



SESSION DESCRIPTION

ID: S10

Circular Bioeconomy – a solution to the global challenges of climate change, decreasing natural resources and environmental degradation?

Hosts:

| | Title | Name | Organisation | E-mail |
|-----------------|---------------------|------------------------|--|--------------------------------|
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Abstract:

In the transition towards a low fossil carbon economy, scarcity of resources represents a global societal challenge. It underpins the need for circular (self-sustaining) resource management systems supplying human needs while ensuring ecosystem health and preserving production systems, within finite planetary boundaries. As resources get scarcer, circulating them within the economy is increasingly valuable. Given the urgency to stabilize global climate, re-circulating carbon along with inducing negative emissions are well-acknowledged necessities in order to reach the Paris Agreement goal of limiting global mean surface temperature to 1.5°C (or well below 2°C). Parallel to increasing scarcity of resources, there are increasing global demands for clean water-, soil- & air, arable land, healthy food and sustainable consumer products, among others. These demands all put pressure on the boundaries of our finite planet and call for preservation and enhancement of ecosystem services as an inherent characteristic of the Circular Bioeconomy. Both for developed and developing countries there is an opportunity of using the circular regenerative bioeconomy as a developmental framework across multiple sectors of the economy. The vision is to develop a framework, which incorporate ecosystem health preserving resource flows as a precondition for economic growth and to develop key performance progress indicators a circular bioeconomy that contribution to social, environmental and economic sustainability development and ensure prosperity from local to global scale.

Goals and objectives of the session:

To answer the following questions:

1. In light of the Sustainable Development Goals, what should be the key parameters characterizing the performance of circular regenerative bioeconomic value chains?



2. How do we measure key performance parameters of existing production and consumption systems and their transition into climate neutral systems self-supplying production systems?

3. How do we measure the capacity of manmade systems to interact with nature in a way to restore/sustain healthy ecosystems and services; e.g. the provision of resources in a circular bioeconomy?

4. How do we ensure that the various forms of emerging use of primary and secondary biomass resources are restorative by design?

Planned output / Deliverables:

1. Propose key performance progress indicators in a circular bioeconomy

2. Develop a framework for how to measure ecosystem service preservation from circular resource flows in a circular regenerative bioeconomy

Session contributions for the open Journal Sustainability, Special issue "Ecosystem services in a bio- and circular economy"

https://www.mdpi.com/journal/sustainability/special_issues/Ecosystem_Services_Circular_Economy

Voluntary contributions accepted:

yes

Related to ESP Working Group/National Network:

[Sectoral Working Group: SWG 10 – ES in the circular \(bio-\)economy](#)