Build, bring and bunk

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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

- Agricultural bio-inputs
- Waste Streams
- Circular bioeconomy
- Consumer products
- Web platform: Optimization of resources and waste streams

Circular economy

Environments

Harbour

Import of biofuels

Export of bio-products

Government, NGOs, Community, Industry

Research institutes

European Commission, Agency

Harbour

Algae production

Fish nursery

Import of biofuels

Export of bio-products

Web platform: Optimization of resources and waste streams
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 multiple actors involved
  - Nutrient recycling
  - Energy production
  - Provide training
  - Organise landscaping
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
<table>
<thead>
<tr>
<th>SDG</th>
<th>ACTOR</th>
<th>Benefit</th>
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<tbody>
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<td>1,2,3,6,7,6,8,9,10,13</td>
<td>Rural community</td>
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<td>16, 13</td>
<td>Policy leaders</td>
<td>stability</td>
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<td>9, 13</td>
<td>Tech providers</td>
<td>business dev</td>
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<td>1, 2</td>
<td>Food traders</td>
<td>profit</td>
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<td>SDG</td>
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<td>Biofuel/product consumers</td>
<td>Product access</td>
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<tr>
<td>13</td>
<td>Shipping industry</td>
<td>Sustainable business</td>
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<td>9</td>
<td>Packaging storage industry</td>
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<td>6, 3</td>
<td>Water providers</td>
<td>Supply clean water</td>
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<tr>
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<td>13, 9</td>
<td>harbours</td>
<td>Sustainable business</td>
</tr>
<tr>
<td>9, 13</td>
<td>Logistics &amp; infrastructure</td>
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<tr>
<td>17</td>
<td>Banks &amp; investors</td>
<td>profit</td>
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<tr>
<td>17</td>
<td>services</td>
<td>profit</td>
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<tr>
<td>17</td>
<td>educators</td>
<td>knowledge</td>
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<tr>
<td>all</td>
<td>NGO’s (indirect)</td>
<td>Goal achievement</td>
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Key enablers

- CO2 credit – funds
- NGO’s
- Food traders
- Food industry
- Politicians
Overall reduction on Capex: 30 Euro / ton CO2

<table>
<thead>
<tr>
<th>Production</th>
<th>Local Energy</th>
<th>Treatment</th>
<th>Education</th>
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<tbody>
<tr>
<td>100 MEuro</td>
<td>20 MEuro</td>
<td>1 MEuro</td>
<td>1 MEuro</td>
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<tr>
<td>10x</td>
<td>1x</td>
<td>10x</td>
<td>10x</td>
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<tr>
<td>1000 MEuro</td>
<td>220 MEuro</td>
<td>15 MEuro</td>
<td>100 MEuro</td>
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<td>Total: 365 MEuro</td>
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0.6 Mton CO2/year reduction with biorefinery
Communication is key!

Who will be our champion?
Thank you!