

Summary of the Workshop & Business forum on Sustainable biomass production for the world market

November 30 – December 3, 2005, University of Campinas, Campinas – Sao Paulo, Brazil.

Organised by Task 40 (Sustainable Bio-energy Trade; securing Supply and Demand) with University of Campinas – SP, Brazil and Task 30 (Short Rotation Crops for Bio-energy Systems) and Task 31 (Biomass production for Energy from Sustainable Forestry) under the Bioenergy Agreement of the International Energy Agency.

Background and scope of the meeting.

Bio-energy trade has expanded rapidly in recent years with forestry and agricultural residues, pellets, bio-ethanol and vegetal oils being traded at national, regional and global energy markets. A growing number of market operators are strongly involved or interested in the bio-energy trade. In addition, various international organizations and NGO's are exhibiting an increased level of interest in the concept of international bio energy trade. By means of the international platform of the IEA working co-operatively with industrial organisations, governmental bodies and NGO's, this combined task aims to contribute to the development of sustainable biomass markets in the short to long term and at different geographical scales (from regional to global). In its intended activities, the task programme will take the several stages of development of sustainable biomass energy markets, at the national, regional and global level fully into account.

Objectives of the meeting:

This workshop, organized jointly between IEA Bio-energy Task 40 and IEA Bioenergy Tasks 30 and 31, focuses on the business experience and perspectives for biomass trade and export, the (ecological) impacts of large-scale biomass production and how sustainable biomass production for the world market can be secured.

With contributions from business (producers, traders, buyers), science (impacts, future possibilities for biomass production), policy and institutions (on criteria, certification and strategy) the event aims to:

1. How large-scale sustainable biomass production for an emerging world market can be realized by understanding the impacts of various biomass production systems.
2. Highlight business opportunities for sustainable international bio-energy trade and address key barriers in this respect.
3. How ongoing market development can be combined with a sustainable growth of biomass production capacity.
4. Subsequently, the outcomes should contribute to formulating strategic advice, highlight opportunities and formulate prioritize policy actions and RD&D needed to support developments described

Summary of the sessions

The Brazilian example

Presented by a large number of speakers, the impressive developments in the various biomass sectors were illustrated in detail. For ethanol from sugar cane, many speakers emphasized the remarkable reduction in ethanol prices over the last 30 years, the high efficiency of ethanol production and the favorable GHG/energy balance, the limited amount of land needed for further ethanol production (compared to other crops such as soy beans or corn) and the improved environmental and social impacts, especially in Sao Paulo state. While the main focus still lies on production for the domestic market, an increasing amount of ethanol is earmarked for export in the

future. Furthermore, Brazil has vast experiences with Eucalyptus plantations, subsequent charcoal production for e.g. the production of pig iron, and is starting up a biodiesel program. Summarizing, over the next 10 years, Brazil will double its ethanol and significantly develop biodiesel production to meet domestic and export demand. While this will yield significant GHG reductions, also some concerns were voiced by the WWF that the required increase of land may (indirectly) put additional pressure on the Cerrado and the Amazon, and may increase social and environmental impacts, if not done in a sustainable way.

Examples from sustainable forestry and SRC

Examples from task 30 and 31 illustrated that certification in forestry has already been implemented in many countries, but that these are primarily nationally initiated. Main elements of certification include standards, certification and accreditation. It was shown that for sustainable forestry systems site-specific management is critical, and that soil quality and productivity can be increased. Continuous improvement should be sought via adaptive forest management strategies. A key issue for successful certification is credibility, which can be achieved by setting standards independent of vested interests, emphasizing forest audits (not documents), including minimum thresholds in standards and by developing credible tracing/tracking system. Based on these experiences, one recommendation was to standardize and certify bioenergy to ensure public acceptance, simplify and rationalize international trade render GHG control more effective.

International biomass trade is taking off

As both the export statistics of ethanol exports from Brazil and pellet export from Canada and the import statistics from e.g. the Netherlands showed, the volumes of internationally traded biomass are increasing strongly. Unfortunately, for many biomass types, such as pellets or agricultural residues, no international statistics are available. Also, as examples from Finland and the Netherlands reveal, trading patterns are often complex, and the use of indirectly imported biomass may play a significant role.

International level of activity, but more need for coordination

During the workshop, presentations were given by UNCTAD, UNEP and FAO. Furthermore, also organizations such as UNECE, WB, IEA and WTO have participated at other occasions in the debate concerning global biomass trade. Thus, it is evident that many different (UN-) organizations are aware of the importance of global biomass trade, and have developed various initiatives to support the further development of biofuels production and trade. However, it became clear that these developments are often fragmented, and that there is no international focal point to act as an authority.

Emerging issues

The potential demand as well as (long term) potential supply for biomass production is very large in terms of EJ. Also, the socio-economic and ecological implications of this land-use can be vast, both in a negative or positive way. In addition, some biomass sources can now directly compete with fossil fuels. While this is a very positive development in itself, it also emphasizes the need for action in order to avoid unsustainable exploitation of these resources. While the impressive projected increase in ethanol production in Brazil will yield significant GHG reductions, also some concerns were voiced by the WWF that the required increase of land may (indirectly) put additional pressure on the Cerrado and the Amazon, and may increase social and environmental impacts, if not done in a sustainable way. Exports are expected to play a role and could offer an opportunity for sustainability improvements. Greenhouse gas balances and sustainability certification could be a key component of a national climate and development policy. Also concerns regarding competition for land, with food, forest, other markets, water resources were voiced during the workshop. In addition, the question was raised how potential economic benefits can be used for e.g. poverty alleviation.

As suggested by several speakers, biomass certification could be a method to address these issues. However, despite available certification systems and efforts (forestry and agricultural certification systems, as well as some

first attempt for biomass certification), many sustainability aspects are only covered globally. Especially coverage of land-use (and induced land use) are often critical components. Another concern expressed regarding the implementation of strict certification systems is the creation of an additional trade barrier.

Information collection and dissemination was mentioned several times as a significant bottleneck. Missing information on trade volumes, biomass prices, potential future supply and demand developments etc. are inhibiting the creation of a level-playing field. Also the lack of positive examples may cause an underestimation of the positive effects of biomass trade.

Finally, it was mentioned that biofuels are not the only option to replace conventional transportation fuels. Gas-to-liquid and coal-to-liquid are clear competitors to e.g. ethanol from sugar cane. This clearly emphasizes the urgency to develop the biofuels market sustainable fast.

Key recommendations:

A number of barriers have been identified such as technical and non-technical trade barriers, sustainability issues, immature markets and small volumes, and lack of information and good statistics. These barriers should be removed by the stakeholders involved, as biomass markets are often still vulnerable. Data collection and dissemination should be performed in a more structured way to support the creation level playing field, e.g. by the IEA. Also additional information should be collected in a structured way, e.g. examples and experiences from existing biomass trade projects. UNCTAD therefore proposed the creation of an international advisory group, composed of international recognized experts and a “hub” for biofuels, which could act as centre of information for countries and as a place for consultation among organizations dealing with biofuels.

With respect to biomass certification, the aim should be an internationally accepted framework based on existing experiences. A great diversity of competing systems should be avoided. Such a certification framework could be created by initiating a gradual process for certification procedures, starting at a regional level. The certification system should include a wide variety of stakeholder in order to ensure credibility. It could be based on current best practices and should be supported with high quality scientific knowledge. It is acknowledge that a gradual development is needed, and such a certification system should not create new barriers (i.e. negative experiences as gained with the CDM should be avoided. Crucial in such system is the build-up of credibility by verification and accreditation of the criteria.

Note: all presentations given by speakers during the conference are available for download at the Task 40 website: www.fairbiotrade.org