GBEP Working Group on Capacity Building
for Sustainable Bioenergy (WGCB)

Activity Group 2
"Raising awareness and sharing of data and experiences from the implementation of the GBEP indicators"
Bonn, Germany, IRENA Offices, 3-4 July 2014

The Activity Group 2 met in Bonn on 3-4 July 2014, kindly hosted by IRENA with the support of GIZ. Argentina, Brazil, Cambodia, France, Germany, Indonesia, Paraguay, USA, European Commission, FAO, IRENA and UNEP participated in the meeting as members of the AG2. An expert from University of KwaZulu-Natal (South Africa) also participated.

The objective of this meeting was to continue sharing lessons learned by countries who performed or are performing piloting projects on the measurement of GBEP Sustainability Indicators, and to identify key items where further discussion is needed, in particular for indicators that would need some kind of refinement, in order to further facilitate their use.

Horst Fehrenbach, Co-Leader of the Activity Group 2 and *Maria Michela Morese*, GBEP Executive Secretary, welcomed participants highlighting the importance of further sharing lessons learned on the implementation of the GBEP indicators and recognizing the good work done by Partners and Observers on the piloting so far.

Session 1 – Overview on implementation of GBEP indicators by Partner or Observer countries

Horst Fehrenbach (Germany) elaborated on the status of implementation of GBEP sustainability indicators highlighting that around 18 countries, among Partners and Observers, have implemented, are implementing or have committed to implement the GBEP indicators. He gave an overview of the report developed by Ecofys and commissioned by the Dutch Government on initial lessons learned and recommendations for the development of the GBEP indicators from five pilot studies (Colombia, Ghana, Germany, Indonesia and the Netherlands), and concluded that the main emerging issues in terms of lessons learned and further guidance needed are the following: i. data availability; ii. data appropriateness; iii. data handling (capacity); iv. attribution to bioenergy; and v. imported/exported biomass. Participants were invited to focus discussions around these emerging issues during that meeting in Bonn.

Session 2 – Updates on experiences from implementing GBEP indicators

Within this session the following Partners updated the AG2 with results and lessons learned from the implementation of GBEP indicators:

- o Argentina - *Agustina Branzini, Ministry of Agriculture, Argentina*
- o Germany - *Susanne Köppen, IFEU, Germany*
- o USA - *Kristen Johnson, USDoE, USA*
- o Indonesia - *Maslan Lamria, Ministry of Energy and Mineral Resources, Indonesia and Marco Colangeli, FAO*

Session 3 - Roundtables on environmental, social and economic indicator experiences

During this session participants were initially divided into three parallel sub-groups, one for each of the three pillars of the GBEP Sustainability Indicators (Environmental, Social and Economic), and then reconvened in plenary, with the aim to identify and discuss some issues related to the measurement of the GBEP indicators: major challenges; data availability and appropriateness; and relevance of capacity building. The results of this initial discussion are reflected in Annex I.

Conclusions and next steps

The Activity Group 2 recognized the added value of further discussing the main issues identified in Annex I related to the implementation of GBEP indicators and the need to work on further guidance to address them.

The following next steps were agreed:

- Partners and Observers will be invited to ***further fill in the Annex I table*** with their respective experiences and views – Contribution to be sent to the GBEP Secretariat by 10 October 2014.

- The ***updated Table reflecting input received will be circulated to Partners and Observers*** by 31 October 2014 in view of its discussion during the GBEP WGCB to be held in Rome (FAO HQs) in mid-November 2014.

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GBEP Sustainability Indicators for Bioenergy – ENVIRONMENTAL PILLAR

INDICATOR NAME	1) Which are the major challenges when measuring this indicator?	2) Data availability? Data appropriateness?	3) How relevant is capacity building?	4) Any other fundamental obstacle?	5) Comments.
1. Lifecycle GHG emissions	1) suggested to use with best available data, not using default values possibly. 2) it is important to specify in which contexts it is suggested to use one or the other. 3) finally the data should be in line the internationally reported data (UNECE, UNFCCC …)	1) Data available. 2) Better not to use default values because they represent proxy. 3) Biograce, GREET and other models are useful tools to be used, because methods and background data are already included	Yes relevant. a. For training on methodology b. For generation of country specific data	The issue imported/exported biomass for energy has to be solved.	
2. Soil quality	1) More guidance needed on the type of measurement i.e. how many centimeters down the level of the land. 2) Concentrate on hot spots.	1) mostly lack of data 2) where data bases exist, data are often under privacy protection 2) Confidentiality agreements for data for data may be necessary.		Mapping of soil quality needed to identify hot spots	Some proxies to be considered: - Organic farming (should be protective in most cases) - Any certificate referring to good practice acc. to soil
3. Harvest levels of wood resources	1) A better definition of modern bioenergy is necessary to specify if wood fuel is considered modern. (→ what about charcoal?) 2.) focus on incremental growth	1) Lack of data with forest inventory. 2) A lot of wood is available and informally traded and not reflected in statistics.			Connecting with REDD reports.
4. Emissions of non-GHG air pollutants,	1) Tremendous work is implied in the measurement of this indicator. As a result a good proxy would be	1) Default values are very good to be used for this indicator. Actual values may also play a big role.			

including air toxics	sufficient to produce good data. 2) If standards (regional and national) are available, these could be used as a basis.	2) air toxics are crucial, normally no data and defaults are too rough.			
5. Water use and efficiency	1) Field measurement is required for this indicator. 2) It is suggested not to use national average data because too general data. 3) so far withdraws have been measured and not real impacts. As a result guidance on how to measure impacts is needed.	1) Maps about water availability are there → hot spots detectable → need ground truthing			1) This indicator has been measure so far in several countries, however it would be interesting to see the results of the measurement of this indicator in more vulnerable countries from a water use and efficiency point of view. 2) Should evapotranspiration be considered (in addition to withdrawal)
6. Water quality	1) The indicator requires measurement of nutrients/pesticides that reaches a water body This implied a very complicated measurement and is mostly not feasible. 2) Could a proxy for impact on quality be acceptable?	1) There should be data for application of fertilizers and pesticides at farm level, there might less data about pollution of water bodies - there are merely data or even models to trace pollution back to the polluter. However: hot spots are detectable			1) Lesson could be learned from areas where within a water shed there is only one sort of cultivation (example: sugar cane in CO)
7. Biological diversity in the landscape	1) problem with Indicator 7.1: it is a violation of law 1) indicator 7.2 does not capture the effects of invasive species due to bioenergy and non bioenergy related agriculture production.	1) Indicator 7.1 is difficult to be measured because of areas that are protected by law, there won't be official data. 2) the definition of "nationally recognized or protected areas" is not enough. High conservation biological values are not always nationally recognized. This reflects on data appropriateness.	Need to strengthen capacity at local level		1) Reconsider revision of indicator 7.1 because some related activities would be not legal in some national contexts. 2) Need to use different language in the indicator in order not to lose the "non nationally recognized protected

		3) No major problems of data availability.			areas" in the measurement.
8. Land use and land-use change related to bioenergy feedstock production	1) Mapping technologies may help on this indicator. 2) Difficulties to find impact directly referred to bioenergy production. 3) consistent time frame important	1) Data available are mostly relying on statistics, which could reduce the level of reflection of facts. 2) Remote sensing needed in cases where registered data bases are to rough			1) Data to be used as a "baseline' would be very useful.

GBEP Sustainability Indicators for Bioenergy - SOCIAL PILLAR

INDICATOR NAME	1) Which are the major challenges when measuring this indicator?	2) Data availability? Data appropriateness?	3) How relevant is capacity building?	4) Any other fundamental obstacle?	5) Comments.
9. Allocation and tenure of land for new bioenergy production	1) Concept of "new" bioenergy production is complex to define because in many cases bioenergy is produced from feedstocks that are not dedicated solely to energy purposes (e.g. sugarcane ethanol, or palm oil biodiesel). 2)In addition to attribution (above) the main challenge in measuring this indicator is the lack of laws on recognition of land rights (in particular customary rights) ; for this purpose FAO has developed a set of voluntary guidelines for land tenure which to date has not been implemented by many countries.	1) Lack of data. Strong emphasis on surveys (primary data) which are resource intensive (time, funding, etc).	1) At the policy level, land tenure issues are one of the major areas for capacity development in many countries.		
10. Price and supply of a national food basket	1) Very hard to run autonomously for countries especially because: A) not easy to understand its Tier's approach; B) does not capture, in an evident manner, all four dimensions of food security; C) most importantly, it requires sophisticated analysis (e.g. for Tier III) and requires a very committed stakeholders working group (Tier II). 2) The Tier I approach rarely captures any interaction between bioenergy and implication with food commodities, unless already evident, thus it could be	1) Data are often available (e.g. FAOSTAT, Ministry of Agriculture, other stakeholders). Availability is not a problem in most cases.	1) Being this indicator so complex, yet being able to describe many aspects of the bioenergy and agrichain, specific training at both policy and technical level is fundamental. 2) Eg., on AGLINK model		

	misleading.				
11. Change in income	1) Hard to attribute to bioenergy (data are often aggregated for agriculture or industry sectors) 2) Impact of inflation 3) Feed-in tariffs	1) Data available is not disaggregated as well as often the workers do not receive a specific portion of the salary for the "bioenergy" component of their job (in the case of multipurpose agricultural commodities i.e. sugarcane, soybean, etc). Assumptions have to be made in order to attribute a possible change in income of agriculture sector workers to bioenergy only.			1) Suggested to make best use of cooperative works in order to get data.
12. Jobs in the bioenergy sector	1) For the reasons above (ind. 11) the attribution to bioenergy is complicate, especially in terms of "net" job creating. Further guidance is needed. 2) Where available, data is owned by the private sector, often reluctant to share.	1) Data available is owned by the private sector, and appropriateness may be questionable.		Markets are changing dynamically → changes situation of jobs.	1) Suggestion of possible deletion of the wording "Net"form the indicator descriptor. It would be too complicated to develop a counterfactual scenario to figure out the net result.
13. Change in unpaid time spent by women and children collecting biomass	1)It relies heavily on surveys (i.e. resource intensive) 2) it should be made gender neutral in order to describe the situation in different country contexts (e.g. in Indonesia, men collect biomass, thus the indicator as it stands fails to capture this aspect)	1) Data are not available (in the tested countries) also because woodfuel is often collected/traded in the informal market; need for representative surveys (large sample over several months where seasonality exists)			1) This indicator could be gender neutral, to reflect different local circumstances. 2) Apparently UNDP is carrying out surveys in Africa on this matter (very relevant in this context) and it is advisable that GBEP liaises with UNDP in order to find out whether the survey could help measuring this indicator.
14. Bioenergy used to expand access to	1) To date, because the indicator mainly targets expanded access to				1) This indicator is not related to bioenergy

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modern energy services	energy (in off-grid areas) due to bioenergy installations, no pilot country has targeted modern bioenergy forms used to expand access to energy where this was not previously available.				produced and put on the grid, but on bioenergy produced and used directly at the local level.
15. Change in mortality and burden of disease attributable to indoor smoke	1) Limited statistics available are aggregate of DALYs lost due to upper respiratory disease, thus including possible sources such as cigarette smoke, etc. 2) In order to assess a change, *reliable* statistics are needed for a long period of time.	1) Limited data available	1) Possibly, by partnering with local Ministry of Health, statistics or surveys that cover a time window sufficient to describe the development of those chronic diseases such as those caused by indoor smoke coming from cooking source (thus targeting the family members more exposed) may lead to the identification of the responsibility of traditional bioenergy use.		
16. Incidence of occupational injury, illness and fatalities	1) Data owned by the private sector, having no incentive for reporting/sharing data.	1) Insurance companies do have data, however, in the country tested (e.g. Colombia) the percentage of insured workers is limited, particularly in the agricultural phase (e.g. 5% of total sugarcane cutters).	1) Fundamental, as in the case of any other indicator which information is held primarily by the private sector, is to partner with local authorities and build the capacity to assess this aspect and produce statistics. It is also important to develop the capacity of national policymakers that favor mandatory insurance regimes and discourage informal jobs in bioenergy (and agriculture) sectors.		

GBEP Sustainability Indicators for Bioenergy - ECONOMIC PILLAR

INDICATOR NAME	1) Which are the major challenges when measuring this indicator?	2) Data availability? Data appropriateness?	3) How relevant is capacity building?	4) Any other fundamental obstacle?	5) Comments.
17. Productivity	1) So far this indicator has been measured easily, getting data from the government relevant Ministries. National averages are sufficient.	1) Mainly relying on secondary data i.e. statistics on prices. Therefore estimations/modeling are needed.			1) National statistics may be used.
18. Net energy balance		1) Data availability may be an issue.			
19. Gross value added		1) Data availability may be a challenge as GDP is calculated by sectors, and bioenergy is not a separate sector but appears within renewable or energy sectors. 2) Possibility to measure tendencies by using proxy (e.g. economic turn-over).			
20. Change in the consumption of fossil fuels and traditional use of biomass					
21. Training and re-qualification of the workforce					
22. Energy diversity					

23. Infrastructure and logistics for distribution of bioenergy				
24. Capacity and flexibility of use of bioenergy				