CONFERENCE/WORKSHOP ORGANISER'S REPORT

"The Contribution of the Emerging Bioeconomy to Sustainable Development"

Brief Description of what the conference/workshop was about

The workshop discussed why and how the bioeconomy can contribute to the sustainability development goals as defined by the OECD. The three main topics covered were:

- Topic 1: Measuring the emerging bioeconomy
- Topic 2: Potential contribution of the emerging bioeconomy to sustainability
- Topic 3: Regulatory policies and implications for sustainability

Participation – details of total number of participants, countries they came from, backgrounds (academia, industry, etc.)

More than 50 participants from mainly European and American countries but also from Australia and Africa attended the workshop and contributed to discussions. Presenters covered ten OECD countries (Australia, Austria, Canada, Germany, Italy, The Netherlands, Spain, Sweden, United Kingdom, and the United States). Background of most participants was academia but also from research institutes, industry, policy, and consulting.

Major highlights from the presentations

Topic 1: Computable General Equilibrium (CGE) models can measure the contribution of the bioeconomy. Advantages of CGEs are the coverage of economy wide impacts on employment and income, land use, rebound effects, and food security. Disadvantage is the model complexity. Technological change is often treated as exogenous. The results largely depend on the quality of the available data. Those are very scarce. The EC JRC-IPTS conducted a survey of 162 firms engaged in the bioeconomy providing a first overview about activities in Europe. The implementation of the survey was very demanding, but the first round provides an example that can be used for future activities. National accounting data provide an alternative . The advantage is, that once the sectors are defined, a share of the value-added and employment that contributes to the bioeconomy can be computed periodically. One of the general problems is the treatment of changes in the stock of natural resources and changes in environmental impacts as those are not directly covered in national accounting systems and firm surveys.

Patents offer an alternative source of information about the development of the bioeconomy. They provide detailed information but only cover the R&D-side. Interestingly, US and EU patent submissions show similar trends until 2003 to 2005, but from than onwards EU patent submissions continued to decline while in the US the number of submission stabilised.

Topic 2: The impact of climate change on agricultural production is important in the sustainability debate of the bioeconomy. It is important to combine socio-economic data with physical data (e.g. crop production systems) to understand how people will adapt to climate change. Detailed micro-level are needed to understand how farmers adopt through migration, innovation, adoption of new technologies/crops, and trade. Besides biotechnology, other new technologies such as biological control can help to address challenges posed by climate change. Those technologies will become even more important in the EU as less alternatives are available.

Topic 3: Over the last decade and more, the time and costs for approvals for pest and disease control methods increased substantially. One of the problems observed is risk assessments only consider risks while from an economic perspective a balance of benefits and costs would be more useful. Further, approval processes in the EU and the US are very costly and make it more difficult for small companies to compete. Regulatory policies are also often not well defined providing the opportunity to use the legal system to challenge developments opposed by specific stakeholders but also encouraged the private sector to develop its own standards resulting in an increase in vertical integration along the food supply chain.

Major outcomes/conclusions in terms of policy relevance

There is no common definition of the bioeconomy and hence, comparisons between countries are difficult. But since the focus between countries differs (e.g., forest, fishery, chemicals, etc.), a (minimum) framework (theory) is necessary as a common ground for a harmonized data collection and evaluation strategy to monitor the development of the bioeconomy. New technological developments in the bioeoconomy are often delayed by differences in regulations among OECD countries. Harmonizing regulations by reducing duplications in data and other information requirements can reduce regulatory time and direct costs and increase the contribution of the bioeconomy to sustainable development and the competitiveness of participating small and medium sized enterprises

Relevance to CRP theme(s)

The presentations contribute to the theme "sustainability in practice". The workshop addressed sustainability of innovative systems and their adoption (measuring the bioeconomy), current technologies as well as technologies with prospects in the future and adoption constraints. Both bio-economic (potential of GMOs and biological control) as well socio-economic issues (regulatory policies) were addressed.

Website for further details – please also indicate if the presentations are/will be available on the website

The presentations are available at: http://economia.uniroma2.it/icabr/ed-2015/