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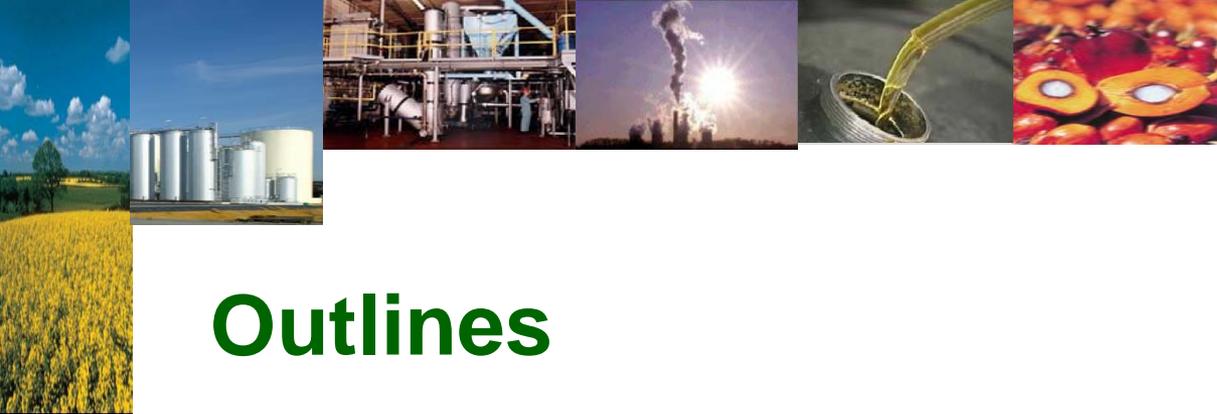
UNITED NATIONS
INDUSTRIAL DEVELOPMENT
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UNIDO and Sustainable Bioenergy

Industrial Development Perspective

IEA Bioenergy Task 29/38/40 Expert Consultation
25-26 Oct. 2007, Dubrovnik Croatia

Fatin ALI MOHAMED
Energy and Clean Production Branch
UNIDO



Outlines

- UNIDO mandate & Bioenergy
- Example of UNIDO bioenergy interventions
- Present Bioenergy issues -International debate
- UNIDO response
- Concluding remarks



UNIDO- Key Facts

- ❑ UN Specialized Agency since 1986
- ❑ Lead role within UN system on industrial development
- ❑ Constitutional mandate to promote sustainable industrial development in developing countries and countries in transition
- ❑ Focus on technical cooperation: policy advice, institutional capacity-building and business development services



Long-term Goal

To contribute to the achievement of the Millennium Development Goals (MDGs), in particular to **poverty eradication through sustainable industrial development.**

Thematic Priorities

Poverty reduction through productive activities

Trade capacity-building

Energy and environment

Programme Components

- Industrial Policy, Business Environment and Institutional Support
- Rural and Women's Entrepreneurship Development
- SME Cluster Development
- Agro-processing and Value Chain Development
- Rural Energy for Productive Use
- Sustainable Production in Poor Communities
- Technology Diffusion
- Promotion of Domestic Investment, FDI and Alliances

- Enterprise Upgrading for Trade Enhancement
- Competitiveness Analysis and Trade-related Policies
- Innovation Systems, Technology Management and Foresight
- Modernization of Export-oriented Agro-industries
- SME Export Consortia
- Corporate Social Responsibility for Market Integration
- Standards, Metrology, Testing and Conformity

- Renewable Energy
- Climate Change and Industrial Energy Efficiency
- Cleaner and Sustainable Production
- Water Management
- Montreal Protocol
- Stockholm Convention



UNIDO's involvement in Energy Programmes include:

- ❑ Energy Efficiency– SMEs and Climate Change Issues
- ❑ Providing access to affordable Energy Services in rural areas
 - Focusing on Energy for Productive Use and
 - Renewable Energy Technologies, where possible



UNIDO and Bioenergy

- ❑ The fact is that **biomass widely used** as source of energy in most of UNIDO Member states, eg, 75%-95% of energy consumption in sub-Saharan Africa, with low efficiency and mostly informal sector though
- ❑ Also **developing countries** and countries in transition have **high potentials for biomass production**, wood and energy crops.



An example of BioEnergy interventions: providing access to energy

UNIDO has a long history of assisting MS to increase the share of modern energy from biomass in the total energy consumption, such as:

- ❑ The production of **briquettes and charcoal** from cotton stalks in Sudan, to be used in **kilns and bakeries** replacing firewood and preserving the shrinking forest





Multi Functional Platform – Energy for Poverty Alleviation- Energy access-with Jatropha oil as option

Multifunctional Platform



Grain grinder



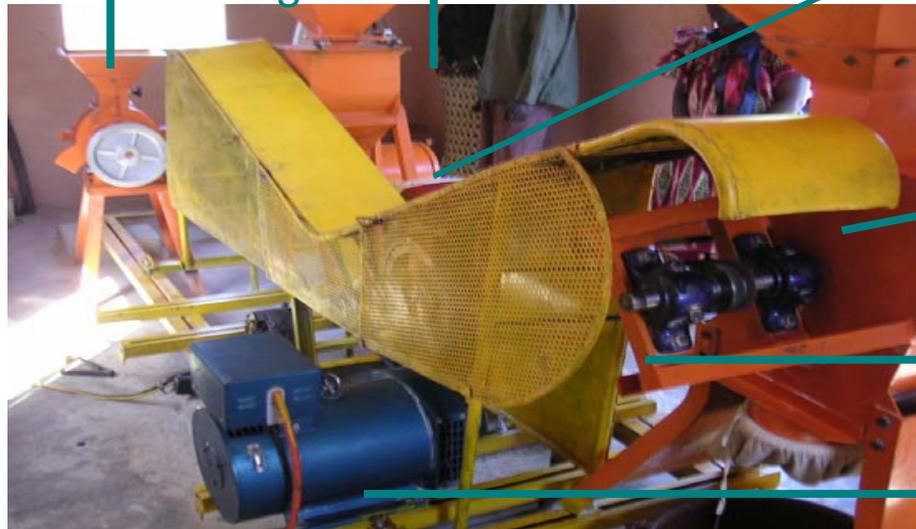
Dehusker



Engine



Grinding mill



Battery charger

Alternator 220V + water pumping



The Concept

The MFP provides an **appropriate solution** to the constraints of rural areas. It is owned & managed by women trained by the project.

- A **simple diesel engine** that can power different tools
- Provides access to **affordable, simple & modern energy** services
- Saves time & energy which can then be devoted to **income-generating activities, education, health & child care**
- Could use **jatropha oil** instead of **desiel**





UNDP funded project of ~US\$ 900.000

- **Installation...**48 MFP in villages on a costs sharing Beneficiaries-Project
- **Training...**50 mechanics, 44 millers, 58 rural artisans and 58 metalworkers
- **Monitoring...**Technical and management monitoring (twice monthly)

Impacts

- ✓ Higher school attendance
- ✓ Empowering women- MFP owned and managed by them
- ✓ Improved health & education conditions, due to potable water and electricity supply
- ✓ Creation of income and permanent jobs (3/MFP)
- ✓ Higher product quality of food processing and less wasted materials





Multifunctional platform approach: to provide the poor population in isolated areas access to an affordable, simple source of energy.

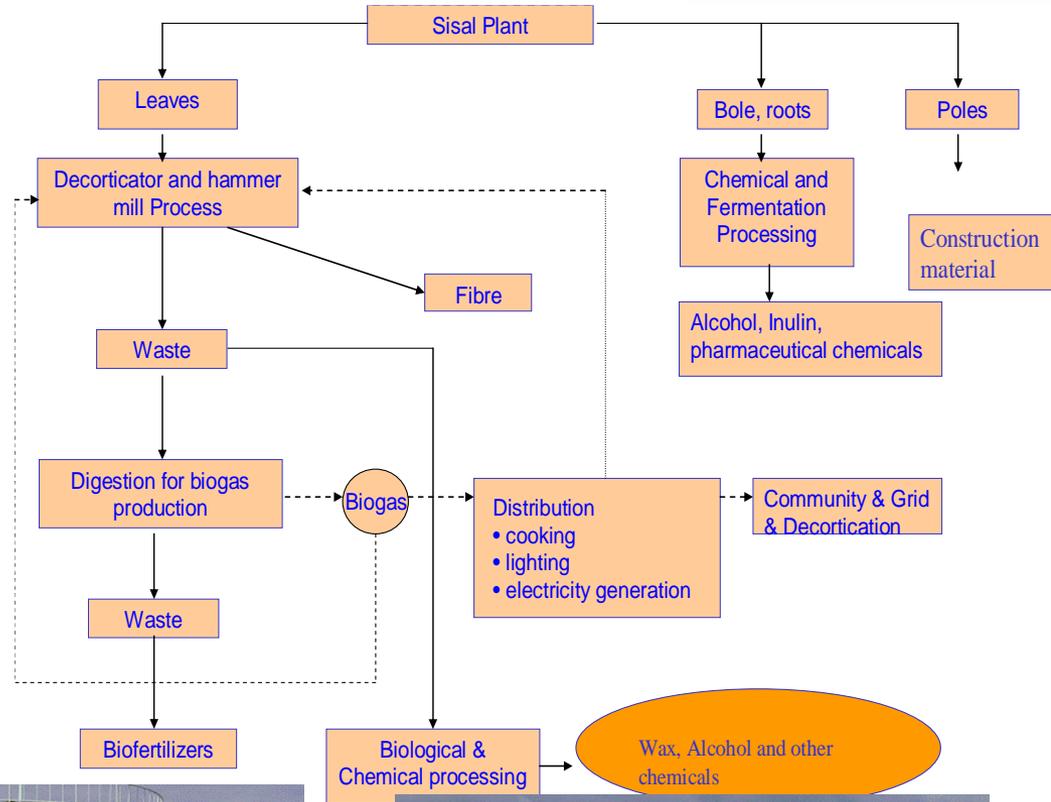
Constantly updating and improving the approach: reinforcing the MFP's economic durability and environmental impact through optimising the economical and energy balance performance and promoting revenue-generating activities.

MFP implementation experience: in Mali, Senegal, Guinea and Burkina Faso from 1993 until today.



An example of BioEnergy interventions

□ The production of biogas in Tanzania from Sisal waste and use it as energy source for the processing Sisal





....in fact the project is about market development of sisal and its products





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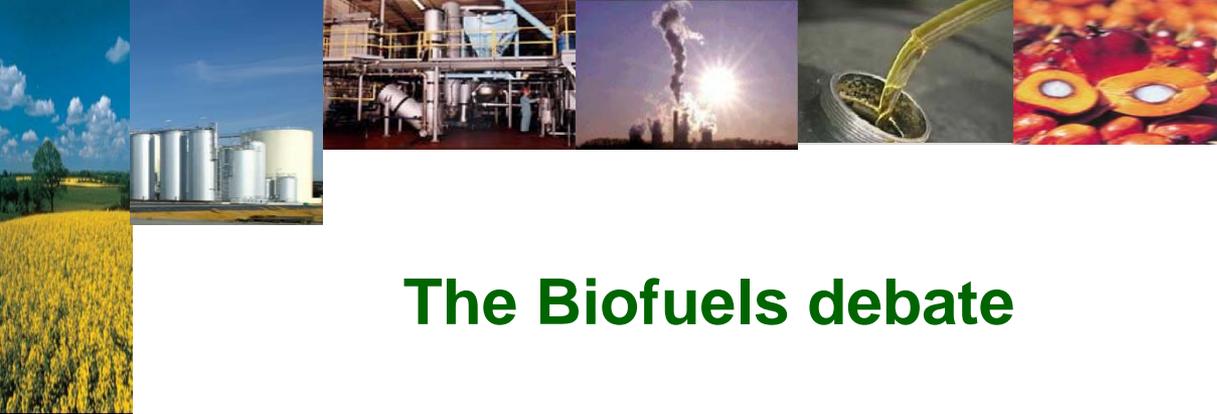
1 MW BIO-GASIFICATION POWER PLANT PROPOSED AT KAPUTA, ZAMBIA - GEF



GAS CLEANING AND SUPPLY



GAS POWER GEN SETS



The Biofuels debate

- ❑ **Biofuels** for the transport sector is becoming an **international trade commodity**. This is creating **opportunities** but also **uncertainties**, mainly for developing countries.
- ❑ Since most of the **factors causing the increase in biofuels market share** (geopolitical issues of energy supply, depleting oil resources, climate change, etc.) are **likely to persist**, increasing number of countries are requesting UNIDO technical assistance on the subject



The Biofuels debate and UNIDO response

- ❑ UNIDO is providing a **package of project activities** that covers the economic, and environmental sustainability and the competitiveness of the Biofuels value chain, e.g, Senegal, Croatia, Albania,..
- ❑ UNIDO **Biofuels Strategy is being finalized** indicating the outline and the focus of UNIDO vision to promote economically and environmentally sustainable Biofuels production and use



The Biofuels debate and UNIDO response

- ❑ UNIDO is organizing, in 2007-2008, a series of **Global forum activities** in Africa, CEE & Latin America, designed, among other, to promote Biofuels: as a possible solution for Energy Security, Environment & Rural Development and assist MS in maximizing the benefits of biofuels value chain and minimizing perceived risks
- ❑ A package of **pipeline projects** are developed for Africa (Bioenergy network), Latin America (RE Observatory), and a regional project for central and eastern Europe is to be formulated



The Biofuels debate and UNIDO response

- ❑ UNIDO is an active partner in most biofuels and bioenergy initiatives on sustainability criteria and indicators
- ❑ While most of on-going work on sustainability issues focus on defining **Environmental & Social dimension**, UNIDO is also active promoting the **economic sustainability** dimension in order to disseminate the key issues and factors to establishing well founded biofuels value chains in developing countries and countries in transition



Economic sustainability criteria to establishing viable biofuel value chain

Stakeholders: involvement of all stakeholders, awareness and capacity building on the **multi-sectoral nature** and benefits of the biofuels value chain

Feedstock: As recognized **bottle neck issue**- a clear definition of the feedstock volumes **available** from a secure supply at the lowest possible cost will determine the final **size, process technology & location** of the biodiesel plant; agricultural **Best practice**, policies and **financial** measures to increase **oilseeds** production/availability and to ensure the biodiversity and socio economic impacts

Markets: defining the **target markets** and segments; whether to go for **100%** biodiesel or **5% blend**, potential **distribution partners** and competitors to allow a successful start up of **market penetration**.



Economic sustainability criteria to establishing viable biofuel value chain

Legislations: based on a macro economic input-output analysis, advising on appropriate legal framework and incentive mechanisms to allow marketing into well-defined segments; **Harmonization with the EU directives**

Advice on Process technology: A plant with a **multi-feedstock** processing capability, **high yield**, proven reliability, and able to produce **quality biodiesel** will allow the market entry strategy to be successfully implemented.

Linking up with **Corporate Social Responsibility** matters.

A typically these are reflected in country-wide biofuels feasibility study profiling the present situation, identifying barriers and providing recommendations based on benchmarking with successful references.



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Thank you!

Fatin ALI MOHAMED
Rural and Renewable Energy Unit
Energy and Clean Production Branch
UNIDO

F.alimohamed@unido.org