Bioenergy Development: the Global Context

Validation Workshop on the ECOWAS Bioenergy Policy

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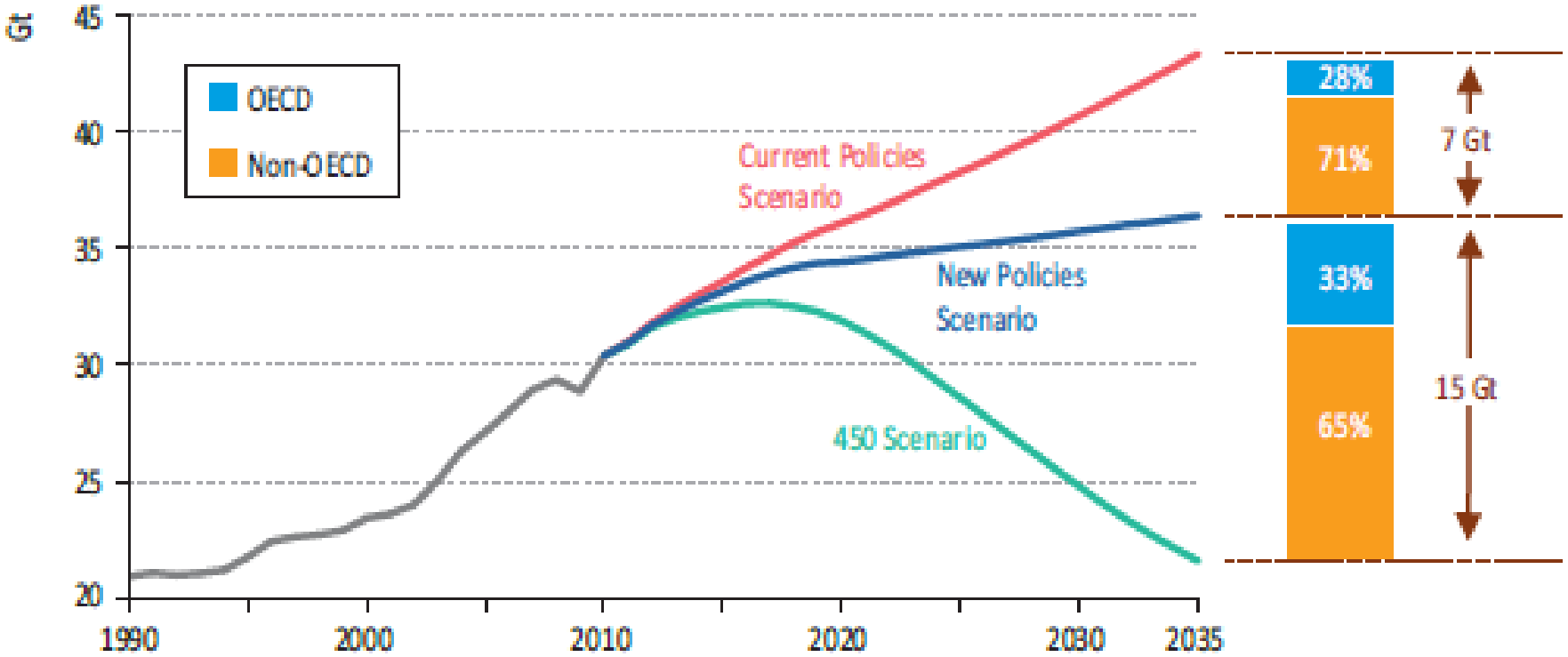
GHG emissions: data and projections

According to IEA, in order to contain the average global temperature increase within the 2° Celsius (if compared to 1990 levels) there needs to be substantial GHG emission reduction.

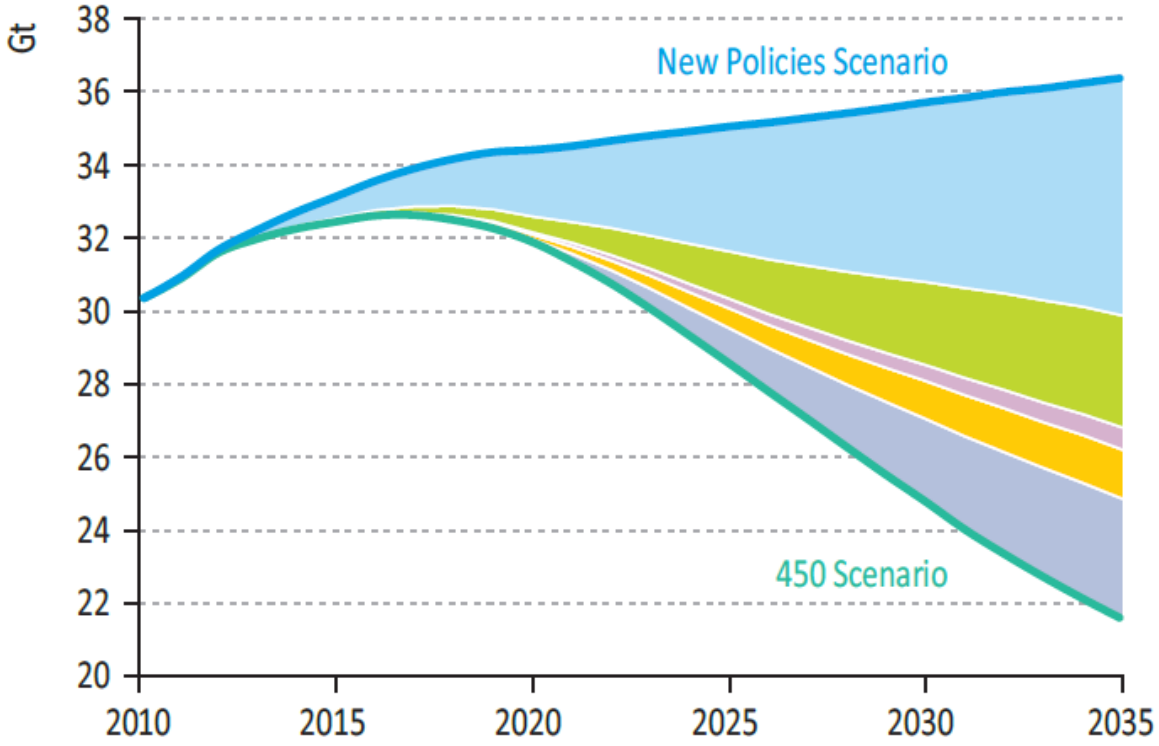
Non-OECD countries expected to play an important role.



Source: IEA, WEO 2012

GHG emissions: data and projections

In the 450 ppm scenario, IEA foresees a specific role for bioenergy



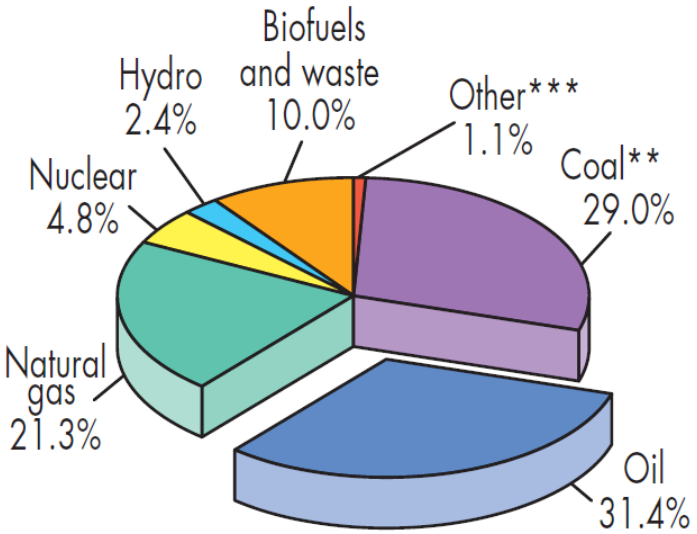
	Abatement	
	2020	2035
Efficiency	72%	44%
Renewables	17%	21%
Biofuels	2%	4%
Nuclear	5%	9%
CCS	3%	22%
Total (Gt CO_2)	2.5	14.8

Source: IEA, WEO 2012

Bioenergy

In 2012 bioenergy production reached 1.34 billion tons of oil equivalent or about **10% of world primary energy supply** (IEA, 2014).

Bioenergy is the fourth most important energy source worldwide and the first among the renewables



Source:
IEA, 2012: 2012 Technology Roadmap, Bioenergy for Heat and Power
IEA, 2013: 2013 Key World Energy Statistics

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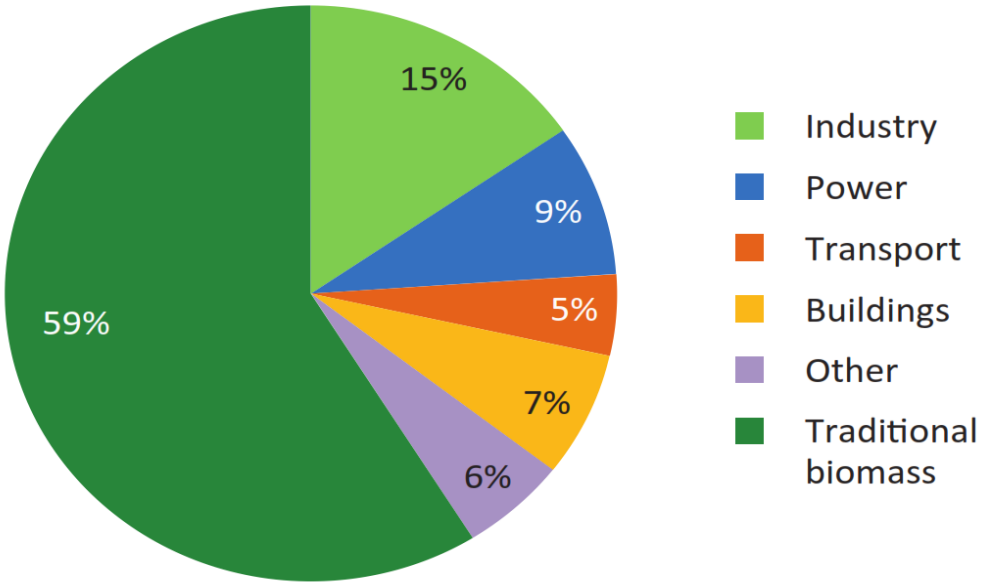
Bioenergy

About **60% of bioenergy produced is in the form of** traditional biomass.

Whereas only 5% of the energy from biomass producted worldwide is employed in the transport sector.



Source: IEA, WEO 2012

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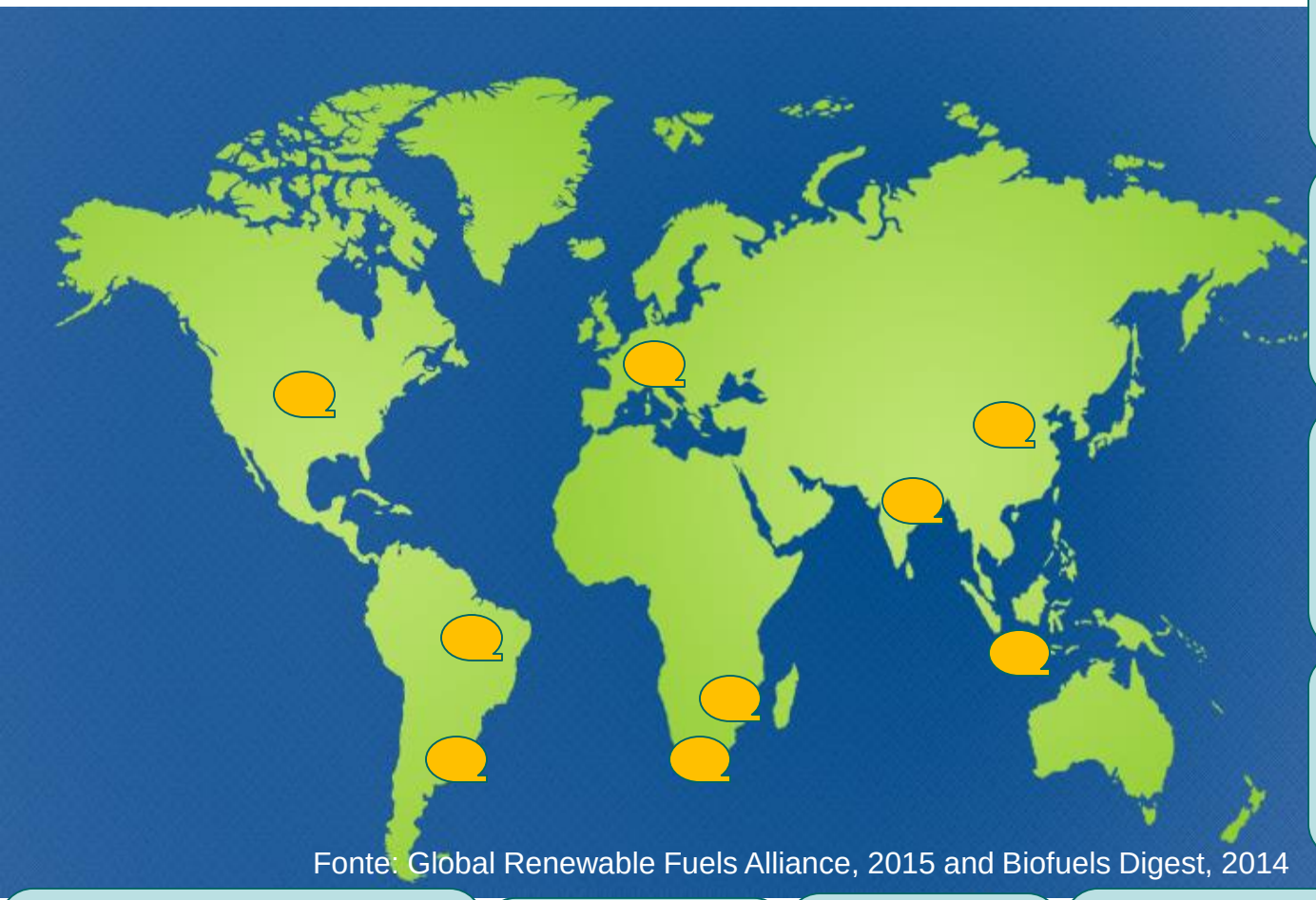
Bioenergy - Policies



Fonte: Global Renewable Fuels Alliance, 2015 and Biofuels Digest, 2014

ARGENTINA current mandate
Ethanol: 5%
Biodiesel: 8%

BRAZIL current mandate
Ethanol : 20%
Biodiesel: 5%

CHINA current mandate
Ethanol : 10% in 9 province
Target for 2020
Etanolo/Biodiesel: 10%

INDIA current mandate
Ethanol : 5%
Target for 2017
Etanolo/Biodiesel: 20%

INDONESIA mandates:
Ethanol : 3% -> 20% 2020
Biodiesel: 10% -> 30% 2020

MOZAMBIC
current mandate
Ethanol : 10%

SUD AFRICA
current mand.
Ethanol : 10%

USA current mandate
136 billion liters by 2022

EU current mandate
10% renewables in transport sector
(up to 7% from food crops)

Bioenergy – solid biomass

Pellet production, trade and consumption –future scenarios (2030, 2050):

- **Europe, India e China main importers**
- **Russia, Canada, Latin America and Africa main exporters**

Source:
IEA Bioenergy Task 40: Future Perspective in Biomass Trade

The Global Bioenergy Partnership (GBEP)

- GBEP was established to implement the commitments taken by the **G8 in 2005** to **support** "**biomass and biofuels deployment**, particularly in developing countries where biomass use is prevalent"

GBEP aims mainly to:

- Promote high-level **policy dialogue** on bioenergy and facilitate international **cooperation**;
- support national and regional bioenergy **policy-making** and **market development**;
- favour the transformation of biomass towards more efficient and **sustainable practices**; and
- foster **exchange** of **information**, **skills** and **technologies** through bilateral and multilateral **collaboration**.

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GBEP Membership

EUROPEAN COMMISSION
IDB
iea
IRENA
International Renewable Energy Agency
UNCTAD
UNDESA
UNEP
UNITED NATIONS FOUNDATION
UNIDO
WCRE

ADB
AfDB
EEA
gef
IFAD
UEMOA
WBCSD
WORLD BANK
World Agroforestry Centre

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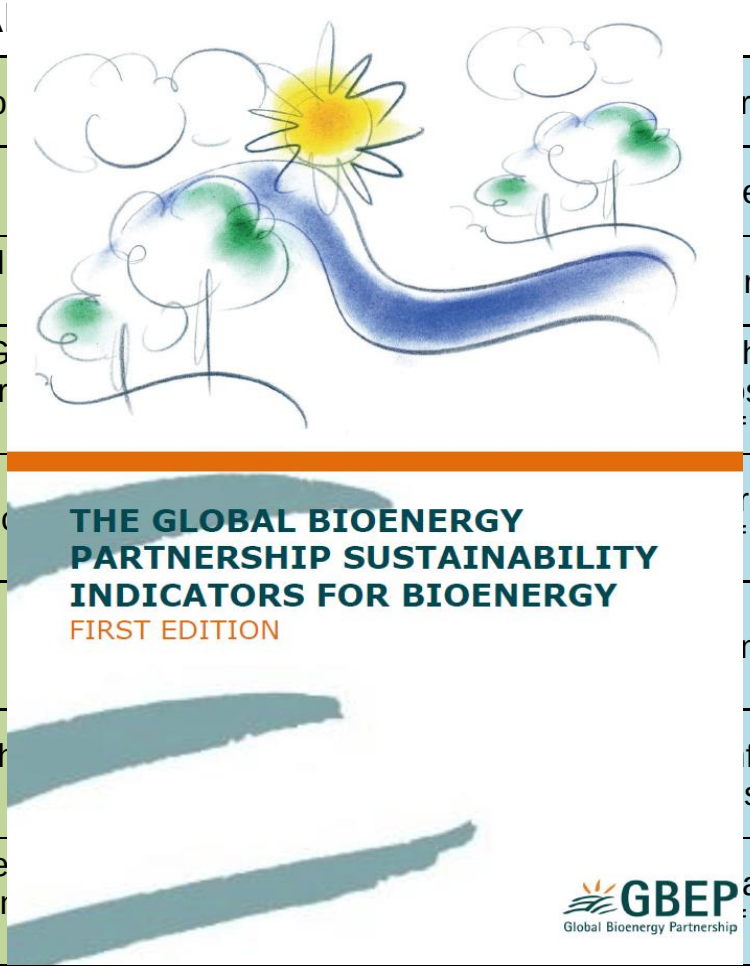
GBEP Sustainability Indicators for Bioenergy

ENVIRONMENTA	ECONOMIC
1. Lifecycle GHG emissio	roductivity
2. Soil quality	et energy balance
3. Harvest levels of wood resources	ross value added
4. Emissions of non-GHG pollutants, including air toxics	hange in consumption of ssil fuels and traditional use biomass
5. Water use and efficien	raining and re-qualification the workforce
6. Water quality	nergy diversity
7. Biological diversity in th landscape	frastructure and logistics for stribution of bioenergy
8. Land use and land-use change related to bioen feedstock production	apacity and flexibility of use bioenergy



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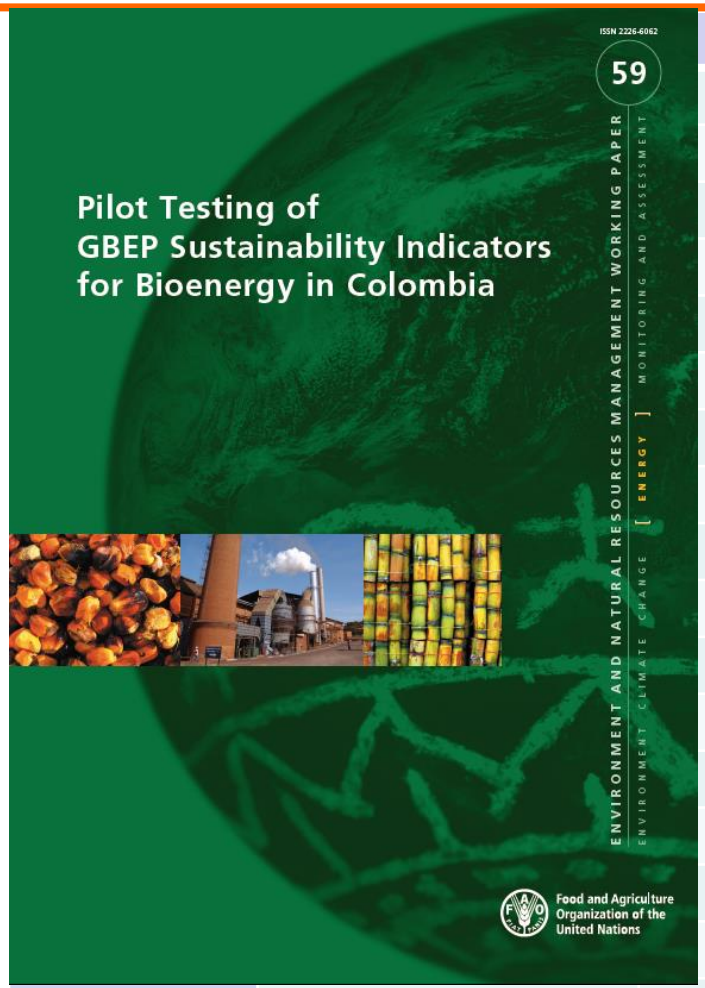
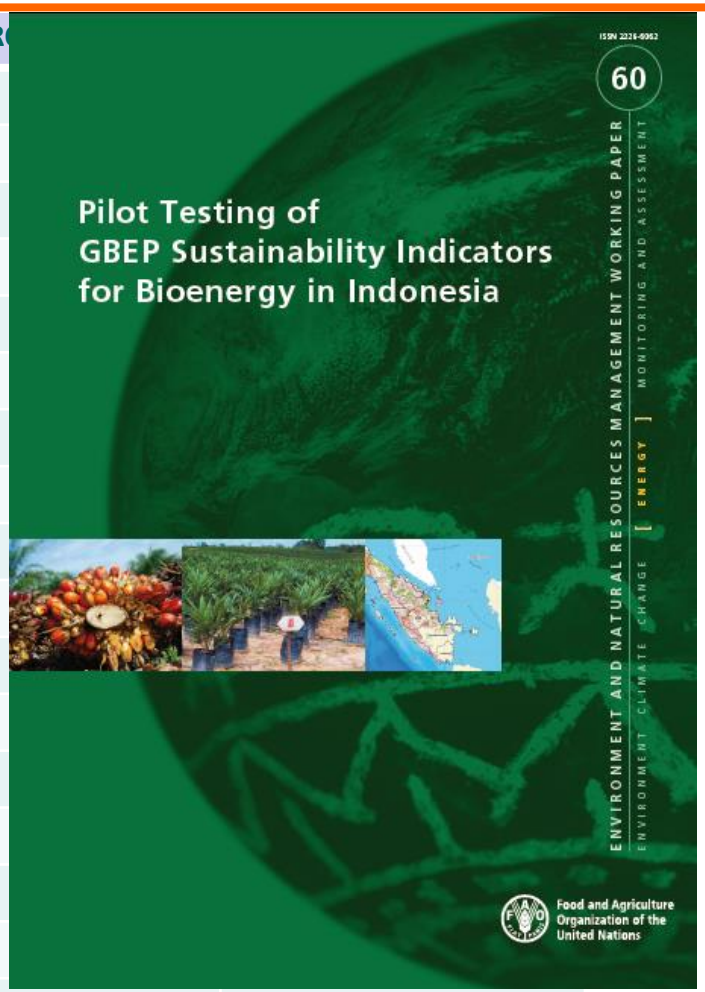
Implementation of the Sustainability Indicators





Sudan			X
Uruguay		X	
Vietnam			X

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Barriers to Sustainable Bioenergy Development: Policy Frameworks

- Lack of **coordination** among relevant **sectors** and related **policies** and **institutions** (e.g. energy, agriculture, environment, etc.)
- Lack of coherent and stable **policy frameworks**

HOW GBEP HELPS…

Since 2006, GBEP has been fostering **institutional coordination**, **multistakeholder dialogues** and **policy dialogues** at both national and regional levels

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Barriers to Sustainable Bioenergy Development: Lack of Evidence – Potential & Sustainability

- Lack of **understanding** of biophysical and especially techno-economic **potential** of bioenergy, as well as of the environmental, social and economic **sustainability** of bioenergy
- Lack of **evidence-based** and political support for bioenergy **policies**

HOW GBEP HELPS…

The GBEP indicators are contributing both to the **generation** of **evidence** and to **assess** the **sustainability** of bioenergy production and use

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Barriers to Sustainable Bioenergy Development: Data and Skills

- Lack of effective **strategies** and **mechanisms** for **data collection** and **management**
- Limited **availability** of – and **access** to – **data**
- Lack of **skills** and **capacity** to undertake necessary analysis

HOW GBEP HELPS…

GBEP is **compiling** the necessary **data**, with a view to **filling** data **gaps**, and is **strengthening** the **capacity** of relevant institutions

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Conclusions

- Bioenergy has the potential to reduce GHG emissions **and offer opportunities to agriculture and forestry sectors**;
- **West Africa** could play an important role
- **Sustainability** is key;
- **Monitoring sustainability** is a **necessary step** in order to understand, evaluate and improve the performances of the sector
- **GBEP is actively working** on the diffusion of **sustainability** in the processes of production and use of bioenergy resources with several activities and tools, including the **GBEP Sustainability Indicators for Bioenergy**
- Particularly for **policymakers** GBEP represents an important forum for discussion and harmonization **policies**

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Thank you

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http://www.globalbioenergy.org

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