

Workshop finale
del progetto LIFE
FutureForCoppiceS

Gestione sostenibile dei
boschi cedui:
indicazioni per il futuro
dall'eredità di prove
sperimentali



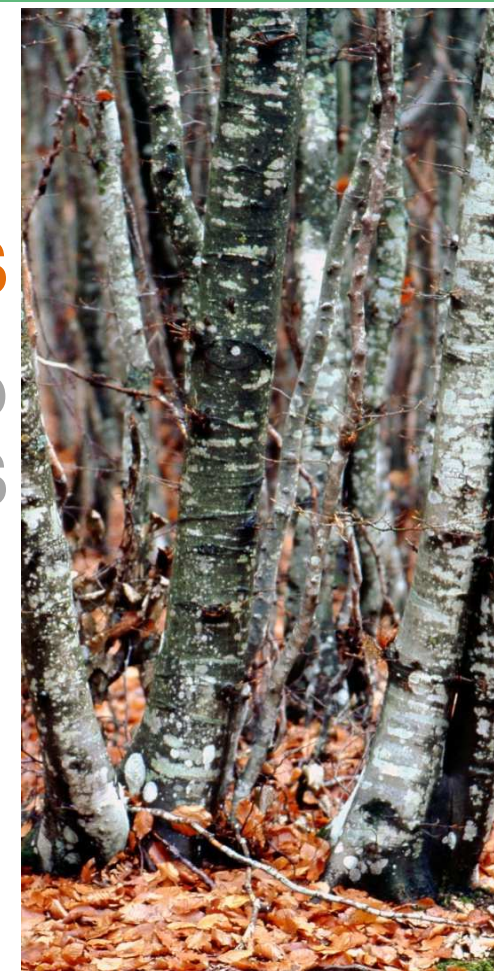
Shaping future forestry for sustainable coppices in southern Europe:
the legacy of past management trials



The project LIFE FutureForCoppiceS

Il progetto LIFE FutureForCoppiceS

Giada Bertini & Gianfranco Fabbio
CREA Foreste e Legno



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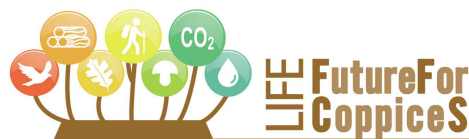


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Shaping future forestry for sustainable coppices in southern Europe:
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Project LIFE – Environment

Coordinator:

CREA - Centro di ricerca Foreste e Legno

Partners:

Fondazione Edmund Mach

Università degli Studi di Firenze

Università degli Studi di Sassari

Agenzia Forestas

Ente Terre regionali toscane

Starting-end date:

1 ottobre 2015 - 31 marzo 2019



• **Coppices** represent nowadays **more than 10% of forest areas in Europe** and they are especially widespread in Southern Europe. In **Italy**, they cover **more than 3.6 million hectares**.

• A **renewed attention** has been recently paid to the ‘coppice issue’ at an **international level (Cost ActionFP1301 EuroCoppice; IUFRO Unit 1.03.01)**, partly because of the increasing demand for **fossil fuels replacement** with renewable resources, partly because of the **intrinsic qualities** of the coppice system:

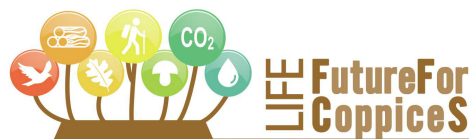
- regeneration reliability** vs high forests
- prompt carbon sequestration** after coppicing
- high resilience** to climate shifts
- simple management**

• In spite of their diffusion and qualities, coppice forests **are poorly accounted for** within Sustainable Forest Management (**SFM**) scenarios



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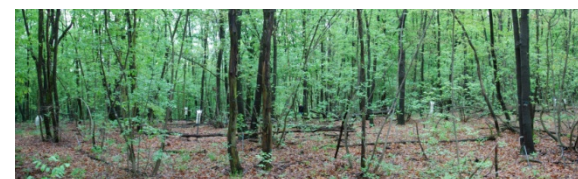
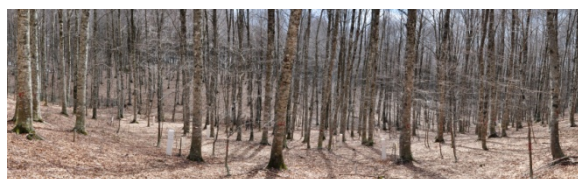


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Sustainable Forest Management SFM

SFM is defined as “stewardship and use of forests and forest land in a way, and at a rate, that maintains their biodiversity, productivity, generation capacity, vitality, and their potential to fulfill now and in the future, relevant ecological, economic, and social functions at local, national, and global levels [. . .]” (**MCPFE**, Ministerial Conference on the Protection of Forests in Europe - Helsinki, 1993).

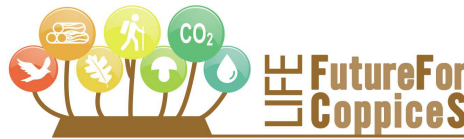


The set of SFM Criteria and Indicators was adopted for the first time by the MCPFE in Lisbon 1998. The set of Criteria and Indicators and the guidelines were known as **FOREST EUROPE**, and then periodically improved and updated.



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FutureForCoppiceS main objectives

- **1**-testing, demonstrating and disseminating the value of SFM indicators in coppice forests
- **2**- evaluating the sustainability of the main management options
- **3**-applying results on a broader geographical scale by simulating management changes as compared to the current scenario



SFM Criteria & Indicators

12 CONSOLIDATED INDICATORS

26 NEW INDICATORS

FOREST RESOURCES AND GLOBAL CARBON CYCLES

Growing stock
Age class/ Diameter distribution
Carbon stock



Growth efficiency
Total above ground tree biomass

FOREST ECOSYSTEM HEALTH AND VITALITY

Soil condition
Defoliation
Forest damage



Chlorophyll content
Leaf traits | Chlorophyll a fluorescence
Stand growth

PRODUCTIVE FUNCTIONS OF FORESTS



Increment and fellings*
Non-wood goods_ marketed mushroom production*
Roundwood (firewood)*

BIOLOGICAL DIVERSITY IN FOREST ECOSYSTEMS

Tree species composition
Introduced tree species
Deadwood
Threatened forest species



Forest herbaceous species | Native herbaceous species
Alien herbaceous species | Herbaceous species of interest
Wood decayin fungi | Epiphytic lichens
Forest breeding birds | Edible mushrooms

PROTECTIVE FUNCTIONS (SOIL AND WATER)



Bryophyte cover
Flood retention
Ground litter depth
Overstorey cover | Understorey cover

SOCIO-ECONOMIC FUNCTIONS

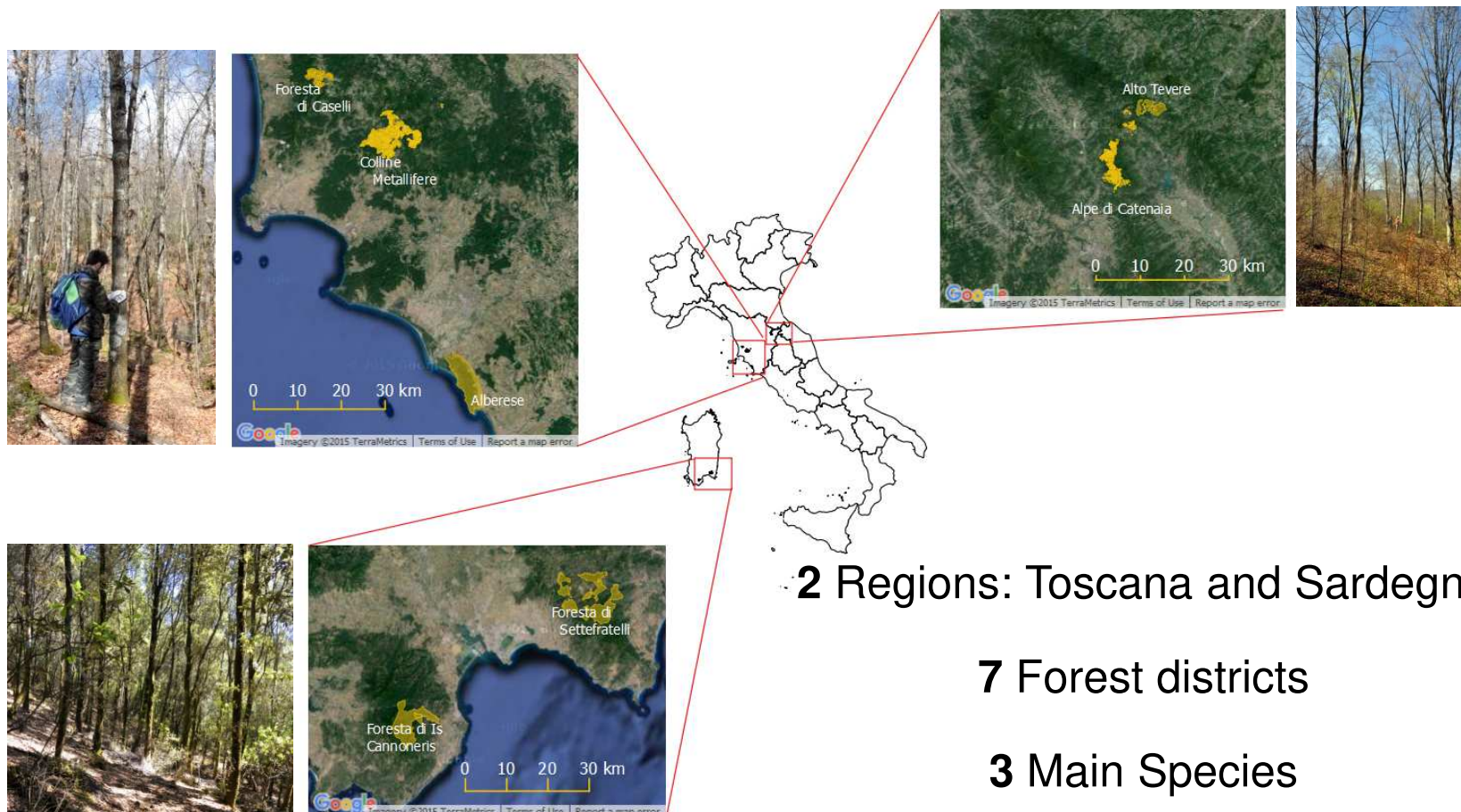
Contribution of forest sector to GDP
Net revenue



Energy from wood sesources* | Recreation*
Trade in wood* | Work force*

7

*Consolidated Indicators but calculated at the stand or management unit level



2 Regions: Toscana and Sardegna

7 Forest districts

3 Main Species

9 Sites (3 “plus sites”)

45 Research Areas

3 European Forest Types

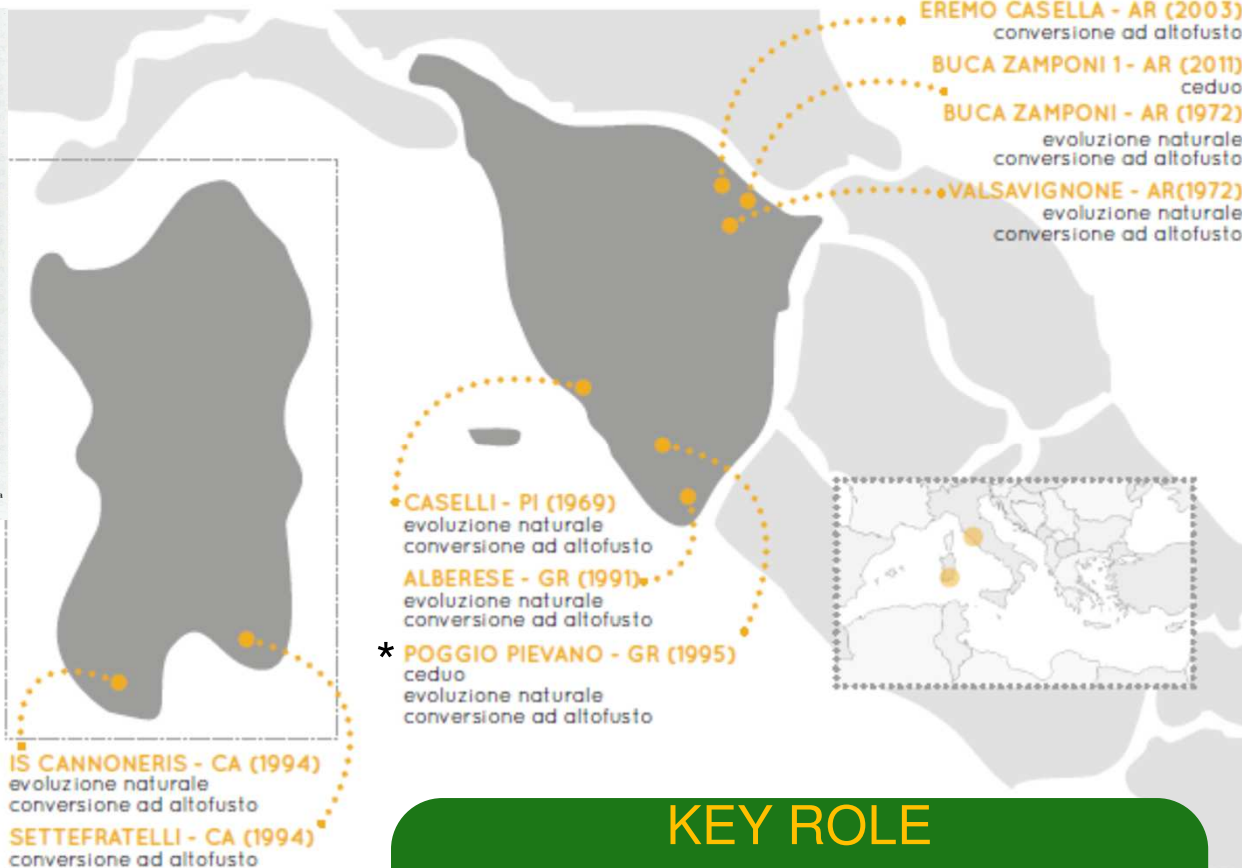
- Mountainous beech forests (7.3)
- Thermophilous deciduous forests (8.2)
- Broadleaved evergreen forests (9.1)



In aspetto del ceduo invecchiato. Si noti il numero elevato di polloni portati da alcune ceppaie.



La fustaia provvisoria a un anno di distanza dall'esecuzione del taglio di avviamento all'alto fusto.



KEY ROLE

- Long-term monitoring trials set in the late 1960s by CREA
- Availability of an historical dataset

Management options



Alpe di Catenaiia (AR)

Natural
evolution



Colline metallifere (GR)

Traditional
coppice

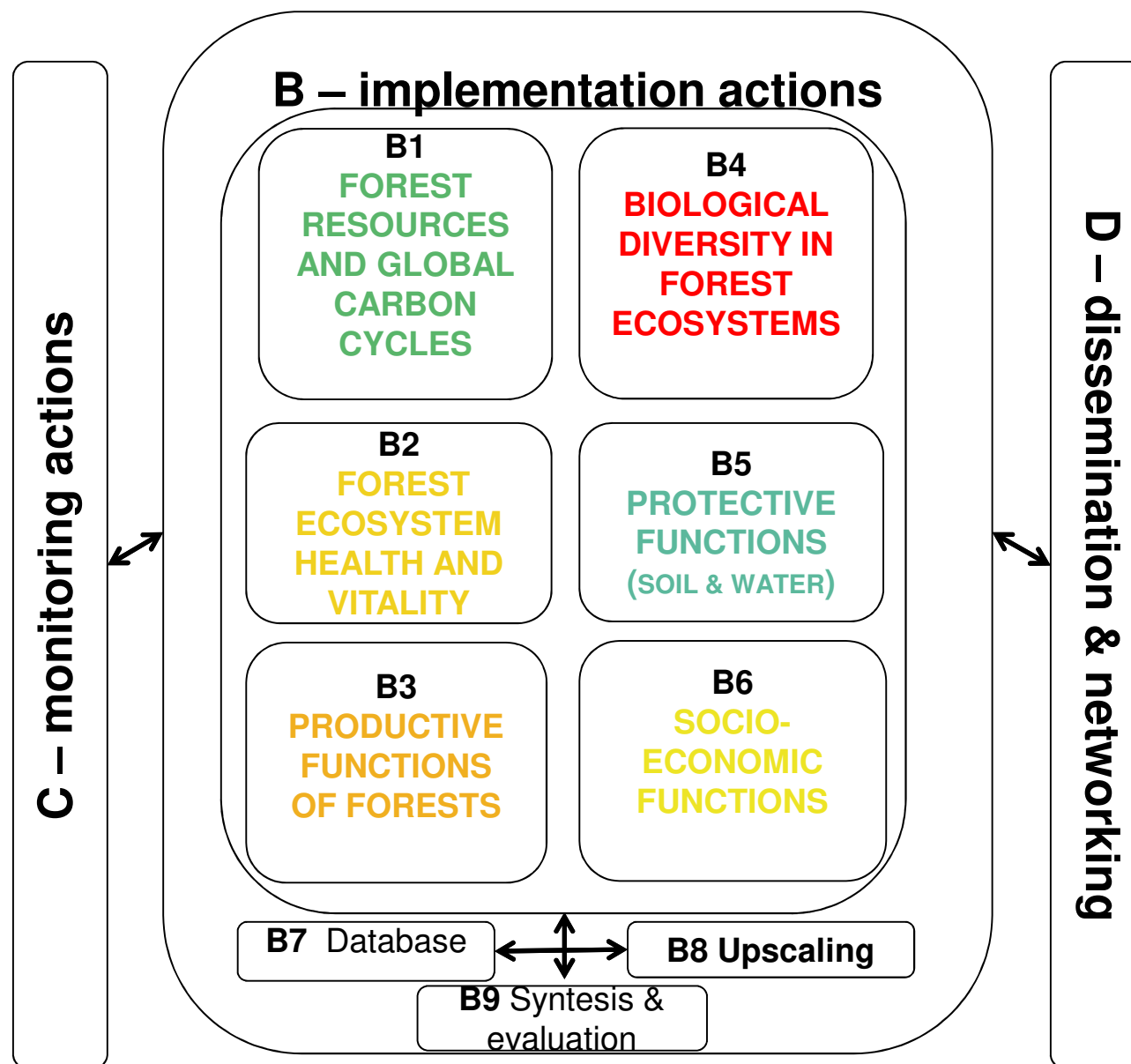


Settefratelli (CA)

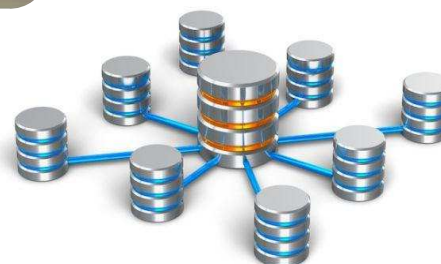
Conversion to
high forest

0

A – preparatory actions (stakeholders involvement and consultation)



Multidisciplinary approach
involving **42 experts**
in **8 different disciplines**



Survey protocols: Guidelines to field sampling

Ferretti M., Cutini A., Gottardini E., 2016.

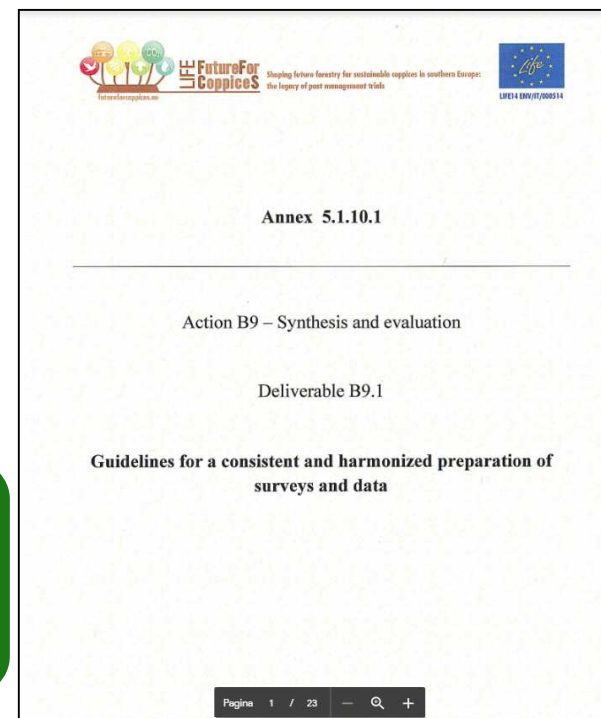
Linee Guida per una preparazione coerente e armonizzata delle indagini e dei dati

Data collection

- Leaf level
- Macroplot level
- Area level

Data source

- Historical data
- New data: 2016-2018



Survey protocols: 6 field manuals

6 Manuals for the assessment methodology, evaluation and interpretation of the **new SFM** Indicators freely available on the project website



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THANKS !!!!

- Criterion 1
- Criterion 2
- Criterion 3
- Criterion 4
- Criterion 5
- Criterion 6

Responsible



Other partners



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External assistance

TerraData S.r.l.

D.R.E.A.M. Italia

Compagnia delle Foreste S.r.l.

