

Benefits for society & sustainability

Evaluating the effects of biobased production

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Drivers for transition

- Economic: variable prices of fossil fuel resources
- Political: energy security
- Environmental: lowering net GHG emissions
- Demographic: rising population and wealth
- Agricultural: rural income and economic development
- Food: add sustainable value to food chain

Sustainable development

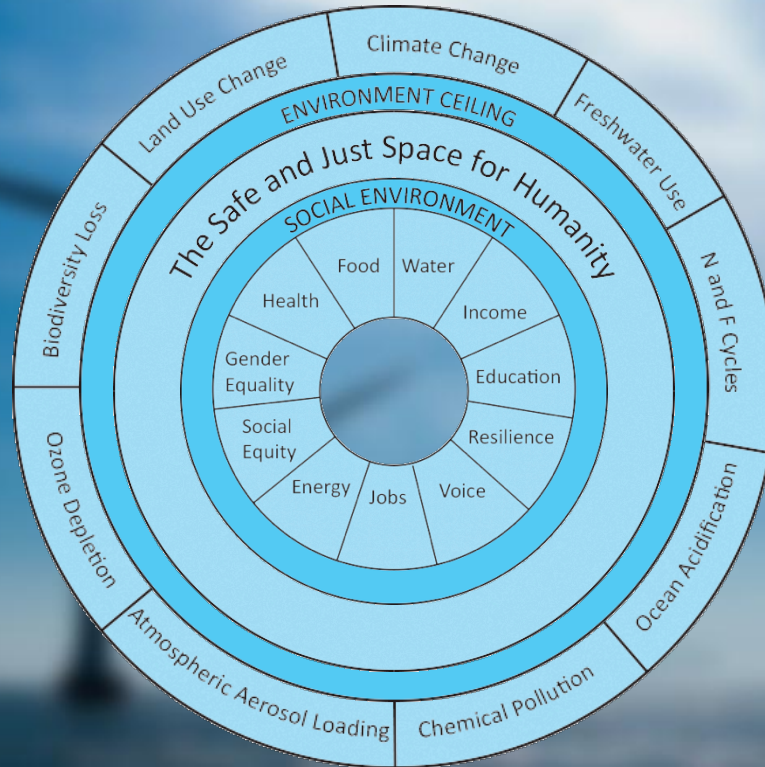
“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

- Brundlandt, 1987

“Looking for a balance between what one desires and what is possible, between human activity and the carrying capacity of the system “Earth” and the repairing capacity of this system.”

- UN World Commission on Sustainable Development, 1987

Sustainability: “A Safe and Just Space for Humanity”



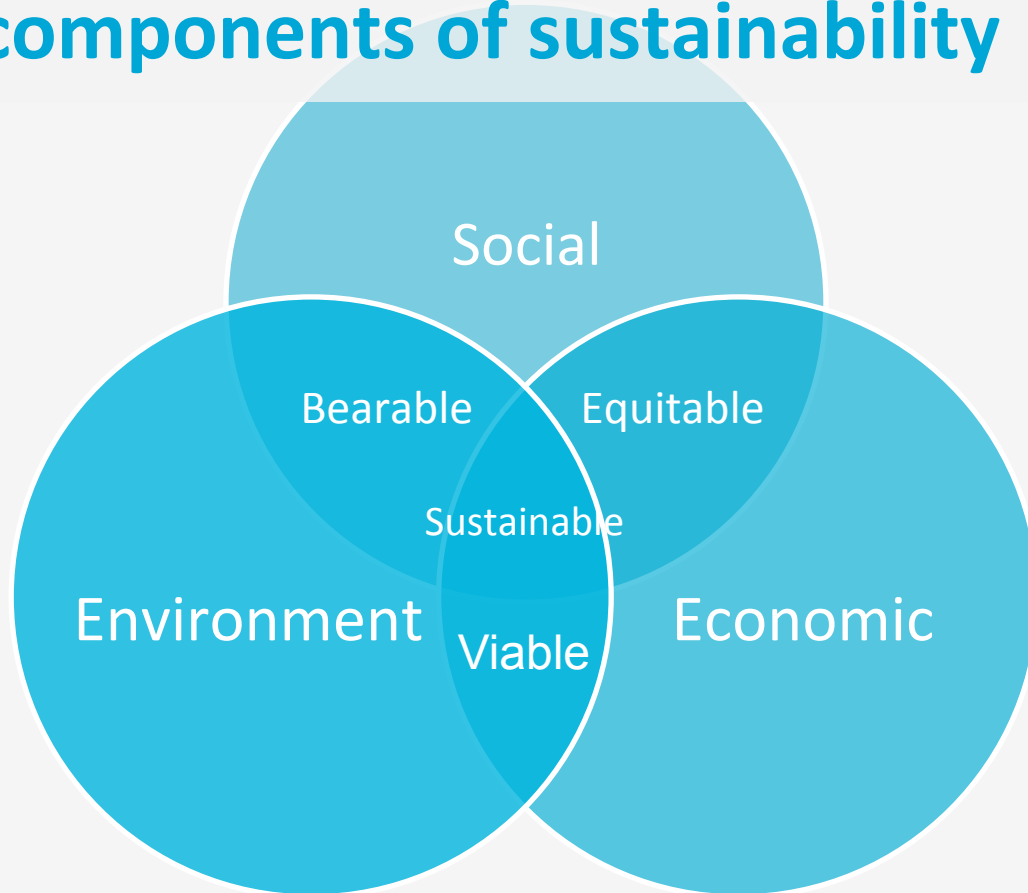
Sustainability is complex

- Durable
- Biodegradable
- Environmentally friendly
- Fair
- Non-GMO
- Organic
- Economically Viable
- Natural

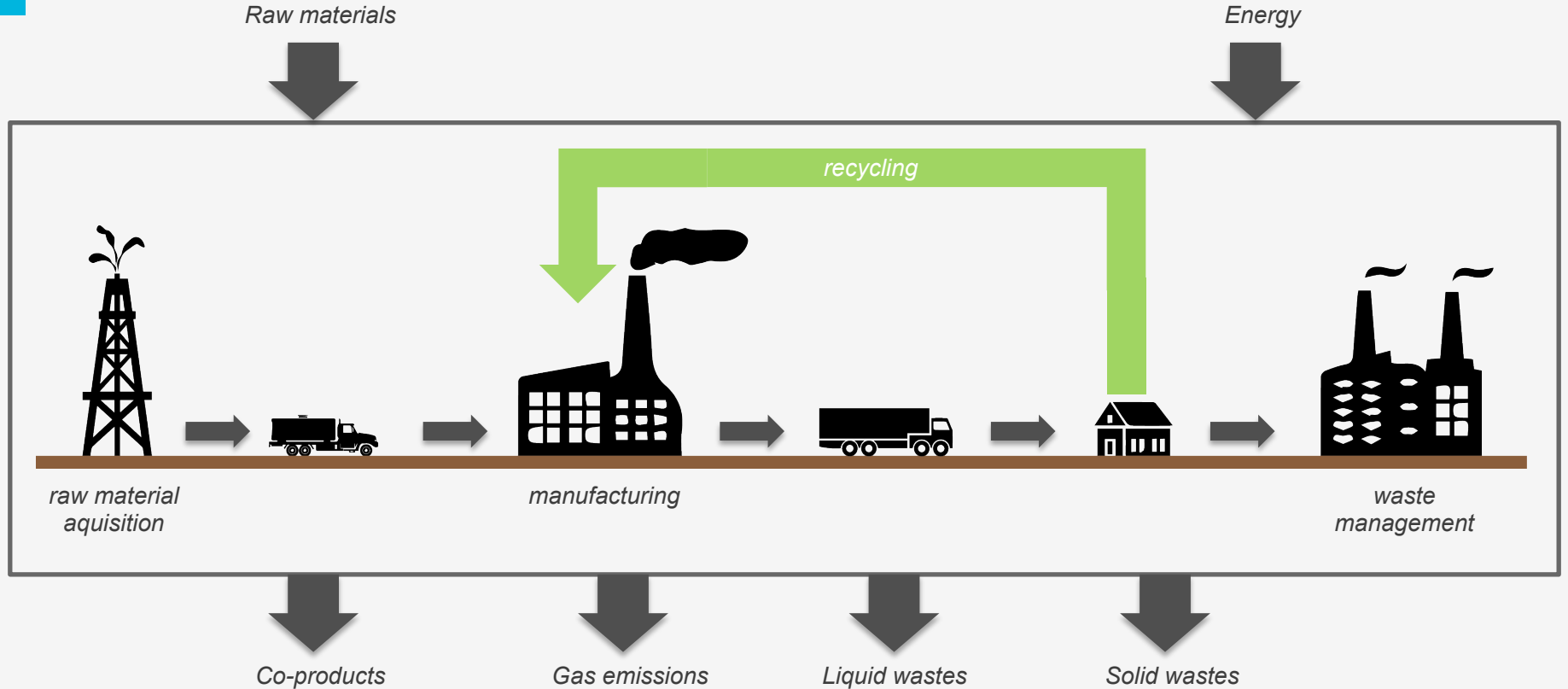
Measurable specific standards

Unmeasurable general concepts

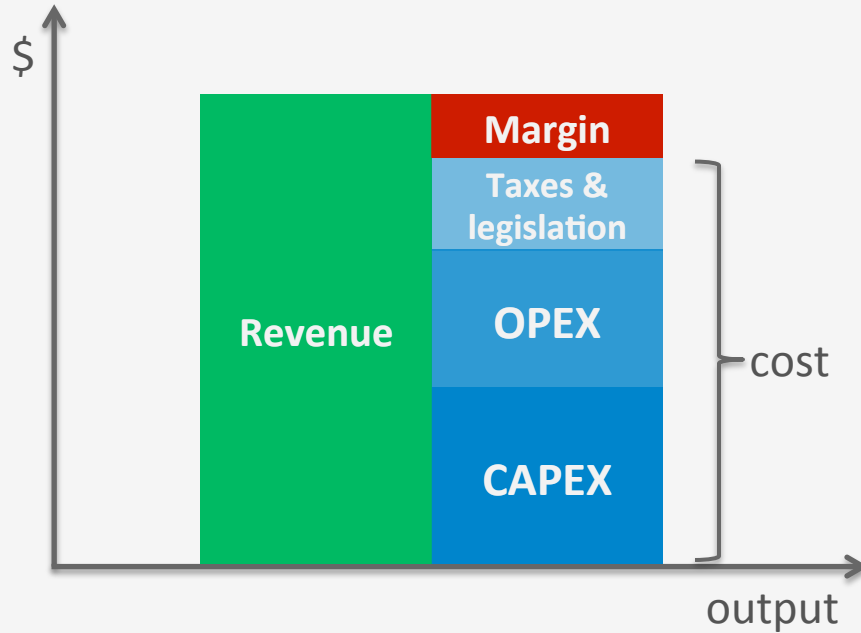
Three components of sustainability



How to measure sustainability?



Economics



Assess a process based on:

- Net Present Value (NPV)
- Internal Rate of Return (IRR)

Perceptions: Biofuels causing hunger?



Assessing social sustainability

Can we improve:

- Employment
- Food security
- Social well being

Do we use acceptable technology?

Are the benefits equally distributed?

Benefits to society

- Less pressure on climate
- Improved recycling
- Higher product quality
- Safer production chain
- Economic development
- Support local communities



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