UNEP’s approach to bioenergy

UNEP is working with governments, the private sector, NGOs and UN sister agencies on:

• sustainability criteria and certification options
• bioenergy planning: research and tools to provide decision-makers in governments and the private sector with appropriate information
• development benefits: creating markets and developing sustainable business models for renewable energy development in developing countries
Energy underpins economic activity, enhances productivity, and provides access to markets for trading purposes (transport).

Contribution to energy security by diversifying sources, increasing the number of producing countries and a potential to ‘homegrow’ energy lowering import bills which are particularly a drain on developing country budgets.
potential benefits - climate change

Stern report: cost of inaction will exceed cost of mitigation

IPCC report confirms the need to dramatically reduce CO2 emissions

GHG reduction potential varies from crop to crop and with agricultural practices, conversion processes and end-use practices; LCA necessary
potential benefits - development

expanding energy access in developing regions:
eliminating energy poverty; reduced health impacts
from indoor air pollution

revalorizing agriculture:
improved productivity and incomes
(incl. trade opportunities)

powering secondary industries, businesses,
infrastructure:
economic diversification, growth and sustainability
potential risks

- increased GHG emissions, exacerbating climate risks, particularly impacts on vulnerable regions and people
- loss of biodiversity, which provides the basis for ecosystems and the services they provide

due to
• direct land use changes
• indirect land use changes
potential risks

Food security: Availability
Accessibility
Stability
Utilization

Land tenure: transparent, consultative and participatory processes that involve all relevant stakeholders

Labour conditions: human rights/ILO standards/ decent work and well-being

- competition for water (food production, drinking)

agriculture currently uses 70% of the world’s (85% of the developing world’s) fresh water, and climate change impacts will create further pressure in areas that are already suffering from droughts
need for good planning and management

- Choice of the area (‘no go areas’, e.g. PA, HCVA; ‘no regrets’, e.g. marginal land)
- Choice of the crop (adapted to local conditions and needs)
  - Biophysical: Climatic conditions, Water availability, Soil quality
  - Structure and growth potential of ag sector; Crops, Trade flows
  - Climate change Impacts – Adaptation potential
- Good agricultural practices (water, soil, new technologies, methods serving double purpose)
- Choice of the end use (local – national – international markets)
  - basic energy needs (Cooking, heating, lighting)
  - transport fuel
  - productive energy
- Involvement of local communities in planning, production (business models incl. equity, outgrowers concepts) and use
tools to ensure social and environmental benefits materialize

• appropriate policies, institutional and legal frameworks
  - Bioenergy plans, developed involving different ministries (agriculture, energy, environment, transport, economics, trade)
  - Water conservation and protection
  - Biodiversity conservation
  - Climate regime
• enforcement of environmental laws and regulations
• institutional capacity building

• internationally agreed system (standard, certification) to ensure sustainability of biomass intended for biofuels production
• harmonised methodology for LCAs for biofuels
• land use mapping
• ecosystem service values / internalizing externalities / cost benefit analysis taking into account co-benefits

• near-term research involving developing countries
• technology transfer (N-S-S)
Martina Otto
Head, Policy Unit, Energy Branch
United Nations Environment Programme

15, rue de Milan
75009 Paris

martina.otto@unep.fr
www.unep.fr/energy/act/bio