

Prevail Project
Prevention Action Increases Large Fire Response
Preparedness
21.4.2021

Bioeconomy development can support forest fire prevention?

Davide Pettenella
TESAF Dept. – University of Padova

TESAF Dipartimento Territorio
e Sistemi Agro-Forestali



1

Two points

- What do we mean for bioeconomy development?

TESAF Dipartimento Territorio
e Sistemi Agro-Forestali



2

Bioeconomy: a fuzzy word...

A definition:

Bioeconomy “encompasses the **production of renewable biological resources** and their conversion into **food, feed, bio-based products and bioenergy**. It includes agriculture, forestry, fisheries, food and pulp and paper production, as well as parts of chemical, biotechnological and energy industries” (EC, 2012)

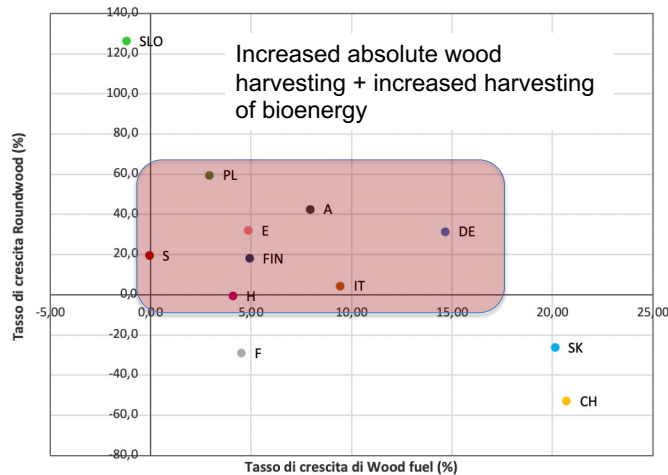
3

A strong emphasis on biorefinery within the bioeconomy framework

- A **key factor** in the transition to a bio-based economy will be the **development of biorefinery systems** (Scarlat *et al.*, 2015)
- Biotechnology and the biorefinery concept are **essential components** of the bioeconomy (McCormick and Kautto, 2013)
- The bioeconomy is integrating traditional agricultural, forest and marine biomass feedstock production systems with a **range of biorefinery options and applications** (SCAR, 2014)
- Biorefineries are increasingly **at the core** of the bioeconomy vision at the EU level and worldwide (World Bioeconomy Summit, 2015)

4

Wood removals patterns in selected European countries (2000-2019)



Source: FAOSTAT

5

Different (complementary?) strategies

(modified from Toman, 2012; Pettenella, 2015; Secco *et al.*, 2015)

	Technological approach	Social innovation approach
<i>Focus on</i>	<ul style="list-style-type: none"> • Technological innovations • Large scale investments • Value chain perspective • Sectorial development • Vertical integration 	<ul style="list-style-type: none"> • Social innovations • Small scale • Networks • Cross-sectoral development • Horizontal integration (= forests (and agriculture) as the green infrastructures for rural development)
<i>Input/output diversification</i>	1 or more inputs Diversification in outputs	Diversification in the use of inputs High added value Products & Services
<i>Market power</i>	Increasing role of business owning/controlling the (new) technologies	Role of networks, groups, associations, public-private partnerships...
<i>Model regions</i>	Northern EU (UK, Scandinavian countries)	Mediterranean region (?)

6

Different (complementary?) strategies

(modified from Toman, 2012; Pettenella, 2015; Secco *et al.*, 2015)

	Technological approach	Social innovation approach
<i>Focus on</i>	Adaptive strategy ("Old wine in new bottles") → conventional wisdom of innovation generation	Bioeconomy: an opportunity to re-think to our consumers' patterns
<i>Input/output diversification</i>	Focus on forests, agriculture, fishery as raw materials providers with biotechnology being the engine of the growth	It not only considers the protection of natural capital, "but it stresses as well the importance of addressing equity and social inclusion challenges in moving toward a green economy"
<i>Market power</i>		
<i>Model regions</i>		

7

Two points

- What do we mean for bioeconomy development?

We should support also a social innovation approach to bioeconomy → **Community-led Local Development** (CLLD) approach against suppression approach (much connected to the a «fire business»)

8

Two points

- What do we mean for bioeconomy development?
- Pathways:
 - (Sustainable) intensification in the use of forest land
 - Working not only on local value chain of wood products, but also on wild forest products and socio-cultural services → landscape diversification
 - Information and public participation in prevention vs. fire suppression

Conclusions

... rural (forest) areas needs more social innovations based on community involvement than technological innovations

