Expert workshop

How2Guide for Bioenergy

Biomass resources and bioenergy potential in Latin America and the Caribbean

28-29 November 2014, Sao Paulo, Brazil
1. Overview of bioenergy, food security and linkages to food security

2. Guidelines for Action in Latin America and the Caribbean

3. FAO Tools

4. Key Points for an Agenda
Overview of Bioenergy and Food Security

First generation biofuels potential feedstock
Production capacity and theoretical demand at the end of 2006 for selected regions

- Potential of raw land available for first generation biofuels-based
- Theoretical demand for biofuels estimating fuel consumption +30% liquid for transport in 2006
- Production capacity of bio-fuel by the end of 2006

- Raw material potential exceeds demand and biofuel production capacity - therefore export
- Production capacity less than the demand for biofuels, therefore investment in infrastructure guarantees export potential
- Limited raw material and biofuels production capacity lower than demand - therefore import

Source: Adapted from New Energy Finance www.newenergyfinance.com
Overview of Bioenergy and Food Security
Overview of Bioenergy and Food Security

Biomass, biofuels, bioenergy

**FEEDSTOCK**
Woodfuel and woody residues, crop residues, livestock residues, crops, food processing residues

**Solid Biofuels**
- Firewood, charcoal, briquettes

**Gaseous Biofuels**
- Biogas, syngas (gasification)

**Liquid Biofuels**
- Bioethanol, biodiesel and straight vegetable oil

**Applications**
- Heating and Cooking
- Electricity
- Transport
Overview of Bioenergy and Food Security

**Food Security**

exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

1996 World Food Summit held in Rome

- **the 4 dimensions of food security**
  - **AVAILABILITY** - Physical AVAILABILITY of food
  - **ACCESS** - Economic and physical ACCESS to food
  - **UTILIZATION** - Food UTILIZATION
  - **STABILITY** - STABILITY of the dimensions
Overview of Bioenergy and Food Security

Linkages: Bioenergy and Food Security

Bioenergy

- Food Availability (Supply)
- Food Access (Income and prices)

Food Utilization (Nutrition)

Which options allow to integrate the energy and agriculture production systems?

To be defined which, if any, are: Environmental sustainability, social acceptability, and economic viability of the bioenergy sector “setup”
1. Overview of bioenergy, food security and linkages to food security

2. Guidelines for Action in Latin America and the Caribbean

3. FAO Tools

4. Key Points for an Agenda
The new strategic framework 2014 - 2017

1.- Help eliminate hunger, food insecurity and malnutrition

2.- Make agriculture, forestry and fisheries more productive and sustainable

3.- Reduce rural poverty

4.- Enable inclusive and efficient agricultural and food systems

5.- Increase the resilience of livelihoods to disasters
The potential of the Bioenergy sector to reduce poverty and hunger, depends largely on the proper design and implementation of policies.

(i) Development and land use policies
- agro-ecological restrictions
- incentives and penalties

(ii) Technological policies
- Raw materials research (small-scale and for small farmers)
- technologies for the chain agents
(iii) Products and services markets regulation policies

- regulatory framework
- trade rules
- incentives and taxes

(iv) Improvement of the contractual relations policies

- the productive chain agents
- integration of small-scale agriculture
- labour rights protection
Opportunities for Latin America and the Caribbean

- Sugar cane sector developed and competitive in most of its countries, capable of guaranteeing its internal supply and/or export ethanol to developed countries.

- Production of a traditional oilseeds (soy, palm) in several of their countries, capable of guaranteeing its internal supply and/or export biodiesel or crude oils to developed countries.

- Availability of land for expansion of production in several of their countries, without compromising the food agriculture.
El presente Protocolo de Intención es celebrado entre ITAIPU Binacional (en adelante “ITAIPU Binacional”), hidroeléctrica perteneciente a los Gobiernos brasileño y paraguayo, entidad binacional constituida de conformidad con el artículo III del Tratado firmado entre la República Federativa del Brasil y la República de Paraguay el 26 de abril de 1973, con sede en Brasilia / DF, Brasil, el Centro de Negocios Brasil 21, SHS, cuadra 06, Grupo A, Bloque A, Sala 103, con oficinas en Curitiba - Paraná, en la Calle Comendador Araújo, No. 551; y en Asunción - Paraguay, en la calle de la Residenta No. 1075, inscrita en el Registro Nacional de Personas Jurídicas del Ministerio de Hacienda de Brasil bajo el No. 00.395.988/0001-35, representada en este acto por su Director General Brasileño, Jorge Miguel Samca, y su Director General Paraguayo, Janés Spalding Hellmers;

y la Organización de las Naciones Unidas para la Alimentación y la Agricultura (en adelante la “FAO”) representada por Sr. Graziano da Silva, Director General;
Possible contributions of Latin America and the Caribbean to Bioenergy and Global Agriculture

- Contribute to the reduction of greenhouse gases globally
- Ensure an additional supply of biofuels to developed countries, reducing the portions of their productions of corn and other cereals for bioenergy
- Develop of sustainable production models - ecological, economic and social - for other regions
- Contribute to a greater availability of food through exportable surpluses
Address to an International Consensus on Sustainable Biofuels

- Food security guarantee mechanisms;
- Sustainability principles;
- Research and development, share knowledge and capacity-building;
- Trade measures and financial options;
- Methodologies for measurement and monitoring the biofuels effects;
- Incentives to participate in family farming.
1. Overview of bioenergy, food security and linkages to food security

2. Guidelines for Action in Latin America and the Caribbean

3. FAO Tools

4. Key Points for an Agenda
Bioenergy and Biofuels

Training Course
Use and Management
of Software
Biodiesel-FAO System
Country level support and Evidence: The Bioenergy and Food Security (BEFS) Approach

- Six areas of support:

  Stakeholder Dialogue and Capacity Building
  - Scoping
  - Sustainable Bioenergy Assessment
  - Support to Policy Formulation
  - Impact Monitoring, Evaluation and Response

Risk Prevention, Management and Investment Screening
BEFS Sustainable Bioenergy Assessment

Country Context

Natural Resources:

The assessment can be carried out at two levels:

- **BEFS Rapid Appraisal**
- **BEFS Detailed Analysis**

Biofuel Supply Chain

Socioeconomic Analysis

Environmental

Country Specific Evidence
The BEFS Rapid Appraisal

Country Status
Review of key indicators and trends: Agriculture, Energy, Environment, etc.

Natural Resources
- Agriculture Residues
- Woodfuel and Wood Residues
- Crops

Energy Use Options
- Heating and Cooking: Charcoal, briquettes, biogas
- Rural Electrification: Gasification, SVO, Combustion
- Transport: Bioethanol, biodiesel

Country Specific Evidence
1. Overview of bioenergy, food security and linkages to food security
2. Guidelines for Action in Latin America and the Caribbean
3. FAO Tools
4. Key Points for an Agenda
Key Points for an Agenda

- Urgent need of further analysis, allowing for country specific scenarios
- Policy coherence and integration at the country level
- Common methodologies to analyze GHG emissions to allow for comparisons, including common reporting standards
- Internationally agreed criteria for bioenergy production
- Certification issues, including compliance & certification costs
FRAMEWORK FOR INTERNATIONAL BIOFUELS

Create an environment that allows you to take advantage of the opportunities represented by bioenergy, contributing to the reduction of greenhouse gas emissions, allowing the productive inclusion and the improvement of the incomes of small farmers, and enabling many developing countries reduce their dependence on imported oil.