

## Sustainable Landscape Management for Bioenergy and the Bioeconomy

Joint IEA Bioenergy Task 43 & FAO Workshop, 11-12<sup>th</sup> October 2018, The FAO Headquarters, Viale delle Terme di Caracalla, Rome, Italy

IEA Bioenergy Task 43 has launched an initiative to identify attractive examples of landscape management and design for bioenergy and the bioeconomy. The goal of this initiative is to compile world-wide innovative examples as a means of showcasing how the production of biomass for bioenergy can generate positive impacts in agriculture and forestry landscapes. These examples are also meant to serve as sources of inspiration that other biomass producers can use to enhance the sustainability of their own activities.

A year ago, a warm-up event for the current workshop was organized as part of the [Bioenergy Australia Conference 2017](#) where contributions were handpicked to demonstrate good examples and stimulate a discussion on how these can be relevant for developing attractive systems in the Australian context.

This event takes us a step forward towards by placing the discussion of biomass feedstock systems within the broader bioeconomy. The attractive examples selected for this workshop show how biomass can be produced together with food and other products in sustainably managed landscapes. This is a highlight topic of the workshop host, the Food and Agriculture Organisation of the United Nations, as described at [the Energy-Smart Food for People and Climate Programme \(ESF Programme\)](#).

**The aim of the workshop is to provide a platform for a dialogue between stakeholders along biomass supply chains where invited representatives from important organizations will share their perspectives on the showcase examples and landscape management and design for bioenergy and the bioeconomy.**

**The workshop will mix presentations of attractive examples and work in groups to identify opportunities and tradeoffs along biomass supply chains and frameworks for identifying and supporting attractive examples of landscape management and design for bioenergy and the bioeconomy.**

**The outcome of the workshop will be a report summarizing presentations and outcomes of the group discussions.**



## Agenda

13:00 – 13:20	Registration with welcome coffee and introduction
	<ul style="list-style-type: none"> <li>🌿 FAO: welcome</li> <li>🌿 Dimitriou: Welcome to IEA Bioenergy Task 43 workshop</li> </ul>
13:20 – 13:40	<ul style="list-style-type: none"> <li>🌿 Dubois: <a href="#">The Energy-Smart Food for People and Climate Programme</a> (ESF Programme)</li> <li>🌿 Berndes: WP1 Landscape management and design for bioenergy and the bioeconomy</li> <li>🌿 Kulisic: Sustainable Landscape Management for Bioenergy and the Bioeconomy workshop format</li> </ul>
13:40 - 14:30	🌿 Introduction of stakeholders (3' per stakeholder)
14:30 – 14:45	Coffee/tea break
14:45 – 16:30	Section 1 (45' presentations; <60' work in groups)
	<ul style="list-style-type: none"> <li>🌿 FAO (Maltsoglou I.): Assessment of residue availability in Turkey and Egypt and how the competing use of residues aspect was accounted for – through the BEFS RA methodology</li> <li>🌿 Bentsen N.S.: Grass based biorefinery systems producing biofuels/biomaterials/feed</li> <li>🌿 Kline K. &amp; Negri C.: Modelling: converting agricultural marginal land in the test watershed from the typical rotation to perennial bioenergy crops, Illinois, USA</li> <li>🌿 Moderated discussion</li> </ul>
16:30 – 16:45	Coffee/tea break
16:45 – 18:30	Section 2 (45' presentations; <60' work in groups)
	<ul style="list-style-type: none"> <li>🌿 Armitage Ch. (IRENA&amp;ICRAF): A set of integrated practices: a multi-faceted market-led approach to improving food and energy security and adaptation to climate change, which incorporates alley cropping of <i>Gliricidia sepium</i> into small-scale maize farming systems in Zambia</li> <li>🌿 FAO (Dubois O.): Water-energy-food nexus in bioenergy-landscapes</li> <li>🌿 Bezzi G. et al: Biogas done right</li> <li>🌿 Moderated discussion</li> </ul>
<b>END OF DAY 1</b>	
<b>20:00 dinner</b>	
09:00 – 10:00	Reporting back of the Sections 1&2 and introduction to the Day 2
10:00 – 10:15	Coffee/tea break
10:15 – 12:00	Section 3 (45' presentations; <60' work in groups)
	<ul style="list-style-type: none"> <li>🌿 Dale V. et al: Cellulosic-based biofuels are strengthening rural investment and development in the United States</li> <li>🌿 FAO (Colangeli M.): Web-based sustainability assessment tools for Bioenergy projects on underutilized lands in Europe</li> <li>🌿 Thiffault E. et al: Opportunities for making use of unloved wood</li> <li>🌿 Moderated discussion</li> </ul>
12:00 – 13:00	Lunch break
13:00 – 15:00	Section 4 Where to move from here?
	<ul style="list-style-type: none"> <li>🌿 Plans forward – FAO (O. Dubois)</li> <li>🌿 Plans forward – new triennium of IEA Bioenergy (M. Brown &amp; G. Berndes)</li> <li>🌿 Stakeholders' ideas on collaboration opportunities (3' each)</li> <li>🌿 Wrap up (I. Dimitriou &amp; O. Dubois)</li> </ul>
<b>END OF DAY 2</b>	



## Background of the Workshop

**IEA Bioenergy Task 43** addresses issues critical to mobilizing sustainable bioenergy supply chains, including all aspects of feedstock production, its markets and environmental, social and economic impacts. The objective is to promote sound bioenergy development that is driven by well-informed decisions by landowners, businesses, governments and others. The Task has a global scope and includes commercial, near-commercial and promising feedstock production systems in agriculture and forestry. The primary focus is on land use and land management of biomass production systems.

The Work Programme is organized in three work packages:

- ✂ WP1 - Landscape management and design for bioenergy and the bio-economy;
- ✂ WP2 - Developing effective supply chains for sustainable bioenergy deployment; and
- ✂ WP3 - Governance of bioenergy supply chains.

The Task collects, analyses, and shares technical and non-technical information related to biomass feedstock supply and provides relevant actors with timely and topical analyses, syntheses and information. Workshops, seminars and other events are regularly arranged and specific Task studies are conducted to analyse topics identified as important by the Task.

### Landscape management and design for bioenergy and the bio-economy

Bioenergy implementation requires strategies for efficient use of biomass from sustainably managed landscapes. Formulating such strategies requires knowledge in how landscape management and land use decisions affect biodiversity and the capacity of ecosystems to provide biomass and other ecosystem services.

**Task 43 aims at supporting landscape management and design for bioenergy and the bioeconomy, by expanding the knowledge base required for sustainable expansion of biomass production systems that also contribute positively to biodiversity and the generation of other ecosystem services.**

The Task takes a landscape level approach to deployment of biomass production for bioenergy and integration of this objective with ownership and societal objectives for existing land use and associated systems. The below overarching questions are addressed, which are relevant for both agricultural and forestry systems and reflect that agriculture and forestry activities often co-exist and shape the landscape together:

- ✂ Which are the most suitable areas for production and/or extraction of various biomass feedstocks?
- ✂ How can biomass feedstock production systems be located, designed and managed to increase resource use efficiency, avoid/mitigate negative and promote positive environmental, economic, and social effects?
- ✂ How can outcomes be optimized to meet the goals of individual stakeholders and society as a whole, including environmental, economic, and social goals?
- ✂ How can analysis and assessment inform participatory processes engaging landowners, policy makers, and other stakeholders in further developing and re-defining goals and plans for landscape management and designs?

The IEA Bioenergy Task 43 WP1 goal echoes within the efforts of [Food and Agriculture Organisation of the United Nations \(FAO\)](#) to investigate options to develop energy-smart food systems. Namely, in 2011, FAO published a [Study](#) that looked at energy uses along the entire agrifood chain from field to plate and the potential of agrifood systems to produce energy. [The ESF Programme](#) is a multi-partner initiative that works with member countries helping them move towards energy-smart agrifood systems that are less dependent on fossil fuels. The four pillars of the ESF programme form the overall framework of FAO's work on Energy:



- 🌿 Access to modern energy services in rural areas
- 🌿 Energy efficiency in agrifood systems
- 🌿 Renewable energy in agrifood systems
- 🌿 Application of a water-energy-food nexus approach

In this way, ESF programme directly contributes to FAO's Strategic Programmes:

- 🌿 Energy needed to ensure food security
- 🌿 Technologies related to climate-smart agriculture
- 🌿 Addresses energy poverty in rural development
- 🌿 Directly contributes to the development of green and inclusive food value
- 🌿 Contributes to safe access to sustainable energy in emergency/rehabilitation settings.

With ESF programme, FAO takes a step further in promoting integrated food-energy systems for climate-smart agriculture activities.

This workshop will bring together efforts by IEA Bioenergy Task 43 and FAO in promoting integrated food-energy systems that work for people and the climate. The objective is to disseminate attractive examples among bioenergy market stakeholders fostering wider implementation.

## Aim

The workshop aims at:

- 🌿 Sharing experiences and knowledge that strengthen the FAO's four pillars
- 🌿 Exchanging worldwide concepts, programmes and projects with high replicability potential
- 🌿 Inspiring novel solutions that will accelerate promotion of both IEA Bioenergy Task 43 and FAO's efforts

The contributions from the workshop will be presented in a Report published by FAO and IEA Bioenergy.

Selected contributions will be invited to submit a manuscript for a Special Collection in the peer review journal WIREs Energy and Environment, published by Wiley.

