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

Activity Group 3 - Workshop
Study tour for capacity building and training

Rome, FAO Headquarter, 15 November 2012

Amb. Mariangela Rebuá, Director of the Ministry of External Relations of Brazil, leader of this Activity Group, welcomed the participants and highlighted the importance to initiate an exchange of information on sustainable bioenergy experiences, in preparation of the "study tour/bioenergy week" to be held in Brasilia in March 2013. To this end, experts from Brazil (leading Partner) and FAO (hosting organization of the workshop) were invited to share their experiences.

Fostering sustainable bioenergy deployment - The Environmental pillar

Mr. Manoel Teixeira Souza Jr., Director-General of Embrapa Agroenergy, gave an overview of the legal framework of Brazilian Environmental Legislation and potential improvements concerning bioenergy and agriculture in Brazil. In the Latin American country, a set of land tenure laws regulates land use change, especially in the Amazon area, establishing legal reserves and protection of water resources. The agroecological zoning of sugarcane excludes sensitive biomes for the expansion of its cultivation. In compliance with these laws, it was estimated the potential for an expansion of sugarcane plantations of a further 50 million ha from now to 2020. This land, located at least 2.000 km away from the Amazon, is mainly degraded land. Increasing productivity of already existing pastures, a reduced amount of land will generate enough feed for a growing herd. The agro-ecological zoning of palm oil, which aims at recovering vegetation in the outskirts of native vegetation, thus contributing to progressive decrease on deforestation, was also presented. Moreover, the positive life cycle analysis of biofuels in Brazil, where ethanol has an energy balance of about 9 to 1, proves it contributes to the reduction of green house gases emissions. Brazilian policies are therefore closely linked to GBEP indicators on sustainability for bioenergy.

Ms. Elizabeth Beall, FAO bioenergy expert, presented a study on evaluation and planning of bioenergy in Tanzania using the Water Evaluation And Planning (WEAP) tool. WEAP is a software for integrated water resources planning that assists the planner throughout the process of planning and policy analysis. In the case study presented, the tool individuated a high risk of water scarcity consequent to the plantation of irrigated sugarcane or sweet sorghum for bioethanol in the area of study.

Fostering sustainable bioenergy deployment - The Social pillar

The FAO Land Tenure Officer, Ms Francesca Romano, presented the Voluntary Guidelines on Land Tenure. The guidelines, approved by the FAO member Countries, call governments to respect legitimated holders of land rights and to respect their rights. They promote the enjoyment of existing tenure rights and provide access to juridical support when dealing with infringements. They stress the principles of human dignity, non-discrimination, gender equality, consultation and participation, continuous policy and regulation improvement.

Mr. Manoel Teixeira Souza Jr. gave a presentation on the changes in the Brazilian energy matrix over the last 40 years, introduced the national biodiesel program and set a correlation between high productivity and promotion of family agriculture with sustainability in the

production of biofuels. These aspects were considered important for their social implications for the Brazilian population. Over the last 40 years Brazil has drastically reduced energy dependence from foreign countries. Also, the Country has increased primary energy by 400%, compared to 40 years ago, mainly due to oil explorations and hydroelectric investments. These are followed by sugar products (ethanol & bagasse for bioelectricity) as second source in the national energy mix (about 17%). Brazil has greatly invested in bioenergy and other renewables and, as a result, in 2010 more than 80% of the electricity supply was produced with non-fossil sources. Moreover, major investments went towards productivity increase. Transportation sector has also increased steadily over the last 10 years (+150%). Brazil has had several programs to stimulate domestic ethanol use. The next challenge for Brazilian bioenergy industry is the increase in the production of biodiesel (since 2005 Brazil has a 5% biodiesel mandate). Biodiesel comes almost entirely from soybean, as a by-product (81% of 4 billion liters produced yearly), but feedstock diversification is needed to reach the blend of 10% biodiesel nationally (B10). Oil palm will be the chosen feedstock to increase the national production of biodiesel. In order to achieve these ambitious goals, all agricultural stakeholders will have to play an important role. The Government of Brazil will reinforce the Family Agriculture Program through which $7.6 billion in 2011 and $8.6 billion in 2012 were invested to allow family owned farms to increase their production and wellbeing. The Social Seal for biodiesel promotes family farming and demonstrates the feasibility of sustainable production of bioenergy and food, in line with GBEP 24 indicators of sustainability.

Fostering sustainable bioenergy deployment - The Economic pillar

Ms. Erika Felix, FAO Natural Resources Officer, discussed the findings of a study on the economic feasibility assessment of sunflower based biofuels in Tanzania. Four scenarios were proposed. In the first scenario straight vegetable oil (SVO) would be produced sourcing 100% of the feedstock from smallholders (500.000 liters per year). In the second scenario, biodiesel would be produced rather than SVO always sourcing 100% of the feedstock from smallholder farming. Scenario 3 and 4 instead, presented a model of feedstock sourcing composed by 40% smallholders and 60% large estate companies. All scenarios also included the production of co-products to be marketed. The economic analyses applied to this case study revealed that best option from an economic perspective is represented by scenario 4 when co-products are considered.

Mr. Cesar Cunha Campos, from Fundação Getúlio Vargas, gave a presentation on the economics of the bioenergy and agriculture sector in Brazil. As a result of a national biodiesel program, Brazil has saved US$ 3.4 billion in diesel imports. There are about 70 biodiesel refineries in the country which employ local labor force. The next step is the possibility to meet the demand for the B10 blend which would account for a saving of US$ 6.8 billion per year. In the case of ethanol, economic advantages of the Brazilian experience are even higher. Between 2002 and 2011 was recorded a 120% increase in the number of formal workers in the ethanol production segment. Workers in the ethanol industry earn 58% more than those from sugarcane plantations and have higher education rates. It was calculated that in Brazil, every 5% increase in ethanol consumption, creates some 40.000 new jobs and distributes roughly $38 million in salaries.

Conclusions

Participants received an overview of some policies, tools and instruments for fostering sustainable bioenergy deployment.
From 11 to 15 March 2013 the Government of Brazil will host the first “Study Tour/Bioenergy week” in Brasilia. It will consists of short training courses, open to about participants, analyzing technical and public policy aspects of sustainable bioenergy

development, in line with GBEP 24 indicators of sustainability. Bioenergy technology and knowhow will be shared through fieldtrips to biodiesel and bioethanol plants.
Participants were invited to contribute with comments and suggestions of case studies to be shared, towards the development of the agenda of the Brasilia event.