

Build, bring and bunk

Hans Langeveld
Hennie Zirkzee
John Grin
Luc Pelkmans
Carla Chidichimo
Patricia Osseweijer



Sustainable development



Cost economy to **value** economy

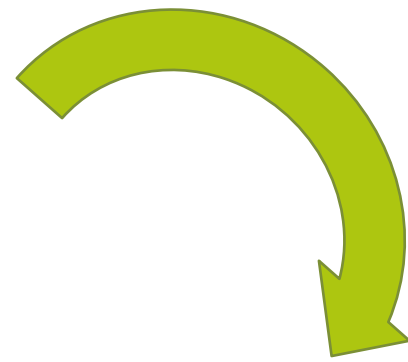
Problem is

- Energy security
- Climate change
- Food security
- Sustainable environment
- Urbanisation
- Social development
- Health
- Well being
-

 **Need a different, circular business model**



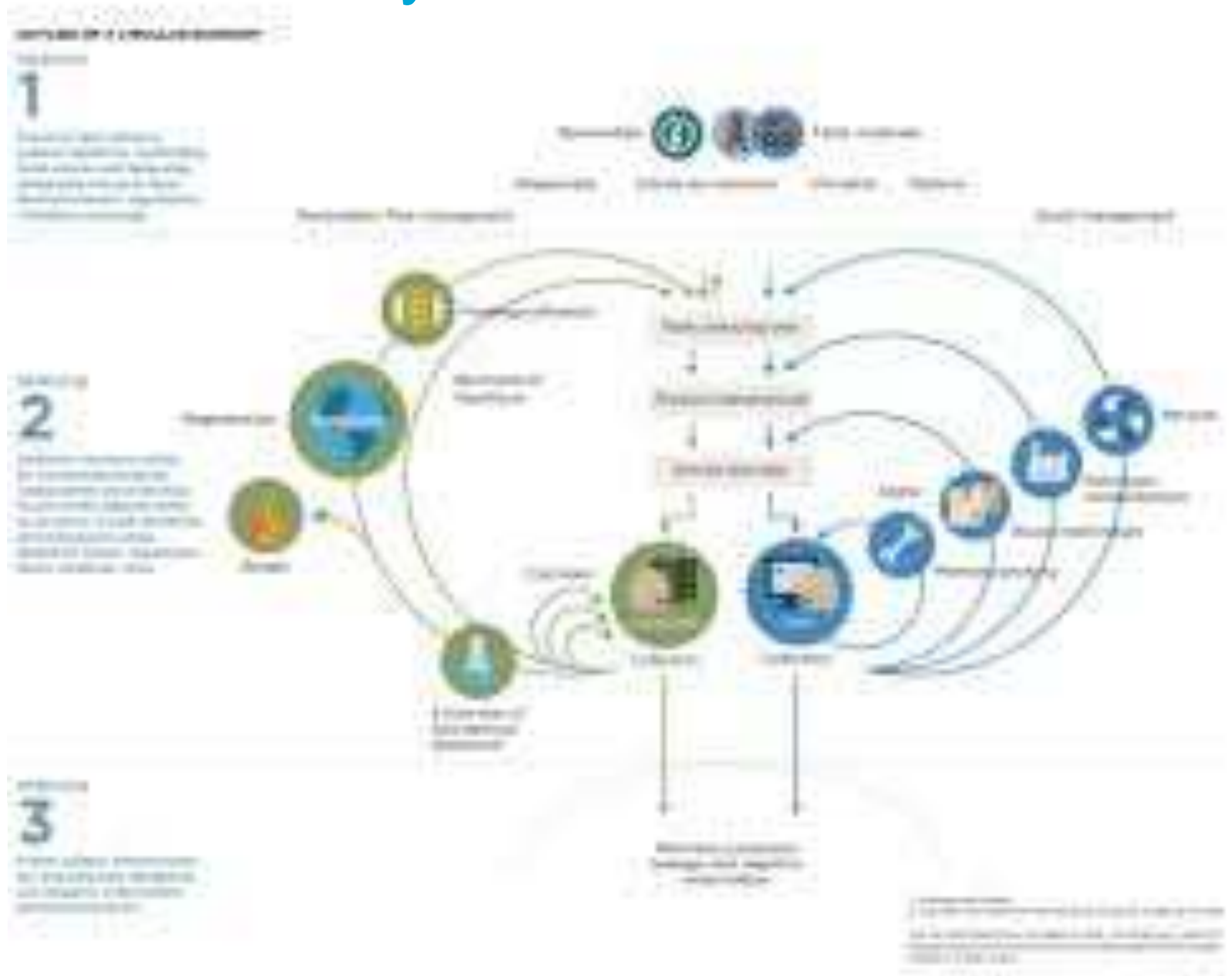
Cost economy



Value economy

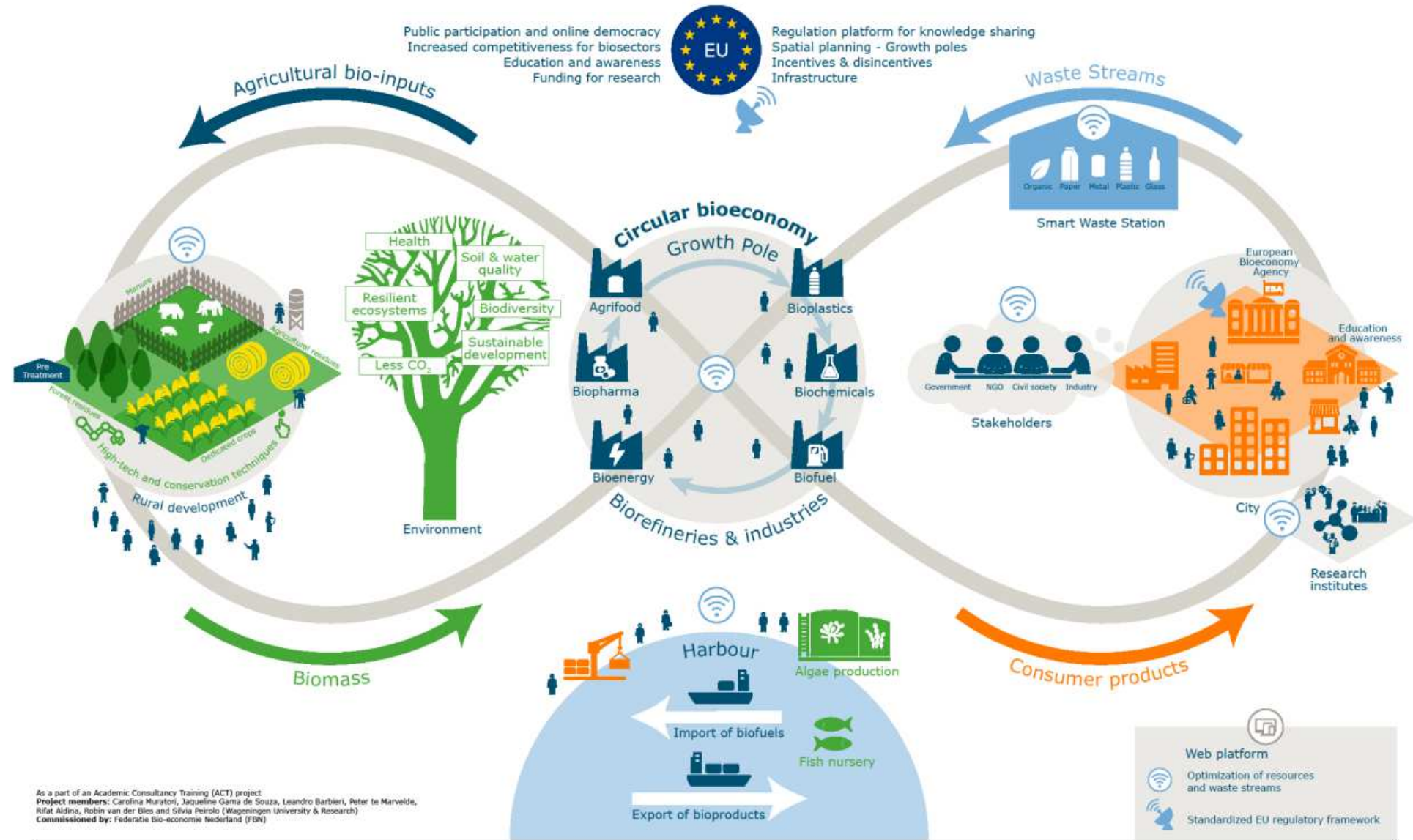


Ellen MacArthur foundation – circular economy



Sustainable BIOHUB

Periphery revolution The engine for the EU bioeconomy in 2040



BIOHUB ambitions

- Sustainable agriculture
 - Nutrient recycling
 - Landscape management for improved biodiversity, soil quality
- Social & rural development
- Biomass mobilisation – feedstock security



Build biodiversity

Bring biomass

Bunk emissions



Biohub Requirements

- Knowledge and skills (farmers, foresters, politicians)
- Inclusion of primary producers
- Improve biodiversity & Food security
- Improve soil quality

Bring social development with m

Nutrient recycling
Energy production
Provide training
Organise land scaping



trust



Ambitions: Biohub for Results

- Bring social development
- Reduce urbanisation
- Improve food security
- Improve energy security
- Improve health



Biohub Organisation

- Circular Lease Deal

Hub to provide:

Education

Innovation

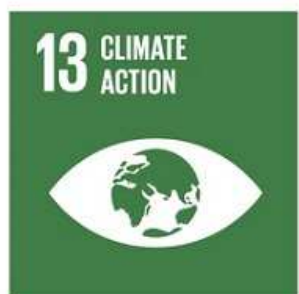
Nutrient recycling (biochar)

Energy

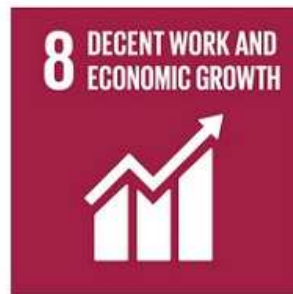
Profit & Risk sharing



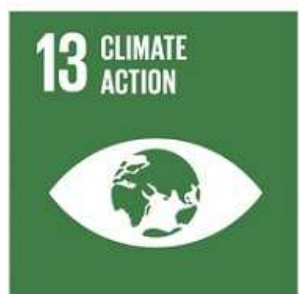
SDG	ACTOR	Benefit
1,2,3,6,7,8,9,10,13,15,16,17	Rural community	social development Well being
1, 13, 15	Farmers, foresters	secure take-off
16, 13	Policy leaders	stability
9, 13	Tech providers	business dev
1, 2	Food traders	profit



SDG	ACTOR	benefit
2, 8, 12	Food companies	Profit, sustainable business
7, 13	Energy producers	Local feedstocks
13	Biorefinery	Feedstock security
13	Biofuel/product consumers	Product access
13	Shipping industry	Sustainable business
9	Packaging storage industry	Sustainable business
6, 3	Water providers	Supply clean water

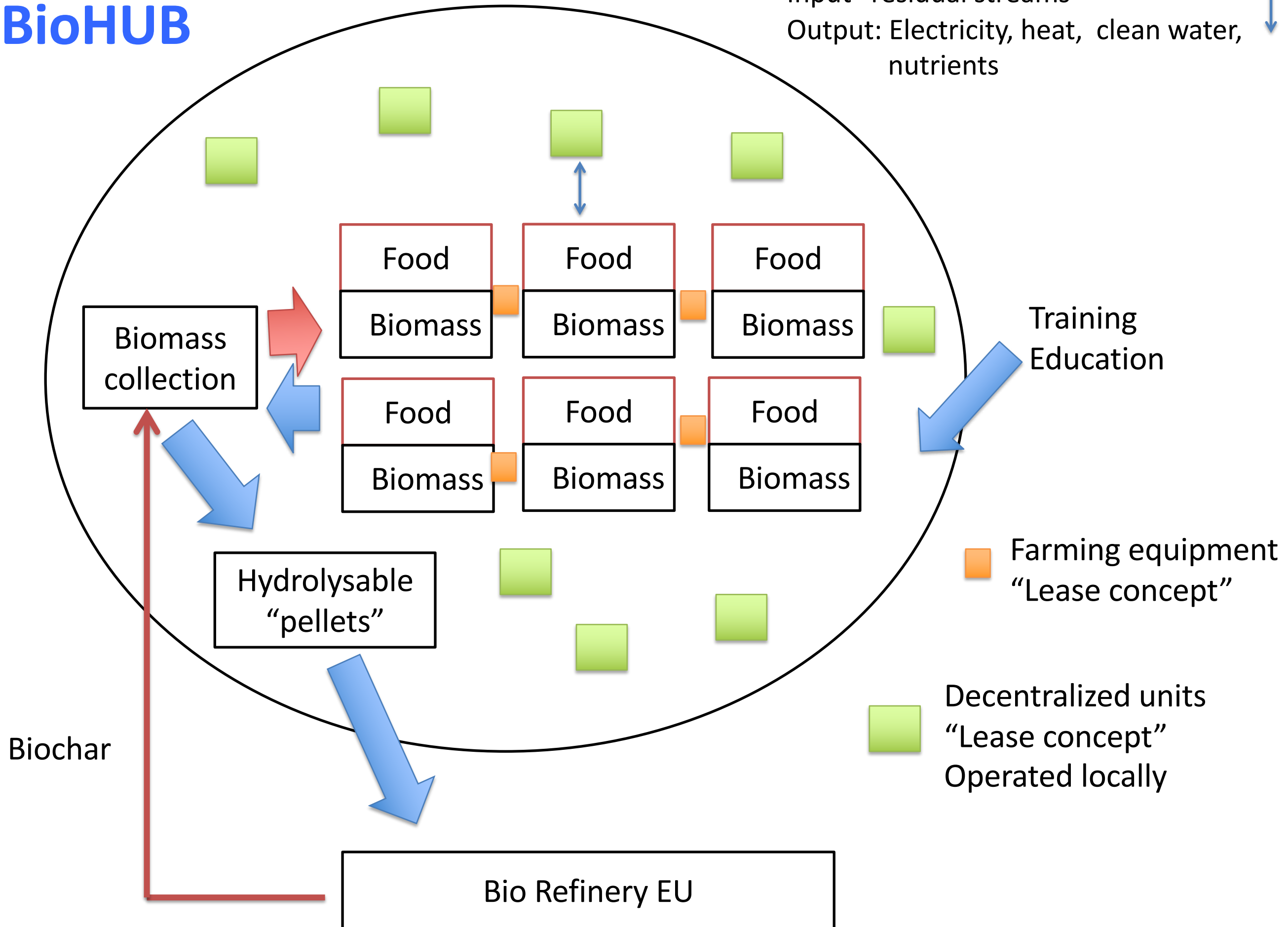


SDG	ACTOR	benefit
13, 9	harbours	Sustainable business
9, 13	Logistics & infrastructure	Sustainable business
17	Banks & investors	profit
17	services	profit
17	educators	knowledge
all	NGO's (indirect)	Goal achievement



BioHUB

Input "residual streams"
Output: Electricity, heat, clean water, nutrients



Key enablers

- CO2 credit – funds
- NGO's
- Food traders
- Food industry
- Politicians



Education	1 MEuro	10x	
Mechanisation	2 MEuro		
Pre-treatment	10 MEuro		
Local energy production			15 MEuro
		1x	220 MEuro
			Total: 365 MEuro
(e.g. harbor)	100 MEuro	10x	1000 MEuro

Overall reduction on Capex: 30 Euro / ton CO2

0,6 Mton CO2/year reduction with biorefinery



Communication is key!

Who will be our champion?



