INTERNATIONAL CONFERENCE
"Socio-economic Impacts
of Biofuels and Bio-products"
Final Conference of the Global-Bio-Pact Project
Brussels - Belgium
29-30 January 2013

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The debate , the gap, the legislation

A strong public debate on sustainability aspects: biofuels are confronted with many environmental and socio-economic impacts. (social impacts include property rights, labour conditions, social welfare, economic wealth, poverty reduction, etc).

In order to address these sustainability aspects of biomass production for industrial uses, different national and international efforts towards certification systems have been evolving, including the European Renewable Energy Directive (RED). However, besides many efforts on environmental aspects, there is a general lack of socio-economic considerations.

The RED includes concrete environmental prerequisites for biofuels. It also includes reporting obligations for the Commission on the impact on social aspects in the Community and in third countries of increased demand for biofuels (Article 17). Based on the results of these reporting obligations on social sustainability, a revision of the Renewable Energy Directive is foreseen to possibly include additional criteria ensuring the socio-economic sustainability of (biomass and) biofuels.

This gap is addressed by the EU-FP7 Global-Bio-Pact project in a comprehensive approach involving partners from Europe, Latin America, Africa, and Asia. The main aim of the Global-Bio-Pact project is the improvement and harmonisation of global sustainability certification systems for biomass production, conversion systems and trade in order to prevent negative socio-economic impacts.

Food vs Fuel

Global biofuel production in 2007: 54 billion litres, 1 per cent of the fuel in the transport sector (IEA 2008).

Many countries, low-, middle-income and rich, have implemented ambitious targets and policies to promote significant biofuel industries.

In industrialised countries, the main driver of biofuel growth has been the concern to reduce greenhouse gas (GHG) emissions. In contrast, low- and middle income countries have seen biofuels as a way of addressing a number of goals including greater energy security, promotion of exports and rural development.

Feedstocks for liquid biofuels are the largest source of new demand for agricultural products and will have a significant effect on markets in the next decade and beyond .(FAO) State of Food and Agriculture Report 2008,

Linkage of environmental and socio-economic impacts

Linkage of environmental and socio-economic impacts:

- preserving "the environment" actually means safeguarding food production, sustaining livelihoods, and preserving health (OECD 2001). This linkage is best expressed in the "ecosystem services" approach. Ecosystem services are the benefits people obtain from ecosystems.

The impacts associated with the production of a feedstock are fairly independent of its use, i.e. whether the feedstock is used for biofuels / bio-products or for other purposes.

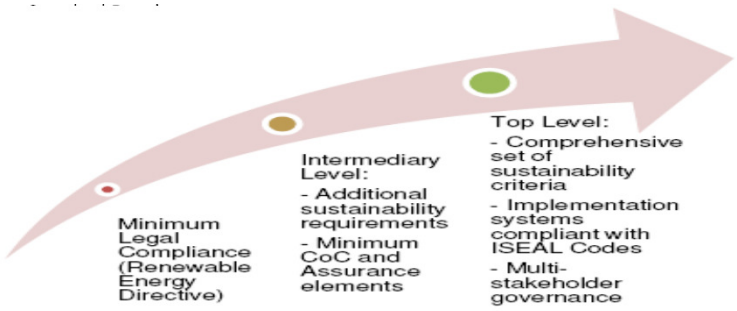
Some of the linkages regarding food security will need additional studies and a different methodology to be able to fully demonstrate that biofuels production may cause food insecurity and in how far biofuel mandates in developed countries and / or globally rising energy prices contribute to that.

Recommendations on how to harmonise sustainability certification for biofuels and bio-products

Many differences exist among EU-recognized voluntary standards and general sustainability standards.

Improvements in the current EU legislation, in order to raise the overall level of robustness and quality of recognised standards:

- Proofs of Compliance
- Chain of Custody
- Assurance



Sustainability ladder towards best practices

Standards and regulatory framework

- Harmonisation of the different available standards and schemes (recognised and non-recognised by the EU) for biofuels will be a difficult task to conduct at a European and global level. Furthermore, there is not strict need to do so, even with a metastandard.
- In the case of Europe the political and regulatory frameworks are in some way providing the bases for the criteria and indicators considered necessary to assure a sustainable biofuels production.
- One of the main concerns with the standards is whether they generate barriers for trade and result in discrimination. The World Trade Organisation (WTO) is still unclear in terms of the possible barriers to trade.

Certification and sustainability

- Certification is already implemented for biofuels and bioliquids in the European Union through the Renewable Energy Directive (RED).
- All private certification systems differ considerably from each other. The legislation establishing the alternative EU national sustainability systems also differs significantly between Member States.
- National systems are difficult to apply for economic activities performed outside the geographic borders of a State. Companies already show preference for voluntary certification systems because of their larger coverage and flexibility. Voluntary systems are of easier applicability in an international context and are applicable to other-biomass feedstock uses such as the food industry.

Policy orientations

Neither states nor markets, in isolation, are sufficient. Complex combinations of regulatory and market-based instruments, operating at different scales, are needed to manage the impacts of investments in biofuel and multi-purpose feedstocks.

The role of governments in consumer countries is also critical, particularly in the introduction of regulations to constrain imports of unsustainably produced goods . While this is important from the demand side, it may lead to trade barriers that favour domestic production over imports.

Biodiesel and bioethanol together represent more than 98 % of the biofuels consumed in the EU, in 2010 79 % of total biodiesel consumed was produced in Europe . The main biodiesel producers were in Germany, Spain, France, Italy and the Netherlands.

There is major overcapacity of biodiesel production: of the 20 mega tonnes per year production capacity, 57 % was not used in 2010. Also overcapacity in bioethanol production: in 2010, almost 24 % of production capacity was not used. Despite this overcapacity, an additional capacity of 4 mega tonnes is planned, according to notifications.

COM perspectives for biofuels

Commission published (17/12/12) a proposal to limit global land conversion for biofuel production, and raise the climate benefits of biofuels used in the EU. The use of food-based biofuels to meet the 10% renewable energy target of the Renewable Energy Directive will be limited to 5%. This is to stimulate the development of alternative, so-called second generation biofuels from non-food feedstock, like waste or straw, which emit substantially less greenhouse gases than fossil fuels and do not directly interfere with global food production. For the first time, the estimated global land conversion impacts – Indirect Land Use Change (ILUC) – will be considered when assessing the greenhouse gas performance of biofuels.

As such, the development of infrastructure for producing second generation biofuels needs to be accelerated.

The overall picture shows that the European policy drive, boosted by internal market objectives, is having a direct and positive impact on energy investment. However, with short timescales to integrate the whole European energy network by 2015, and to deliver the 2020 targets, the current rate of investment is unlikely to be sufficient to achieve the results expected.

From FP7 to Horizon 2020

(Draft) Roadmap for implementing Horizon 2020 S.Specific Programme for Societal Challenge 2:

FOOD SECURITY, SUSTAINABLE AGRICULTURE, MARINE AND MARITIME RESEARCH AND THE BIO-ECONOMY

2.4.3. Supporting market development for bio-based products and processes

Main line 2.4.3.1: Support to policy and market development: Standardisation and demand side measures, e.g. labelling, procurement. Methodologies and approaches for Life cycle analysis of bio-based products including trade-off between the various uses of biomass.

- -Pre-normative research for the development of European standards for bio-based products that they are complementary and compatible with existing ones.
- -Assessment and definition of suitable demand-side measures for bio-based products such as labelling and public procurement measures for bio-based products.
- -Development of harmonised and compatible methodologies and approaches for life science assessments (LCAs) and sustainability criteria for the production of biomass and bioproducts in Europe and promotion of these criteria at international level.
- -Development of understanding on the current and future biomass availability and demand trends with view to optimise biomass uses, including their climate change mitigation potential.
- -Providing the necessary scientific basis for GMOs policy and GMO societal dialogue, such as means to identify and wherever possible quantify associated potential environmental risks/benefits and to assess socio-economic implications of the deliberate releases and placing on the market of GMO's or bioproducts based on GMO. Efficient means to engage in an informed dialogue with society on this topic should be identified and implemented.