Governing Bioenergy

AN INTERNATIONAL PERSPECTIVE ON ATTEMPTS TO DEFINE AND PROMOTE SUSTAINABLE BIOENERGY DEVELOPMENT

Bioenergy Australia 2011 Conference

IEA Bioenergy ExCo Workshop

Novotel Twin Waters Resort, Sunshine Coast, 24 November 2011

Dr Jonathan Reeves

Food and Agriculture Organization of the United Nations/
Global Bioenergy Partnership Secretariat

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OVERVIEW OF PRESENTATION

1. **Scene-setting:**
    - bioenergy sustainability as a cross-cutting challenge;
    - international institutional and policy landscape regarding bioenergy sustainability;
2. **The Global Bioenergy Partnership (GBEP):**
    - GBEP's role and membership;
    - the GBEP sustainability indicators for bioenergy;
    - GBEP indicator piloting projects and other capacity building work;
3. **The way forward:**
    - integration;
    - cooperation;
4. **Conclusions**

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GOVERNING BIOENERGY
(OR GUIDING ITS SUSTAINABLE DEVELOPMENT)

In general terms, there are three steps required to govern bioenergy or guide its sustainable development:

- *knowing* the right thing to do, which requires:
  - an analytical framework that can be applied to specific settings;
  - information, evidence and the technical capacity to gain these;
  - inclusive, participatory decision-making;
- *enabling* people to do the right thing, which requires:
  - dissemination of information, transfer of knowledge, extension services, capacity building;
  - an enabling legal, policy and institutional environment (clear, transparent, stable, low administrative burden);
- *incentivizing* people to do the right thing, which may involve:
  - reinforcing and changing behaviour through incentives (internalizing the externalities/payment for ecosystem services/carbon taxes/certification) or obligations (biofuel mandates/polluter pays/thresholds).

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BIOENERGY SUSTAINABILITY: A CROSS-CUTTING ISSUE

- Focus of this presentation: *the sustainable development of bioenergy requires evidence-based, integrated and participatory governance with a strong international dimension*:
  - more and better evidence required to inform decision-making:
    - large range of positive and negative environmental, social and economic impacts – generally externalities;
    - high level of uncertainty due to relative novelty of large-scale bioenergy promotion;
    - analysis of policy effectiveness required (multiple goals);
  - impacts cross both sectoral and national borders (indirect effects);
  - capacity building and knowledge exchange required to move quickly up learning curve.
- Important roles for governments, the private sector and civil society and a strong need for coordination and cooperation in policy development, implementation, and monitoring and evaluation, extending beyond the bioenergy sector.

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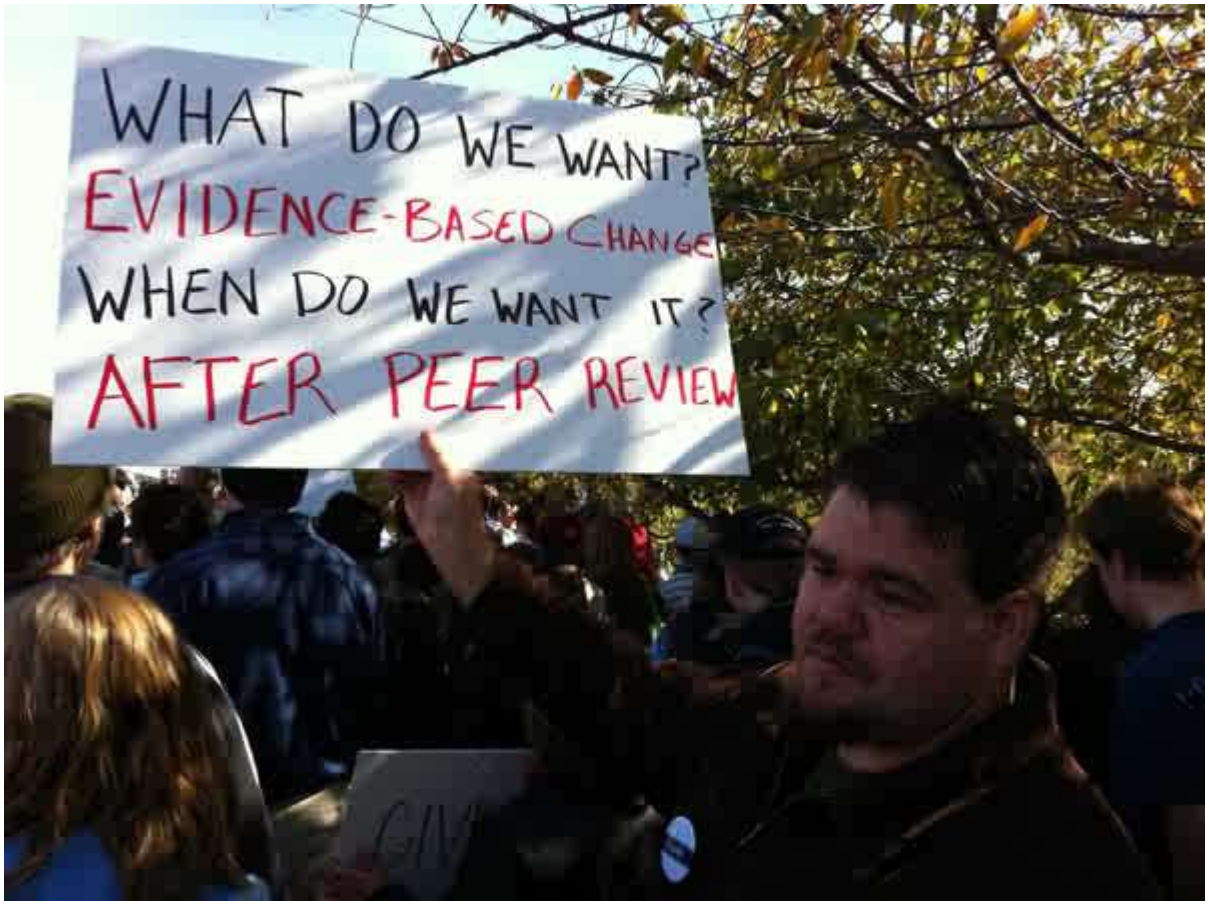
EVIDENCE-BASED, CLEAR, LONG-TERM, STABLE POLICY... NOW!



Part I

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BIOENERGY GOVERNANCE: THE INTERNATIONAL LANDSCAPE

- CSD, CBD, FAO, IEA, ILO, UN-Energy, UNDP, UNEP, UNIDO, UNFCCC, WB, WHO
- Multi-stakeholder roundtables
- GBEP as international forum for policy-relevant discussion
- IEA Bioenergy as most significant and international research network
- Various regional networks (policy and research)
- Role of voluntary partnerships vs binding conventions at international level
- *Governance interpreted in broad sense*
- *Examples of state, national or economic integration zone policies: EU RED & FQD, US RFS2, Californian LCFS, UK RTFO, German Biomass Ordinance, Swiss sustainability criteria, Brazilian Social Seal for biodiesel & AEZ for sugarcane, China, Colombia, NSW…*

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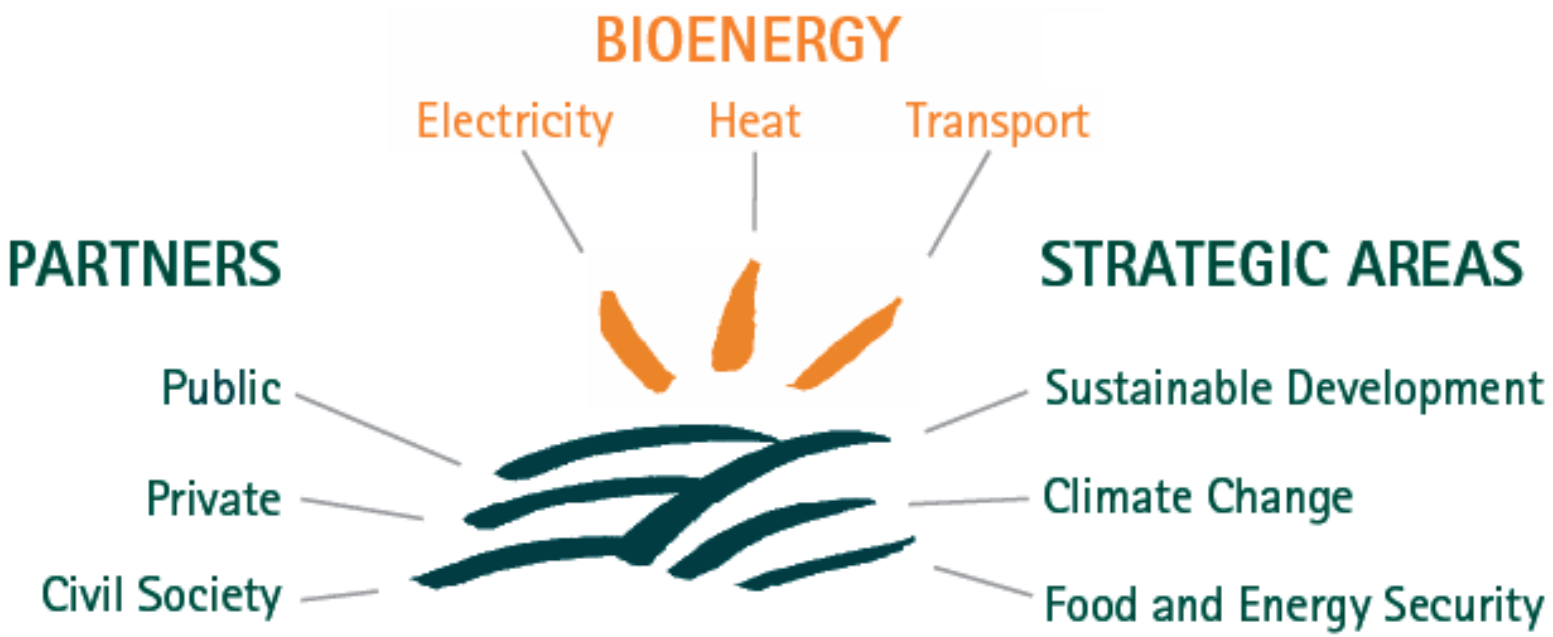
THE GLOBAL BIOENERGY PARTNERSHIP



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G8 COMMITMENTS AND MANDATES

2005 Gleneagles Plan of Action	• *"We (the G8) will promote the continued development and commercialisation of renewable energy by: […] d) launching a **Global Bioenergy Partnership** to support wider, cost effective, biomass and biofuels deployment, particularly in developing countries where biomass use is prevalent".*
2008 Hokkaido Toyako Summit	• *"We support the work of the **Global Bioenergy Partnerhsip (GBEP)** and invite it to work with other relevant stakeholders to develop science-based benchmarks and indicators for biofuels production and use"*
2009 L'Aquila Summit	• *"We[…] invite **GBEP** to accelerate its work in developing science-based benchmarks and indicators for sustainable biofuel production and to boost technological cooperation and innovation in bioenergy"*
2010 Muskoka Summit	• *"We welcome the work of the **Global Bioenergy Partnership (GBEP)** and commit to facilitating swift adoption of voluntary sustainability criteria and indicators, as well as [agreement] on capacity building activities"*
2011 Deauville Summit	• *"We believe that it is also crucial to employ a range of measures to encourage efficient and sustainable resource use, including renewable energy, by national and other actors. We will keep on supporting international initiatives launched by the G8, notably [...] the **Global Bioenergy Partnership (GBEP)**"*

18 January 2007 - GBEP was registered as a **CSD Partnership for Sustainable Development**

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GBEP PARTNERS AND OBSERVERS

36 Partners (23 governments – 13 organizations):

G8 Governments (Canada, France, Germany, Italy, Japan, Russian Federation, United Kingdom, United States of America) plus Argentina, Brazil, China, Colombia, Fiji Islands, Ghana, Mauritania, Mexico, Netherlands, Paraguay, Spain, Sudan, Sweden, Switzerland and Tanzania, as well as ECOWAS, European Commission, FAO, IDB, IEA, UNCTAD, UNDESA, UNDP, UNEP, UNIDO, UN Foundation, World Council for Renewable Energy and EUBIA.

34 Observers (23 governments – 11 organizations):

Angola, Australia, Austria, Cambodia, Chile, Egypt, El Salvador, Gambia, India, Indonesia, Kenya, Lao P.D.R., Madagascar, Malaysia, Morocco, Mozambique, Norway, Peru, Rwanda, South Africa, Thailand, Tunisia and Vietnam, along with the African Development Bank, Asian Development Bank, ECLAC, European Environment Agency, GEF, IFAD, IRENA, OAS, UEMOA, World Bank, and the WBCSD.

Italy and Brazil are currently Chair and co-Chair of the Partnership.

The Secretariat is hosted at the FAO HQ in Rome.

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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.

It also provides a platform for sharing information.

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GBEP PROGRAMME OF WORK

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** (newly established Working Group on Capacity Building for Sustainable Bioenergy);

4. **Raising awareness and facilitating information exchange on bioenergy**.

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1. GBEP TASK FORCE ON GHG METHODOLOGIES

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GBEP TASK FORCE ON GHG METHODOLOGIES: BACKGROUND

- **October 2007** – TF established under the co-leadership of the United States and the UN Foundation
- **June 2009** – TF developed and published the "GBEP common methodological framework for GHG lifecycle analysis of bioenergy – Version Zero" intended to guide policy makers and stakeholders when assessing GHG emissions associated with bioenergy, and to be used as a tool for comparing the results of various methodologies when assessing GHG emissions from bioenergy systems, for communicating the results in a transparent way and also building capacity in GHG lifecycle analysis (LCA) for bioenergy.
  - Work was based on accepted methods for undertaking environmental lifecycle analysis and GHG inventories, such as the ISO 14040 standards and the IPCC good practice guidance for land use change and forestry.
- **October 2010** – TF finalized the **"GBEP common methodological framework for GHG lifecycle analysis of bioenergy – Version One"**, after dissemination, testing and improvement of the previous version.
- **January 2011** – **Clearing house on GHG methodologies** up and running on the GBEP website.
  - It sets a platform to exchange information on the implementation and testing of the "GBEP common methodological framework for GHG lifecycle analysis of bioenergy" and to allow users to share documents and studies as well as to learn from other users' experience. It also allows you to test the methodological framework on line.

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GBEP COMMON METHODOLOGICAL FRAMEWORK FOR GHG LCA OF BIOENERGY

The methodological framework is a checklist that comprises ten steps in the full lifecycle analysis of GHG emissions from bioenergy production and use:

1. GHGs covered
2. Source of biomass
3. Land-use changes due to bioenergy production
4. Biomass feedstock production
5. Transport of biomass
6. Processing into fuel
7. By-products and co-products
8. Transport of fuel
9. Fuel Use
10. Comparison with replaced fuel

For each step, a set of questions was developed to ascertain which sources of emissions (or sinks) were considered and through which methods, and which assumptions were made.

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Test the GHG methodological framework

- Download the GBEP GHG Methodological Framework (.pdf)
- Relevant regional, national and international rules and regulations
- Relevant documents and studies
- Related institutes and research centres
- Compiled questionnaires and statistics
- Provide your feedback/suggestion

The GBEP methodological framework consists of 10 "Steps" of analysis. Steps 1 and 2 are simple checkboxes in which the user identifies the GHGs included in the LCA and the source of the biomass feedstock. In cases that the feedstock is waste material, further explanation is requested. Steps 3-9 walk through a full LCA appropriate for bioenergy production and use, including emissions due to land use change, biomass feedstock production, co-products and by-products, transport of biomass, processing into fuel, transport of fuel, and fuel use. For each Step the framework presents a series of yes/no questions and checkboxes, with requests for further explanation where appropriate. Step 10 is the comparison with replaced fuel. In this Step the framework includes options for reporting LCA of fossil transport fuels and LCA of stationary heat and electricity production systems.

This on-line version can be completed in multiple sessions. You can re-access your questionnair at a later time without losing previously entered data.

STEP 1 GHGs Covered	**STEP 2** Source of biomass	**STEP 3** Land use change	**STEP 4** Biomass feedstock production	**STEP 5** Transport of biomass
STEP 6 Processing into fuel	**STEP 7** By-products and co-products	**STEP 8** Transport of fuel	**STEP 9** Fuel use	**STEP 10** Comparison with replaced fuel

* Step not complete

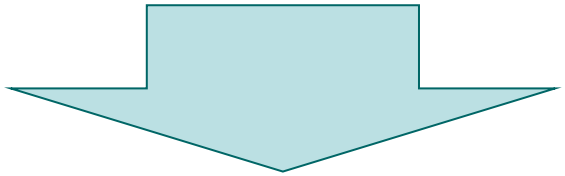
* Step complete

PROPOSED NEXT STEPS FOR GHG TF

Facilitate the implementation of the

GBEP Common Methodological Framework

in projects, training programmes, policy-making and reporting and its inclusion in MRV activities under the UNFCCC framework.



WG on Capacity Building for Sustainable Bioenergy

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2. GBEP TASK FORCE ON SUSTAINABILITY

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GBEP TF ON SUSTAINABILITY: BACKGROUND

Task Force established in June 2008 - Led by the UK until October 2010.
Currently led by Sweden.

SCOPE

- To provide relevant, practical, science-based, voluntary sustainability criteria and indicators to guide any analysis undertaken of bioenergy at the domestic level.
- To be used with a view to informing decision making and facilitating the sustainable development of bioenergy and not to be applied so as to limit trade in bioenergy in a manner inconsistent with multilateral trade obligations.

RESULTS

- Set of 24 sustainability indicators agreed in May 2011.
- Full report on the indicators, including methodology sheets, endorsed by Steering Committee in November 2011.

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WHAT MAKES THIS WORK UNIQUE

The uniqueness of the GBEP Task Force on Sustainability lies in that:

- It is currently the only initiative to have **built consensus among a broad range of national governments and international organizations on the sustainability of bioenergy** (in its full breadth);
- The emphasis is on providing **science-based measurements useful for informing national-level policy analysis and development** (in contrast to sustainability schemes recently developed by others, primarily designed for application at the project or economic operator level);
- **It doesn't have directions, thresholds or limits and do not constitute a standard; nor are they legally binding on GBEP Partners in any way.** Measured over time, the indicators will show progress towards or away from a sustainable development path as determined nationally;
- It addresses **all forms of bioenergy**, rather than just liquid biofuels.

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A SET OF INDICATORS WITHOUT THRESHOLDS, COMBINED WITH THE INTERNATIONALLY AGREED PRINCIPLES OF SUSTAINABLE DEVELOPMENT, RESULTS IN A UNIVERSAL YET FLEXIBLE TOOL FOR GUIDING DECISION-MAKING

Principles of sustainable development relevant to use of GBEP indicators:

- sustainable development is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”;
- environmental limits set by this condition, but can be adjusted by human innovation in technology and social organization;
- social equity between generations and within each generation (poverty eradication key to sustainable development);
- integration of environmental, social and economic considerations, as well as institutional aspects;
- a process: changes made consistent with future as well as today’s needs;
- trade-offs inevitable;
- universal concept and broad strategic framework, national interpretation.

24 SUSTAINABILITY INDICATORS

agreed by 23 countries & 13 international organizations involving a total of 46 countries and 24 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

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ENVIRONMENTAL INDICATORS

ENVIRONMENTAL PILLAR

GBEP considers the following themes relevant, and these guided the development of indicators under this

Greenhouse gas emissions, P ns, Air quality, Water availability, use efficiency and qu ncluding indirect effects

Percentage of land for which soil quality, in particular in terms of soil organic carbon, is maintained or

•Water withdrawn from nationally-determined watershed(s) for the production and processing

•Total area of land for bioenergy feedstock production, and as compared to total national surface and agricultural and managed forest land area

•Percentages of bioenergy from yield increases, residues, wastes and degraded or contaminated land

•Net annual rates of conversion between land-use types caused directly by bioenergy feedstock production, including the following (amongst others):

- •arable land and permanent crops, permanent meadows and pastures, and managed forests;
- •natural forests and grasslands (including savannah, excluding natural permanent meadows and pastures), peatlands, and wetlands

of feedstocks, intermediate products and end products, and use; and in comparison with other energy sources

e change related to bioenergy feedstock production

SOCIAL INDICATORS

Effects of bioenergy use and domestic production on the price and supply of a food basket, which is a nationally-defined collection of representative foodstuffs, including main staple crops, measured at the national, regional, and/or household level, taking into consideration:
•changes in demand for foodstuffs for food, feed, and fibre;
•changes in the import and export of foodstuffs;

•Net job creation as a result of bioenergy production and use, total and disaggregated (if possible) as follows:
- •skilled/unskilled
- •temporary/indefinite

•Total number of jobs in the bioenergy sector and percentage adhering to nationally recognized lal
Fu

•Total amount and percentage of increased access to modern energy services gained through modern bioenergy (disaggregated by bioenergy type), measured in terms of energy and numbers of households and businesses
•Total number and percentage of households and businesses using bioenergy, disaggregated into modern bioenergy and traditional use of biomass

ectors

Incidences of occupational injury, illness and fatalities in the production of bioenergy in relation to comparable sectors

en collecting biomass as
ern bioenergy services

Change in mortality and burden of disease attributable to indoor smoke from solid fuel use, and changes in these as a result of the increased deployment of modern bioenergy services, including improved biomass-based cookstoves

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ECONOMIC INDICATORS

ECONOMIC PILLAR
GBEP considers the following themes relevant, and these guided the development of indicators under this pillar:

Energy ratio of the bioenergy value chain with comparison with other sources, including energy feedstock production, proc feedstock into bioenergy, b and/or lifecycle analysis

nergy production, conversion, distribution and end-use,

ss to technology and

oply, Energy

•Substitution of fossil fuels with domestic bioenergy measured by energy content and in annual savings of convertible currency from reduced purchases of fossil fuels

•Substitution of traditional use of biomass with modern domestic bioenergy measured by energy content

energy feedstocks

farm/plantation

ncies by

20. Chang

•Ratio of capacity for using bioenergy compared with actual use for each significant utilization route

•Ratio of flexible capacity which can use either bioenergy or other fuel sources to total capacity

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Change diversit primar supply bioene

Number and capacity of routes for critical distribution systems, along with an assessment of the proportion of the bioenergy associated with each

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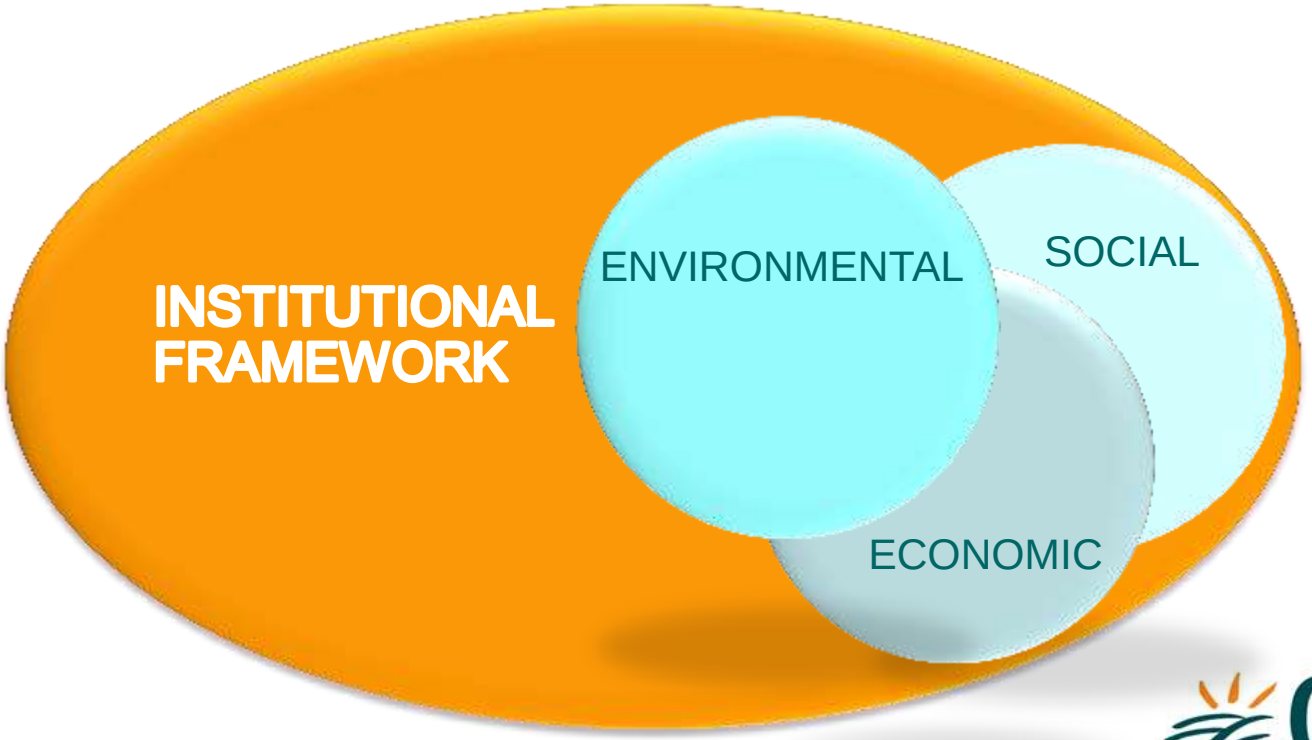
INSTITUTIONAL ELEMENT

In order to enrich interpretation of the GBEP indicators, information on legal, policy and institutional frameworks is extremely important:

- National policy objectives and targets provide useful context.
- Level of government support for bioenergy production and/or use useful in order to perform a cost-benefit analysis of a national bioenergy programme.



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GBEP AGREED THE FOLLOWING CROSS-CUTTING ISSUES RELATING TO GOVERNANCE AND THE LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK WERE RELEVANT TO BIOENERGY SUSTAINABILITY:

- **good governance**;
- **integrated policymaking**, with the institutional structure to support it;
- regular policy **monitoring and review** to ensure quality in policy implementation;
- monitoring, implementation of and **adherence** to national bioenergy policies, goals, and legislation;
- **decentralized, participatory** decision-making processes;
- **public-private partnerships** with a view to advancing energy for sustainable development;
- environmental, social, and economic **impact assessments** of bioenergy projects and national bioenergy programmes;
- **codes of business practice** and responsible investment approaches to achieve the sustainable production and use of modern bioenergy;
- **integrated physical and land-use planning and management**;
- **integrated water resources management**;
- policies and laws that guarantee **well defined land and water use rights** and promote **legal security of tenure**;
- **education and awareness-raising** about bioenergy and its contribution to sustainable development;
- **stable regulatory framework** and an **enabling environment** for the bioenergy sector;
- **open, equitable, secure, non-discriminatory and predictable multilateral trading system** consistent with sustainable development; and
- **improved market access for developing countries**.

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LEVEL OF AGGREGATION

- Many GBEP indicators rely upon data collected at the household, farm and production unit levels.
- All the indicator values can be aggregated or averaged to the national level to give a summary of the impacts of a national bioenergy programme.
- In some cases, a smaller spatial area, e.g. the watershed, is the most appropriate level to inform policymaking.
  - But even here a useful national-level indicator could be formed (e.g. percentage of bioenergy produced in water-scarce watersheds). And local conditions can be built into aggregated indicators by measuring deviation from a local level.
- Different forms of aggregation are also useful, so that governments can see the extent to which different bioenergy practices used in their country are aligned with their policy objectives, and how impacts vary across region, ecosystem, section of society etc.

THE FAO SUPPORT PACKAGE FOR SUSTAINABLE BIOENERGY: MAKING BIOENERGY WORK FOR CLIMATE, ENERGY AND FOOD SECURITY

Define Sustainability Principles
DST: A Roadmap to Sustainable Bioenergy

WHAT TO DO

BEFS/BIAS: Getting Facts Right to make the Right Choices

BEFSCI: Implementing Good Practice and Policies

HOW TO DO IT

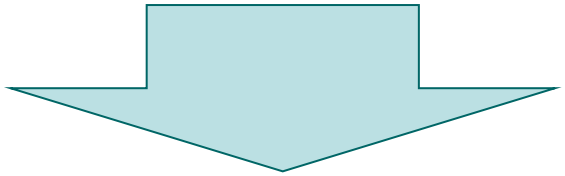
Monitoring impacts at country level through GBEP sustainability indicators

TF ON SUSTAINABILITY: NEXT STEPS

The Task Force will:

- give further consideration to **consulting** a wide range of interested parties and stakeholders, and to how the work can be **disseminated**, including through further outreach activities;
- **review** the indicators and their supporting information in light of their implementation and feedback within approx. two years.

GBEP is already **exploring possibilities for piloting** the agreed indicators, including through **capacity building activities**.



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3. GBEP WORKING GROUP ON CAPACITY BUILDING FOR SUSTAINABLE BIOENERGY

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WGCB

The Working Group on Capacity Building for Sustainable Bioenergy has was established by the Steering Committee in May 2011 and held its first meeting in Tokyo, 16 November 2011.

It is currently co-chaired by the Netherlands and USA, and it will held its next meeting in Rio de Janeiro, June 2012.

SCOPE

- To develop capacity building activities and projects for sustainable bioenergy, through collaborative work among GBEP Partners and Observers. It aims to develop a repository of information and insights gained from experiences and outcomes from these activities and projects.
- Activities and projects will build upon, but not limited to, the work of the GBEP TFs on GHG Methodologies and on Sustainability.
- Activities and projects will be country driven.

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PILOTING THE GBEP INDICATORS (I)

The GBEP sustainability indicators for bioenergy need to be pilot tested in a diverse range of national contexts to establish their feasibility and enhance their practicality as a tool for policymaking. Some GBEP Partners will require technical and financial assistance in order to achieve this.

FAO is managing a pilot project, funded by the German International Climate Initiative, which will last one year and is due to finish in September 2012. It aims to:

- ✓ assess and enhance the capacity of Colombia and Indonesia to measure the GBEP indicators and use them to inform bioenergy policymaking; and
- ✓ learn lessons about how to apply the indicators as a tool for sustainable development and how to enhance the practicality of the tool.

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PILOTING THE GBEP INDICATORS (II)

To achieve this, the project will:

- ✓ familiarize stakeholders with the indicators and key associated concepts;
- ✓ assess data availability and human and institutional capacity;
- ✓ tailor methodologies for measuring the indicators to country conditions;
- ✓ define a data collection strategy and fill major data gaps;
- ✓ establish baseline values for the indicators;
- ✓ identify training needs and help put the pilot countries in a position to measure the indicators periodically;
- ✓ facilitate multi-stakeholder discussion of baseline indicator values and their implications for policy objectives over the coming years; and
- ✓ assess the practicality of the GBEP tool and suggest recommendations for its improvement and future use.

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PILOTING THE GBEP INDICATORS (III)

Likely multiplier effects deriving from an enhanced capacity to collect evidence of the environmental, social and economic impacts of bioenergy and formulate policy to improve the sustainability of the bioenergy sector include:

- ✓reductions in GHG emissions, more sustainable use of biodiversity and natural resources, more job creation and a greater contribution to economic development from bioenergy;
- ✓spillover effects in the agricultural and energy sectors; and
- ✓improved market access and increased foreign investment.

Other piloting: The Netherlands is funding a similar project to pilot the GBEP indicators in Ghana and raise awareness of the process in the ECOWAS region. The Netherlands and Germany intend to pilot the indicators in their own countries too, whilst Japan has already started.

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THE WAY FORWARD (GENERAL)

- Bioenergy development informed by use of the GBEP indicators
- Joined-up approach to *ex ante* assessment/planning and *ex post* M&E
  - this is promoted by various aspects of GBEP indicators, such as water availability, food security, infrastructure, access to energy, biodiversity...
- Discussion related to (aspects of) bioenergy sustainability in other fora should draw on consensus reached in GBEP
  - GBEP indicators and operator-level sustainability schemes are compatible not competing
- Integrated land-use planning/natural resource management
- Integrated food-energy systems
- More international co-operation on research and networks to exchange information, lessons learned etc.
  - Presently much duplication of effort and lack of communication of existing knowledge
  - Regional networks feed into IEA Bioenergy and GBEP

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THE WAY FORWARD: INTEGRATED LAND-USE/NATURAL RESOURCE MANAGEMENT

Part III

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THE WAY FORWARD: INTEGRATED FOOD-ENERGY SYSTEMS

Part III

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THE WAY FORWARD (LINKS TO AUSTRALIA & IEA BIOENERGY)

- Australia could consider further involvement in GBEP:
  - connect with international debate;
  - learn from countries that have more experience in bioenergy production, use and policymaking;
  - influence sustainability of biofuels from potential trading partners, including through providing support for capacity building and seeking common ground;
  - connect with IGOs, MDBs etc.;
  - private sector can also get involved in WGCB activity groups, upon invitation.
- IEA Bioenergy and GBEP should maintain and strengthen links:
  - IEA Bioenergy work can be disseminated through GBEP;
  - IEA Bioenergy experts can take part in capacity building activities of GBEP such as training workshops;
  - GBEP can feed in more global perspectives from policymakers to influence IEA Bioenergy research etc.
  - GBEP and IEA Bioenergy should manage the science-policy interface at the international level.

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CONCLUSIONS

- **The sustainable development of bioenergy requires evidence-based, integrated and participatory governance with a strong international dimension.**
- **In 2011, GBEP agreed a set of 24 relevant, practical, science-based, voluntary sustainability indicators to guide analysis of bioenergy at the domestic level:**
  - **accompanied by detailed methodology sheets and relevant governance issues;**
  - **representing consensus among broad range of national governments and international organizations (no excuses, with capacity caveat);**
  - **piloting of the indicators now underway, with associated capacity building.**
- **Bioenergy sustainability needs to be considered in broader context of integrated land-use planning/natural resource management: new lessons can be learned, and old knowledge revived and shared.**
- **There is scope for enhanced cooperation between GBEP and both Australia and IEA Bioenergy**

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FOR FURTHER INFORMATION

Do not hesitate to contact me:

jonathan.reeves@fao.org

Further information is available at:

www.globalbioenergy.org

THANK YOU!

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