

Bioeconomy at the JRC

MME on International Bioeconomy dialogues

EC Joint Research Centre, Directorate for Sustainable Resources, Bioeconomy Unit

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Definitions

The Joint Research Centre (**JRC**) is the European Commission's science and knowledge service which employs scientists to carry out research in order to provide independent scientific advice and support to EU policy.

The **bioeconomy** encompasses the **production of renewable biological resources** and the **conversion** of these resources and waste streams into value added products, such as food, feed, bio-based products and bioenergy.

Policy Background

- **Bioeconomy Strategy and Action Plan**

EC Communication (COM(2012)60) adopted on 13 February 2012

Action No 6: *To establish a Bioeconomy Observatory that allows the Commission to regularly assess the progress and impact of the bioeconomy.*

Action No 9: *[...] improve the understanding of current, potential and future availability and demand of biomass across sectors [...] for the development and review of relevant policies*

- **Review of the Bioeconomy Strategy (2017)**

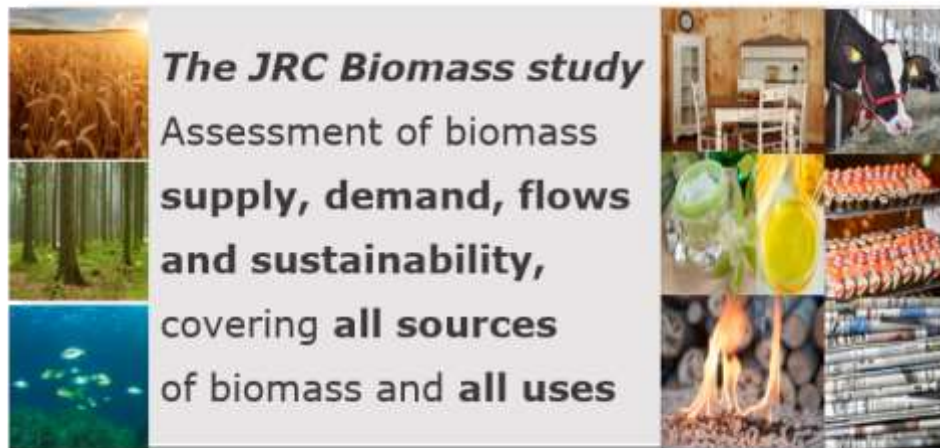
- **2018 Update of the Bioeconomy Strategy**



Bioeconomy at JRC

Knowledge Centre for Bioeconomy

- Bringing together **knowledge** and **experts** from within and outside the EC
- **One-stop-access** to data, knowledge and intelligence on bioeconomy



Support the EU Bioeconomy Strategy

- **To provide the knowledge-base and forward looking capacity on bioeconomy.** The Biomass assessment study
- **To monitor the progress** of the EU bioeconomy covering all sustainability dimensions and within the overarching framework of the SDGs

Bioeconomy Knowledge Centre BKC

Creating, managing and making sense of collective scientific knowledge for better EU policies



Bioeconomy Knowledge Centre: governance

Decisions

Advice and information exchange



Knowledge base and forward looking capacity

The JRC Biomass Assessment Study

Assessment of EU and global biomass **supply, demand, flows and sustainability** (incl. gaps and uncertainties)



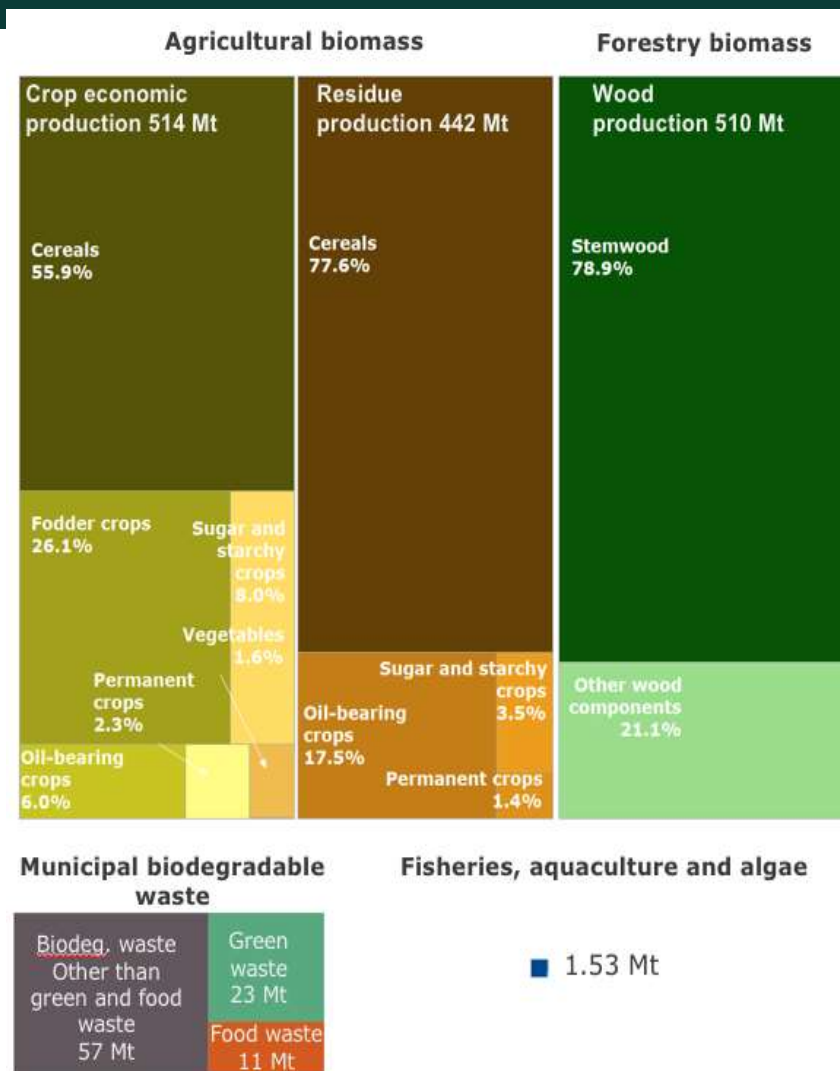
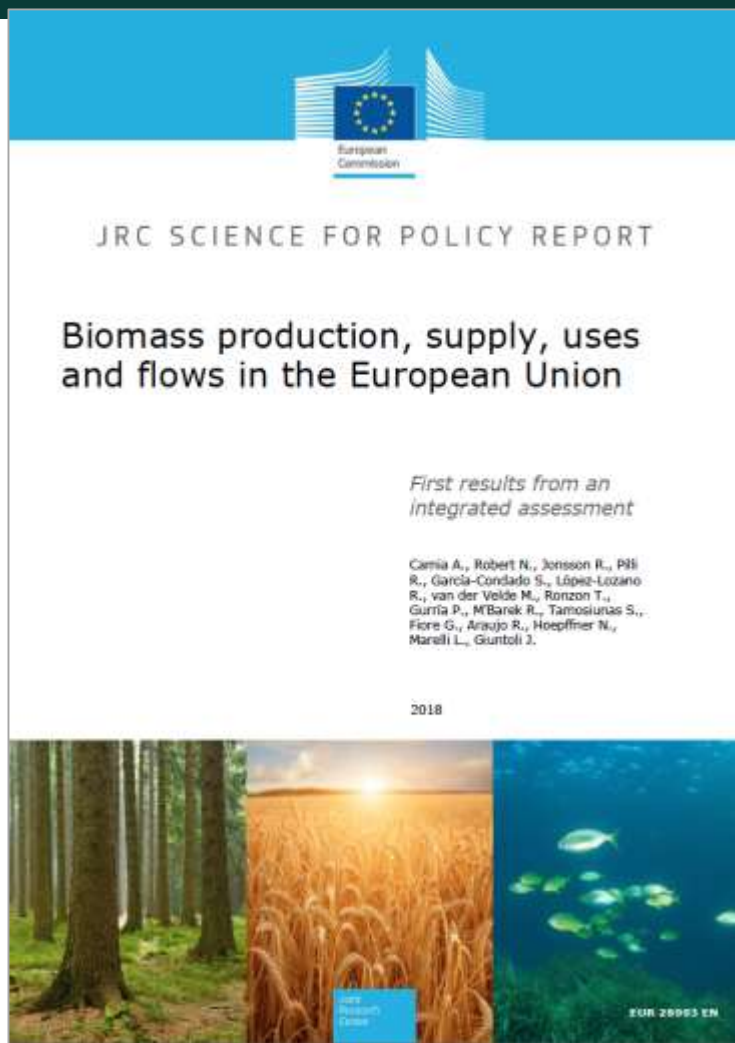
Covering **all sources** of biomass and **all uses**



Scenarios and projections for biomass supply and demand and their respective impacts (2020-2030-2050)

Addressing **impacts** linked with production and use of biomass, **competition and synergies** between sectors for biomass resources

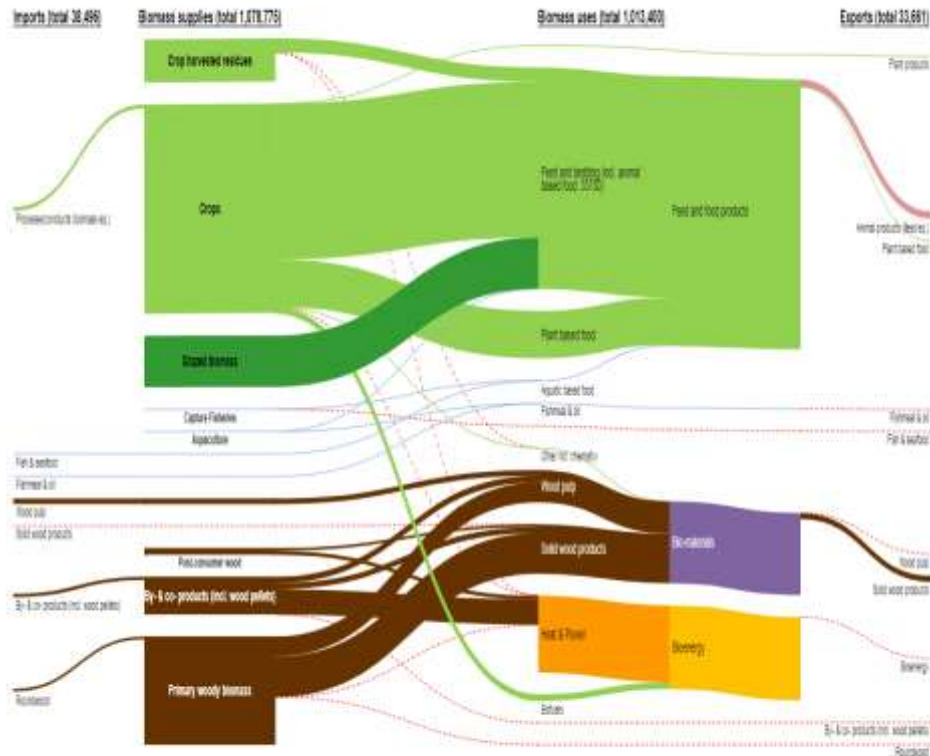
Bioeconomy monitoring: bio-physical indicators



EU-28 Biomass flows

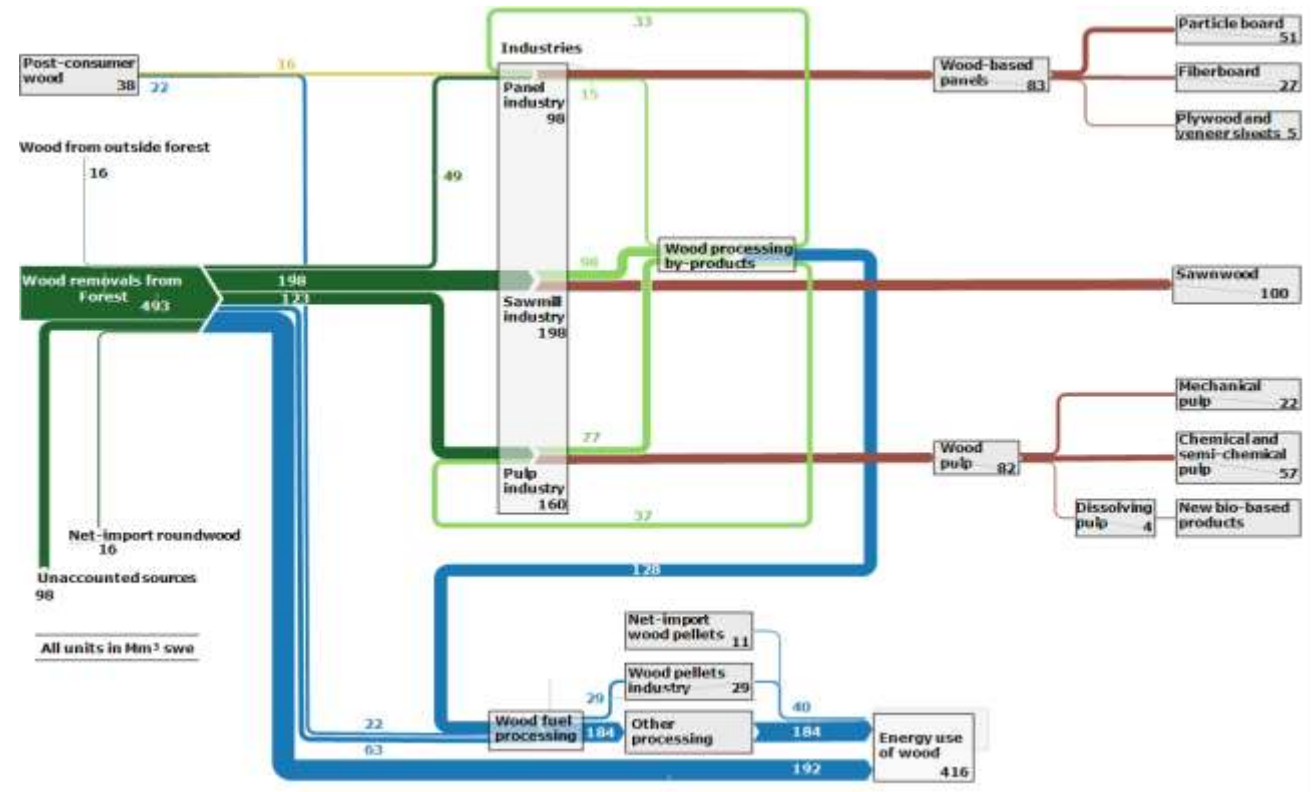
CROSS - SECTORIAL

Biomass balances in European Union (EU-28). Last date available: 1000 T of dry matter



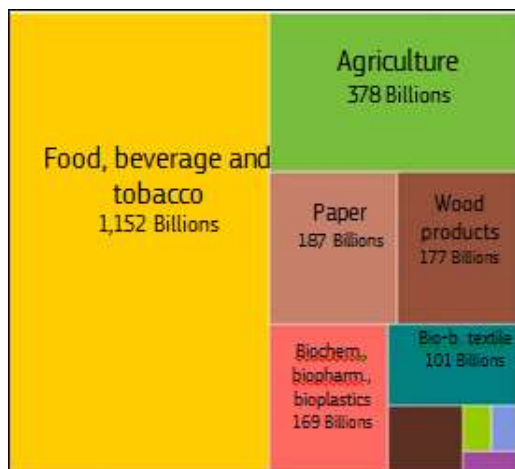
Source: data from the BIO4AG project, European Commission – Joint Research Centre
 Please note: Supply and use figures might not match due to estimation errors, stock changes, season and/or loss of biomass or differences in the data sources used.
 Other data points are shown in dotted red lines. Data derived from missing or incorrectly reported data. Data not assigned to a specific category or data that cannot be attributed.

EU28 biomass flows – Forest-based sector

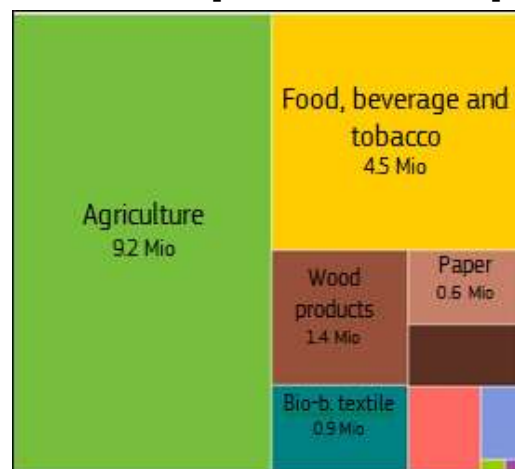


Bioeconomy monitoring: socio-economic indicators

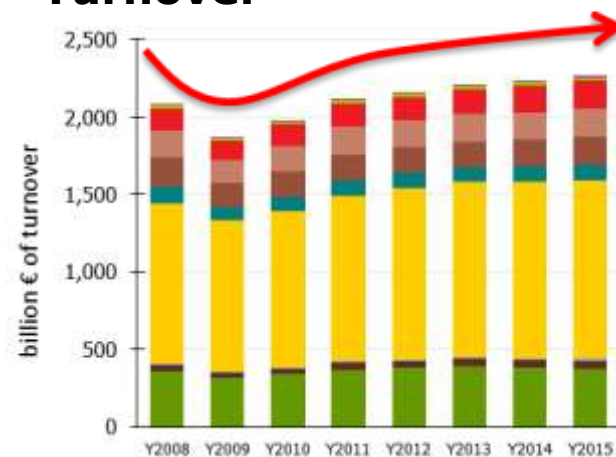
2.3 trillion € turnover



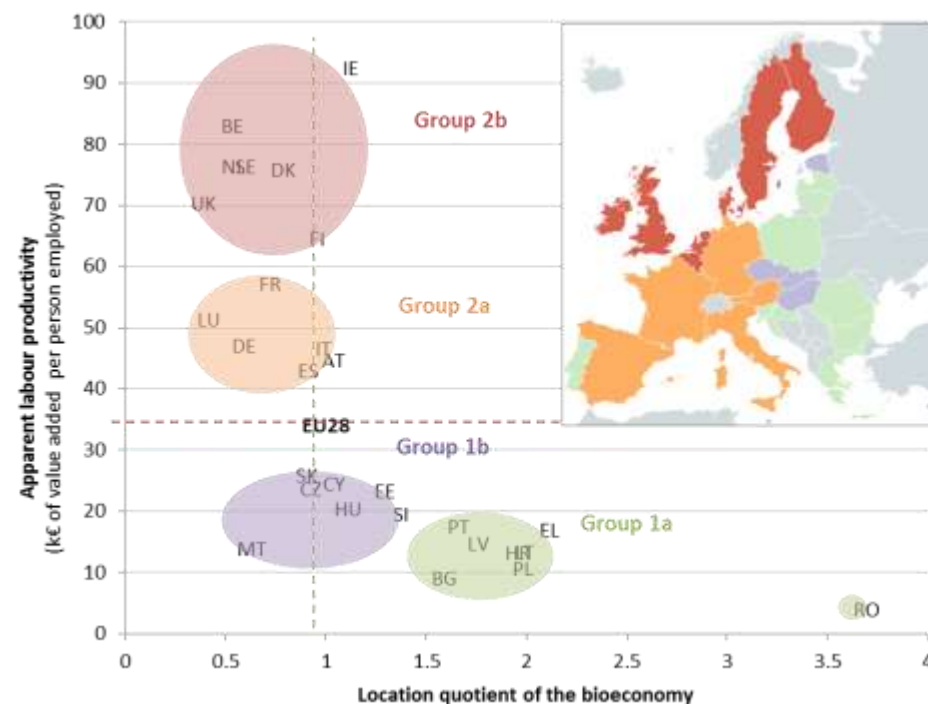
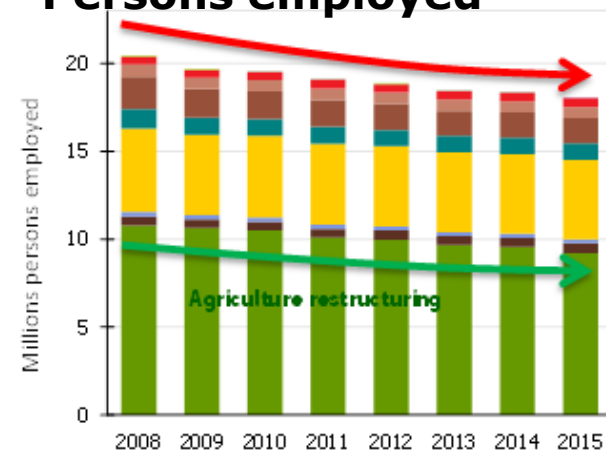
18 million persons employed



Turnover

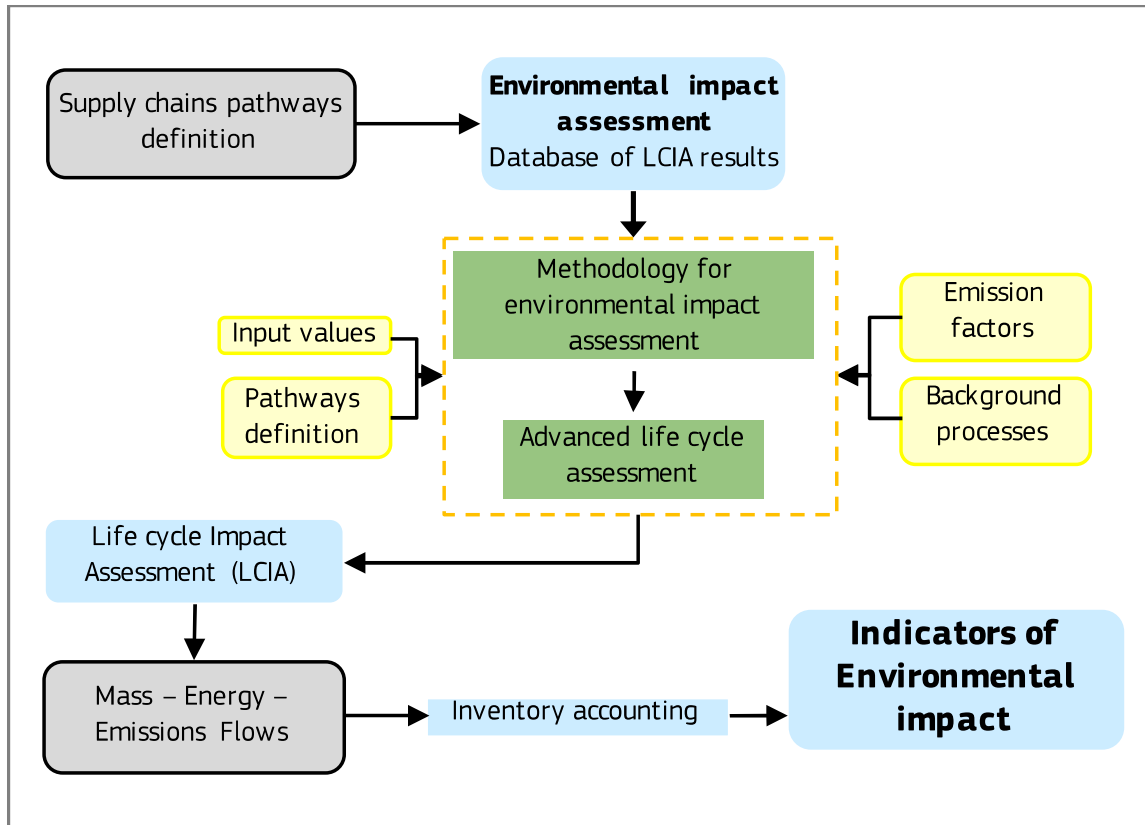


Persons employed

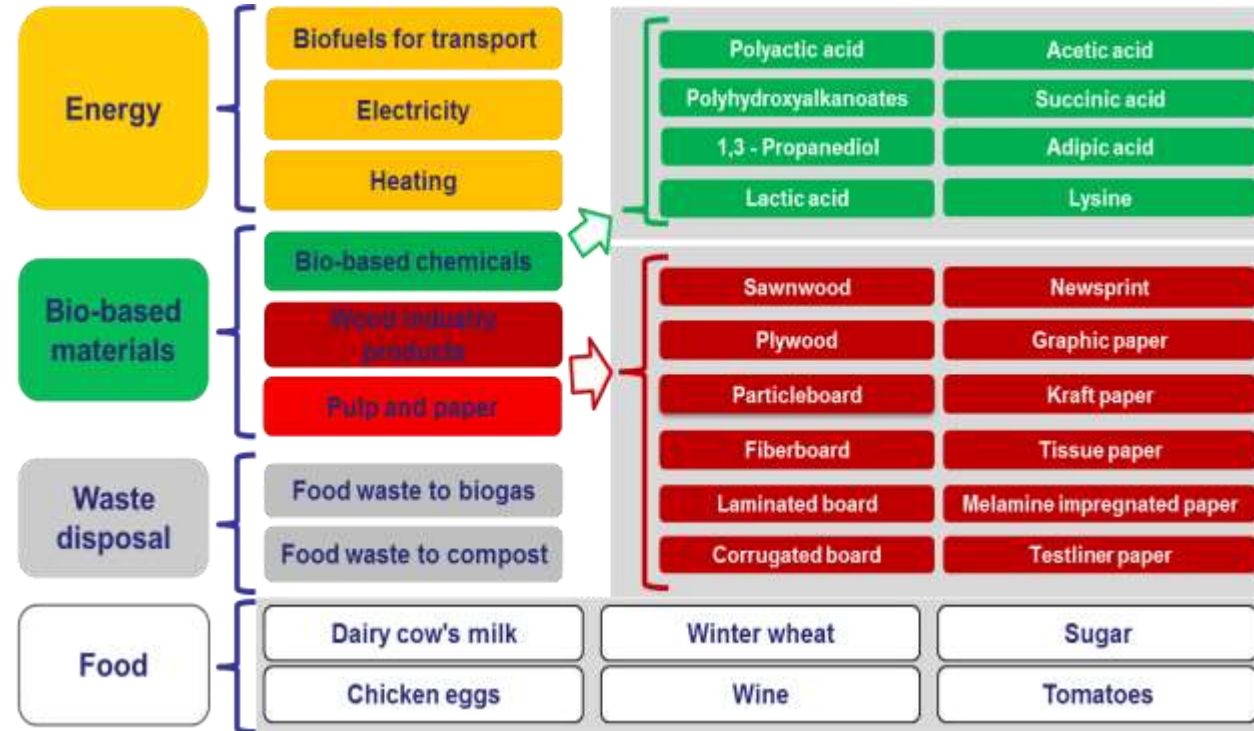


Environmental impacts

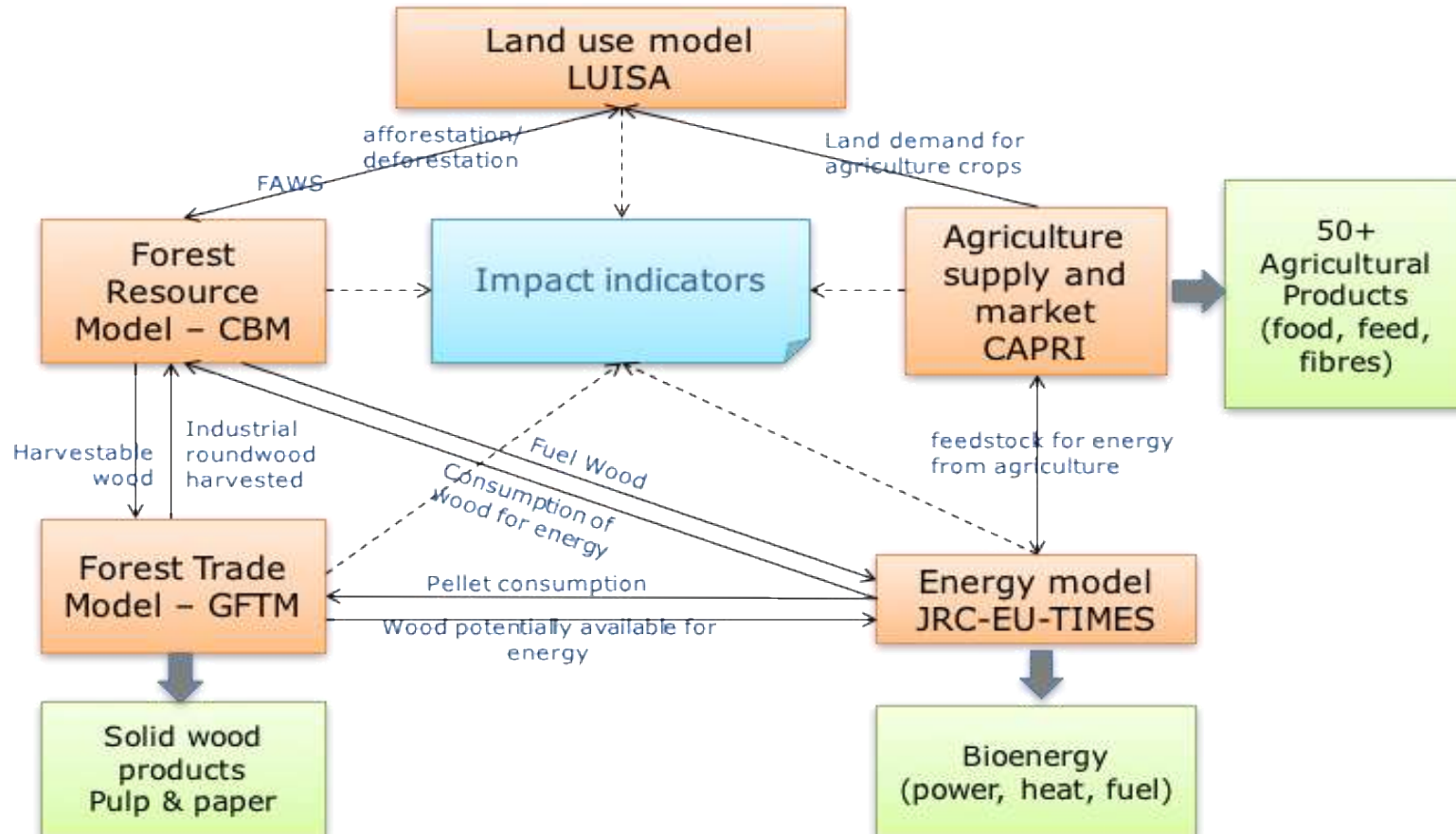
LCA-based approach



Database of LCA results



Integrated Modelling Framework



Scenarios of biomass supply and demand

Focus on bio-physical aspects (biomass amounts and flows) and environmental impacts

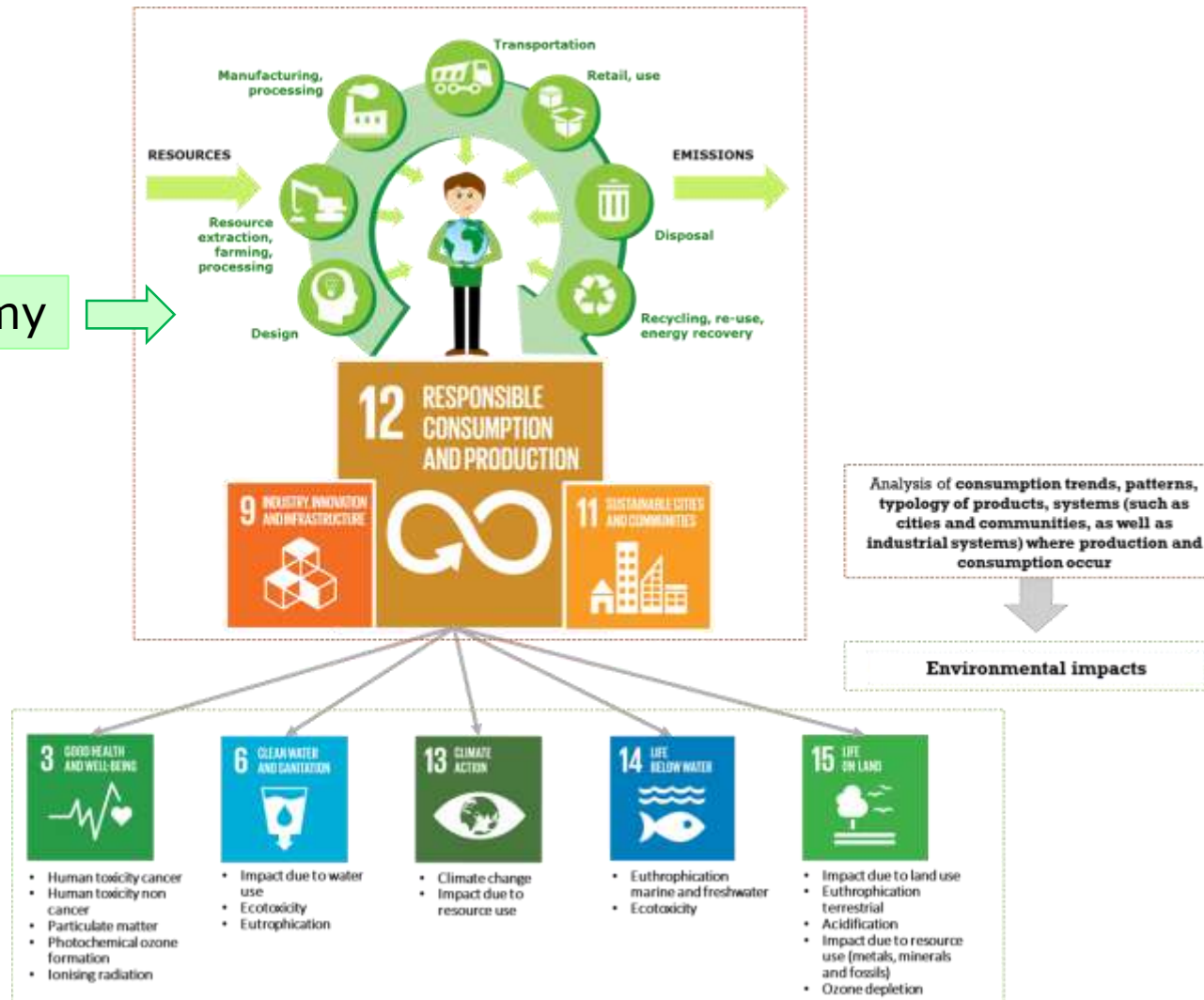
Examples of questions the framework can address:

- Impact on the forest sector and GHG emissions of increased demand of wood for energy
- Consequences for food supply of increased demand to the agricultural sector of bio-based materials

Under development: link with whole-economy model (MAGNET)

Bioeconomy contribution to SDG's

Bioeconomy



Adopting Life cycle assessment as reference methodology it is possible to perform an **integrated assessment of the environmental benefits and impacts of Bioeconomy**, including

- Assessing contribution to SDG's
- Unveiling trade-offs
- Avoid burden shifting among:
 - categories of impacts/ different SDG's
 - life cycle stages
 - geographical and temporal dimensions

Plastics Life Cycle Assessment (LCA)

- Policy context:
Linked to the **plastics strategy**, work for DG GROW
- Objectives:
Elaborate a consistent LCA-based method to evaluate the potential environmental impacts of **alternative feedstocks** for plastics (biomass, recycled plastics, CO₂) versus fossil feedstocks, taking into account also **end of life aspects**
- Who is involved in it?
Three different units from **three different Directorates** in JRC are cooperating to bring together different expertise and skills available within the JRC
- **Consultation** planned towards the end of 2018 to give stakeholders the opportunity to provide input on draft method and screening LCA case studies



Any questions?

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