

BIO-ECONOMY

Just a trend or real future for our planet?

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HISTORICAL APPROACH

- The concept of bio-economy has existed since 1925, but emergence in the 70s and real consideration in the 2000s
- From a theoretical point of view, the bio-economy is an economic theory developed by Nicholas Georgescu-Roegen at the beginning of 1970s. This theory uses the principle of the entropy to analyze economic processes. The bio-economy emphasizes the biological or natural basis of all the economic processes and thus the human problems associated to the depletion of our natural resources.

DEFINITION

- "The concept of bio-economy covers the agricultural industry and all manufacturing sectors and their respective service areas, which develop, produce, process, reprocess or use them in any form biological resources such as plants, animals and microorganisms. Thus, it achieves a variety of industries such as agriculture, forestry, horticulture, fisheries and aquaculture, plant and animal breeding, food and beverage, wood, paper, leather, textile, chemical and pharmaceutical industries up to branches of energy industry."

GOALS

- The goal is a more innovative, low-emissions economy which reconciles demands for sustainable agriculture and fisheries, food security and the sustainable use of renewable biological resources for industrial purposes, while also ensuring biodiversity and environmental protection.
 - The underlying question is to find a new environment-friendly model favoring the economic growth.
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SLIDE CONCEPTS

- Protection of the environment
- “Sustainable development is development that meets the needs of the present, without compromising the ability of future generations to meet their own needs.”
- The concept of sustainable development can be interpreted in many different ways, but at its core is an approach to development that looks to balance different, and often competing, needs against an awareness of the environmental, social and economic limitations we face as a society.

A EUROPEAN WILL

- In February 2012 the European Commission announced its “Strategy for a sustainable bio-economy to ensure smart green growth in Europe”. The strategy and action plan was called “Innovating for Sustainable Growth: a Bioeconomy for Europe”. The objectives are :
 - reinforcing European leadership and creativity in the biosciences;
 - • optimizing innovation and the systems for knowledge transfer;
 - • research into safe, nutritious and affordable food;
 - • making rural and coastal economies more sustainable;
 - • improving the efficiency of agricultural, food and industrial production and distribution systems;
 - • maintaining the competitiveness of European industry and agriculture;
 - • building low-carbon industries;
 - • reducing emissions of GHG and waste.
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A EUROPEAN WILL

- The Europe 2020 Strategy calls for a bio-economy as a key element for ‘smart, sustainable and inclusive growth’ in Europe (European Commission, 2010d).
- Advances in bio-economy research and innovation uptake are expected to allow Europe to improve the management of its renewable biological resources and to open new, diversified markets in food and bio-based products. Establishing a bio-economy in Europe holds a great potential:
- “it can maintain and create economic growth and jobs in rural, coastal and industrial areas, reduce fossil fuel dependence and improve the economic and environmental sustainability of primary production and processing industries.”
- http://ec.europa.eu/research/bioeconomy/pdf/201202_commission_staff_working.pdf

A EUROPEAN WILL

- The Bio-economy Action Plan 2012 rests on three main pillars:
 - 1. investments in research, innovation and skills aimed at ensuring substantial EU and national funding, in synergy with Cohesion funds and CAP, as well as private investment. The European Commission “consider that, by 2025, every euro invested in research and innovation actions regarding bio-economy financed by the EU will produce 10 euros of added value in the sectors of the bio-economy”
 - 2. reinforced policy interaction and stakeholder’s engagement, through the creation of a Bio-economy Panel, a Bio-economy Observatory and regular Stakeholders Conferences that will contribute to enhancing synergies and coherence throughout the whole value chain;
 - 3. enhancement of markets and competitiveness in bio-economy sectors by a sustainable intensification of primary production, a cascading use of biomass and waste streams as well as mutual learning mechanisms for improved resource efficiency (European Commission, 2012c).

BUT NOT ONLY

- A need for all countries
 - Create new kind of competitiveness for OECD countries
 - Highlight the new technologies
 - Help the BRIC to sustain their economic growth without destroy their environment
 - Build a new model for the agriculture in the countries of Africa
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ISSUES

- The sector of the bio-economy in the EU would already represent a turnover of about 2 000 billion euros and would employ more than 22 million people, that is 9 % of the total working population.
 - Save and preserve the planet
 - Prepare the future
 - Mission statement for the firms
 - Real challenge for the firms
 - New business models
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ISSUES

- A fundamental innovation: waste as source of energy
 - Waste treatment
 - Valuation of waste
 - Definitive elimination of waste
 - Creating new secondary raw materials
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OPPORTUNITIES FOR THE FIRMS

- Communications tool of companies
 - Essential argument to attract the new talents (For the human resources, it could be tool of motivation and development of worker's loyalty)
 - Dominating marketing argument
 - Answer to consumer expectations (safe and healthy food, environmental protection, ...)
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POTENTIAL OBSTACLES

- Costs of research and development
 - Needs of new technologies
 - Invention, but limited innovation (limited industrial application)
 - Higher price for the consumers
 - Necessity of cross-over : rethink the organization and the functioning of companies
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POTENTIAL OBSTACLES

- Question of ethic
 - Stakeholders : who are they in the field of bioeconomy ? Do they have enough influence ?
 - Conflicts between shareholders and stakeholders
 - The outsider model : the dominance of the collection of the profit
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THREATS

- Genetically modified organism (GMO) : famous case of Monsanto
 - Problem of the human products
 - Problem of knowledge of the risks : the not control of the consequences of the new technologies this day. At last, is the bioe-conomy less dangerous forward than nuclear power?
 - Importance of the ethics and the business ethics of the scientists, in charge of the innovation (example of the apprentice-wizard)
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ENCOURAGING PROSPECTS

- Creation of new activities
 - Modification of the sources of energy: perpetual renewal and limit to the global warming
 - Synergy of the skills
 - Conformity with the expectations of the generations Y and Z
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CONCLUSION

- A new transformation of the economy? (Sliding tertiary sector in the quaternary sector, and from now on in the sector of bio-economy)
 - A real world stake
 - A total revision of the models of the economy (the end of the proverbial black box),
 - A return in the capitalism based on the natural laws (the reminder of the Malthusian rules on the environmental protection, but with other considerations)
 - But a real way to rethink the economy after the disappearance of the fossil energies : we have to make the choice between green washing and the future of our planet
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WEBOGRAPHY - BIBILIOGRAPHY

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- Thank you very much for your attention
 - Any question ?