

**11<sup>th</sup> meeting of the GBEP Working Group on  
Capacity Building for Sustainable Bioenergy**  
*FAO Headquarters, Lebanon Room D-209*  
Rome, 28 October 2019

**Co-Chairs Conclusions**

The GBEP Working Group on Capacity Building for Sustainable Bioenergy (WGCB) held its 11<sup>th</sup> meeting on 28 October 2019 at FAO Headquarters in Rome.

Argentina, Brazil, Canada, Egypt, Ethiopia, Germany, Italy, Japan, Kenya, Philippines, Spain, Sweden, United States of America, Viet Nam, EUBIA, FAO, ICRAF, IEA, IEA Bioenergy, IRENA, UN Environment, UNIDO and WBCSD participated in the meeting as Partners and Observers. Before beginning the meeting, a minute of silence was observed for our friend and colleague Jeffrey Skeer from IRENA who sadly passed away earlier in 2019. He was remembered for his cheerful outlook and his dedication to his work.

**Opening of the WGCB**

The Co-chair, Mr. Miguel Almada from Argentina welcomed participants to the 11<sup>th</sup> meeting of the WGCB and submitted the draft [agenda](#) that was officially adopted. Mr. Bah F. M. Saho from ECREEE/ECOWAS (co-chair) sent his apologies that he was not able to attend the meeting.

Discussions on Activity Groups (AG) 2, 3, 4, 7 and 8 were held, along with a session dedicated to the importance of involving young generations within GBEP activities and discussions. The meeting was followed by a field trip on Wednesday 30 October to a biogas plant in Latina.

**Activity Group 2 – “Raising awareness, and sharing of data and experience on the implementation of the GBEP indicators”**

[Horst Fehrenbach](#), AG2 Co-Leader, provided a brief overview on the implementation of GBEP indicators (GSI) worldwide. During the session, there were presentations from Ethiopia and Kenya on the recent finalisation of the measurement of the GSI in their countries, as well as from Germany on the second measurement of the GSI and how to visualise the evolution of the GSI over time.

[Berhane Kidane](#) (Ethiopia) presented the final results of the project on the implementation of the GSI in Ethiopia, coordinated by UN Environment and funded by Germany through the International Climate Initiative (ICI). The project focused on two bioenergy pathways: biogas for households and institutions from organic waste (animal dung and human excreta); and solid biomass (charcoal and firewood) produced with advanced technologies, such as improved carbonisation, and used in improved cookstoves for cooking and heating. Mr. Kidane explained why the project was important in Ethiopia as a way to build capacity of both researchers and government officials for the assessment of the sustainability of the bioenergy sector, and to support decision makers in developing effective integrated policies for sustainable bioenergy production and consumption. The project also reinforced relationships between stakeholders and developed new data sources. As well as the specific results of the measurement, Mr. Kidane also provided some general feedback on the GSI implementation; he acknowledged the importance of the GSI as a key tool for analysing

bioenergy pathways but recognised that there is currently no institution in Ethiopia that is collecting bioenergy data in a coordinated manner. One of the recommendations of the project in fact is that coordination among regional and national government institutions is needed with a view to play a great role in the improvement of the indicator implementation. The final meeting of the project is to be held on 4 November 2019 and both the Technical Report and the Synthesis Report will be available soon after.

[Rocio A. Diaz-Chavez](#) (Stockholm Environment Institute, Kenya) presented the status of the same project here above, but in Kenya. Two bioenergy pathways were identified for indicator measurement: use of sugar cane bagasse briquettes in the tea industry; and sustainable charcoal production, on woodland and farmland, used by households. For each pathway, the stages of production and consumption were detailed, and the main environmental, social and economic issues were identified. For sugar cane bagasse briquettes, some of the critical issues were the alternative uses of sugar cane bagasse, transport distance, low wages, and the need for technical improvement of boilers. For charcoal, some issues identified were: the reduction of non-GHG emissions through reduced transport, determined species and improved kilns; the definitions of woodland and farmland; health implications; lack of coordination of policies; effects on food basket of price of charcoal; and need for improved kilns. The project has had positive impacts on the bioenergy sector in Kenya, through the consolidation of data from different organisation that can be used for monitoring, capacity building on GHG emissions calculations, stakeholder engagement, and policy innovation.

[Horst Fehrenbach](#) (Germany) presented the results of the second implementation of the GSI in Germany, the aim of which was to enable the monitoring of the impacts of bioenergy production and use at the national level over time, and to identify options to connect a periodic assessment of the GSI with other reporting and data collecting schemes. He focused on how they visualised the GSI results through synopsis tables, which they recommend in order to easily display the state and trend of indicators. Germany aims to continue the periodic monitoring of the GSI every 4-5 years.

It was announced that a letter of intent will be signed between AFREC/AU and FAO/GBEP to measure the GSI in as many African countries as possible through a long-term programme that will facilitate the collection of bioenergy data.

Experiences on the implementation of the GBEP indicators will continue to be gathered and shared with the GBEP community as projects are finalized and others proceed.

### **Activity Group 3 – “Study Tour for capacity building and training”**

[Rosemarie Gumerá](#) (Philippines) presented an overview of the 7th Bioenergy Week, held 25-27 June 2019 in Manila, The Philippines. The Week was hugely successful, with over 250 people attending the two days of seminars and one-day field trip. The Week was praised for opening opportunities for knowledge sharing among the GBEP partners and observers with the ASEAN countries on bioenergy policies, lessons learned and recent developments. It also provided a space for bilateral meetings between the GBEP partners and observers with Philippine bioenergy developers and farmers in order to foster technical cooperation. The Bioenergy Week was preceded by a one-day National Workshop to familiarise local stakeholders with the GSI, in preparation for their potential measurement in the country in the future.

It was announced that the 8<sup>th</sup> Bioenergy Week in 2020 will be held in Addis Ababa, Ethiopia in April or May (exact dates to be confirmed), to be kindly hosted by AFREC/AU. The GBEP Secretariat requests inputs from Partners and Observers by 31 December 2019 on potential themes and speakers to be invited to the Bioenergy Week in Ethiopia, so that a draft agenda

can be developed and circulated. It was suggested that it would be useful to have an elaborated concept note for the Week to be attached to the agenda and sent to local participants to provide more information on the event and stimulate further participation.

It was also announced that the 9<sup>th</sup> Bioenergy Week in 2021 will be held in Asunción, Paraguay.

#### **Activity Group 4 - “Towards sustainable modern wood energy development”**

[Olivier Dubois](#) (FAO), AG4 Leader, presented a progress report for the Activity Group. At the 10<sup>th</sup> WGCB Meeting, a new thematic area of *woody biomass for forest landscape restoration and sustainable livelihoods* was discussed and accepted. Since then, an electronic group has been created and a teleconference was held to examine potential activities. In May 2019, the activities under the new theme began, with the circulation of a template to collect examples of positive relationships between sustainable wood energy and forest landscape restoration.

One of these good practices was presented during the meeting by [Dennis Garrity](#) (ICRAF) on the work of the Global EverGreening Alliance and the integrated food-energy-restoration concept. Mr. Garrity presented the use of *Gliricidia* trees intercropped with smallholder coconut in Sri Lanka, where the wood is used for electricity generation, whilst the foliage is used for biofertiliser and fodder. This can have positive impacts not only on the yield of the food crops but also on the farmer income, land restoration and soil carbon sequestration. Mr. Garrity presented how this is being scaled up across Africa, for example intercropping with maize in Zambia.

Further to a discussion on the case study presented and with a view to collect information on the scalability of each case study, it was decided that the template for the collection of good examples will be updated to include information on the business case and on the carbon sequestration potential. Partners and Observers are requested to submit their good examples by 31 December 2019. Webinars will be organized in 2020 to share good examples collected.

[Tiziana Pirelli](#) (GBEP Secretariat/FAO) presented the additional contribution to AG4 from the collaboration with GIZ and IEA Bioenergy. She presented the project on Facilitating dialogues on Forest Landscape Restoration (FLR) and wood energy, which runs from September 2019 to May 2020. The main aims of the project are to raise awareness on the relevance and opportunity of sustainable wood energy, production and use, as a contribution to FLR; and to promote dialogue of stakeholders across FLR and bioenergy sectors. As part of the project, there will be national dialogues in both Ghana and Togo (which build upon the lessons learned from a previous project building capacity on the GSI in the two countries) and international dialogues.

#### **Activity Group 7 – “Biogas”**

A presentation was given by [Constance Miller](#) (GBEP Secretariat/FAO) to provide an update on the activities of the group. She presented the most recent draft of the Stocktaking Paper, which aims to give a better understanding of the perceptions of stakeholders on the factors important for success of biogas value chains in different regions of the world using SWOT analysis. In 2018, regional analysis was carried out in Latin America and the Caribbean through interviews and an online survey, as part of the 6<sup>th</sup> Bioenergy Week in Argentina. Research will be carried out in Asia at the end of 2019 as a follow up of the 7<sup>th</sup> Bioenergy Week in the Philippines, and a final draft of the stocktaking document will be prepared in the first half of 2020.

Further to this, an e-learning webinar was held during 2019 on the BiogasDoneRight® model in collaboration with *Consorzio Italiano Biogas* (CIB), the *Instituto Nacional de Tecnología Agropecuaria* (INTA) and Michigan State University. The webinar was held in both Spanish and English to cover different geographical regions, and the recordings of the webinars are available [online](#). The opportunity to hold further webinars was discussed during the meeting, and David Chiaramonti (University of Florence, Italy) expressed his willingness to hold webinars on biochar technologies and the synergies with anaerobic digestion.

### **Activity Group 8 – “Advanced Liquid Biofuels”**

[Constance Miller](#) (GBEP Secretariat/FAO) gave an overview of the activities of the Group during 2019, which had been agreed virtually, after the decision to formally establish the group was taken at the 10<sup>th</sup> WGCB in November 2018. The first of these activities will be a collection of advanced biofuels good practices and policies: a template was circulated to Partners and Observers in May 2019 and five examples have so far been received. During the meeting, two of these examples were presented: the integrated biorefinery concept (Emily Mathaler, USA) and the RenovaBio policy (Luis Horta Nogueira, FAPESP/UNICAMP, Brazil).

[Emily Marthaler](#) (USA, AG8 leader) presented a good example of the integrated biorefineries concept in the USA, which are biorefineries that are capable of efficiently converting a broad range of biomass feedstocks into commercially viable biofuels. Ms Marthaler presented the research carried out on the lessons learned at the national level from the evaluation of pilot, demonstration and pioneer integrated biorefineries. She also discussed the Integrated Biorefineries Research Facility (IBRF), which, through NREL, enables researchers and industry partners to develop, test, evaluate, and demonstrate processes and technologies for the production of bio-based products and fuels.

[Luiz Horta Nogueira](#) (FAPESP/UNICAMP, Brazil) presented the Brazilian RenovaBio policy, which aims to promote GHG emissions mitigation in line with COP21 commitments and foster bioenergy agroindustry. The policy works through annual decarbonisation targets, evaluation of GHG emissions through life-cycle analysis, and the issuance of GHG emission reduction certificates.

Further good practices and policies will continue to be collected, and Partners and Observers are requested to provide more case studies through the circulated template by 31 December 2019. Webinars will be organized in 2020 to share good examples collected.

### **The importance of involving young generations within GBEP activities and discussions**

At the end of the WGCB meeting, there was a short session to allow Partners and Observers to discuss potential opportunities for GBEP to develop activities that would involve young people.

To begin the session, [Reuben Sessa](#) (FAO) presented the work of the Youth and United Nations Global Alliance (YUNGA) to involve young people in environmental and social issues through informal education, such as the ‘Challenge Badges’. As well as presenting the Energy Challenge Badge, Dr. Sessa introduced some of the ways that YUNGA seeks to increase outreach and promote action and change through ‘YUNGA Ambassadors’, the United Nations Youth Award, and youth participation in international institutions such as the UNFCCC climate change negotiations.

After this introduction, some Partners and Observers presented youth involvement that has already taken place in the context of GBEP. [Ahmed Abdelati](#) (Egypt) reported on the youth empowerment model through the second implementation of the GSI in Egypt, whilst [Suani](#)

[Coelho](#) (Brazil) gave an overview of the PhD Programme in Bioenergy at the University of São Paulo, and [Luis Carlos Pereira](#) (Paraguay) presented the youth involvement in the measurement of the GSI in Paraguay. [Miguel Almada/Maria R. Murmis](#) (Argentina) presented the ‘PROBIOMASA education kit’, which is part of a project for the promotion of biomass derived energy in Argentina. This kit aims to increase awareness and understanding in children, their families and the community in order to promote and facilitate the use of sustainable biomass energy and improve current practices. It includes brochures for children, teaching materials for educators and an educational [video](#).

It was agreed that GBEP should make more of a systematised effort to involve young people in its activities, and that the GBEP Bioenergy Weeks may represent a good opportunity for outreach. Therefore, the GBEP Secretariat will explore the options to include local young people at the Bioenergy Week in Addis Ababa, including presentations of bioenergy research.

A page on the GBEP website will be dedicated to Youth with a view to collect contributions of the partnership to youth involvement. Partners and Observers are requested to provide more ideas for youth involvement by 31 December 2019.

### **Conclusions and next steps**

The next steps that were discussed and agreed upon are:

- **Activity Group 2** will continue to gather and share experiences on the implementation of the GBEP indicators as soon as projects are developed.
- **Activity Group 3** - 8<sup>th</sup> Bioenergy Week will be held in Addis Ababa, Ethiopia in April/May 2020 focused on themes of direct interest to Africa (exact venue and date to be confirmed in due time). The GBEP Secretariat requests inputs from Partners and Observers by 31 December 2019 on potential themes and speakers for the Bioenergy Week, so that a draft agenda can be developed and circulated.
- **Activity Group 4** will continue with the activities under the new theme of ‘woody biomass for forest landscape restoration and sustainable livelihoods’, specifically the collection of examples of positive relationships between wood energy and FLR. A revised template will be circulated by the GBEP Secretariat, and Partners and Observers are requested to submit their good examples by 31 December 2019. Webinars will be organized in 2020 to share good examples collected.
- **Activity Group 7** is developing a stocktaking paper to guide future activities of the group on biogas. This paper will be finalised by early 2020, with the inclusion of the regional analysis in Asia. After the success of the e-learning webinars on BiogasDoneRight® held during 2019, more webinars were suggested for 2020 and the GBEP Secretariat will explore options proposed during the meeting, including a webinar on biochar.
- **Activity Group 8** will continue with the collection of good practices and policies in advanced liquid biofuels. Partners and Observers are requested to provide more examples through the circulated template by 31 December 2019. Webinars will be organized in 2020 to share good examples collected.



- **Youth involvement** – efforts will be made to involve young people in future bioenergy weeks, starting from the 7<sup>th</sup> Bioenergy Week in Addis Ababa, Ethiopia in 2020. A page on the GBEP website will be dedicated to Youth with a view to collect contributions of the partnership to youth involvement. Partners and Observers are requested to provide more ideas for youth involvement by 31 December 2019.

### **Field Visit – Agri Power Plus biogas plant**

In the context of the 11<sup>th</sup> Meeting of the WGCB, a field visit was organized to a biogas plant located in the province of Latina, Italy called Agri Power Plus. It was built in the year 2011, before which time the site had been used for pasture. The plant represents a very interesting example of the circular economy in action, whilst also contributing to the mitigation of GHG emissions through the substitution of fossil fuel and chemical fertiliser use.

The biogas production system is fed 90% by by-products of nearby agro-industrial activities (e.g. food production residues, including pasta, dairy products, bread, vegetables, etc.), animal manure and olive pomace. The remaining 10% of feedstock is silage, 50% of which is produced by the company (60 ha cultivated by the company) and the remaining 50% is cultivated by local producers in a 20km radius.

The plant has a capacity of 1MW and produces electricity that is sold to the Italian grid, maintaining an average of 8 million kWh/year. The electrical energy is produced by the combustion of biogas, which is composed of 55% methane (CH<sub>4</sub>) and 45% carbon dioxide (CO<sub>2</sub>). During the process of electricity production, the generator also contributes to produce heat water, which is sold as thermal energy to the 70 hectares of greenhouse complex located next to the plant. About 7 million kWh/year of thermal energy is sold to the nearby greenhouse and therefore substitutes fossil fuel use for maintaining the temperature levels of the greenhouse complex. Furthermore, 1.6 kWh/year of the thermal energy is consumed by the plant itself to maintain the temperature in the digester at optimum levels. The digestate is also used as a natural fertiliser by local farmers. A visual representation of the production process can be seen in the diagram in the Annex.

## Annex

### Production process at Agri Power Plus

