



**BIOENERGY POLICIES WORLDWIDE:
MANAGING RISK AND PROMOTING
OPPORTUNITIES**

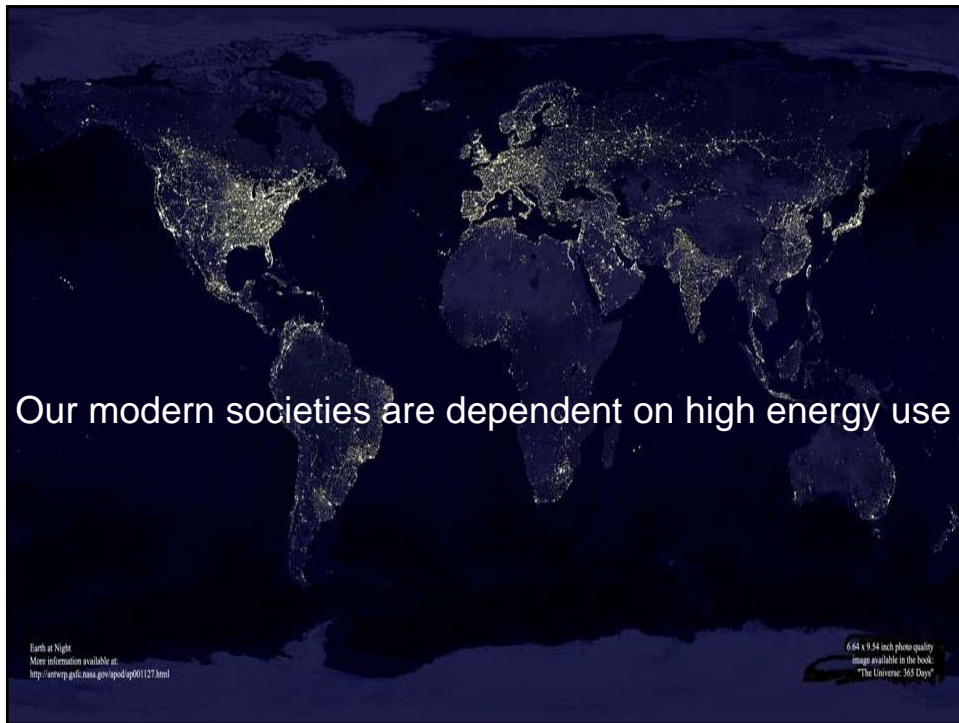
Jeffrey A. McNeely
Senior Science Advisor IUCN
Presented to
7th International Biofuels Conference
New Delhi, 12 February 2010

Soybeans in Brazil. Greenpeace Photo

**Converting food crops
into biofuel “is a crime
against humanity.”**

**Jean Zeigler, United
Nations Special
Rapporteur on the Right
to Food, October 2007**







A Major New Challenge

Petroleum, which has driven modern industrial society, may have reached its maximum production and prices are likely to increase steadily in the coming years



How will the poor adapt to more expensive oil?

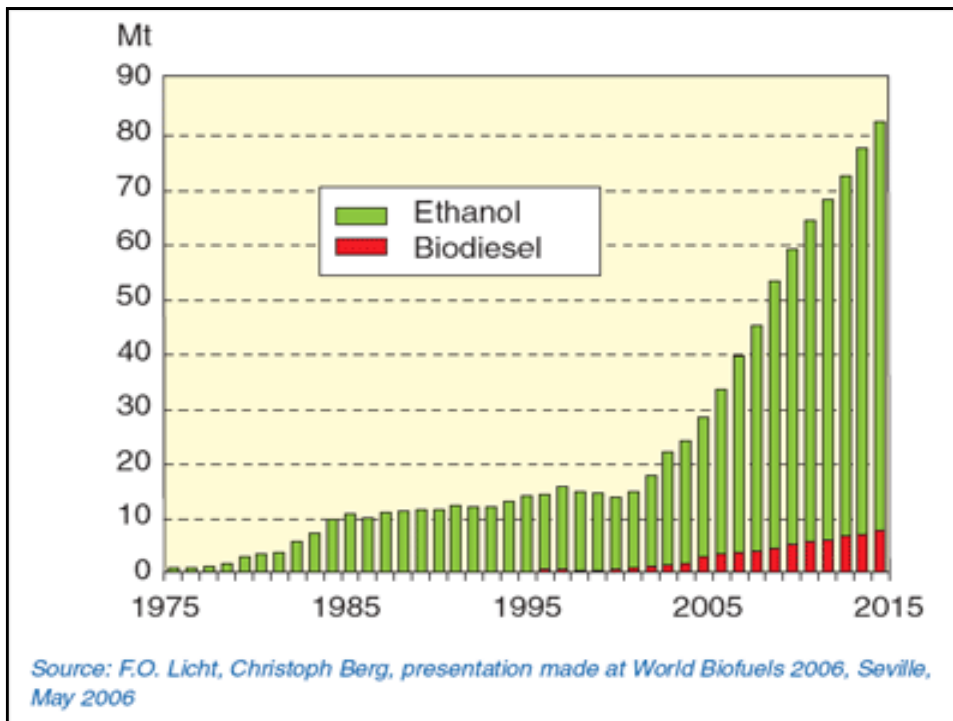
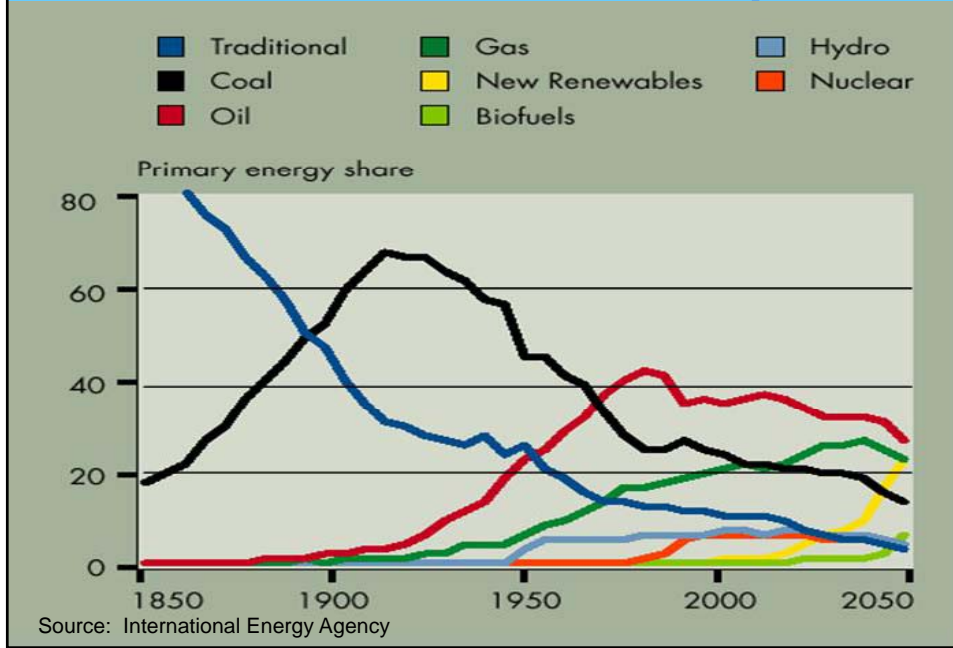


A post-petroleum future?

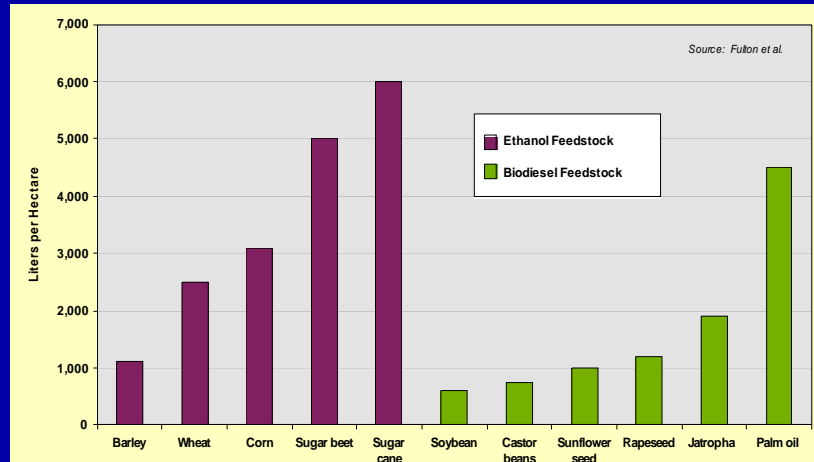


This Ferrari F430 runs on biofuel

We need to look at all the options



Biofuel yields of selected first generation ethanol and biodiesel feedstock (l not c)



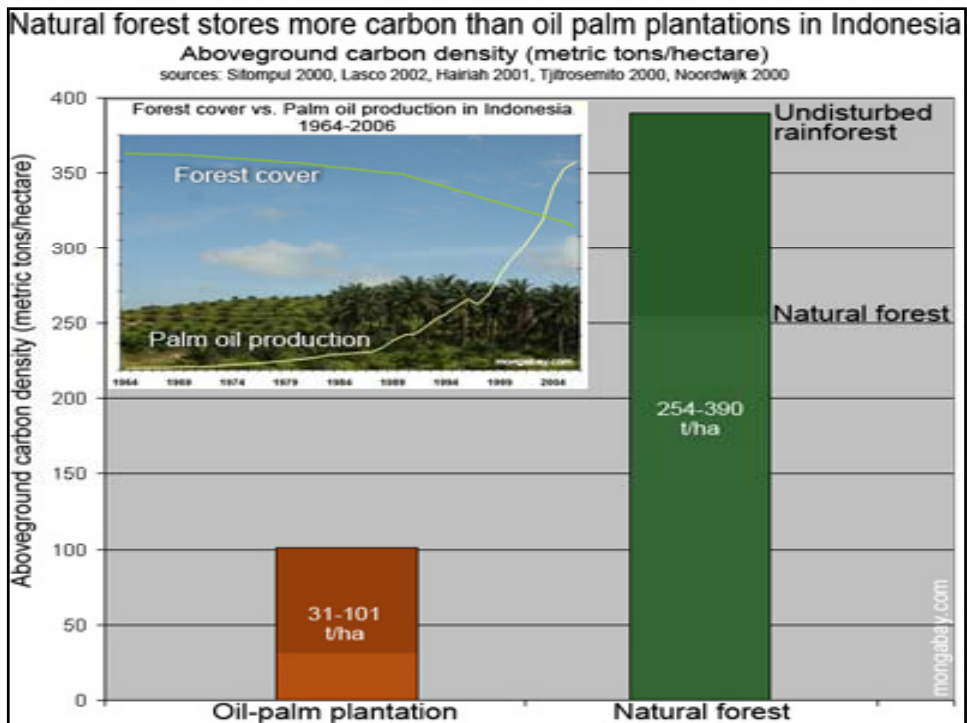
2000-2005, Indonesia planted 1.6 million ha of oil palm, with US\$110 million in government subsidies. 9.8 million ha of forest were lost.

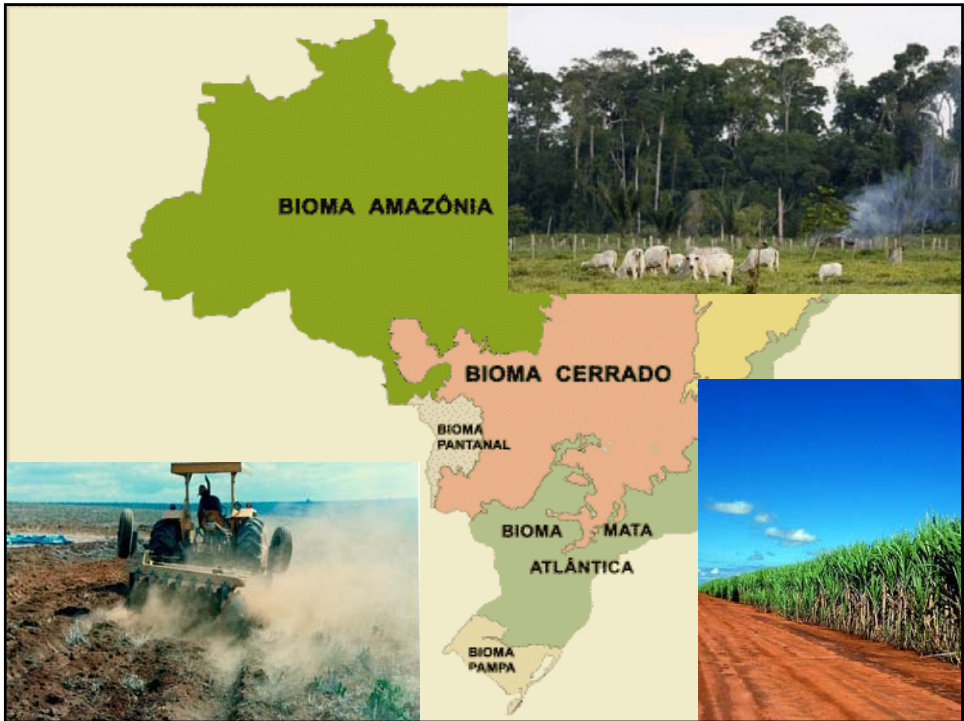
The flowchart illustrates the lifecycle of oil palm products, starting with **Deforestation** and **Monoculture** (oil palm plantations). This leads to the use of **Pesticides** and the processing in an **Oil Mill**. The mill produces **Refined Oil**, which is then used in a **Refinery** to create **Fatty Alcohol Plant** products. These products are used in a **Surfactant Factory** to produce **'Ecofriendly', Vegetable-based shampoo or cleaning product??'** and in **Plastics Manufacture**. The process also involves a **2000 Mile Journey** to **Petrochemicals**. The background features a satellite map of Indonesia and a photograph of a forest fire.

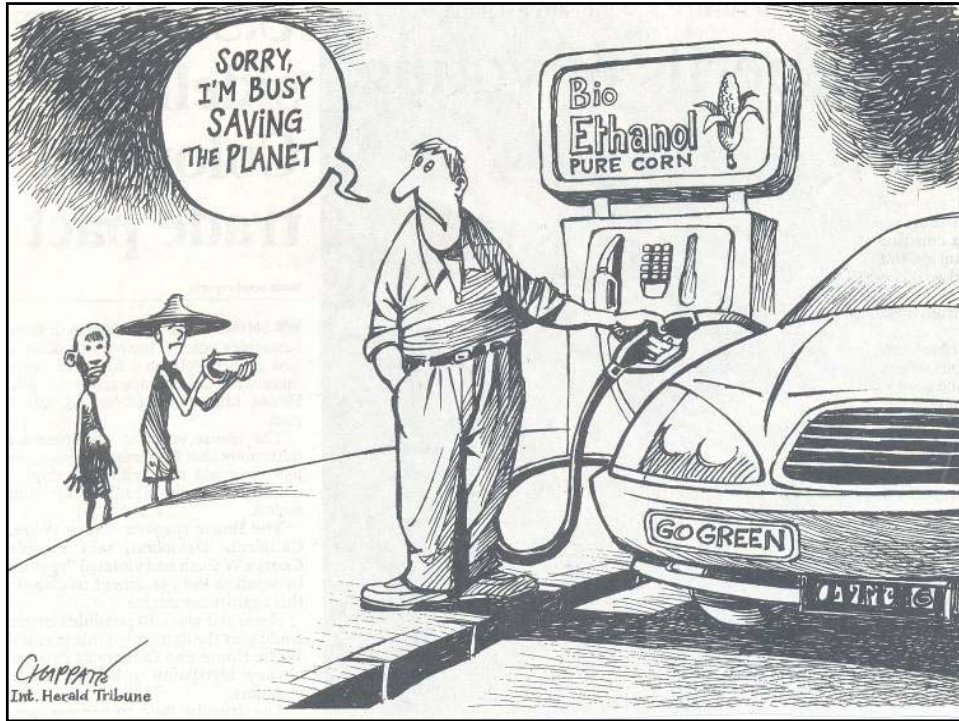
Forest growing on peat soils in Indonesia are burned to make way for oil palm plantations

Releasing more carbon than will ever be stored by the palms

Source: UNEP







The European Commissioner for Agriculture cancelled subsidies for set-asides in 2008, because of demand for biofuels. The EU has mandated that biofuel must provide 5.6% of transport energy by 2010.

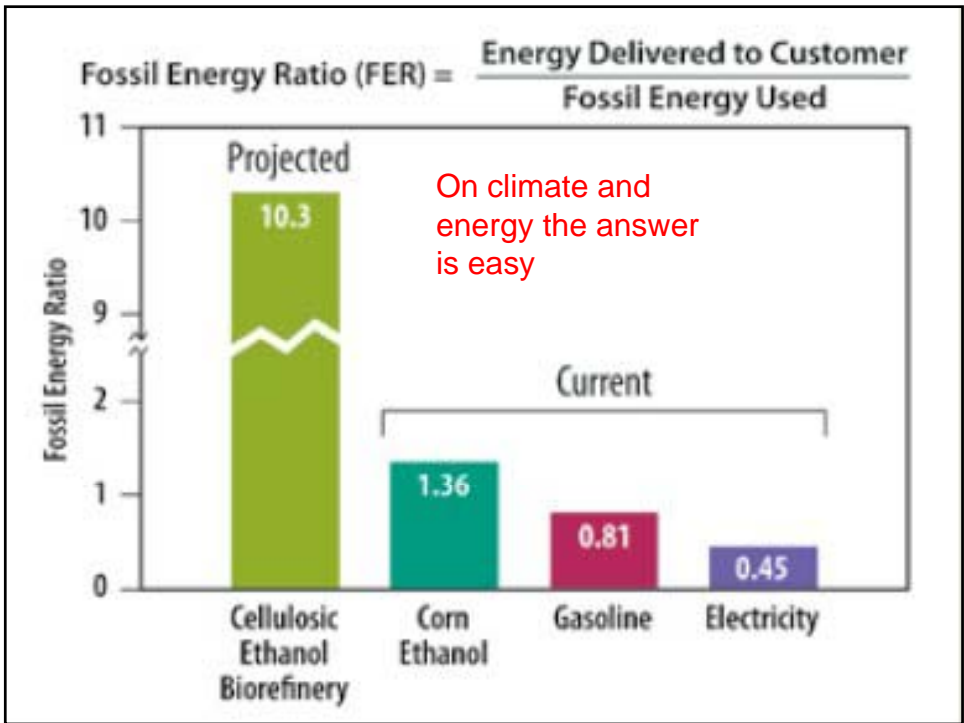


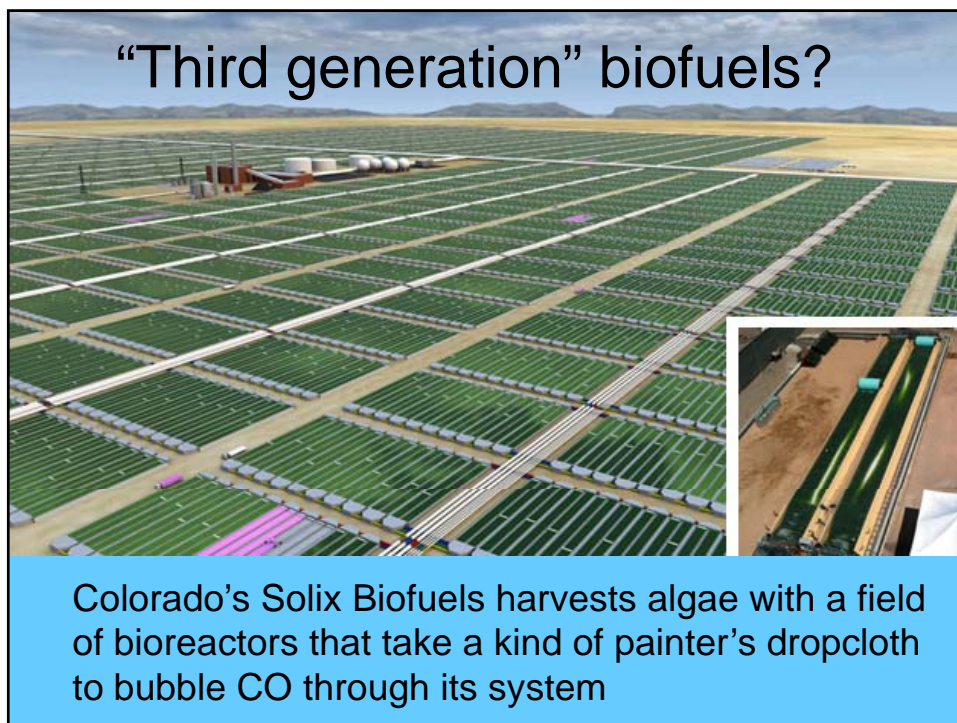
Policy may have gotten ahead of science

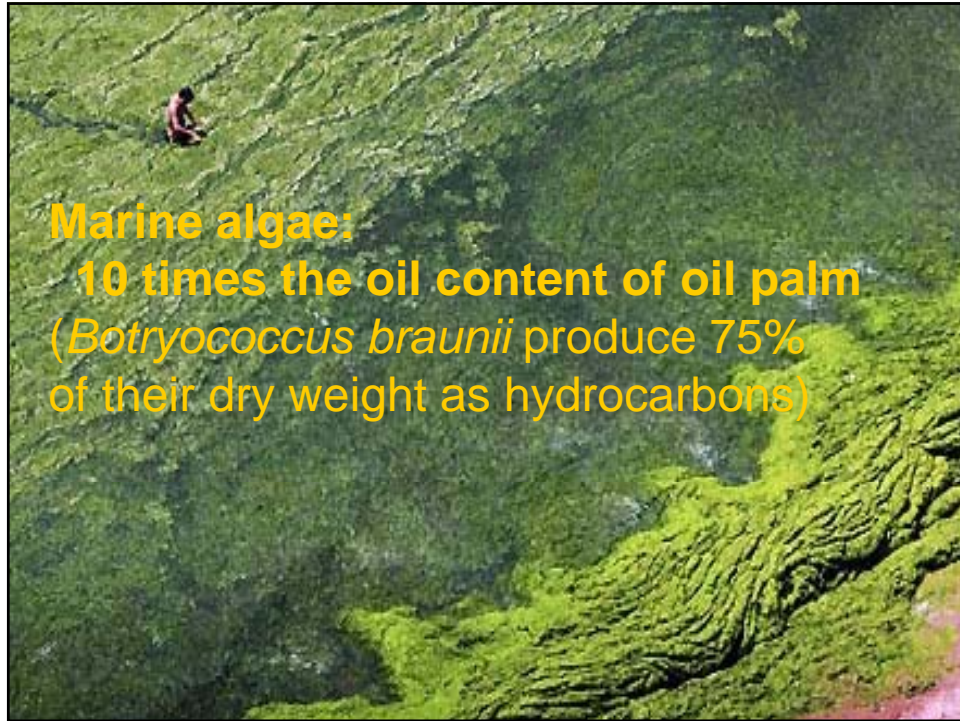
“Second generation” biofuels

produced from agricultural waste, wood and grasses







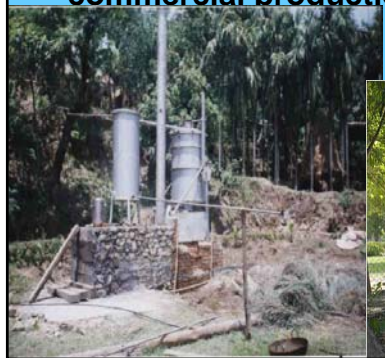


Three main systems of biomass production for energy

System 1. Small-holder production for local use

System 2. Small-holder production with commercial processing

System 3. Medium- and large-scale commercial production



System 1. A multifunctional landscape with bioenergy potential



System 2. Canola in France is often sold commercially by smallholders



System 3. Corn and sugarcane are often grown commercially for external markets



Biofuel plant in the Everglades



International Risk Governance Council

Project on Risk Governance Guidelines for Bioenergy Policies



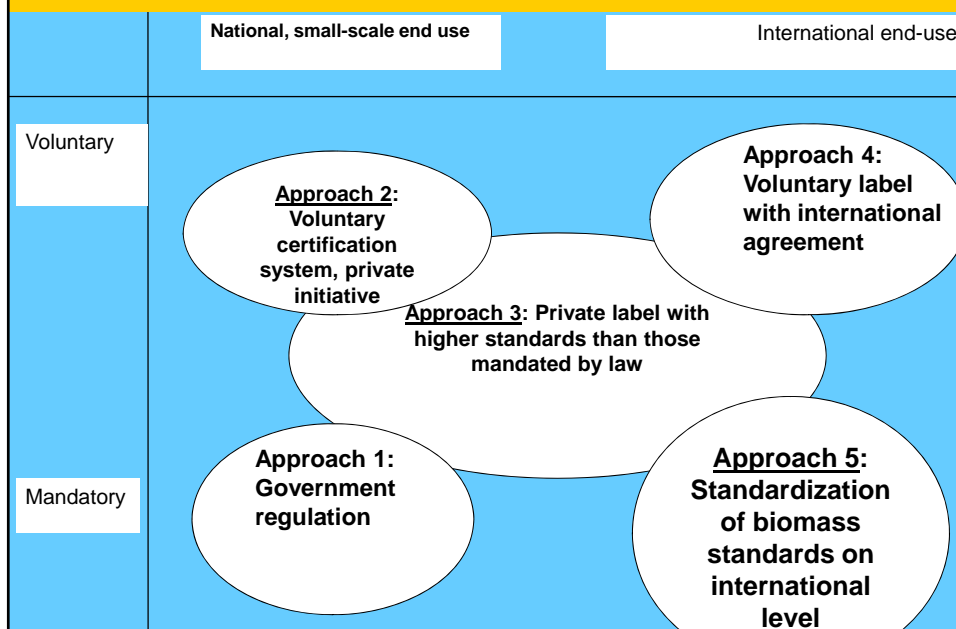
Policy Conclusions:

Industrialized countries and major exporters of bioenergy among developing countries should encourage the development of bioenergy only where it can be demonstrated that doing so will reduce GHG emissions throughout the entire life-cycle;

Other developing countries should develop bioenergy that primarily benefits local livelihoods through the provision of affordable, safe and more efficient heat, electricity and fuel for transportation, and to support wider sustainable development goals that do not, in doing so, jeopardize food security.

www.irgc.org

FAO's Suggested Approaches to Implementation of Sustainable Biofuels Policies (Dubois, 2008)



Some policy recommendations

- **Governments:** Gain clear understanding of economic, environmental and social impacts of bioenergy production & trade before making policy
- Governments: conduct risk **assessment of comparative advantages, land availability and food security impacts of energy options**
- Governments: encourage **investment on better environmental technologies and practices for all renewable sources of energy**
- Governments: Ensure that **policies include small producers**

Some more recommendations

- Do not expect bioenergy to be a main source of energy – conservation remains the best policy.
- Use overall land use plans as the basis for planning bioenergy production at the landscape scale.
- Avoid using food crops for biofuels
- Accelerate research and development on second and third generation bioenergy.