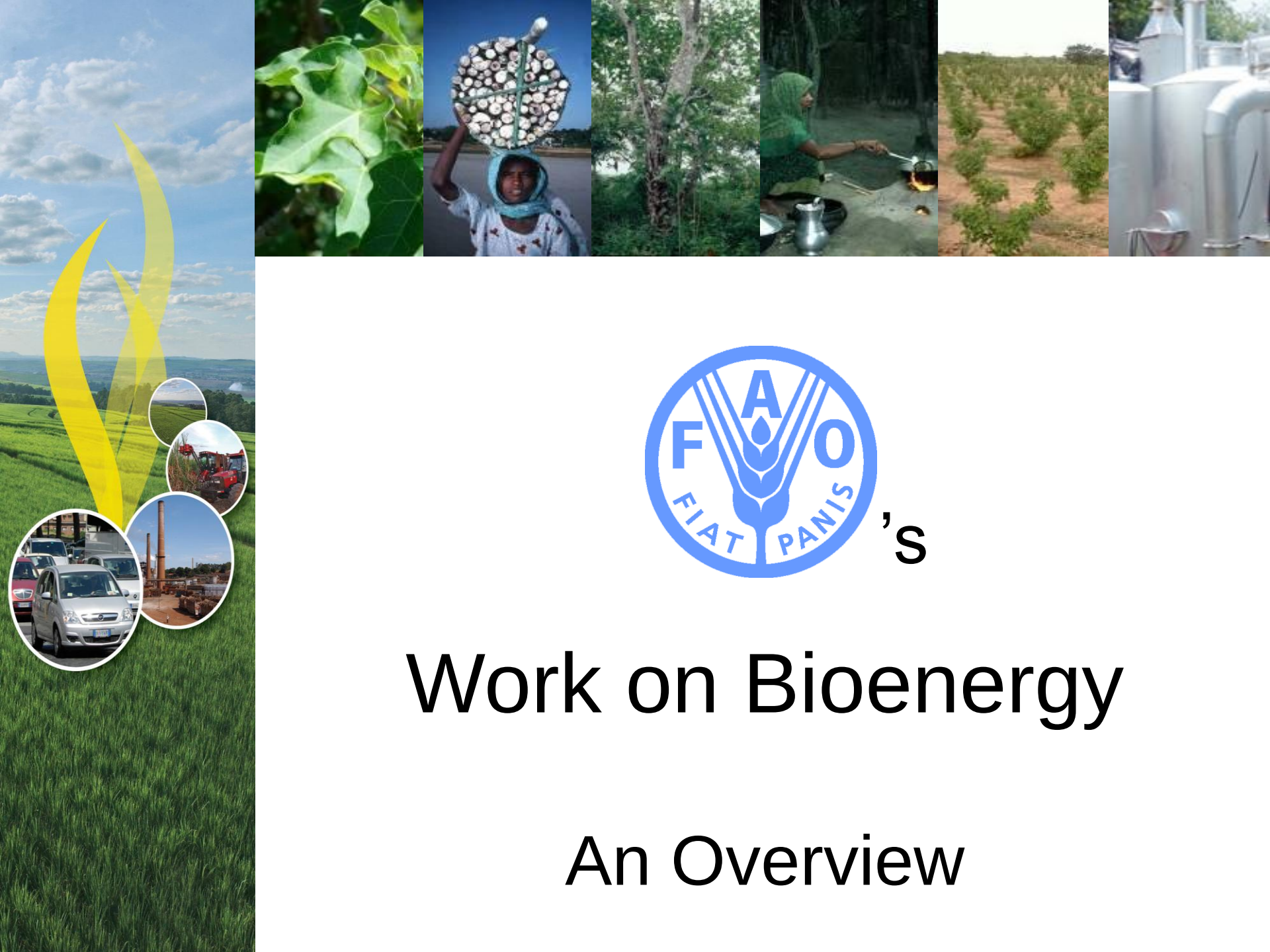
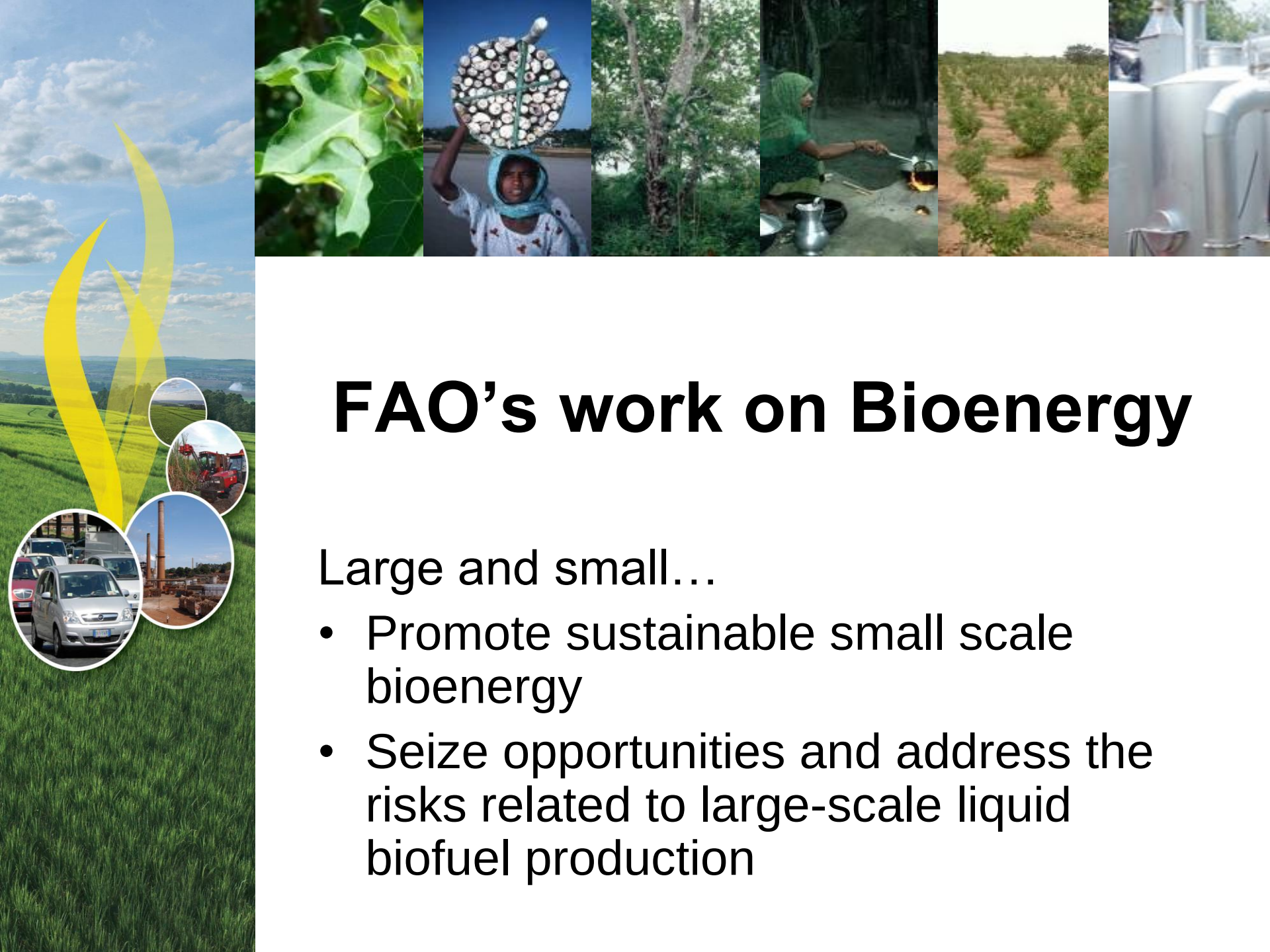




Work on Bioenergy

An Overview



FAO's work on Bioenergy

Large and small...

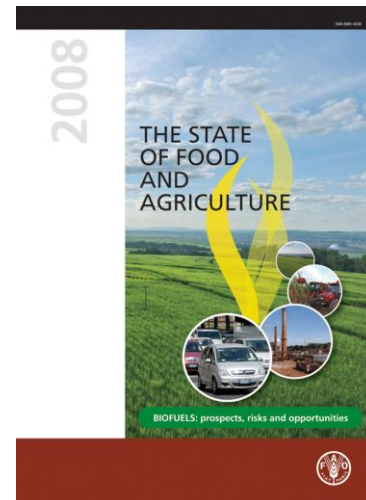
- Promote sustainable small scale bioenergy
- Seize opportunities and address the risks related to large-scale liquid biofuel production

But there are many types of Biofuels

Production side, supply	Biofuel type	Users side, biofuel examples
Direct woodfuels	WOODFUELS	Solid: fuelwood (roundwood, chips, sawdust), charcoal
Indirect woodfuels		Liquid: black liquor, ethanol
Recovered woodfuels		Gaseous: pyrolysis gas
Fuel crops	AGROFUELS	Solid: straw, stalks, huks, bagasse
Animal by-products		Liquid: ethanol, oil diester
Agroindustrial by-products		Gaseous: pyrolysis gas
	MUNICIPAL BY-PRODUCTS	Solid: municipal solid wastes
		Liquid: sewage sludge, pyrolytic oil
		Gases: biogas, pyrolytic gas

Key messages of SOFA 2008 on Liquid Biofuel Development

- Opportunities as well as risks
- Impacts depend critically on policies and practices
- Current policies imply
 - modest impacts on energy security
 - diverse impacts on climate change
 - significant impacts on agriculture, environment and food security
- Reducing risks and expanding opportunities require changing policies





Policy action is urgently needed

- Protect the poor and food insecure
- Ensure environmental sustainability
- Invest in agriculture and rural development
- Review current biofuel policies
- Promote international policy coordination

Many Departments work on Bioenergy

Coordinating Mechanism:
Inter-Departmental
Working Group on Bioenergy

ES: economic analysis
of biofuels (SOFA),
biofuel impacts on
food prices,
social/gender impacts

FO: wood energy,
potentials, planning,
sustainability,
2nd generation biofuels

NRC:
making bioenergy
sustainable –
technical and policy
guidance,
bioenergy for rural
livelihoods,
bioenergy and
food security,
partnerships
(GBEP, UN Energy),

FI: aquatic biofuels

**Bioenergy
at FAO**

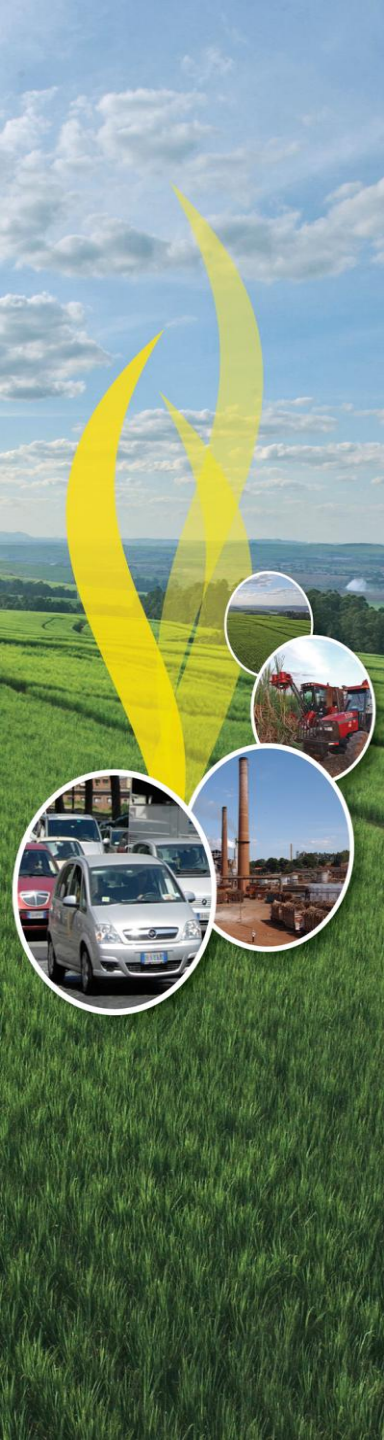
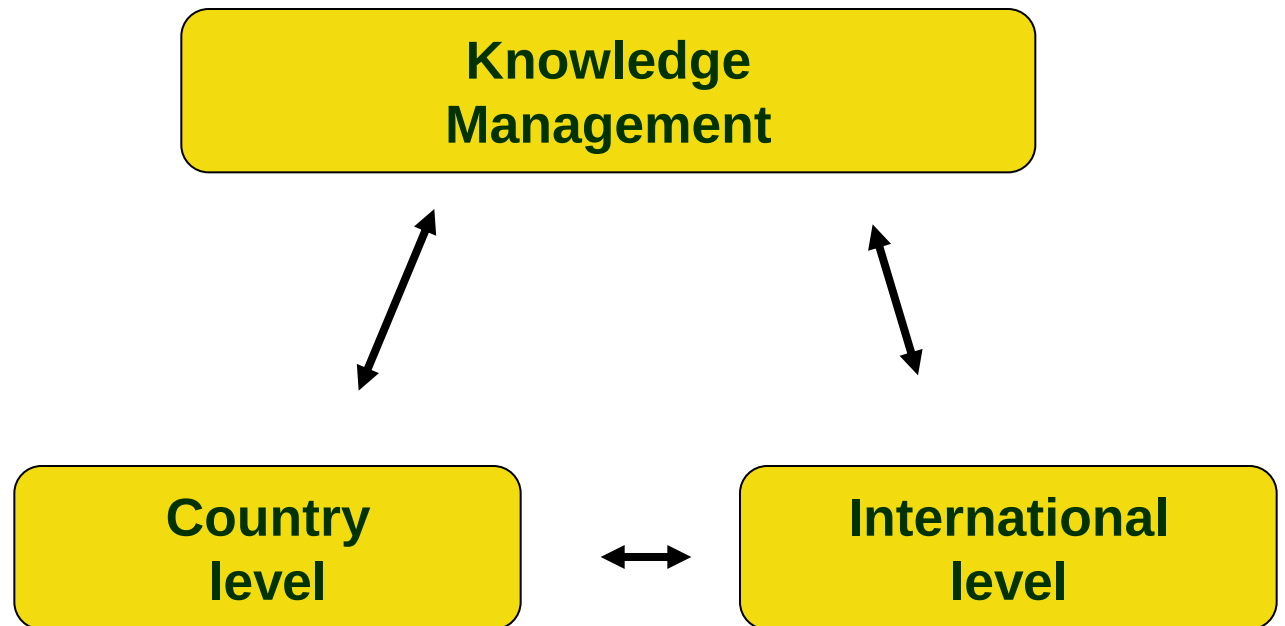
NRL: land suitability,
water requirements/
management, impacts

AG: feedstock
suitability, bioenergy
production systems

Regional Offices:
National/ regional
Projects

NB not comprehensive

FAO's Work on Bioenergy



Component 1: Knowledge Management

Resource mapping & management

- Woody biomass assessment (WISDOM) towards inclusion of agricultural residues
- Land cover/land use (Module 1 BEFS)
- ECOCROP (database on energy crop characteristics)

Towards sustainability – guidance and tools:

- Towards sustainability principles & standards on food security (BEFSCI, GBEP)
- Impact assessment (Environment/BIAS, Food Security/BEFS, GEF)
- Decision support tools for bioenergy strategies and investments (BIAS, BEFS, GEF, UN-Energy),

Contin. ...



Component 1: Knowledge Management



Integrated Food-Energy Systems (IFES):

- Integration of food & energy crops on one farm
- ‘Closed loop’ systems: resource efficiency & use of residues as base for other products

Small-scale livelihood-oriented bioenergy:

- Lessons learned from 15 case studies on small-scale bioenergy initiatives
- Assessing and replicating success



Component 2:

Country level

Situation analysis: WISDOM > 10 countries, BEFS in 4 countries, ITAIPU/Brazil, DST, Biodiesel FAO/Brazil

Policies/Strategies/Programmes

- Decision support tool (DST) for sustainable bioenergy
- Field projects (e.g. Angola, BEFS countries, Argentina, Colombia, Paraguay)

Specific country-level support projects (e.g. palm oil-Congo/Brazzaville, sunflower-Mozambique, several wood energy policy projects)



Component 3:

International level

Global trends/debate: FAO-OECD Outlook, HLC 2008, BEFSCI project for standard harmonization

Partnerships

- **GBEP – Global Bioenergy Partnership**
G-8 initiative (since 2007) with public, private and civil society stakeholders to promote sustainable bioenergy development
- **UN-Energy** - Secretariat until 2007, lead for UN-Energy bioenergy framework, Co-leader (with UNEP) of renewable energy cluster
- **Other international fora** - RSB, IEA task forces, IPCC, COMPETE, GEA....





Summary

Focus on:

- International level
- Country level
- Knowledge management
- Large scale: participation and risk management
- Small scale optimization and diversification
- Decision making support, capacity building, testing, implementing success

To achieve:

Food Security and Resilience to environmental, climatic and economic risks and variability



Links:

<http://www.fao.org/bioenergy/en/>



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