

PROMOTING A
CLEAR, BALANCED
UNDERSTANDING OF
BIOTECHNOLOGY



PUBLIC UNDERSTANDING OF
BIOTECHNOLOGY

THE CURRENT STATUS OF THE BIOFUELS INDUSTRY WORLDWIDE



The following key policy issues have resulted in some major international countries investing funds and resources in developing the biofuels sector.

- Concerns about the reliability of petroleum supplies
- Global warming concerns
- Greenhouse gas emissions
- Low incomes in the agricultural sector.



In South Africa, a draft strategy was developed by the Biofuels Task Team appointed by Cabinet in 2005, with a specific mandate to:

- Stimulate rural development thereby contributing to the government's Accelerated and Shared Growth Initiative (AsgiSA)
- Reduce poverty by creating sustainable income-earning opportunities.



Currently, the world's leading ethanol producers are Brazil and the USA.

Current biofuel crops

- In Brazil ethanol is produced from sugarcane
- In the USA ethanol is mainly produced from maize
- Europe produces an estimated 8% of the global biodiesel from domestically grown rapeseed
- Other countries such as China, India, Kenya and Tanzania are investing their resources in the production of jatropha, a non-edible plant, to produce fuel.



In South Africa, the crops proposed in the national biofuels strategy for the production of biofuels include:

- Sugarcane and sugarbeet for bioethanol
- The Industrial Development Corporation (IDC) has indicated its intention to invest in the production of biofuels from sweet stem sorghum in Pondoland, which covers KwaZulu-Natal and the Eastern Cape
- Sunflower, canola and soybean oils for biodiesel
- The Council for Scientific and Industrial Research (CSIR) in South Africa has reported on a project which aims to develop a process for the production of biodiesel from algae.

Maize, the main staple food in Africa, has been excluded from the strategy mainly based on food security concerns and the global price increase.

Financial incentives

The biofuels industry is heavily subsidised by governments.

Financial support for biofuel production differs in various governments, for instance:

- US producers receive tax credits
- The Brazilian government offers financial support to biofuels stakeholders with tax incentives ranging from 32% to 100% depending on the fuel source and use
- Kenyan farmers have received an estimated US\$30,000 from the World Bank in 2001 for growing yellow oleander as a biofuels crop, in order to drive economic development.

In the South African Biofuels Strategy it is mentioned that clear policy regulations and incentives will be required for the development of a sustainable biofuels industry.



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State owned entities (SOE) such as the Central Energy Fund (CEF) and the IDC will invest in public private partnerships or play the role of investment consortium leaders. Small-scale farmers will be funded by financial institutions such as the Land Bank.

Social issues and capacity building

In countries such as Germany, people have been trained as laboratory personnel and quality assurance specialists for research purposes in pursuit of the goal of developing a biofuels industry.

In African countries, previously disadvantaged people, including women, have been given economic

opportunities by equipping them with relevant skills. For example, women in Ghana and Mali are currently using jatropha biodiesel for the production of shea butter and to produce soap from jatropha seeds.

South Africa

Contributing to AsgiSA, the South African government will ensure that training programmes will be implemented for capacity building of previously disadvantaged people to ensure that the biofuels industry becomes a driver of transformation and skills development, coupled with sustainable job creation.



	Other Countries	South Africa (SA)
Labour issues	Brazil - Since the development of the biofuels sector Brazil has experienced increases in the number of jobs created. The major concern however has been the quality of jobs (are they sustainable and will they result in more income for poor families, or merely extend their poverty?).	Biofuels has been identified as a key driver in AsgiSA for social and economic development.
Environmental issues	The Kyoto protocol obliges industrialised countries to pledge to reduce their greenhouse gas emissions by 2012.	Although the Kyoto protocol does not commit countries like South Africa to any quantifiable emission targets, there is potential for future low-cost emission reduction options. Biofuels projects may apply for carbon emission reduction credits via mechanisms such as fuel switching.
Land use and water resources	In some African countries it has been noticed that the cultivation of jatropha can reduce soil erosion and increase water retention. In the US maize has generally been rotated with soybeans to promote soil quality. In the USA it has been found that corn grown in drier areas will require more water and hence put pressure on already scarce water resources.	In South Africa a specific requirement for the Biofuels Industrial Strategy was to create a link between the first and the second economy, this meant developing areas such as in the former homelands, where agriculture was previously undermined, to a level that it will compete commercially. Irrigated crops such as sugarcane, which require a lot of water, will have to compete with other crops for the already scarce water resources.

In order for bioenergy markets to develop, a coordinated approach is needed by all countries to advance research and development, share information and resources and work multilaterally to advance the development of the biofuels globally.

The PUB programme is an initiative of the Department of Science and Technology and is implemented by SAASTA. The mandate of PUB is to promote a clear, balanced understanding of the potential of biotechnology and to ensure broad public awareness, dialogue and debate about biotechnology and its current and potential applications. For more information visit www.pub.ac.za or contact info@pub.ac.za, Tel: 012 392 9300 or Fax: 012 320 7803