woodland



Linkage With Productive Sector-How to make the sectors more productive



- Multi-objective sector:
 - Multiple value added chains (biorefinery)
 - Diversification of bio-industries:
 - Bio-energy, Bio-fuels
 - Textile, Polymer
 - Pulp and paper, timber
 - Speciality chemicals
- (MATCH PRODUCT RANGE OF OIL REFINERY)**



Linkage With Productive Sector Sector-How to make the sub-sectors more productive



- Best practices: Agro-forestry-
 - Food security
 - Energy security
 - Economic development
 - Social development
 - Sustainability of the environment



Linkage With Productive Sector-How to make it more productive



- Adding value
 - Technology
 - Integration of scientific/ engineering / economics expertise with indigenous knowledge
 - Capital investment- infrastructure
 - Support services e.g extension services
 - Enabling political environment



Linkage With Productive Sector-Establishment of a bio-economy for sustainable rural sector



- Transfer of bio-energy technologies-
 - Who are the target groups: Gender issues? Women, subsistence farmers e.t.c.
 - How to integrate the advanced technologies with the indigenous technologies:
 - What indigenous knowledge for bio-energy production and utilisation already exist?
 - What are the required support services?
 - Extension services- do they still exist?



Linkage With Productive Sector-Establishment of a bio-economy for sustainable rural sector



- Bioenergy production and utilisation Knowledge already existing in African rural set up
- Fermentation (African gin production - 20-70% alcohol content)
- Distillation



Source: Hans Hillewaert
2005



Linkage With Productive Sector-Establishment of a bio-economy for sustainable rural sector



- Bioenergy production and utilisation Knowledge already existing in African rural set up:
- Oil extraction
- Charcoal production



Linkage With Productive Sector-Establishment of a bio-economy for sustainable rural sector



- Training of young generation in rural areas
- The need for support services- to avoid implementation of misguided technologies e.g.
- **Women Diverting Anti Retroviral (ARV) drugs for production of traditional Malawi Gin (Kachasu)**
- Normal Kachasu production process- four packets of sugar = five or six litres of kachasu
- New method: One tablet of ARVs = one packet of sugar to produce eight litres. ([Clement Nyirenda](#), 2009)



THANK YOU!

ZIKOMO (Chichewa)

Q??