Biomass: Key tradeoffs and opportunities in the SDGs

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This talk covers biomass (4Fs)

13 billion tonnes of biomass produced globally (2005)

82 % food and feed

11 % bioenergy

7 % biomaterials

(Wirsenius 2007)

The ratio of biomass produced for feed and bioenergy is increasing
Trade-offs

- Limited Resources
- Different Levels of Ambition (SDGs vs BAU)
- Human Rights Issue

Opportunities

- Follow-up and Review
- Contribute to Increasing Accountability
- Indicators! Supporting reviews
Competition between different biomass needs might lead to incoherent policies and serious implementation issues.
The 2030 Agenda provides a framework for the necessary design of sustainable biomass production.

**Principle of universality:**
Encourages importing countries to redesign their consumption patterns which creates incentives for producing countries.

**Principle of Integration:**
Calls producing countries to account for the incorporation of all dimensions of sustainability and the implementation of participatory and inclusive processes.
Estimated global land use expansion under BAU conditions

Expansion of global cropland from 2005 to 2050 under business-as-usual (BAU) conditions and possible savings from reduced consumption and improved land management in million hectares (Mha).

Source: UNEP (2014), Popp et al. (2014)
Are we on the right track?

Safe operating space

Overshoot of safe operating space

BAU expansion of global cropland compared to safe operating space
Gap under business-as-usual scenarios between the ambition set by the SDGs and the biomass and natural resources that are available to us

Potential conflicts

Need to review trade-offs between the SDGs

which calls for an integrated approach at national and global level in implementing the SDGs.
BIOENERGY - MANAGING EXPECTATIONS AND TRADE-OFFS OF THE 2030 AGENDA

BIOENERGY IS NOT GOOD OR BAD... IT VERY MUCH DEPENDS!!

UNDERLINE OPPORTUNITIES TO USE BIOMASS SUSTAINABLY

A EUROPEAN PERSPECTIVE

ENERGY... THINK ABOUT ALL BIOMASS... NOT ONLY ANTHROPGENIC BIOMASS!!

INSIDE THE LIGHT OF THE SDGs...

COUNTRY EXPERIENCES AND GOVERNANCE SYSTEMS

SUSTAINABILITY VS. PROFITABILITY

IT'S ALL ABOUT POWER!!

WE NEED INTEGRATED POLICIES...

WE NEED A FIXED AMOUNT OF LAND!!

1% URBAN
25% UNIUED
12% CRUOS
36% OTHER LAND/GRASSING AREAS
27% FORESTRY

THERE ARE STRONG FEEDBACKS BETWEEN DIETS, LAND USE, YIELDS, LIVE STOCK AND BIOENERGY!!

WE NEED TO MAKE TRADE-OFFS TRANSPARENT!

THE AGRICULTURAL SYSTEM IS AT THE CORE!!

WE NEED FURTHER RESEARCH!!

ONE GLOBAL PICTURE!!

A NEW GENERATION EARTH SYSTEM MODEL

REDUCE LEVEL OF CONSUMPTION OF FUEL / FEED

BINDING STANDARDS & PRODUCTION

DIVERSESIFIED AGRICULTURE

MULTIFUNCTIONAL LAND USE SYSTEMS

THE SMART BIOENERGY INNOVATION CONCEPT!!

POWER TO THE PEOPLE!!

MICHIEL SCHENK
LIVE ILLUSTRATION
Brazil and the Curse of Soy
Intensified biomass production may cause severe consequences

→ Sustainable production and consumption of biomass that take social, economic and environmental challenges into account is of essential importance for an integrated implementation of the 2030 Agenda
Opportunities

• Follow-up and review: SDGs force us to look at the interlinkages and discuss them
• Tracking Biomass Consumption
• Engage with the process:
  – Assess GBEP indicators compared to SDG indicators
  – Global thematic reviews under the umbrella of the High-level Political Forum to support an integrated perspective on the SDGs.
  – At the national level, multi-actor approaches in finding ways to achieve the SDGs in their integrity.
Tracking Biomass Consumption: Scientific Underpinning for the Implementation of the 2030 Agenda
Complex production and consumption patterns require that national policies of one country need to take effects on other countries into account.
E.g. Germany: Increasing dependence on imported agricultural resources and products (such as soya or palm oil)

→ policies need to take socio-economic and environmental consequences - “ecological footprints”- in producing countries into account
Soy production quantity (tonnes) for Germany’s consumption

- Brazil: 3,000,000
- Argentinia: 1,500,000
- USA: 1,000,000
- Paraguay, Canada, China, India, Uruguay, Ukraine, Italy: Very small quantities
Worldwide one third of harvest gets wasted, in Europe about one quarter

Source: Gustavsson et al. for FAO (2011)
Further Strategies:

- Improve land use planning
- Invest in rehabilitating degraded soils (Land Degradation Neutrality)
- Improve diets and reduce waste
- Assess biofuel targets and biomaterials demand


http://static.independent.co.uk/s3fs-public/thumbnails/image/2015/10/26/14/Red-Meat.jpg
Potential land expansion savings from reduced consumption and improved land management

- Improving diet and reducing waste: Low estimate 96, High estimate 135
- Halving biofuel targets: Low estimate 24, High estimate 40
- Controlling biomaterials demand: Low estimate 0, High estimate 57
- Land use planning: Low estimate 11, High estimate 13
- Investment programmes to regenerate degraded soils: Low estimate 30, High estimate 74

(Saving range) 161 | 319

(Saving range) 120 | 232
**Trade-offs**

- Limited Resources
- Different levels of ambition (SDGs vs BAU)
- Human rights issue

**Opportunities**

- Follow-up and Review
- Contribute to Increasing Accountability
- Supporting reviews of progress
Open questions:

1. How to monitor the human rights dimension of the production of biomass for energy?

2. What is the role of women in sustainable biomass production? How is GBEP measuring this?

3. How do GBEP indicators live up to the principles and the ambitions of the 2030 Agenda?