



Workshop & business forum on sustainable biomass production for the world market

Potential of liquid biofuels for developing countries The rationale of the UNCTAD biofuels initiative.

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Background of UNCTAD's interest in biofuels

UNCTAD XI Conference, request to look for new and dynamic sectors of world trade, June 2004

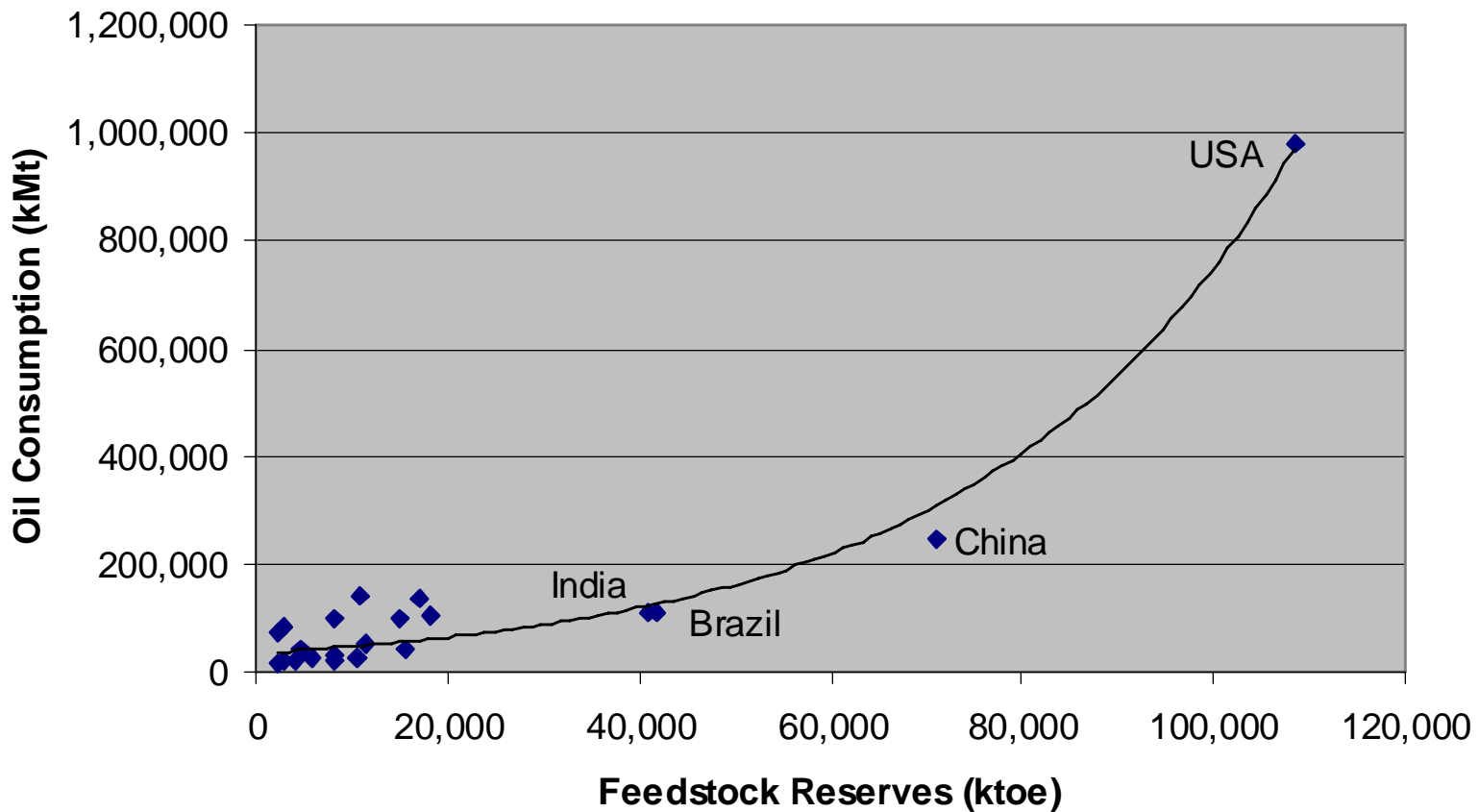
Expert Meeting on New and Dynamic Sectors, session on Biofuels, February 2005

Outcomes of the expert meeting presented at the Commission on Trade in Goods and Services and Commodities, March 2005, which asked for the development of pilot project.

Launch of the UNCTAD biofuels initiative in June 2005



Potential for biofuels



Potential for biofuels

Country	2001 Oil Consumption (kMt)	Feedstock Reserves (ktoe)	Feedstock Reserves / Oil Consumption
Pakistan	18,356	8,205	44.7%
Malaysia	24,505	10,684	43.6%
Brazil	110,304	41,859	37.9%
India	109,187	40,855	37.4%
Australia	44,126	15,517	35.2%
China	245,894	70,957	28.9%
Turkey	30,931	8,342	27.0%
Argentina	23,720	5,988	25.2%
Indonesia	53,850	11,509	21.4%
Ukraine	20,142	4,113	20.4%
France	102,657	18,404	17.9%
Colombia	14,159	2,495	17.6%
Canada	102,147	14,985	14.7%
S. Africa	22,912	3,068	13.4%
Russia	136,862	17,107	12.5%
Thailand	40,081	4,829	12.0%
USA	982,435	108,398	11.0%
Mexico	99,509	8,385	8.4%
Germany	140,731	10,965	7.8%
UK	86,208	3,016	3.5%
Spain	74,617	2,410	3.2%



Limitations for developing countries

Large feedstock production is not a sufficient indicator, owing to domestic food requirements (may not be necessarily true)

The size of the economy: its easier for larger economies to start biofuels production and expand their feedstocks reserves.

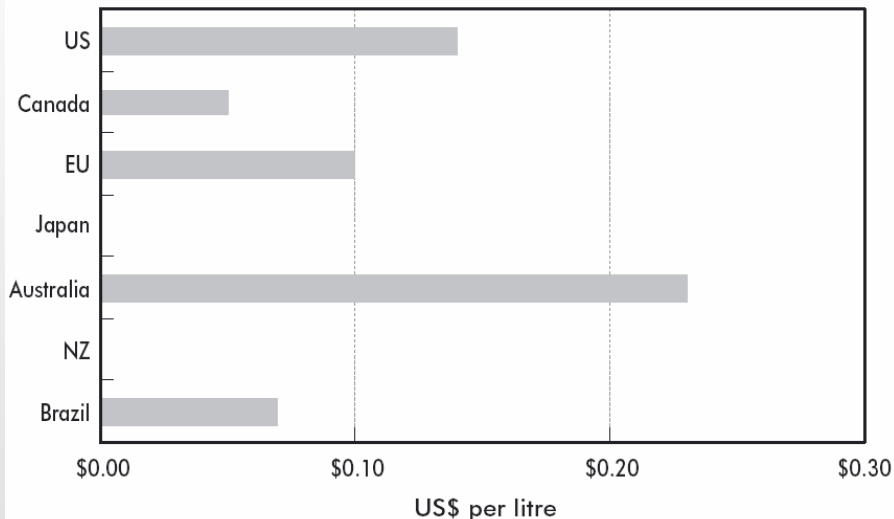
Market forces, and more specifically trade barriers for exports.

Technology transfer and need of infrastructure.

International trade is limited for developing countries

Many countries with domestic production levy high import tariffs on biofuels

Selected Ethanol Import Duties



Source: International Energy Agency

Many countries have production incentives and tax exemptions, what can distort international markets



International trade is limited for developing countries

Limited feedstocks will prevent liquid biofuels becoming a mainstream source of energy in all but a few countries

Brazil and USA experiences show that production and large multinationals companies will probably control international trade on biofuels

Regional trade agreements, such as EU-ACP, may change the nature of sugar trade, which can impact availability of sugar for biofuels

Market access and market entry issues in developed countries limit imports

Farmers lobby will probably put serious resistance to imports and will protect internal production.

The potential designation of biofuels as environmental goods under the Doha Round may impact the development of trade (actually far away on the agenda of the WTO)



Environmental impacts of biofuels in developing countries

Clear positive impact as a cleaner development path than using fossil fuel

Preservation of forest areas. For instance gel fuel replaces wood. Points to be mitigated because new plantation for biofuel feedstock may replace forest, ex: for palm oil.

Reduction of air pollutants: lead, CO, Greenhouse gas (São Paulo, Mexico and New Dehli)

Management of byproducts



Poverty reduction perspective

Employment ex. production of 350 million tonnes of cane in Brazil → 700,000 direct jobs and 3.5 million indirect jobs

Access to energy especially for poor communities and remote ones

Infrastructure building : embryonic electricity grid

Education: access to after daywork learning activities

Economic aspects

Provide farmers - diversification opportunities

- possibility of arbitrage \Rightarrow stabilize their income
- less oil dependence

A way to lighten the energy bill and to reduce oil dependence, especially for net crude oil importing countries

Production in developing countries can be cost competitive against fossil fuel

Rationale of the initiative

1. International trade of biofuels could be limited to a few developing countries
2. For developing countries, especially LDCs, the main justification to produce biofuels lie elsewhere:
 - Diversification of agricultural production and its economic benefits
 - Diversification of energy sources and lower oil dependence
 - Development of energy policy and providing access to energy
 - Environmental benefits
 - Contribution to poverty reduction



First activities of the biofuels initiative

National studies in:

- India
- Philippines
- Thailand
- Dominican Republic
- Kenya
- Uganda
- Tanzania
- Brazil (Castor oil as a source of biodiesel)

1. Assessment of the potential to start biofuels in selected countries
2. Development of national strategies
3. Identification of market access and market entry issues in order to enhance trade competitiveness of large biofuels producers among developing countries



Financing biofuels production projects in developing countries

Need high upfront investment (plant, local electricity grid, etc)

Gap between the capital the bank is willing to invest and the guarantees provided by the project sponsor

Structured finance help reduce the perceived risks by the banks:

- Feedstocks supply availability / variability (weather risk, other production risks)
- Resource price variability
- Non reliable demand

Some solutions exist:

- Existence of a « Power Purchase Agreement » (PPA)
- Long-term provision contract of feedstocks
- Development of insurances schemes to cover other risks



Receivables-based finance

Receivables consists of contractual obligations within the value chain which can be used either as security or for meeting financial obligations.

Example in Andhra Pradesh, India, to stimulate the biodiesel production from jatropha seeds.

One small company funded a jatropha processing plant and the campaign finance for several smallholder jatropha plantations.

Receivables used were forward contracts with railway and trucking companies for the sale of the biodiesel to be produced and with farmers for the delivery of the jatropha seeds.

With this, the company was able to finance a US\$ 4 million processing plant.



Clean Development Mechanism: a way to better secure financing schemes

CDM is a policy where a project sponsor can receive Carbon Emission Reduction (CER) certificates against his investment in a GHG reduction project in developing countries (Non-Annex I Parties of the Kyoto Protocol).

CERs can serve as receivables, they can be sold, pledged or used against their GHG reduction commitments

CERs are normally sold under 7-10 years contracts- the financier can take security on 7 to 10 years future receivables flows.



Clean Development Mechanism: a way to better secure financing schemes

Example in a palm oil processing complex in Malaysia.

A year, 570,000 liters of diesel are burnt to power the ten palm oil mills, the refinery and the palm kernel crushing plant (cost of US\$ 2 million)

Replacing the diesel generator by electricity generated from burning empty fruit bunches, cost of US\$ 10 million.

Reduction of CO₂ emissions from burning diesel and of CH₄ from rotting fruit bunches in the fields. The company will have to demonstrate the reductions in order to benefit from the CDM.

Estimates: reduction of 36,000 tCO₂e from rotting bunches + substitution of diesel.

At a conservative estimate of US\$ 10 /t: US\$ 360,000 cash flows a year



Financing component of the initiative

Development of tool kits for project developers

- Identification of biofuels project eligible for CDM
- Assessment of projects
- Designing project for being presented to the CDM executive board

Development of e-learning courses

- On biofuels and climate change
- On CDM
- On structured finance

European Union

- Proposal in 2003: 2% blend by 2005 and 5.75% by 2010
- Set aside program of agricultural land equivalent to 2.5% of replacement of gasoline.
- Blending exist with ETBE and biodiesel
- Biofuel production is not cost competitive with fossil fuel

Policies in Europe are not incentive enough, mainly because the cost of production is much higher than the cost of conventional fuel.



International aspect of our projet

No international focal point where to address questions

No authoritative reference

1. Creation of an **international advisory group**, independent, composed of international recognised experts

2. Creation of a « **hub** » about biofuels containing:

- A centre of information for countries
- A place for consultation among organisations dealing with biofuels
- Forum for exchange



The three activities of the UNCTAD Biofuel initiative

1. National assessments and implementation strategies
2. Development of toolkits to prepare CDM eligible projects and e-learning courses.
3. Creation of an international advisory expert group, an international center for consultation and an international policy dialogue on biofuels

<http://www.unctad.org/ghg>



THANK YOU