

Biofuels: ACP's response to fossil fuel dependence

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BIOFUELS

- Products from biological origin
 - *Liquid biofuels* - ethanol and bio-diesel
 - *Solid biofuels* - woody biomass, bagasse
 - *Gaseous biofuels* - biogas, from digesting organic waste



WIST 2008

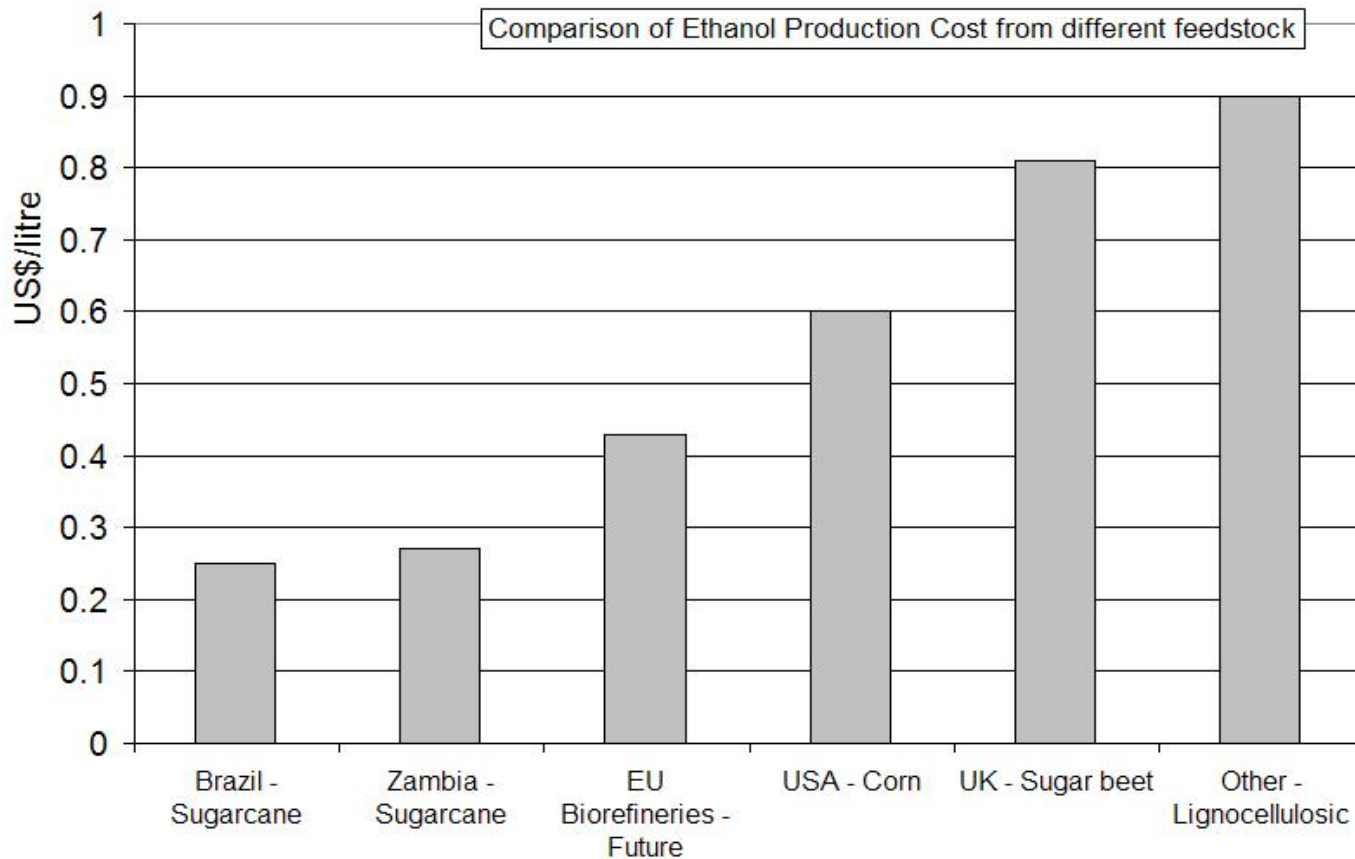


Economics

- Economies of scale are crucial
- Close examination of the long term market potential to minimize the risks

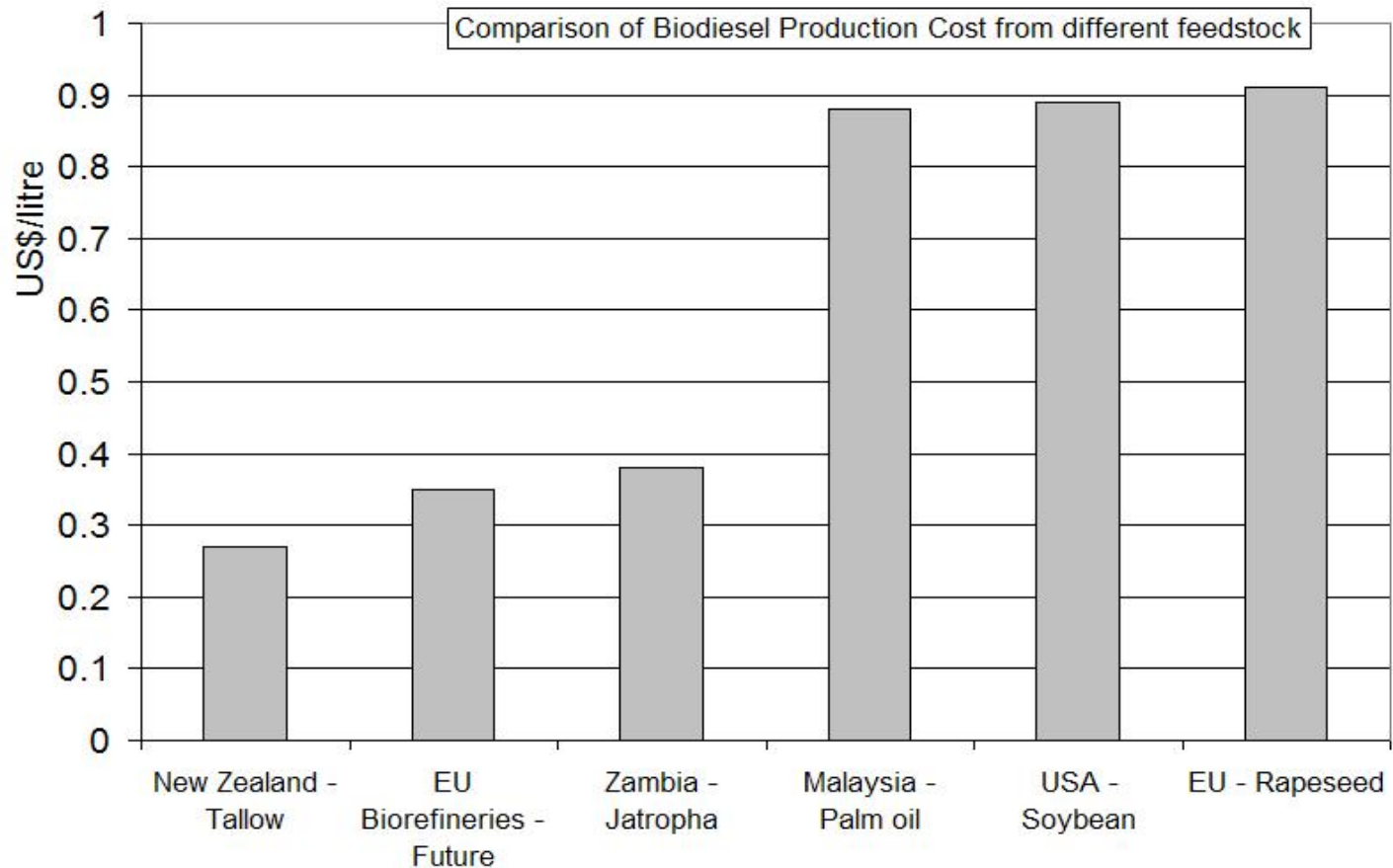
Production cost of ethanol in selected countries

(Source IEA 2004 Energy Outlook, CEEZ 2006)



Production cost of biodiesel in selected countries

(Source IEA 2004 Energy Outlook, CEEZ 2006)

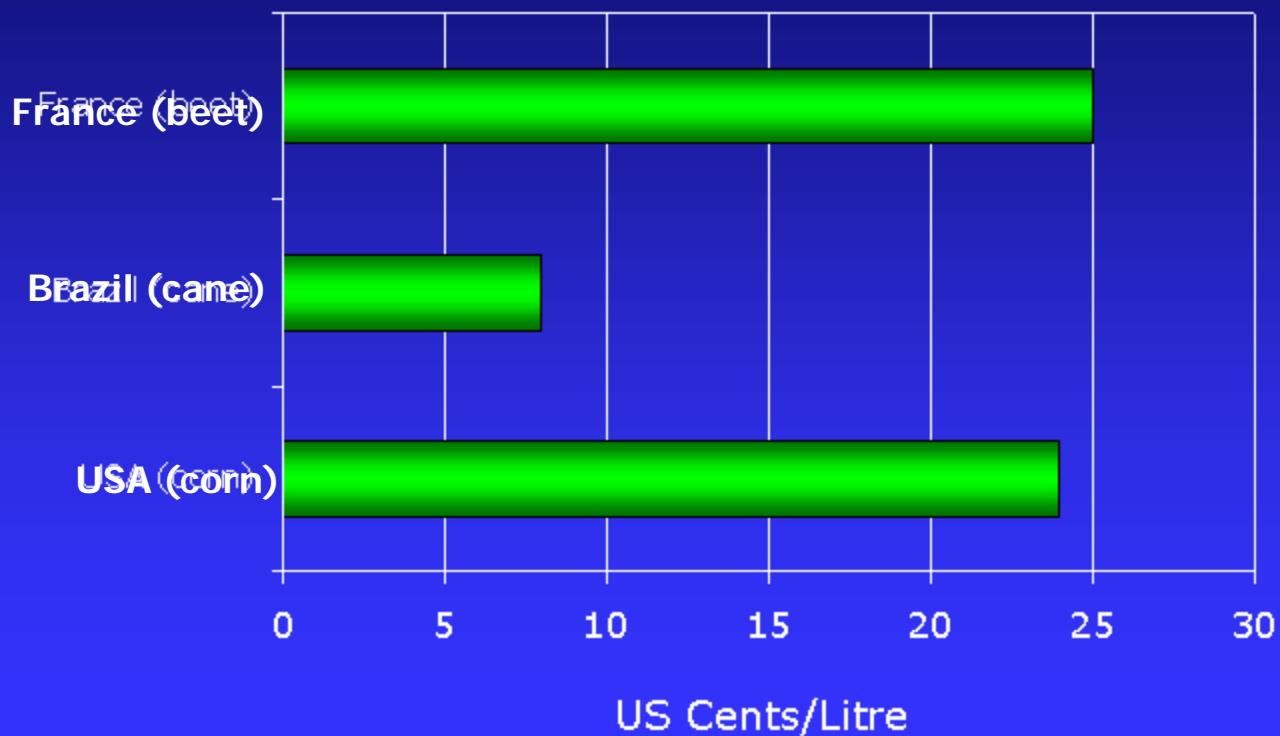




Feedstock

- Market prices of feedstock and fossil fuels
- Availability of feedstock in sufficient quantities at reasonable prices
- Knowledge and capacity to select the appropriate feedstock and technology

Gross Feedstock Cost Per Litre Of Ethanol



Greenhouse gas savings of different biofuels compared to their fossil fuel comparator

Type of biofuel	GHG savings (%)
Biodiesel from: PALM OIL	53 %
RAPESEED OIL	51 %
SOY	29 %
Ethanol from: SUGAR CANE	89 %
WHEAT	49 %
BEET	40 %

Restructuring





Standards

- For use of biofuels – NO national standards
- Not recognised fuel or fuel blend
- Unacceptability of biofuels, makes the industry unattractive to investors and venture capitalists
- ACP countries can adapt established standards from EU, Brazil, Philippines, and Malaysia.
- Standards for pure plant oils in adapted engines in transport and power generation



Fuel Blending

- Biofuels can completely displace the fossil fuels
- Generally simpler to blend E10 or B10
- Legislative framework to provide incentives to encourage oil distribution companies, car manufacturers, entrepreneurs, farmers to invest

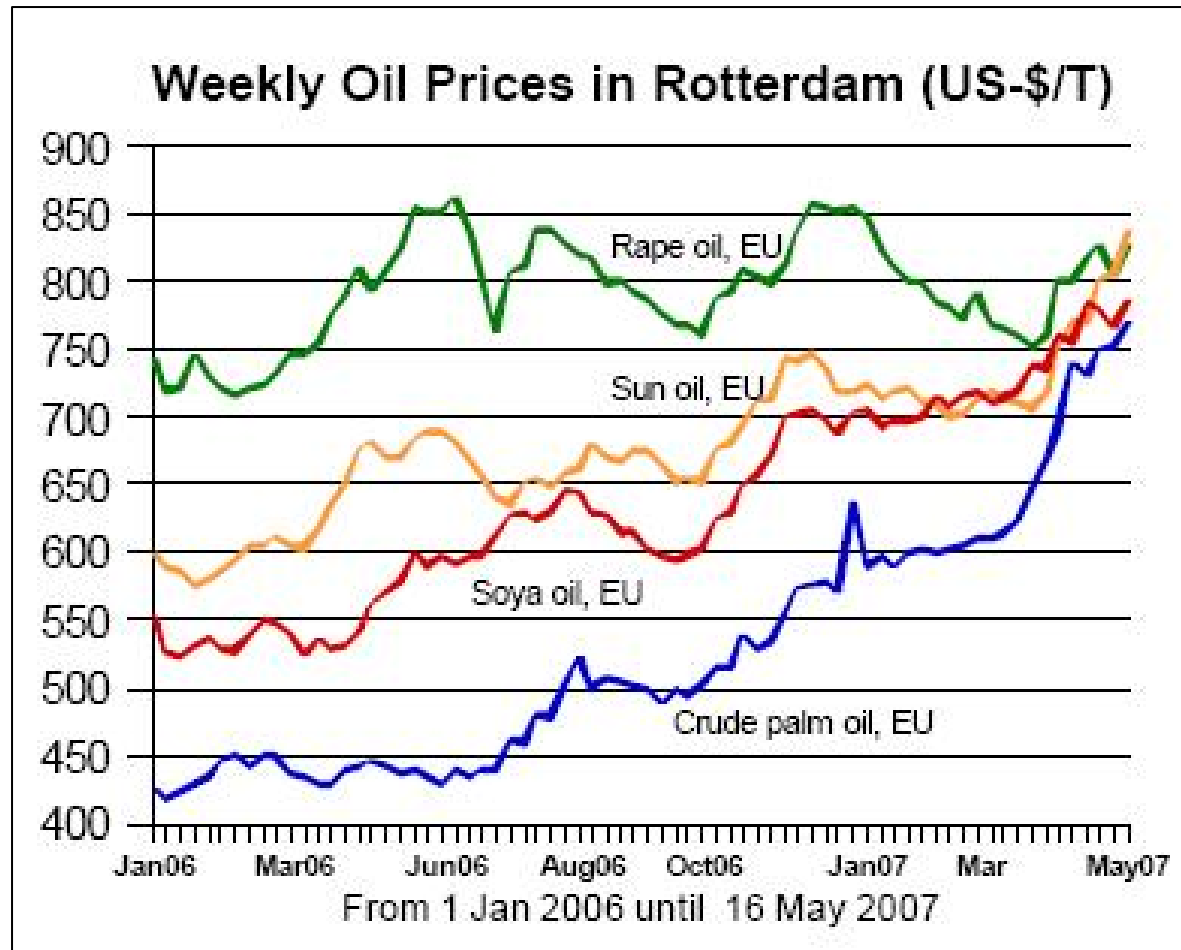


Trade

- Rapid increase in international trade in biofuels and feedstocks resulting in a great increase in vegetable oil prices, negative impacts on viability of biofuel and food prices
- Need for increase in production capacity
- Right sizing of the industrial complex
- Examination of export taxes, transport charges as well as import duties

Vegetable Oil prices

(source OilWorld, May 2007)





Policies

- Updated energy policies - renewable energy
- Policies in energy, agricultural and rural support to promote the use of biofuels
- Policies should address legislation, standards and tax incentives
- To ensure improved income of farmers
- Issue of biofuels and other alternative fuels in a more holistic way, so as to optimise the total net benefits on a national level



Policy Coherence

- Coherence between policies of different Ministries and Government Departments affecting the production of biofuels
- Coherence between national policies and those of EU to ensure that there are no barriers to export trade



Socio Environmental Issues

- Conflict between using land and water for growing crops for food, livestock feed and biofuel, rearing livestock, aquaculture
- Unsustainable production - destroying tropical forests
- Improved efficiencies in land and water management practices
- Soil fertility management - removal of crop residues- impact on soil structure -, promote erosion - affect eco-system sustainability



Socio Environmental Issues II

- The potential of biofuels in poverty reduction appears to be significant, it is also fragile
- Use marginal lands to grow crops such as jatropha
- Stringent management is necessary to achieve high productivity
- High prices of fertilisers and improper agronomic practices

The role of Science

Technology and Innovation

- To increase availability and improve quality of feedstock - characterisation and optimisation of feedstock life cycle
- Economic analysis of the productivity and suitability of the various feedstock
- Technological options for conversion should provide direction towards cost-effective solutions



The role of Science Technology and Innovation II

- GIS technology to identify feedstock availability
- Harvesting and storage of the raw material
- Improvement in dehydration /compaction
- Use pure plant oil applications in adapted engines
- Alternatives to esterification
- Logistical issues for transporting biofuels



The role of Science Technology and Innovation II

- Compatibility with the existing infrastructure, equipment capacity and capability
- National biofuel quality standards may require adaptation to suit local requirements
- Greater investments in research and developing human capital and physical infrastructure are required



Sustainable biofuels industry

- Sustainable use of land and water
- Maximum biomass production (integrate into existing farming systems)
- Efficient Conversion Technologies, process optimisation
- Stringent waste management (recycling)



Sustainable biofuels industry II

- Standardization and certification
- Compliance, enforcement and accountability
- Legislation (emission control, land use, trade)
- Auditing tools, Life Cycle Assessment
- Much greenhouse gas savings



Recommendations

- National Biofuel Strategies
- Institute Legal and regulatory framework
- Promote integrated agro-energy farming policies
- Support ACP Biofuel Research



Conclusions

- ACP countries have a comparative advantage - natural endowment – climate, arable land and water resources
- National strategies to ensure benefits accrue to the producer countries



Conclusions II

- ACP countries must advance the sustainable production of biofuels increasing the competitive state of the agricultural sector
- ACP Governments must act and increase investment for sustaining science, technology and innovation infrastructure by building human resource capacity and physical infrastructure



Conclusions III

- Through policy coherence for development (PCD), which highlights the EU's commitments to improving the effectiveness of development assistance, ACP national governments should be able to access policy, budgetary and technical support in the areas of environment, energy, and agriculture and food security (COM, 2008).



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THANK YOU