

Circular Forest Bioeconomy in Southern Europe  
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## Forest goods & services and Bioeconomy: **Ecosystem services**

Mauro Masiero

*TESAF Dept., University of Padova, Italy*  
*[mauro.masiero@unipd.it](mailto:mauro.masiero@unipd.it)*

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## Presentation outline

- Some general considerations on ecosystem services (ES) from a South-European perspective
- Grasping ES value: an overview and some examples
- Recent trends and societal demand for cultural ES
- Looking forwards between gaps and potentialities

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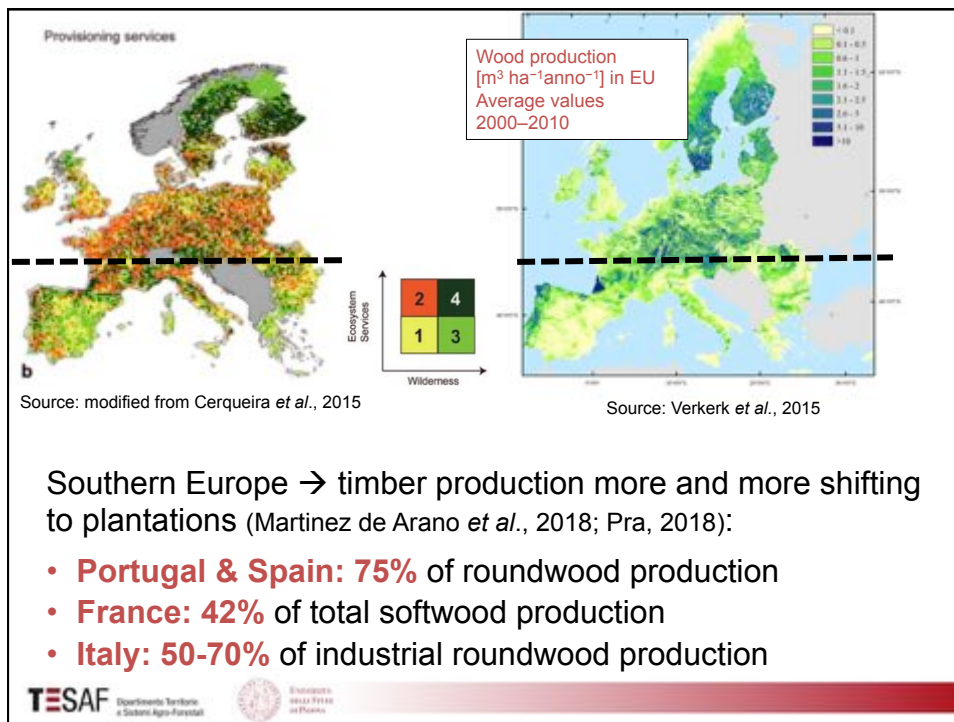
## Ecosystem services: an overview (1/2)

### Provisioning services

= products obtained from ecosystems

- Food
- Fresh water
- Firewood
- Fiber
- Biochemicals
- Genetic resources
- ...





## Ecosystem services: an overview (2/2)

### Provisioning services

= products obtained from ecosystems

- Food
- Fresh water
- Firewood
- Fiber
- Biochemicals
- Genetic resources
- ...

### Regulating services

= benefits obtained from regulation of ecosystem processes

- Climate regulation
- Water regulation
- Water purification
- Disease regulation
- Pollination
- Soil regulation
- ...

### Cultural services

= non-material benefits obtained from ecosystems

- Tourism
- Recreation
- Landscape
- Education
- Spiritual & religious
- Art
- ...

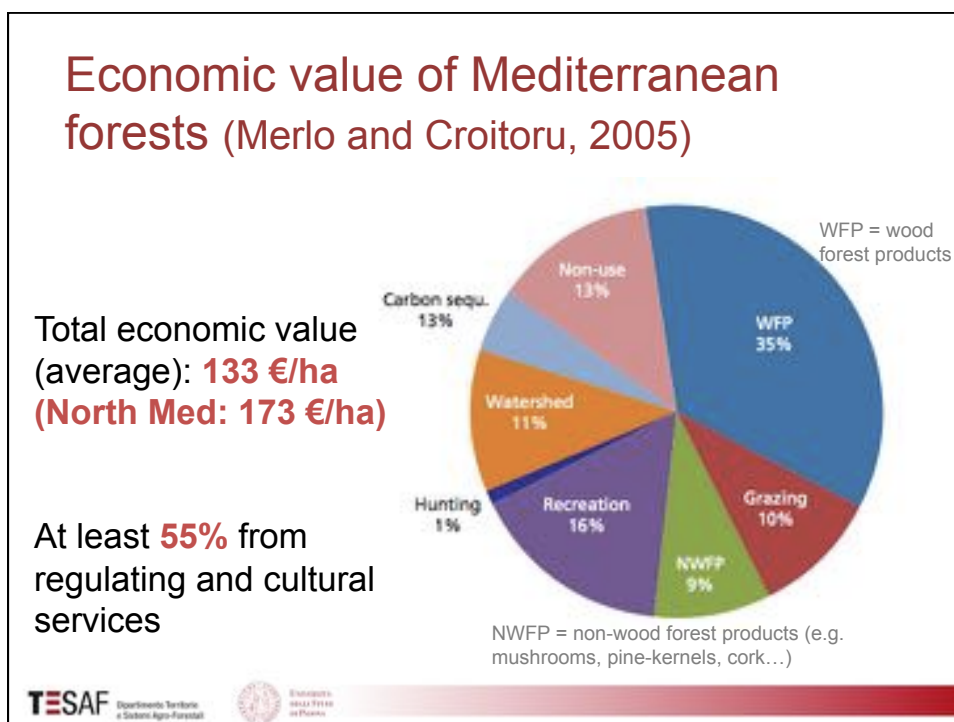
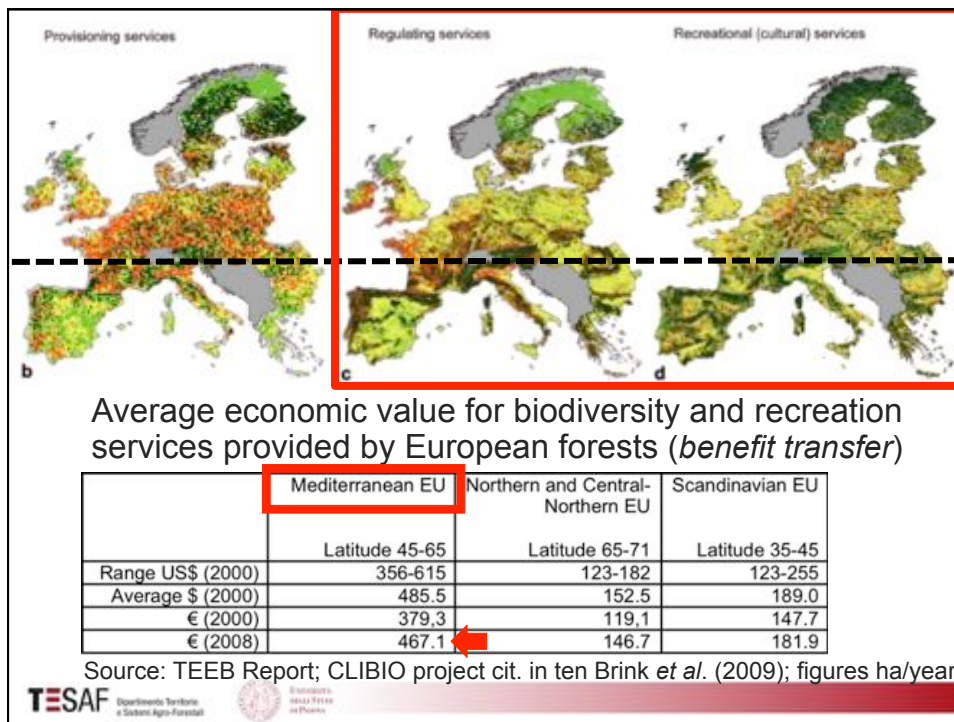
### Regulating services

= services necessary for the production of all other ecosystem services

Soil formation

Nutrient cycling

Primary production



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## Market initiatives/surveys for ES in Europe and worldwide focused on regulating services



[www.ecostarhub.com](http://www.ecostarhub.com)  
[www.ecosystemmarketplace.com](http://www.ecosystemmarketplace.com)



## Southern Europe growing, but still lags a bit behind

e.g. User-driven watershed investment programmes in Europe

Map 2: User-Driven Watershed Investment Programmes by Country



...nonetheless some good examples can be found

Source: Ecosystem Marketplace, 2017

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### Example 1

## User-driven project for biodiversity and water (Portugal)

- Coca-Cola Portugal → **500.000 m<sup>3</sup>/year** of groundwater from Tagus Aquifer (T3)
- **16 000 ha** FSC-certified (APF, local forest certification group)
- **Ca. 600 ha high-conservation values** (for species conservation and water recharge)
- Payment of **17 €/ha** for implementing appropriate forest management practices



Source: Bugalho *et al.*, 2014

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## Example 2 Groundwater recharge (Italy)



### Private sector donors



### Public sector partners (municipalities)



### Technical partners



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Ministero delle Politiche Agricole, Alimentari e Rurali

### Example 3

## FSC® certification and off-site biodiversity compensations (Italy)

Private companies →  
**FSC certified poplar plantations**

FSC standards  
(Indicator 6.5.5):

**Representative sample areas of native ecosystems shall be identified and protected**



Technical and financial support  
**200€ /ha/year for 5 years**

**Oglio Sud Regional Park**  
manages 12 722 ha of natural areas along Oglio river

**Management, restoration and conservation of natural ecosystems (off-site compensations)**

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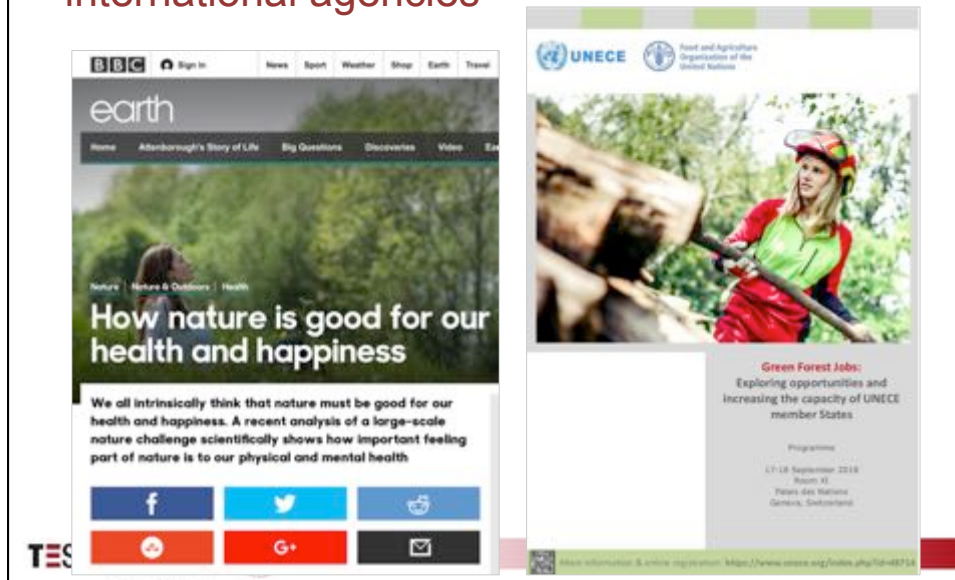
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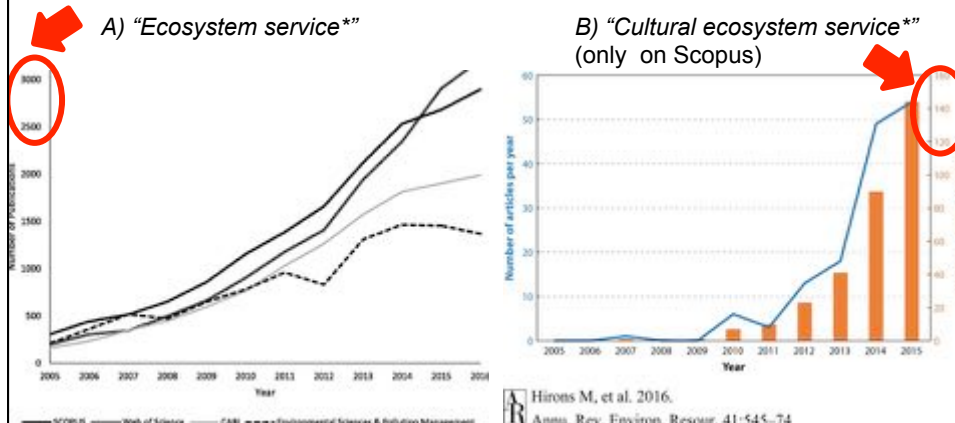


## A growing demand for cultural ES and an increasing interest by media and international agencies

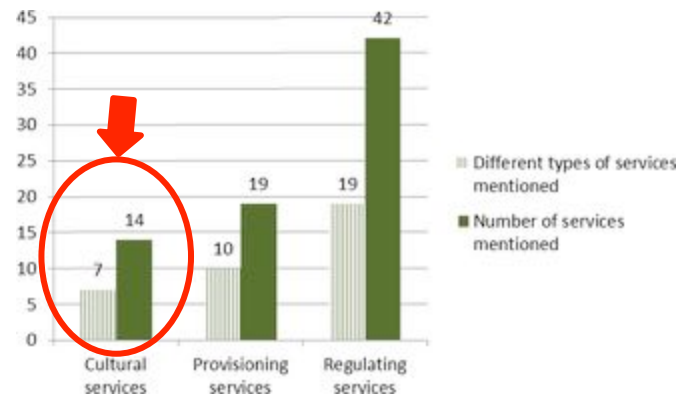


*"[...] Despite their importance and centrality in shaping the ecosystem services framework, cultural ecosystem services and related values are relatively marginalized in research and policy"* (Hirons et al., 2016)

### N. of scientific publications indexed on scientific literature databases [Title, abstract and key-words]



## Adoption of the ecosystem services concept in EU policies



Source: Bouwma *et al.*, 2018

## Cultural ES

Some examples (non-exhaustive list):

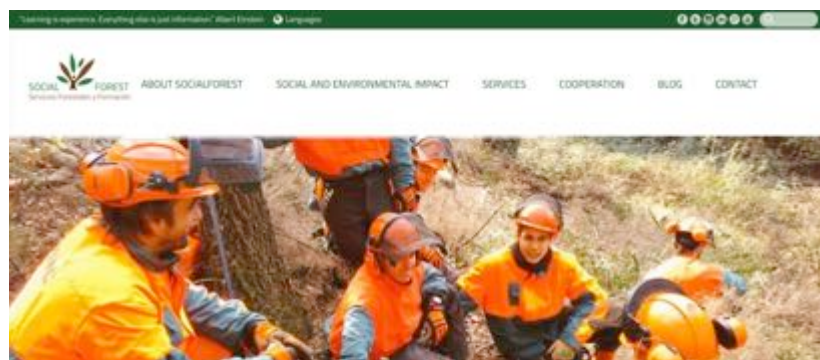
- Green care initiatives
- Forest Bathing and Forest therapy
- Social Forestry
- Education and pedagogic activities
- Sport/recreational activities
- Art activities
- Burial forests
- ...

## Forest bathing and therapy

Shinrin-yoku (森林浴) → Forest-contact therapy



## Social forestry



Training, projects and job-opportunities for young (15-24 years old) unemployed people at high risk of social exclusion, e.g. immigrants, people with addiction or mental disorders...

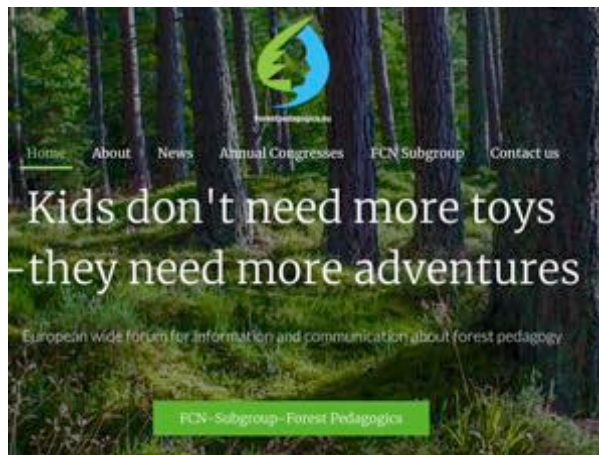
<http://socialforest.org/en/>

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GOVERNAMENTO DE GALICIA

## Education and pedagogic activities (1/2)



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## Education and pedagogic activities (2/2)

German model exported (and adapted) in many other countries, including South-European ones →



[www.spiegel.de/international/zeitgeist/forest-kindergartens-could-be-the-next-big-export-from-germany-a-935165.html](http://www.spiegel.de/international/zeitgeist/forest-kindergartens-could-be-the-next-big-export-from-germany-a-935165.html)



[www.asilonebosco.com/](http://www.asilonebosco.com/)

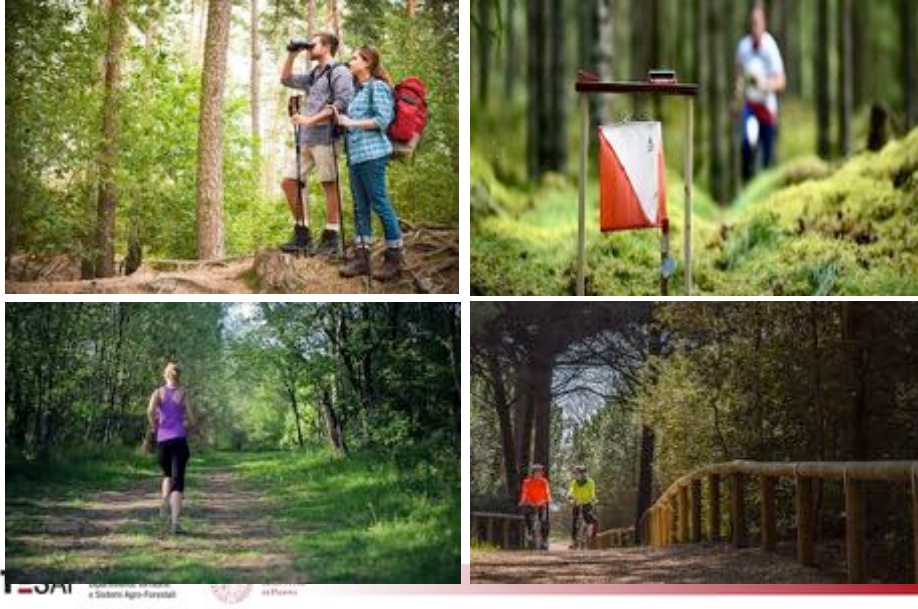
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## Sport activities and events (1/2)

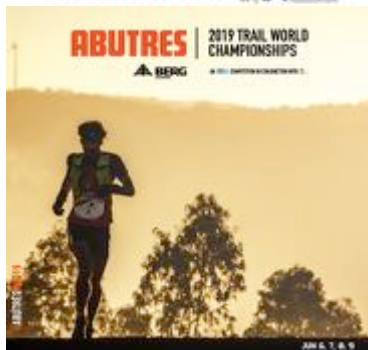


## Sport activities and events (2/2)

**2017 TRAIL WORLD CHAMPIONSHIPS**

10th JUNE

AN **AWA** COMPETITION IN CONJUNCTION WITH **ITR** **TRAILRUNNING**



<https://itra.run>

## Art events



[www.artesella.it/en/](http://www.artesella.it/en/)

Art exhibitions,  
concerts, drama...



[www.isuonidelledolomiti.it/EN/sounds-of-the-dolomites/](http://www.isuonidelledolomiti.it/EN/sounds-of-the-dolomites/)

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## Some barriers in the development of economic opportunities based-on ES

Barrier category	Challenges
<b>Informational</b>	Lack of awareness among beneficiaries and providers
<b>Technical</b>	Scientific uncertainty, Baselines, Leakage, ES valuation, Excludability and free riding, Shortage of skills and experience
<b>Spatial</b>	Spatial variability of ES
<b>Temporal</b>	Permanence, Time lags, Different time horizons
<b>Financial</b>	Perceived risks, High start-up and Transaction costs
<b>Institutional</b>	Perverse incentives, Complex policy environment
<b>Legal</b>	Property rights and other issues
<b>Cultural</b>	Aversion to paying for ES, Lack of trust, Terminology
<b>Equity</b>	Perceived unfairness

Source: modified from DEFRA, 2011

## Gaps in entrepreneurship-oriented university education

- **14 University Forestry/ Environment Depts.** (9 EU countries)
- **80%** respondents consider that entrepreneurship could be a useful field of study within their university curriculum
- **12%** of Depts. offering some specific courses on entrepreneurship



[www.ecostarhub.com/reports/](http://www.ecostarhub.com/reports/)

## A recent experience

More info at: [www.ecostarhub.com](http://www.ecostarhub.com)



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- sustainable investments
- wild forest products
- payment for ecosystem services
- forest certification
- carbon market
- ecotourism

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156 Enrolled students



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NATURAL CAPITAL ACCOUNTING



WILD FOREST PRODUCTS MARKETING



FOREST AND CARBON CERTIFICATION



ECOTOURISM (working in nature)

**B. Nature accelerator**

250+ applicants (50+ countries)

8 selected start-ups

8 weeks training + seed-funds





## Conclusions

- **Bioeconomy** is a **buzzword** → product- and technology-oriented views prevail = focus on (some) provisioning ES
- From a South-European perspective → **some trade-offs** and **many potential synergies** among different ES types (*win-win* solutions possible)
- New **management models** and mind-sets required (research, training, networking, public-private partnerships...)
- **New paradigms for the governance of forest resources** → public institutions as catalysts, facilitators and promoters in cooperation with private sector and civil society organizations