

# BIOFUEL PROJECTS

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## Executive summary

- **Global biofuel demand continues to grow** and is expected to remain strong in future years:
  - Growing interest in biodiesel due to rising hydrocarbon prices and environmental concerns
  - Greatest demand expected for biofuel crops that grow in tropical climates (oil palm, jatropha, sugar cane) due to higher yields and calorific value
  - Malaysia and Indonesia together account for 85% of global oil-palm supply, but are constrained on arable land given deforestation concerns. In 2007, demand for palm oil feedstock for biofuel is forecast to grow 9%, but arable land can only increase marginally
  - Globally, prices are expected to remain high, as production in key markets fails to keep pace with demand, both for fuel and for traditional food and personal care products use
  
- **Tanzania has exceptional potential** to become a major supplier to world markets:
  - Tanzania is well placed to access key markets under EBA, AGOA, EAC and other agreements
  - A number of suitable regions exist with the right soil, climate and potential for irrigation
  - Less than 6% of arable land is currently utilized, and more than 160,000 hectares suitable for oil palm and jatropha production have already been identified
  - Oil palm environmental impact is comparable to that of current brush ecosystem
  
- **Existing international investors in biofuels** production in Tanzania attest to the potential of the sector:
  - A Dutch investor has begun a 10,000 hectare jatropha outgrower program in the country
  - A subsidiary of a global cement producer is already using biomass to generate power
  - Three international sugar companies have invested in plantations and are producing ethanol and power as by-products
  - Several groups (a US-UK group, a Malaysian group and a US-based venture fund) are currently exploring more than 100,000 hectares for oil palm production
  
- **The Government of Tanzania and international donors have identified biofuel as a priority** growth sector and can provide extensive support for investments in this sector
  
- Beyond Tanzania's specific assets and incentives for biofuel production, the country offers a **very stable and favourable business environment**

## Global demand for biofuel crops is outpacing supply

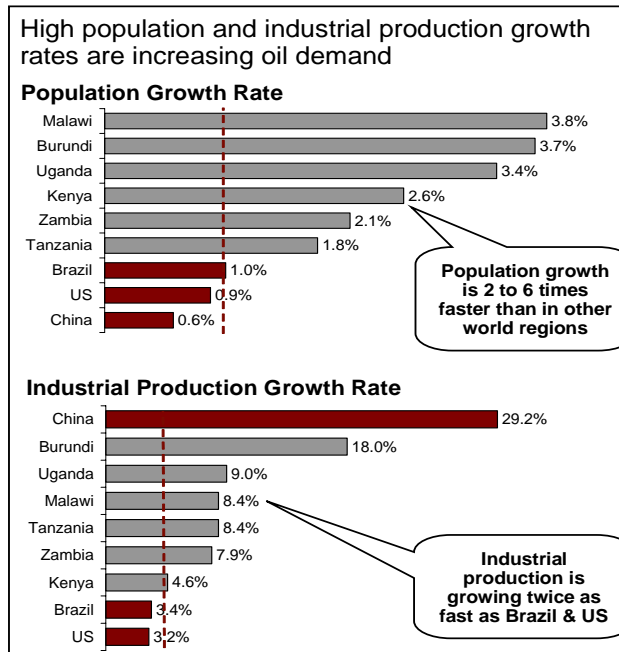
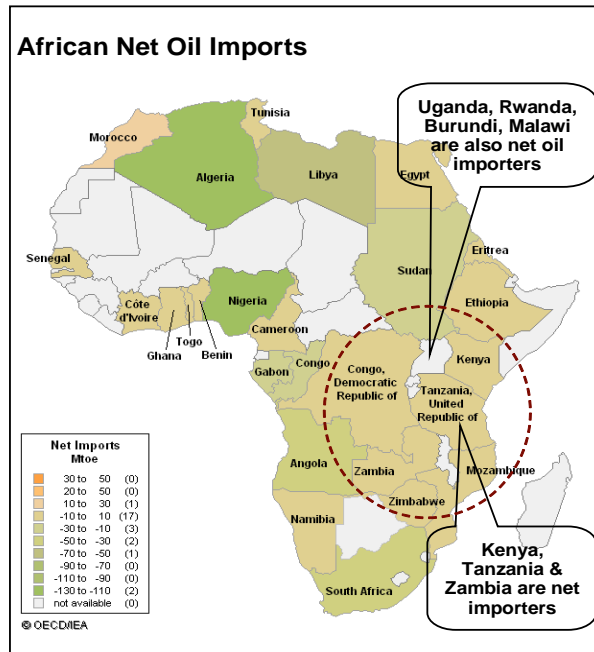
- **Global Demand – Strong growth in biofuel crop consumption continues:**
  - **For Fuel:** Expected refined fossil fuel deficit by 2010 and mandates in various countries to incorporate biofuels in the next five to ten years point towards increased biofuel demand. In 2007 palm oil for biofuel use is forecast to grow 8.9%, as Malaysia, China and the EU-25 expand their palm oil biofuels programs
  - **For Food:** In addition, use of key biofuel crops such as palm oil for food is forecast to grow at 4.5%, driven primarily by increased palm oil demand in China and India. Since 2002, driven by the increase in soybean oil prices, palm oil demand has increased globally and has been substituting soybean oil use, especially in China and India
- **Regional:** Tanzania and its neighbors, Kenya, Uganda, Burundi, Rwanda, Malawi, Zambia, are all net fuel importers. Tanzania has the potential to become the exporter of biofuel to those countries
- **Local:** Tanzania currently imports all of its fuel; competitive local biofuel production would substantially reduce foreign exchange import requirements

- **Supply is Constrained**
  - Malaysia and Indonesia together account for 85% of global oil-palm supply, but are constrained on arable land given deforestation concerns.
  - Currently Malaysia dedicates 5 million hectares to oil palm plantations, while many believe not more than 6 million can be dedicated to this crop, an increase of 20%, which only allows for a few years of the market growth
- **Global oil seed production is growing slower,** at 2.3%, than demand, adding pressures to oil seed feedstock price and availability

Seed	Expected Production in 2006 (m MT)	2004-2006 CAGR
Rapeseed	48.4	4.9%
Soybean	220.2	1.9%
Sunflower	29.6	16.9%
Palm Oil	35.1	3.5%
Other	56.8	N/A
<b>Total</b>	<b>390.1</b>	<b>2.3%</b>

**With increase in global demand and supply constraints, Tanzania represents an unparalleled investment opportunity for biofuel plantations**

## Countries in the East African region are net importers of oil and demand is increasing



**Tanzania is ideally placed to serve this local deficit because it has more arable land than the other countries in the region combined**

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## Tanzania is ideally placed to become a leader in biofuel production globally

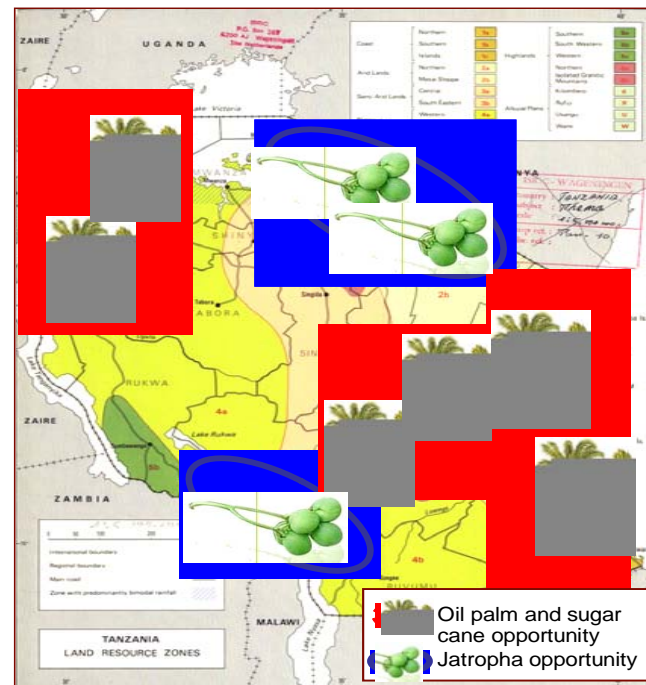
- Tanzania has **ideal geographic and climatic conditions** for growing a wide range of biofuel crops: sugar cane, palm oil, jatropha, soy, cotton, and others
- Tanzania has over **88 million hectares of suitable agricultural land**, of which less than 6% is currently utilized
- Unlike many alternative countries, the vast majority of land in Tanzania that is available for cultivation is **not virgin forest or environmentally sensitive**
  - Much is former agricultural land that fell into disuse during nationalization
  - Other target areas are open scrub with similar eco-impact to oil plantations
- With three of the largest 10 lakes in the world, and a large network of rivers, most areas of Tanzania have significant **irrigation sources**
- **Local expertise and institutions:** with the support of the German Government, a detailed study of Tanzania's biofuel assets and potential has been completed, and a National Biofuels Taskforce has been established, to bring together experts in the sector and promote development of the sector
- **Local partners:** a number of local entrepreneurs and corporate groups have expressed interest in co-investing in biofuel production alongside international investors

## Tanzania has significant potential for irrigated land and several areas apt for oil palm and jatropha have already been identified

### Areas in Tanzania with High Irrigation Potential

Region	High Irrigation Potential Land (Ha)
Arusha	410,700
Coast	83,000
Dar	8,000
Dodoma	10,000
Iringa	163,600
Kagera	95,300
Kigoma	107,400
Kilimanjaro	238,500
Lindi	19,600
Mara	210,000
Mbeya	285,000
Morogoro	376,800
Mtwara	14,000
Mwanza	98,500
Rukwa	11,000
Ruvuma	23,200
Shinyanga	80,400
Singida	10,000
Tabora	25,000
Tanga	30,000
<b>Total</b>	<b>2,300,000</b>

### Identified Oil Palm and Jatropha Production Areas



Source: Map from [http://eusoiils.jrc.it/esdb\\_archive/EuDASM/africa/maps/afr\\_tz2001\\_to.htm](http://eusoiils.jrc.it/esdb_archive/EuDASM/africa/maps/afr_tz2001_to.htm)

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## Tanzania has created a National Biofuels Task Force to promote the sector and develop legislation to stimulate use of biofuels

- In 2005, German Technical Cooperation (GTZ) published a major study providing detailed analysis of the potential for biofuel production and demand in Tanzania
  
- In 2006, the Government of Tanzania created the **National Biofuels Task Force** to promote development of the sector and develop legislation to stimulate use of biofuels. The goals of the taskforce include:
  - Designing biofuels policies and regulations suitable for Tanzanian conditions (e.g. mandate, obligation, tax breaks, enabling fuel standards)
  - Ensuring co-operation between Ministries involved in the development of biofuels policies
  - Acting as an information channel between Government and biofuels stakeholders
  - Establishing biofuels demonstration facilities
  - Encouraging the sale of flex-fuel vehicles and vehicles which run on Pure Vegetable Oils
  - Designing financing options (e.g. capital allowances, tax breaks) and set-up incentives for (local and foreign) investors
  - Securing international funding for biofuel development, such as the EU Partnership Dialogue Facility, the FAO International Bioenergy Programme, and the G8 Global Bioenergy Partnership
  - Promoting applied research and development
  - Promoting awareness of the benefits of biofuels among the population
  
- The Taskforce is working with the UN Foundation to understand global best practices and is expected to recommend **legislation introducing incentives for fuel-blending** in 2007

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## The Government of Tanzania and foreign donors have identified biofuel as a priority sector and can provide extensive support for investments

- **The President of Tanzania** and his Cabinet have identified biofuel as a priority growth sector and are prepared to provide support at the highest levels to accelerate investment
- **The Tanzania Investment Centre** maintains a database of suitable growing areas and offers a one-stop shop to facilitate the land acquisition, permitting and registration process
- Tanzania's **Land Policy** gives investors full rights to buy and sell land
- Under the **Tanzania Investment Act** of 1997, qualified investors are entitled to exemption from VAT and import duties on imported inputs and 100% repatriation of profits and capital investments after taxes and other obligations are met; the Act also provides for full protection of all investor agreements
- A number of **international donor organizations** (e.g. the World Bank, USAID, DFID) provide technical and financial assistance to develop the productivity and capacity of outgrower associations and communities in palm oil and jatropha growing areas
  - The BEST (Business Environment Strengthening in Tanzania) programme is a coordinated multi-donor project to increase competitiveness across sectors. Under the BEST Cluster Competitiveness Project, donor financing may be made available to support capacity development (such as training, yield-improvement, market research, etc.) of outgrowers in key growth sectors
- With significant funding now earmarked for **infrastructure development** in Tanzania (by the Millennium Challenge Corporation and other donors), potential also exists to leverage these funding sources to offset infrastructure development costs associated with new production facilities (e.g. road linkages, irrigation, etc.)