

Bioenergy and “The Future We Want”: the role of the GBEP sustainability indicators

*Policy Forum: Opportunities for Sustainable Bioenergy Development:
National Experiences and Global Exchange*

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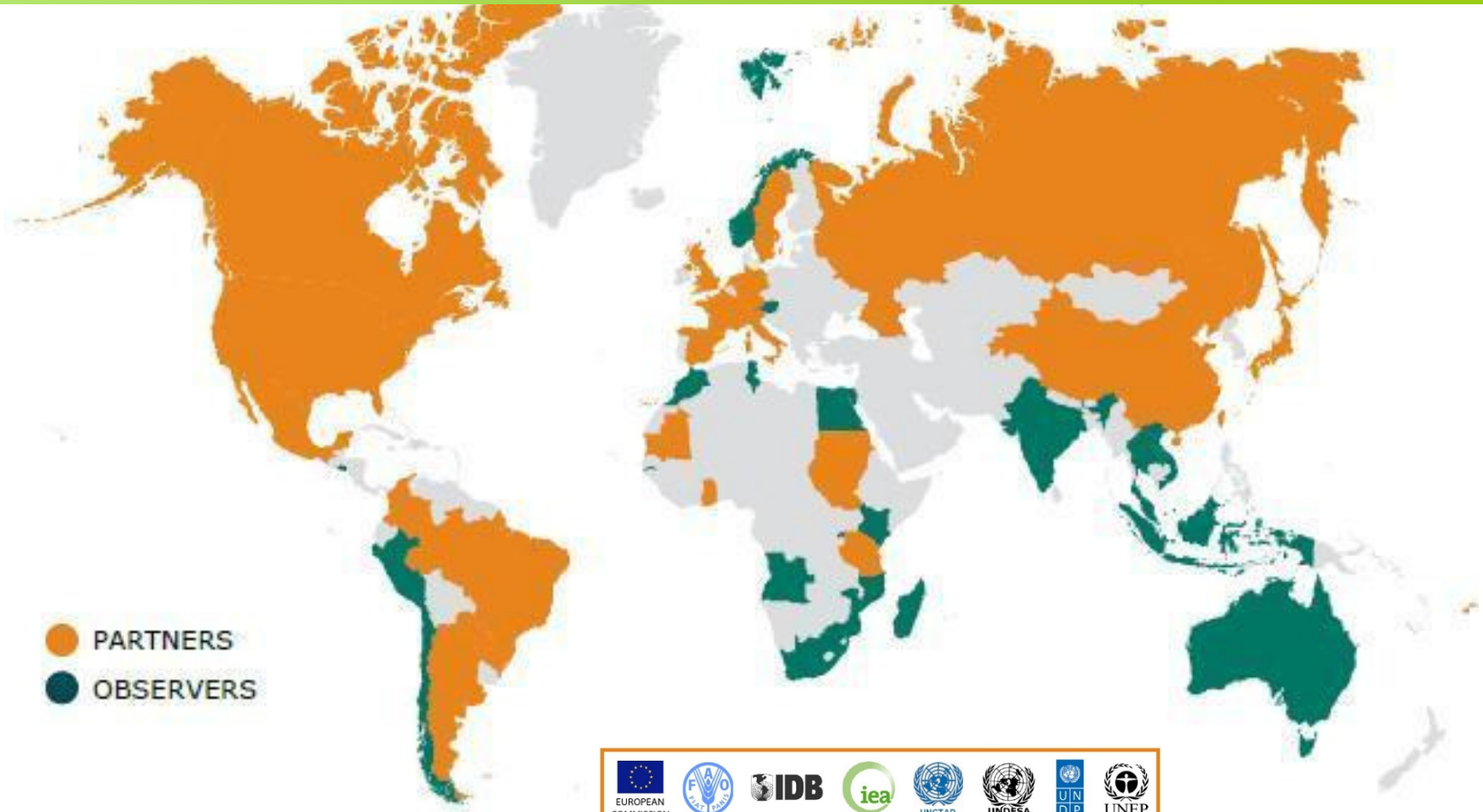


Presentation Overview

- **Global Bioenergy Partnership – objectives, priorities and rising issues for the consideration of GBEP members and partners;**
- **GBEP voluntary indicators on bioenergy sustainability (examples of Brazilian contributions to the capacity building process)**
 - **Ideas for GBEP work in the years to come.**



GBEP Members



● PARTNERS
● OBSERVERS

37 Partners (23 governments – 14 organizations).

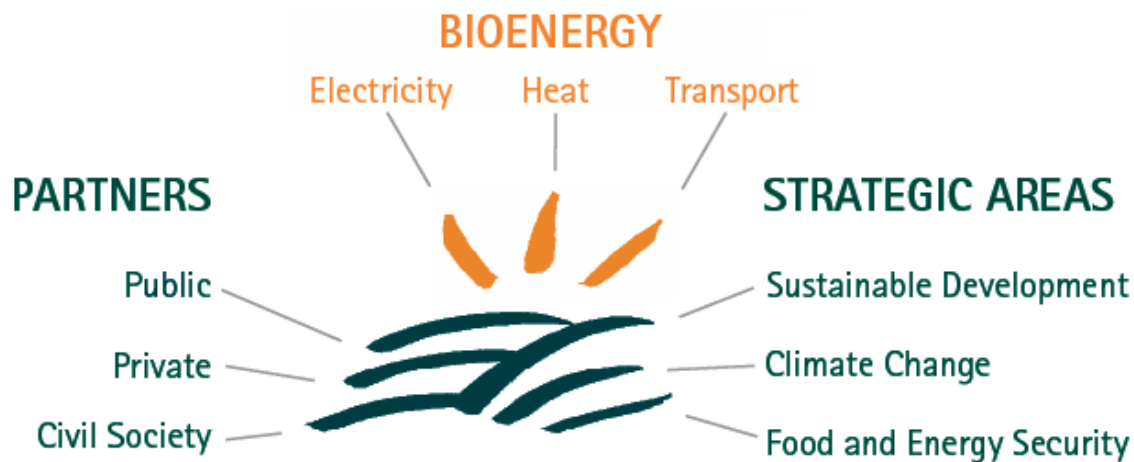
37 Observers (26 governments – 11 organizations).



GBEP'S OBJECTIVES

The main objectives of the Global Bioenergy Partnership are to:

- promote global 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 use towards more efficient and sustainable practices; and
- foster exchange of information, skills and technologies through bilateral and multilateral collaboration.



GBEP is a forum where voluntary cooperation works towards consensus amongst its partners in the areas of the sustainable development of bioenergy and its contribution to climate change mitigation.

GBEP's contribution to sustainable bioenergy

- **Modern bioenergy** is part of the solution to improve energy access and to reduce negative effects on climate change, human health and the environment
- **Producing bioenergy sustainably** is a great concern and finding the proper criteria to define how to do it is one objective we all share
- Balanced, science-based assessment takes into account **all three dimensions of sustainability** – economical, social and environmental
- GBEP seeks to build consensus among a broad range of national governments and international institutions on the sustainability of **all Forms of bioenergy**, providing useful information on policy options to help partner countries to develop their own policy solutions



GBEP - Action Groups

GBEP's priorities are:

- 1. Piloting the GBEP Common methodological framework on GHG emission reduction measurement from the use of bioenergy (Task Force on GHG Methodologies);**
- 2. Facilitating the sustainable development of bioenergy (Task Force on Sustainability);**
- 3. Facilitating Capacity Building for Sustainable Bioenergy (Working Group on Capacity Building for Sustainable Bioenergy);**
- 4. Raising awareness and facilitating information exchange on bioenergy.**



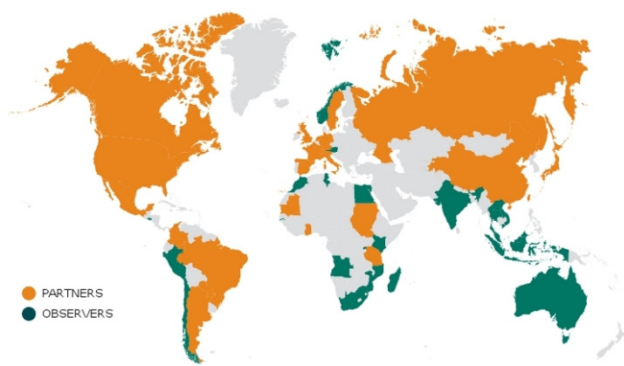
24 SUSTAINABILITY INDICATORS

agreed by 23 countries & 13 international organizations
involving a total of 45 countries and 23 int. organizations (Ps & Os)

PILLARS		
Environmental	Social	Economic
INDICATORS		
1. Life-cycle GHG emissions	9. Allocation and tenure of land for new bioenergy production	17. Productivity
2. Soil quality	10. Price and supply of a national food basket	18. Net energy balance
3. Harvest levels of wood resources	11. Change in income	19. Gross value added
4. Emissions of non-GHG air pollutants, including air toxics	12. Jobs in the bioenergy sector	20. Change in consumption of fossil fuels and traditional use of biomass
5. Water use and efficiency	13. Change in unpaid time spent by women and children collecting biomass	21. Training and re-qualification of the workforce
6. Water quality	14. Bioenergy used to expand access to modern energy services	22. Energy diversity
7. Biological diversity in the landscape	15. Change in mortality and burden of disease attributable to indoor smoke	23. Infrastructure and logistics for distribution of bioenergy
8. Land use and land-use change related to bioenergy feedstock production	16. Incidence of occupational injury, illness and fatalities	24. Capacity and flexibility of use of bioenergy

GBEP – Capacity Building on Bioenergy Sustainability

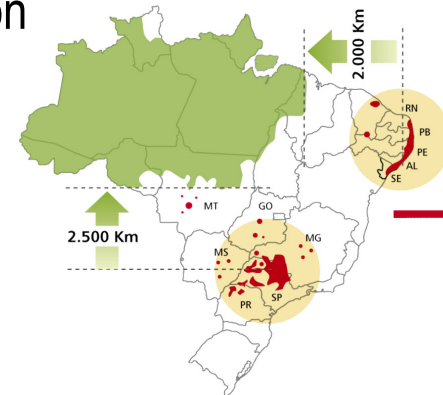
- The Working Group on Capacity Building for Sustainable Bioenergy (WG) has been established by the Steering Committee in May 2011 and is currently co-chaired by The Netherlands and USA.
- The WG develops capacity building activities and projects for sustainable bioenergy, through collaborative work among GBEP **Partners** and **Observers**. It also aims to develop a repository of information and insights gained from experiences and outcomes from these activities and projects.



GBEP Indicators in Brazil

Environmental pillar:

- Positive LCA: the EPA (Environmental Protection Agency) rated the Brazilian ethanol produced from sugar cane as "advanced biofuel", since it **reduces by 61% the emission of GHG emissions** compared to gasoline
- Studies show that sugarcane helps to cool the climate. The expansion of cultivation of sugarcane in pastures or planted areas in the Brazilian cerrado results in a temperature of approximately 0.93 Celsius degrees **cooler than average**
- Between 1975 and 2011, the consumption of bioethanol substitutes approximately 330 billion litres of gasoline, or US\$ 137 billion dollars, and made possible CO2 emission reduction of 550 million tonnes
- Brazil's compromise of banning burning of fields by 2014: mechanization
- Palm oil (for biodiesel) and sugarcane (for ethanol) **agroecological zoning** in Brazil: no threat to sensitive biomes



GBEP Indicators in Brazil

Social pillar:

- **Jobs and income** generated in the sector: more than a thousand formal jobs, with one of the most well-paid salaries (just lower than that of the soy chain)
- About 70 thousand independent producers of sugarcane and **social inclusion of more than 100 thousand family farmers** through the Social Fuel Certificate of the biodiesel program
- Power generation from the use of biomass (agricultural waste): relatively low investment and production of **bioelectricity** at a cost much lower than that generated from petroleum products
- National Commitment: **improve the labour conditions** in the sugarcane production and harvesting: agreement between the Federal Government, workers and sugarcane producers, signed in 2009 and renewed in 2011.
Improving health and education of workers



GBEP Indicators in Brazil

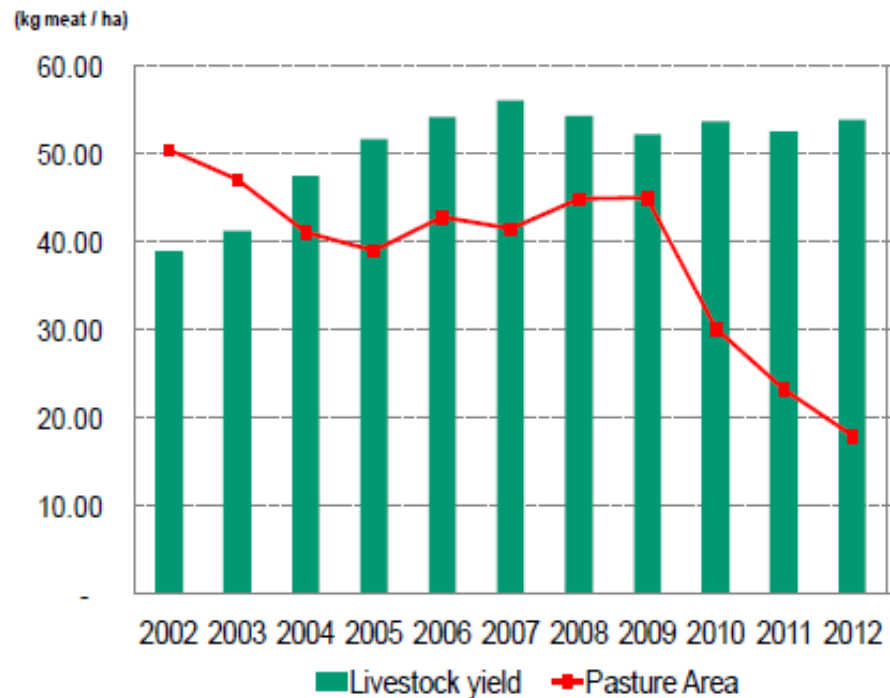
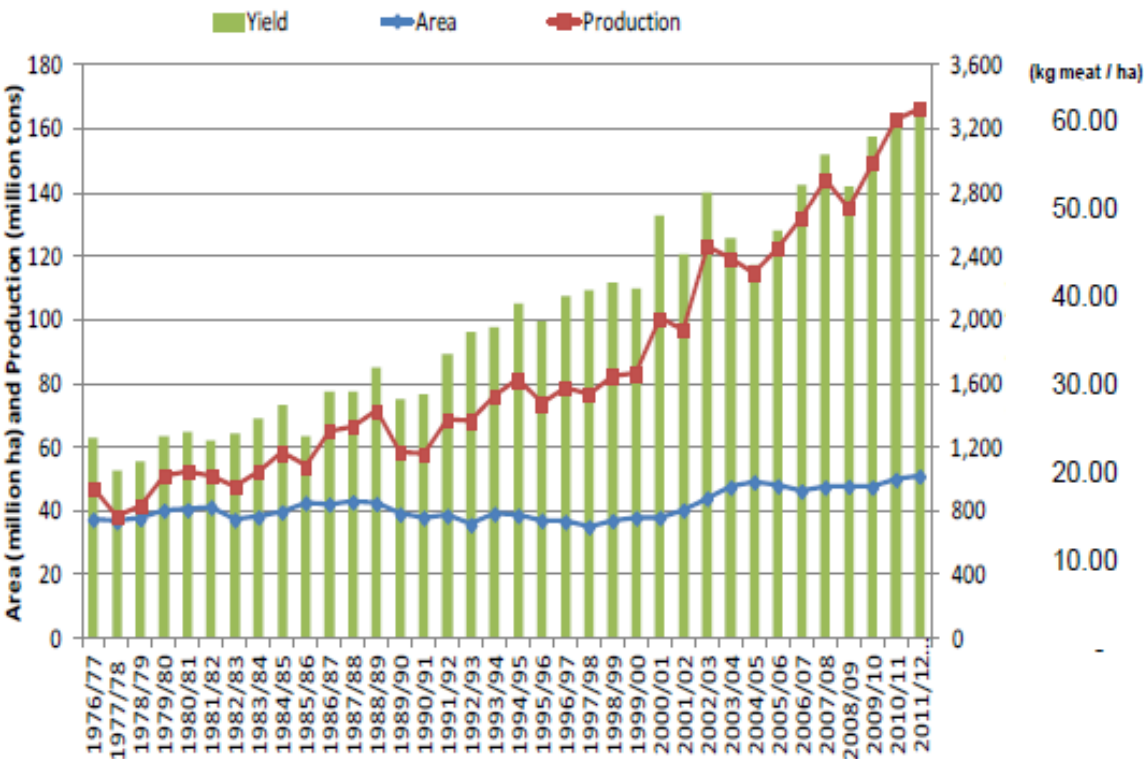
Economic pillar:

- About **2% of Brazilian GDP**
- Estimated **savings of more than US\$ 50 billion** due to oil and derivatives not consumed because of ethanol
- High **productivity**: Brazil has increased by more than 15% its grain crops production, at the same time that ethanol production has doubled, with a increase of only 7% of the agricultural land
- Training and **requalification of workforce**: UNICA's RenovAção Project has prepared five thousand workers for new roles within and outside the sugarcane industry. The beneficiaries are former sugarcane cutters and their families of the communities of São Paulo, impacted by the process of mechanization



GBEP Indicators in Brazil

- Productivity increases both in sugar cane and cattle should be taken into account for the evaluation of sugar cane bioethanol production sustainability



Agroenergy systems and the integration of food and fuel

- **Integrating food and bioenergy foster investments in the agroindustrial complex;**
 - **Develops a structured agricultural system;**
 - **Occupy labour in a permanent way;**
- **Generates income all year round, not only during harvest;**
 - **Suppliers can be organized in cooperatives;**
 - **Workers will get better qualification to work in those complexes;**
 - **The production of bioenergy allow the use of clean energies and can obtain carbon credits and others instruments**



Ideas on how to step up GBEP's work

- **New capacity building activities, possibly focused on the specific needs of some countries and geographical regions**
- **Establishment of new action groups (still to be decided upon by GBEP members):**
 - AG4 - "Towards sustainable modern wood energy development"*
(in coordination with FAO, UNEP and UNF);
 - AG5 - The Global Renewable Energy Atlas*
(in coordination with IRENA)
- **Enhanced cooperation with other international fora and initiatives, such as The United Nations' Secretary General Initiative Sustainable Energy For All (SE4All)**



THANK YOU !

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