



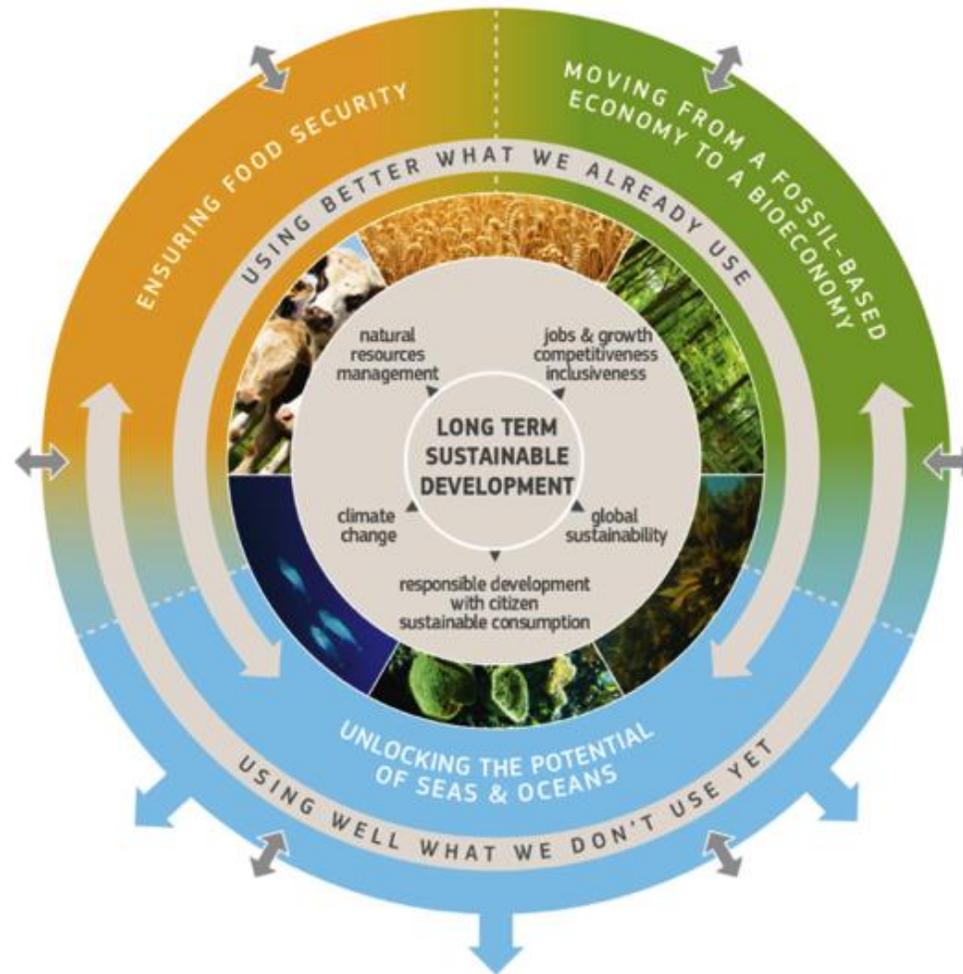
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The Future Bioeconomy

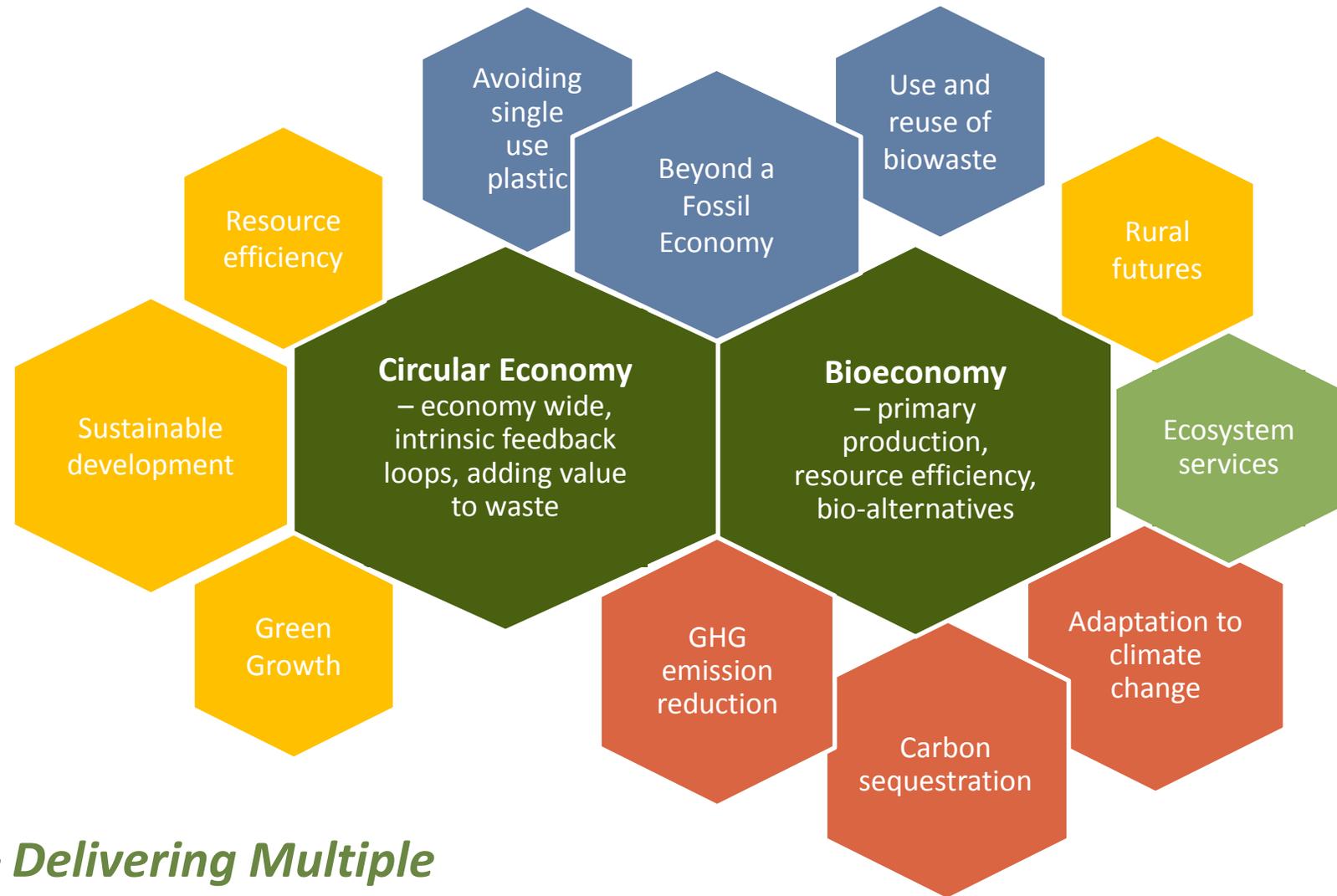
Delivering climate sensitive and sustainable alternatives
to meet the needs of society

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Given the historic and ongoing use of biomass in the economy the question is - *Why the emphasis now on creating or transitioning to a bioeconomy?*



- **Innovation** - promote and respond to advances in scientific knowledge
- **Added value** - alternative opportunities for creating value from biomass
- **Environment and social justice** - opportunity for the bioeconomy to drive sustainable development



A Circular, Bioeconomy – Delivering Multiple Goals

Global Interest in the Bioeconomy

Bioeconomy Policies around the World



Integrated Goals for Sustainable Development and Climate Action

1. Ensuring food security;
2. Managing natural resources sustainably;
3. Reducing dependence on non-renewable sources;
4. Mitigating and adapting to climate change;
5. Creating jobs and maintaining competitiveness.

- The production of renewable (sustainable), biological products and resources – **scale is important**
- Primary production **relies on inputs** – can be both linear and circular
- Relies on a **common resource streams**
- Can deliver efficiency but **needs to be considered collectively** - best and most efficient use of resource

A Question of Scale

- Biomass produced = 1,466 MT / year
 - 956 MT / year agriculture
 - 510 MT / year forestry
 - (avg figures)
- Harvested and used = 805 MT/year
 - 578 MT / year agriculture
 - 227 MT / year Forestry
 - (2013 figures)

Sources:

Eurostat (env_ac_mfa) and (demo_gind);
JRC (2018) *Biomass production, supply, uses and flows in the European Union. First results from an integrated assessment.*
doi:10.2760/539520

Driving a circular, resource efficient economy

100 %

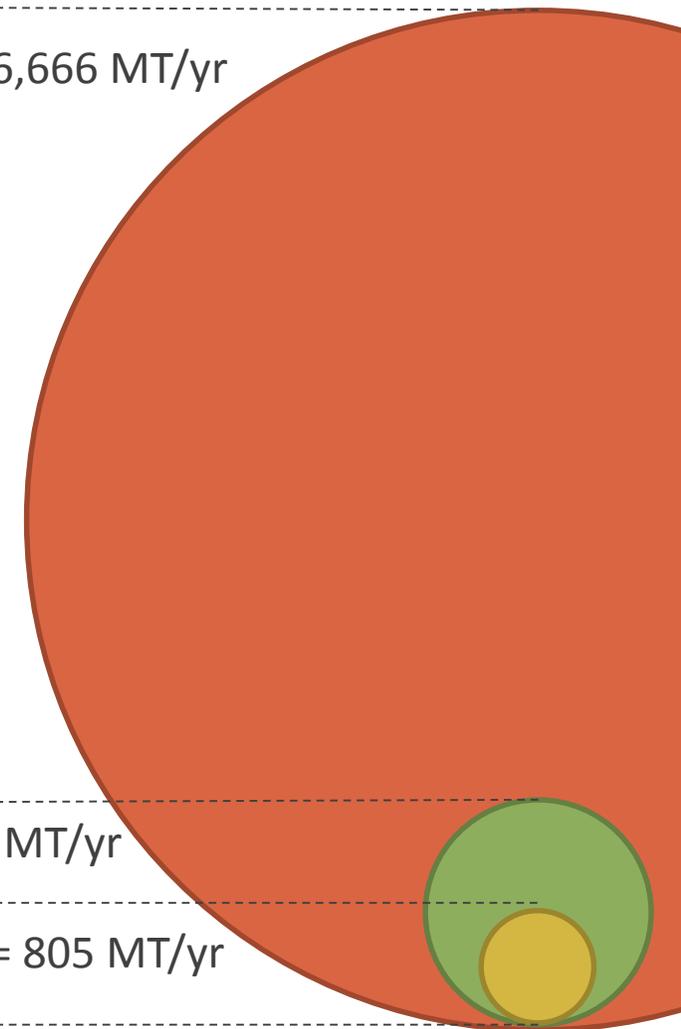
Material consumption - 6,666 MT/yr

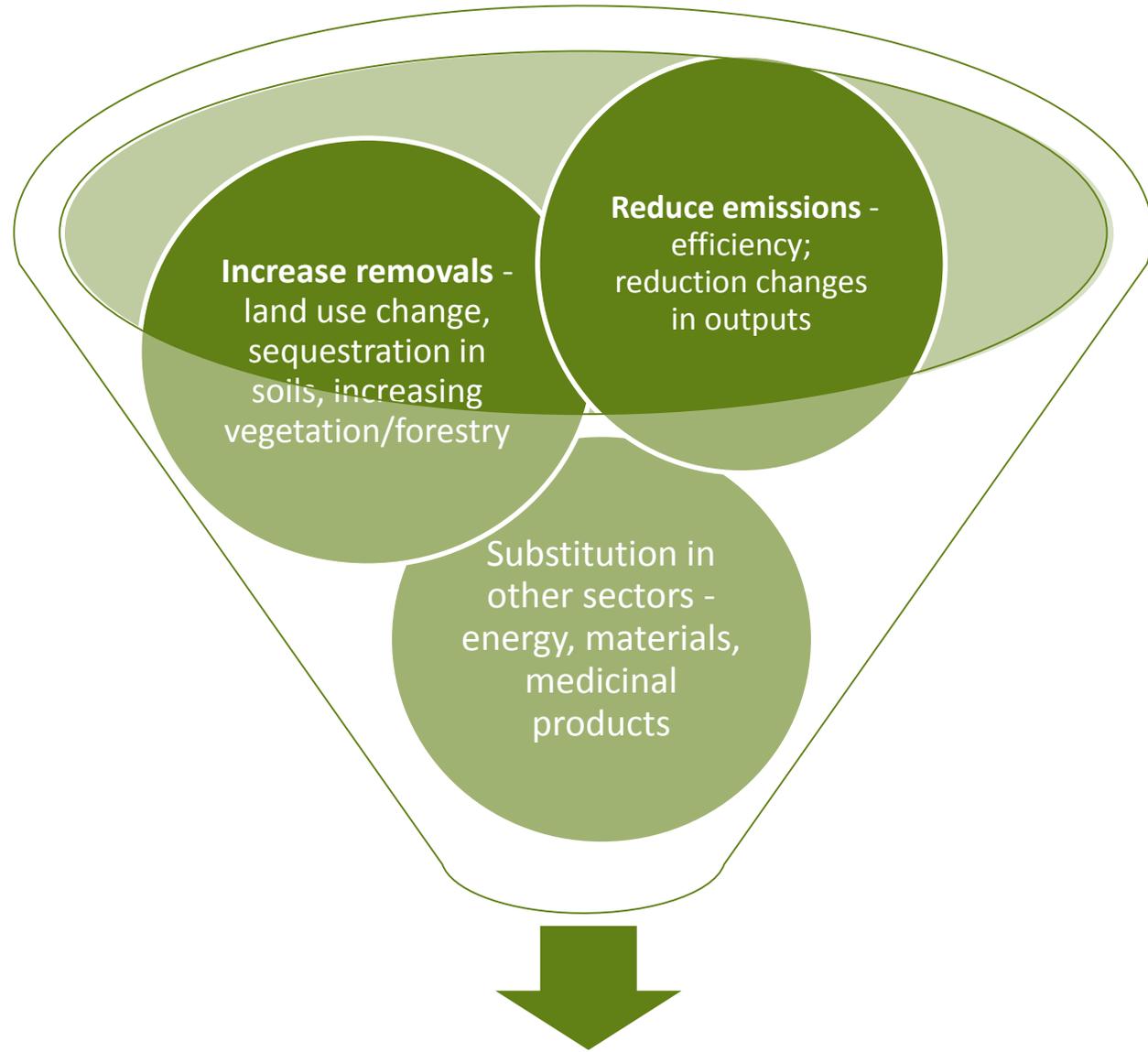
22%

Total produced 1,466 MT/yr

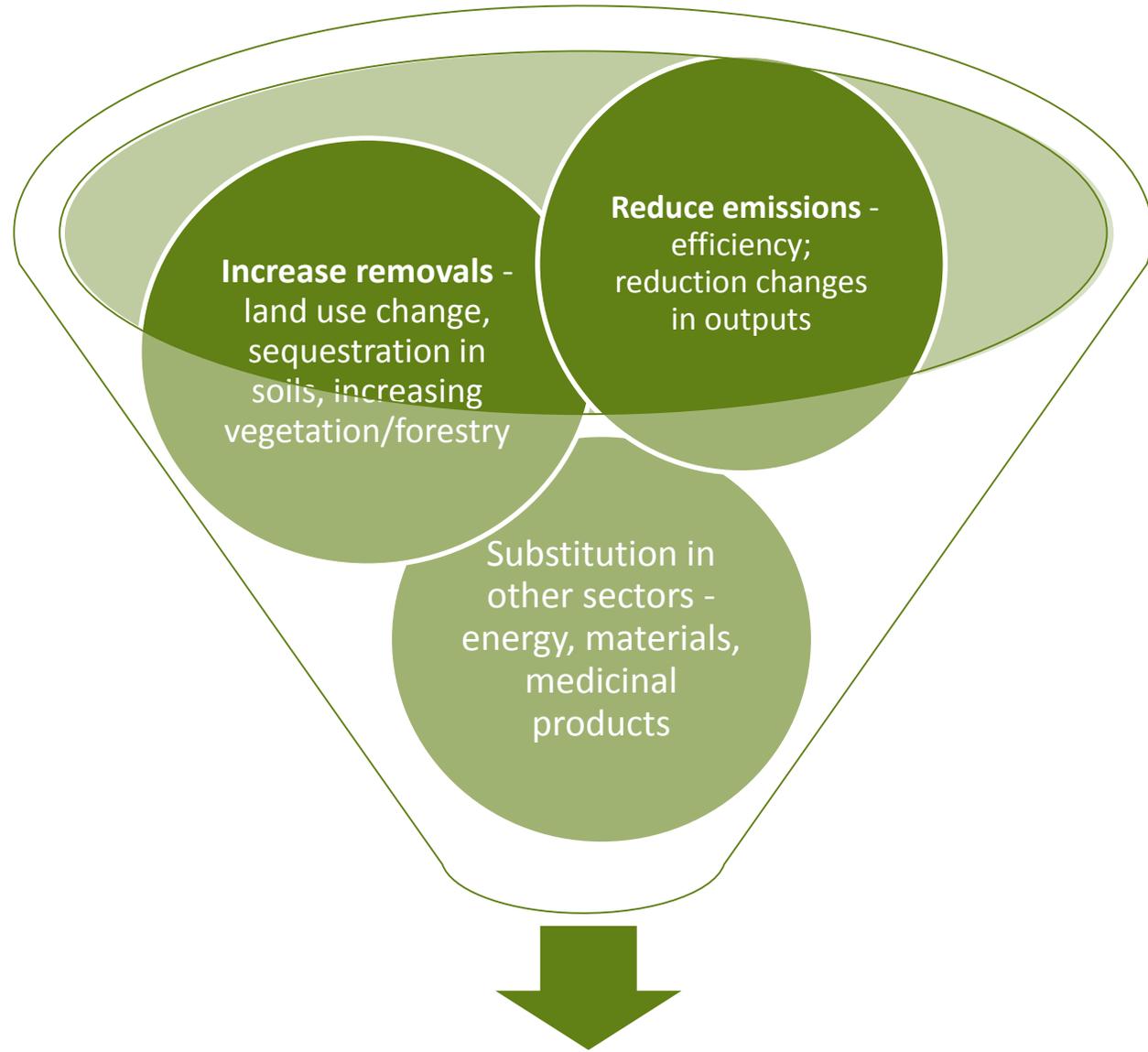
12%

Harvested and used = 805 MT/yr





Reduced consumption
Circular resource efficient economy



Bioeconomy has a role in a resource efficient, economy that delivers on climate action

Bioeconomy is only part of the change needed, it has to be accompanied by wider societal change

Reduced consumption
Circular resource efficient economy

Limits of a Circular Economy

- Respect established environmental limits and thresholds
- Real resource savings must be measured as absolute, rather than just relative
- Europe is a leader for environmental policy but per capita consumption and waste production remains very high
- Does not automatically integrate concepts of social and environmental justice - future development models

A Sustainable Circular Bioeconomy – that delivers Climate Action

- Policy coherence - sustainable trajectory for the circular bio-economy
- Policy interventions to deliver reduction of environmental pressures along the entire value chain
- Necessity socio-economic and institutional innovations - reconceptualising what value means in the bio-economy, not just production
- Changes in consumption and behaviour
- Sustainability criteria - to ensure the bio-economy stays within natural limits and to promote circularity
- A new way of considering bio-resources and their role in society



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