

Environmental Sustainability and Climate Change


Some reflections about Circular Economy

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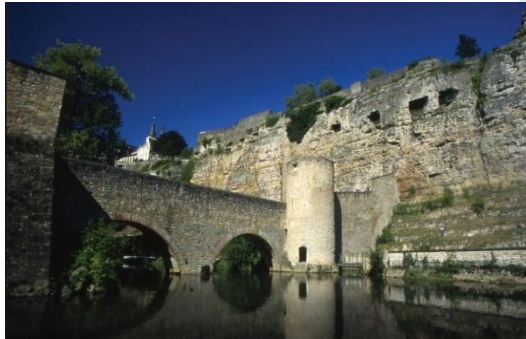
Luxembourg Ecolnnovation Cluster

May 2014



- 
- **“One World Tower” is based on Giant Steel Sections produced in Differdange, Arcelor Mittal**
 - **Guardian Luxguard S.A., “Burj Khalifa Tower”**
 - **SES, Hitec, Apateq, TARKETT, SolarTEC, ...**

GEOGRAPHY



Why?



(c) <http://tavidado.orne.fr/>



<http://upload.wikimedia.org/>

CABO VERDE 2030

Cidade da Praia
14 a 16 de Maio de 2014



mowe-mull.jpg

Bär Facts Müllstrudel Müllteppich Meer Ozean Wasser Strand Kunststoff Plastik Garbage
Great Pacific Garbage Patch Ocean Water Beach

« déchets »
6 400 000 000 kg
per an

50% plastiques

<http://www.baerfacts.de/2009/12/14/das-meer-die-weltgroesste-muellkippe>

Why?

- CO₂ Emissions
- Global Warming
- Waste
- Energy demand
- Biodiversity....

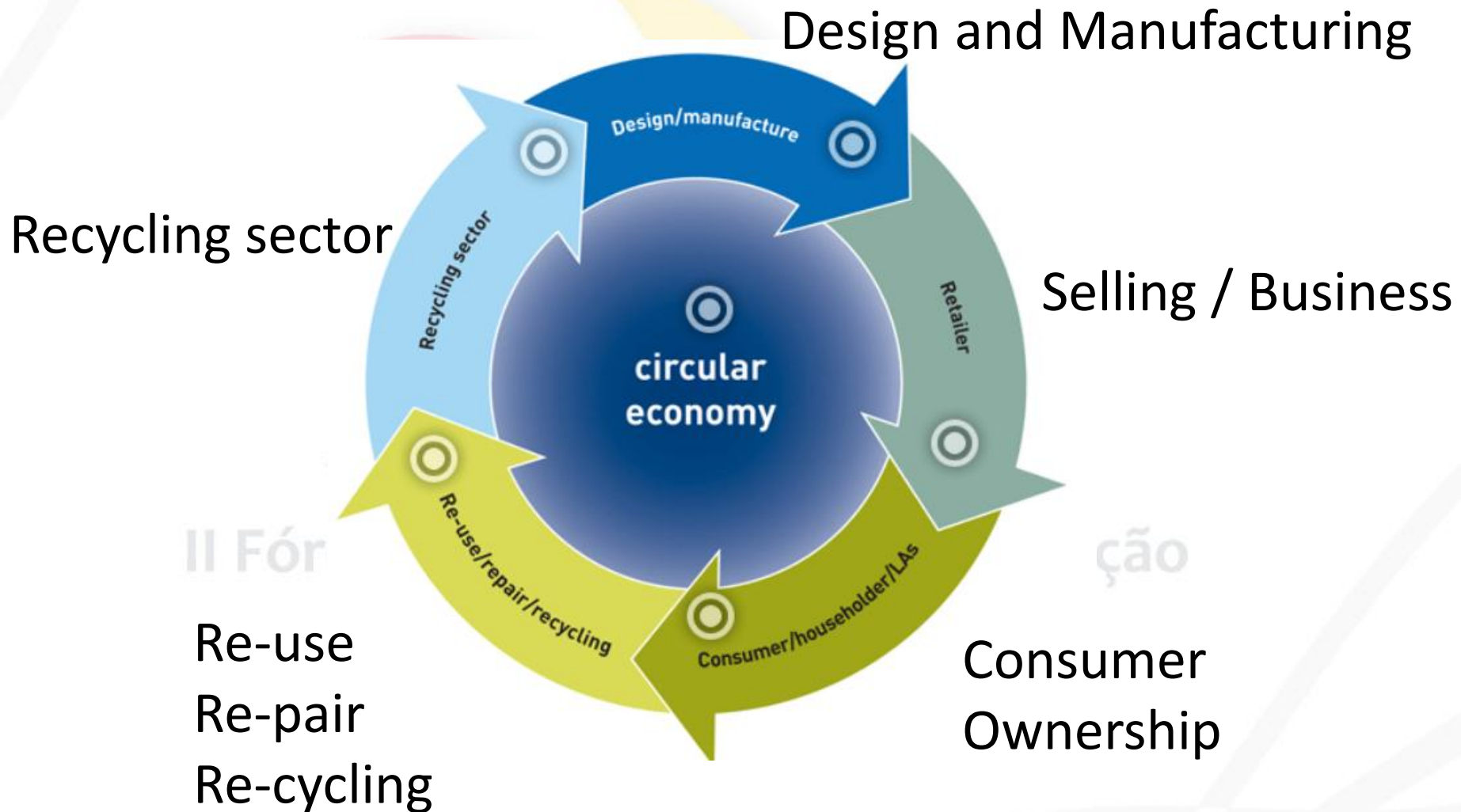
- « human factor »



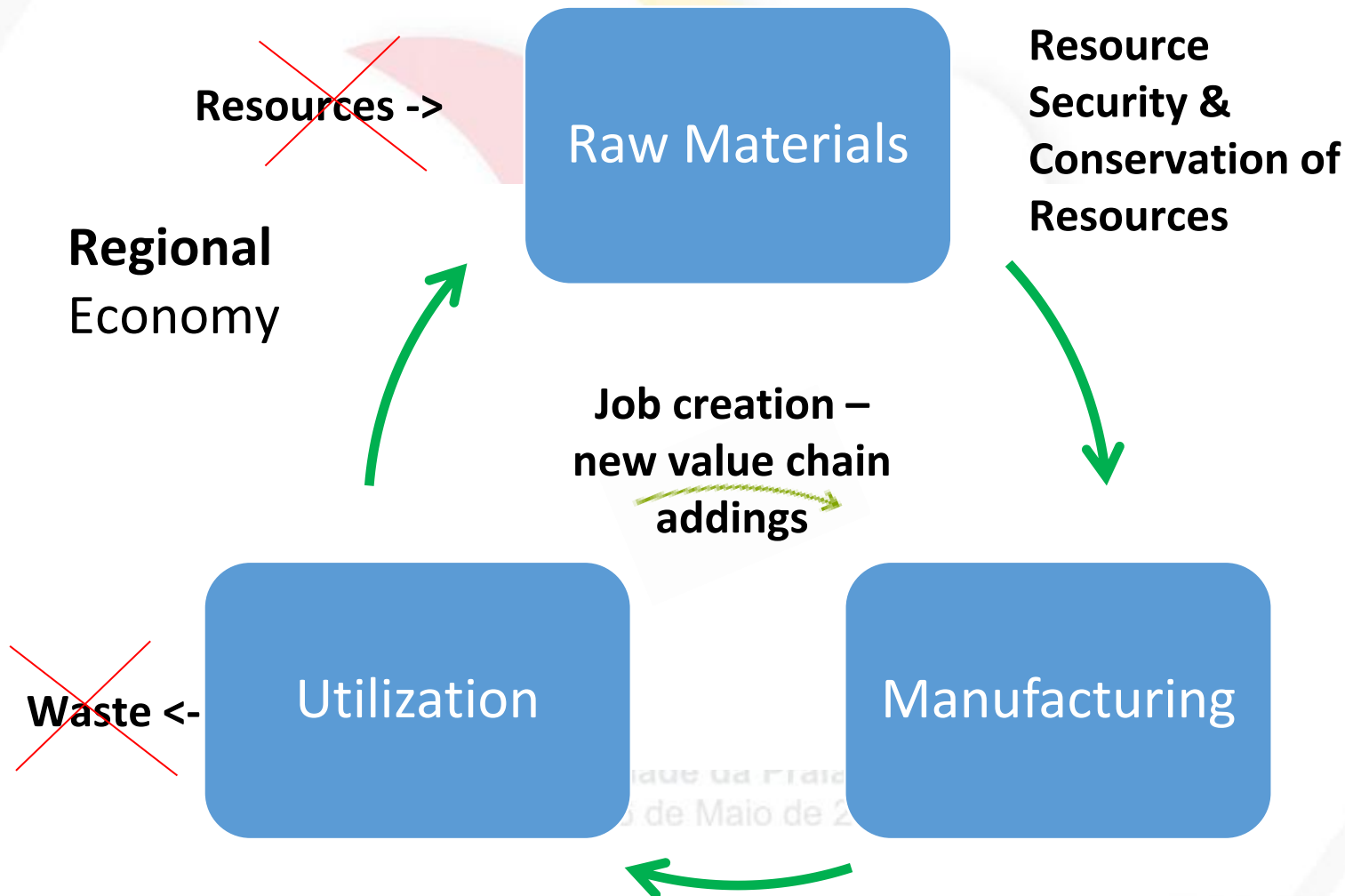
Circular Economy



A circular economy is an alternative to a traditional linear economy (= make, use, waste) in which we **keep resources** in use for as long as possible, extract the maximum value from them whilst in use, **then recover and regenerate products** and materials at the end of each service life



Circular Economy



Circular Economy

- Main impacts of closed loops:
- Resource Security & Conservation of Resources
- **Positive Impact on a local economy**
- Job creation on every part of the value chain:
 - Designers, Engineers in order to **conceive sustainable and circular products.**
 - **The raw materials have to be collected and transported (logistics / reverse logistics)**
 - Re-Manufacturing of the product -> **shift from an raw-material intensive industry towards a labour intense industry**
 - High Quality Products (High Quality is often «high added value»)

Circular Economy, here !



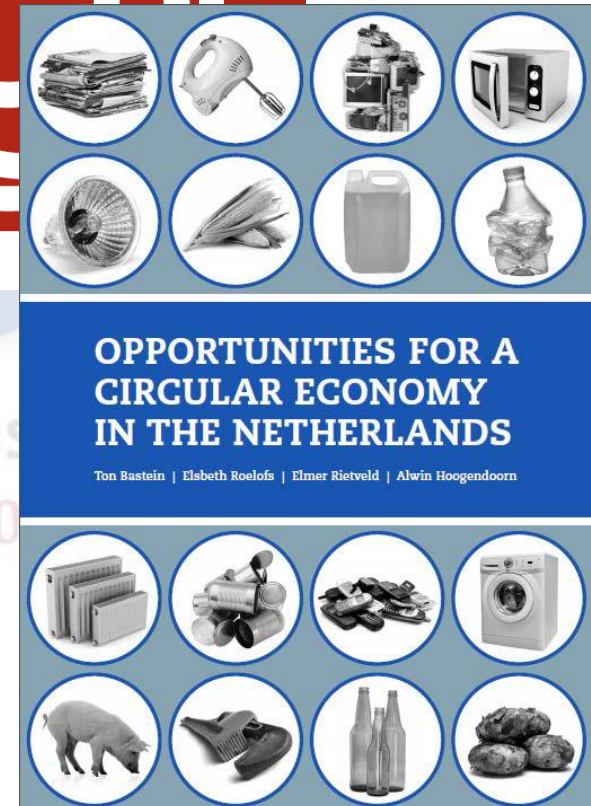
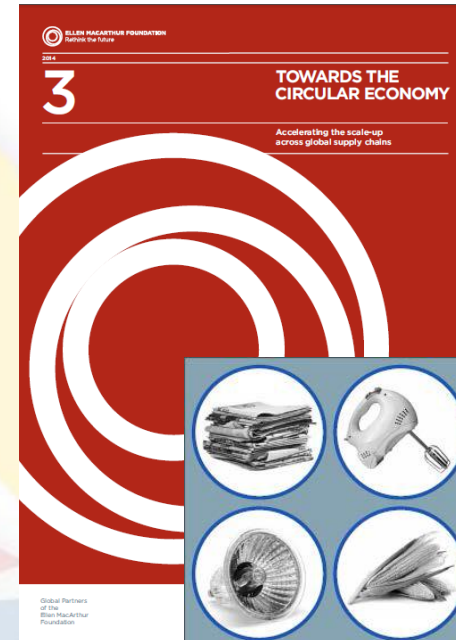
Construction

- Resource Security & Conservation of Resources
- Energy consumption
- Logistics
- Local jobs
- Closed loops

....Beaches

Circular economy

- Pays-bas (TNO)
- France (IAU)
- UK (Ellen MacArthur Foundation)
- Luxembourg (Ministère de l'Economie): *"Moving away from the linear model towards creating the circular framework"*
- ...



Challenges

- **Unsustainable consumption behaviour**
Consumption behaviour in developed countries is using more resources than available. **The produce-use-waste model is unsustainable.**
- **Increasing competition and costs for raw materials**
An ever increasing demand for raw materials is paired with a steadily decreasing offer.
Re-using instead of purchasing new materials may become vital for national economies.
- **Luxembourg is poor in raw-materials**
Luxembourg is of small size and has only very limited resources of raw-materials. Reducing the dependences of material imports may be vital for its economy.



Objectives

- **Towards a sustainable circular economy**
Implement a circular economy in Luxembourg for economic and environmental reasons **without reducing consumption and growth.**
- **Strengthen competitiveness of Luxembourg's industry**
Lowering energy consumption and material costs will be a major competitive advantage for Luxembourg's Industry which is submitted to high pressure also due to high labor costs.
- **Foster research and innovation**
Implementing a circular economy model in **Luxembourg will require innovative business models that will have important spillover effects and foster innovation in various sectors.**

Why a circular economy is important?
As well as creating new opportunities for growth, a more circular economy will:

- **reduce waste**
- **drive greater resource productivity**
- **deliver a more competitive economy.**
- **better address emerging resource security/scarcity issues in the future.**
- **help reduce the environmental impacts of our production and consumption.**

14 a 16 de Maio de 2014

Cluster companies, ...

Ren. Energy	SolartTEC, ELCO, SWIRL, Solair , Siegel-Schleimer, Innovat-technologies,
Water treatment	Apateq, Myriado, SEO, ...
Consulting	AECT, 3E Consult, Prosolut,
Construction	ProGroup, Cimalux, Polaris, Betons Feidt
Mobility	CityMov', Estonteco
Biomass	LEE, Soil- Concept, Boson
Waste	Superdreckskescht, Ecotrel
Grid	Enovos / Creos
Engineering	Paul Wurth / Dephi /
ICT / Materials / Space /...	



92 Members , 80 companies



1. Luxembourg is a reliable partner with Cabo Verde
2. Luxembourg is dedicated to clean-tech
3. Luxembourg has a reliable business environment
4. Luxembourg is a competitive country
5. Luxembourg believes in R&D / Innovation
6. Luxembourg is at the crossroads of Europe



....., Keep in mind



Circular Economy

- No waste, but products.
- Renewable Energy
- Raw materials
- New Business Models

→ Sustainable development



Marcel Klesen

... , obrigado!