Some information about Italy and Italian mountain forestry

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IPROMO -Summer School on Mountain environments and Protected areas
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UNIVERSITÀ DEGLI STUDI DELLA Tuscia

OUR NUMBERS

- 644 members of staff

(82 Full Professors; 101 Associate Professors, 106 Permanent Assistant Professors, 33 Temporary Assistant Professors; 320 Technical and Administrative;)

- 7000 students
- 16 Bachelor's Degrees
- 13 Master's Degrees
- 6 PhD courses

PhD Program: Science of Sustainability

Coordinator: *Prof. Andrea Vannini*

The DIBAF Doctorate School offers three different curricula

- **AGRO-FOOD TECHNOLOGIES:**

The course was developed to improve the skills of graduates in research areas closely related to environmental topics

- **BIOTECHNOLOGY:**

The course was developed for research on fundamental and applied aspects of conservation, processing and evaluation of food.

- **FOREST ECOLOGY & ENVIRONMENTAL SCIENCES:**

The course was developed to study the forest ecosystems, in the context of high quality research programs.

ALPINE RESEARCH CENTRE of the University of Tuscia

Centro Studi Alpino dell'Università della Tuscia
Altopiano del Tesino

Administrative Unit of the University of Tuscia, including teaching and research facilities, located in the Tesino plateau (Trento province, Italian Alps-Dolomites)

The **Alpine Research Centre** provides support for:

- practical training of forestry students;
- experimental activity within the preparation of graduate and PhD thesis;
- scientific and technological research;
- summer schools, seminars, workshops and conferences;
- technical, scientific and practical collaboration to the management and development of the Tesino Arboretum.

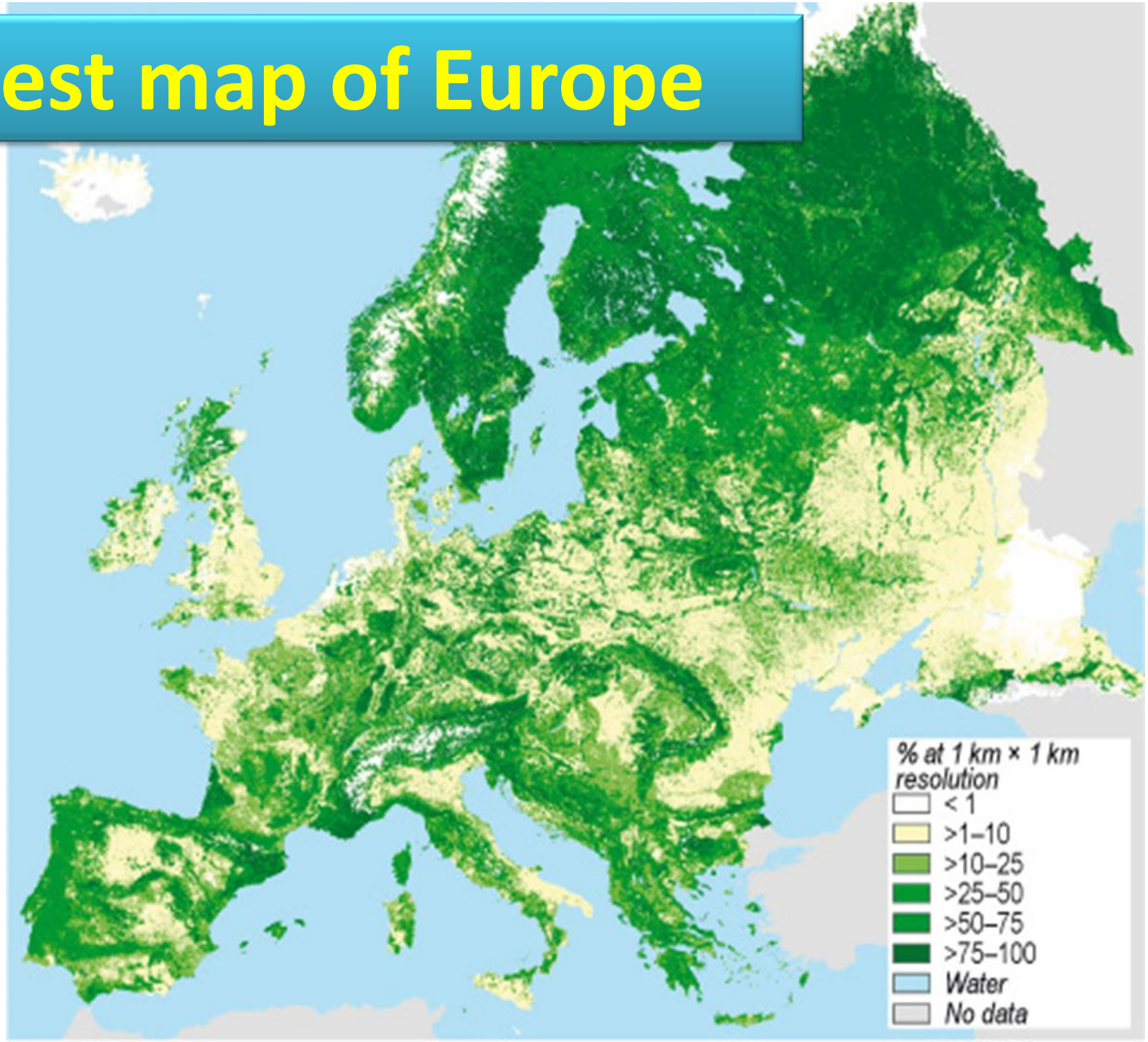
Natural environment in Tesino

The Tesino plateau (900 m a.s.l.) is surrounded by calcareous and granitic mountains.

The highest peak is the Cima d'Asta (2850 m s.lm.).

Slopes are covered with typical alpine forest dominated by beech, silver fir, spruce and larch.

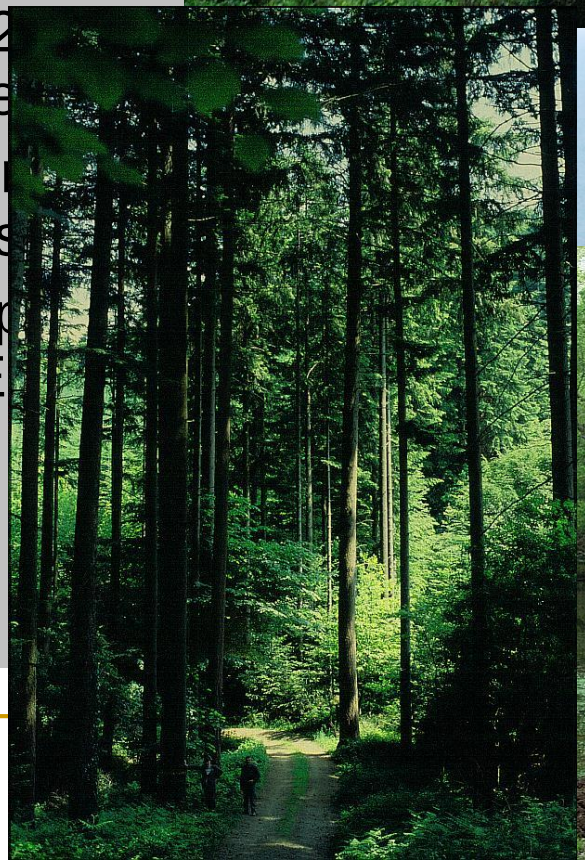
Forest map of Europe

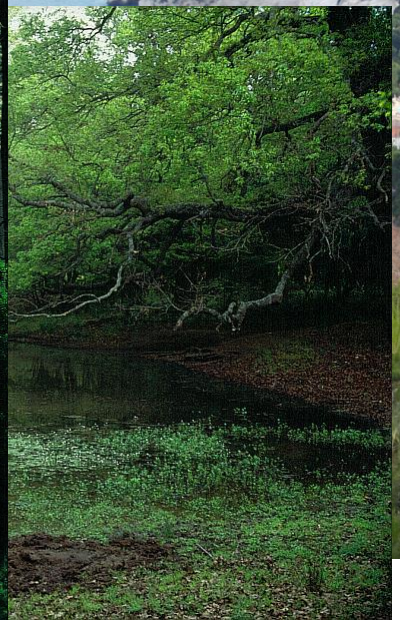


Forest surface consistently overlaps with mountain areas in Italy (and in South Europe)

Some facts about Italian forestry

- Italian forests a
  - large latitudinal an
    35°N, in Sicily, to 47°N
  - more than 2
    Mediterrane
  - 100 forest t
    tree species
  - Italy has rep
    important E
    Abies)
  - coevolution
    activities





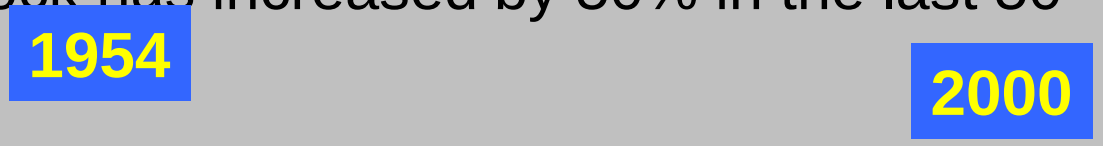
Italian forestry

Forests in Italy (and EU): a dynamic situation

- 12 Mha of forests (39% of Italian territory; 100% expansion from 1950's)
- Forest area expanding naturally because of abandoned farmland (+0.6% annually)

The return of forest and woodland……. Worldwide!

- Volume stock has increased by 50% in the last 50 years



- Conservative forestry (only 25% of forest annual increment is being harvested) and close-to-nature silviculture

In Europe forest C-absorption offsets C-emissions from agricolture

Table 1. Net biome productivity in forest, agricultural, and peat sectors. Positive fluxes mean net uptake; negative is net loss of C. Numbers within parentheses represent one standard deviation. For each ecosystem, the total area is also given.

	Area (Mha)	NBP (Tg C a^{-1})	Ref. nos.
Forest sector			
Grasslands	151 (36)	101 (133)	(*15, 24*)
Subtotal		−199 (229)	
Peat sector			
Undisturbed peat lands	39 (6)	13 (7)	(*28–30*)
Drained peat lands	16 (4)	−30 (15)	(*29–31*)
Peat extraction		−50 (10)	(*29, 30*)
Subtotal		-67 (19)	
Total		111 (279)	

Forest C-sequestration accounts for 10-20% of European C-emissions

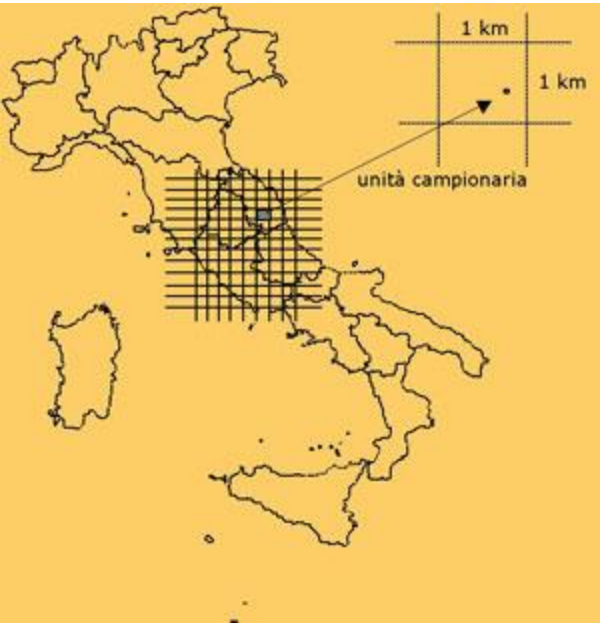
But: large uncertainties!

Emissions from fossils = -1850 Tg

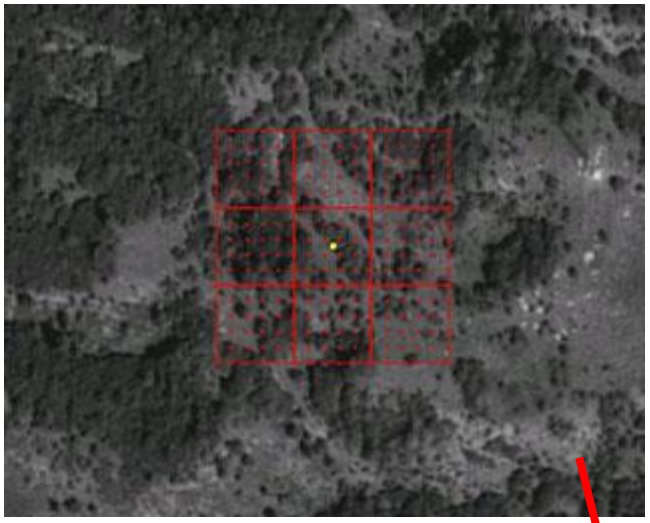
geographic Europe (up to Urals)

Janssens et al. (2003)

Italian Inventory of Forests and Carbon-INFC

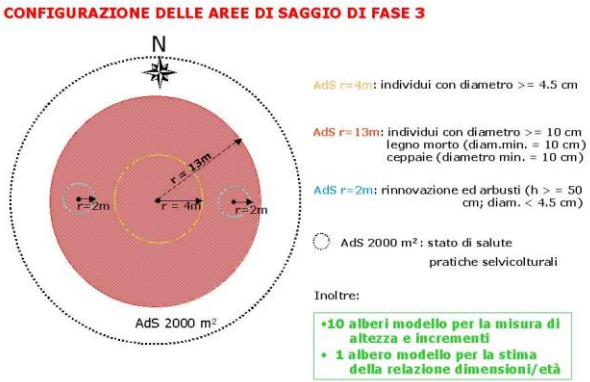


Step 1
300,000
points

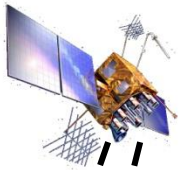


Step 2
30,000
points

Step 3: 7,000
points on
biomass (step
3+ 1,700
points on
Soil-C)

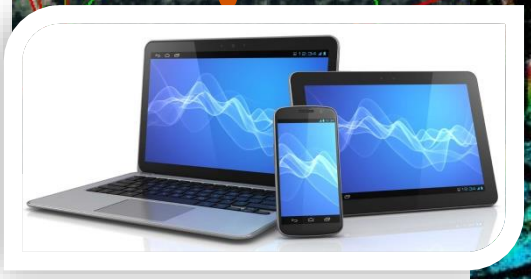


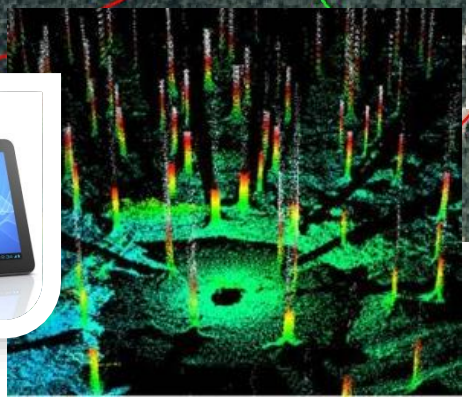
Project ALForLab: ForestWoodEnvironment Value Chain



ICT applied to forest sustainable management, inventory of ecosystem services, and wood mobilization

Informatica forestale, *mobile* e *desktop* GIS





LiDAR- terrestre

Fotogrammetria con droni

Consiglio Nazionale delle Ricerche

CRA Consiglio per la Ricerca e la Sperimentazione in Agricoltura

Università degli Studi della Tuscia

CURSA Consorzio Universitario per la Ricerca Socioeconomica e per l'Ambiente

(PON project in the Region Calabria)