



"TO INTERFERE OR NOT TO INTERFERE IN FORESTS?"

4. MAY 2023

8:00 - 16:00

Agrokomplex - pavilion K

ACTIVE FOREST MANAGEMENT TO INCREASE CARBON STOCK

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RETERURALE
NAZIONALE
20142020



MINISTERO DELL'AGRICOLTURA
DELLA SOVRANITÀ ALIMENTARE
E DELLE FORESTE





PRESENTATION OUTLINE

1. Italian forests
2. Forest management
3. Non active forest management
4. Active forest management and ecosystem services
5. Conclusion



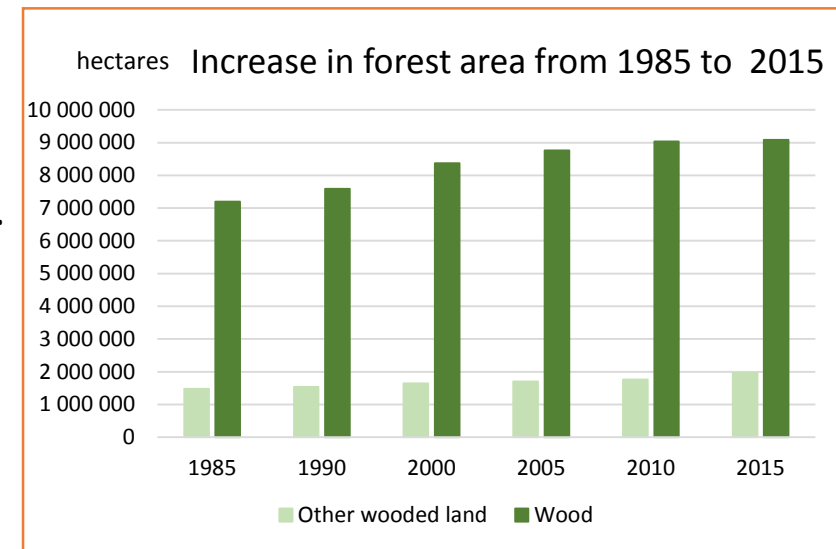


Italian Forests

1 football field every 9 minutes

39 swimming pool every day

- Forest areas have been increasing over the last 30 yrs.
- Farm abandonment in mountain and inner areas.
- Carbon stock from 1,7 billion tCO₂ in 2005 to 2,1 in 2015.
- Forest area is 37% of total national area
- 27 % of forests are located within parks
- All forests are subject to landscape constraints
- Reduction of silvicultural utilisation, with only a quarter of yearly timber growth.
- The wood processing industry imports 80% of the national requirements
- Extreme events more frequent and intense (fires, wind-storm, drought, pests and disease)





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REGULATORY INSTRUMENTS FOR FOREST MANAGEMENT

- FRAMEWORK LAW ON FORESTS AND THE FORESTRY SECTOR, DECREE LAW 34/2018 (TESTO UNICO IN MATERIA DI FORESTE E FILIERE FORESTALI **TUFF**) + 10 IMPLEMENTATION DECREES

Overall framework for 21 Regions located in a diverse area including the Mediterranean and the Alps (with ecological characteristics of Africa and the Arctic)

- ITALIAN NATIONAL FOREST STRATEGY 2022

Strategic instrument lasting 20 years which can be updated every 5 years



FRAMEWORK LAW ON FORESTS AND THE FORESTRY SECTOR, DECREE LAW 34/2018

(is the new framework law for the forest sector)

- ART 1. The Government promotes forest management and **valorisation** to secure sustainable development of the forestry sector, also based on the **commitments made at international and European level.**
- ART2 . The government promotes **active and sustainable forest management to secure the provision of environmental, economic and socio-cultural services.**
- ART 3 Defines **active management = sustainable management.** Forest management for the current and future provision of key ecological, economic and social services at local, national and global level, without compromising other ecosystems services;



ACTIVE FOREST MANAGEMENT

Active forest management introduces a (new?) **PRINCIPLE**

The (public or private) **owner's responsibility** of forest management is relevant to the public interest too (not only private)

ACTIVE MANAGEMENT or **SUSTAINABLE FOREST MANAGEMENT**

DOES NOT MEAN CUTTING!!!!

But means taking a management decision (i.e. to produce or conserve), which is reported on the **Management Plan** or equivalent instrument setting the actions needed to preserve and/or valorise the forest while securing the provision of ecosystem services over time and space.

Otherwise, on the other hand:

Forest abandonment = **Cultural lack of interest**
(owner's responsibility) **(social and political responsibility)**



THE ITALIAN NATIONAL FOREST STRATEGY:

1. It guarantees forest environmental, social and production services.
2. Forest management is needed to manage in a coherent way the territory, through management plan at enterprise level (PGF) and provincial or regional level (PFTI), with the following objectives:
 - Hydrogeological risk prevention
 - Prevention of fires, wind-storms and other extreme events... **RESILIENCE AND CLIMATE CHANGE MITIGATION**
 - Biodiversity, ecosystems and landscape diversity conservation
 - Recovery of abandoned areas
 - Socioeconomic development: employment in the inner areas, environmental, production and socio-cultural development
 - Imports wood reduction



COMMUNICATION

Communication of the importance of active forest management as a common responsibility.

- Active forest management means **RESOURCE PRESERVATION.**
- If we decide to only follow the natural evolution of the forest, **MINIMAL INTERVENTION AGAINST EXTREME EVENTS IS NEEDED** anyway
- Prevention against fires, pests and disease, etc...
- **ACTIVE FOREST MANAGEMENT IS THE INSTRUMENT TO PRESERVE OR INCREASE ECOSYSTEM SERVICES.**



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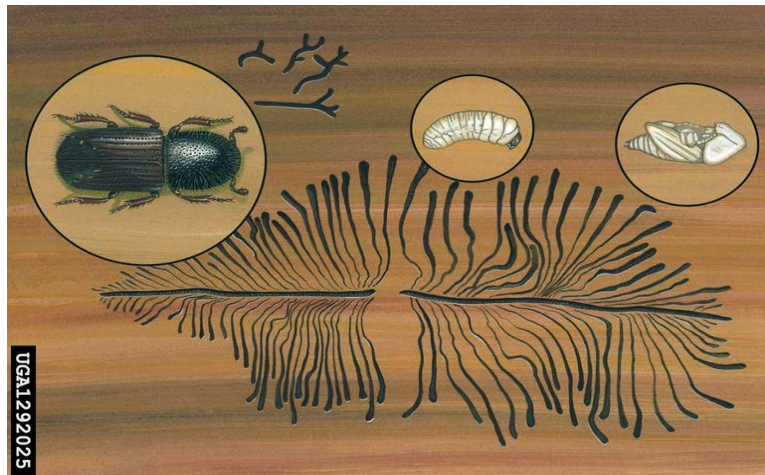


Without active management

Main threats are:

(Anderegg *et al.*, 2013, Allen *et al.*, 2015; IPCC, 2021)

- Fires
- Other extreme events: Vaia storm
- Pests and disease



Ips. Typographus: bark beetle

Nel 2017 160.000 hectares burned by fires



Fire at Monte Serra 2018 Source

October 2018 8,5 M m3 fallen trees

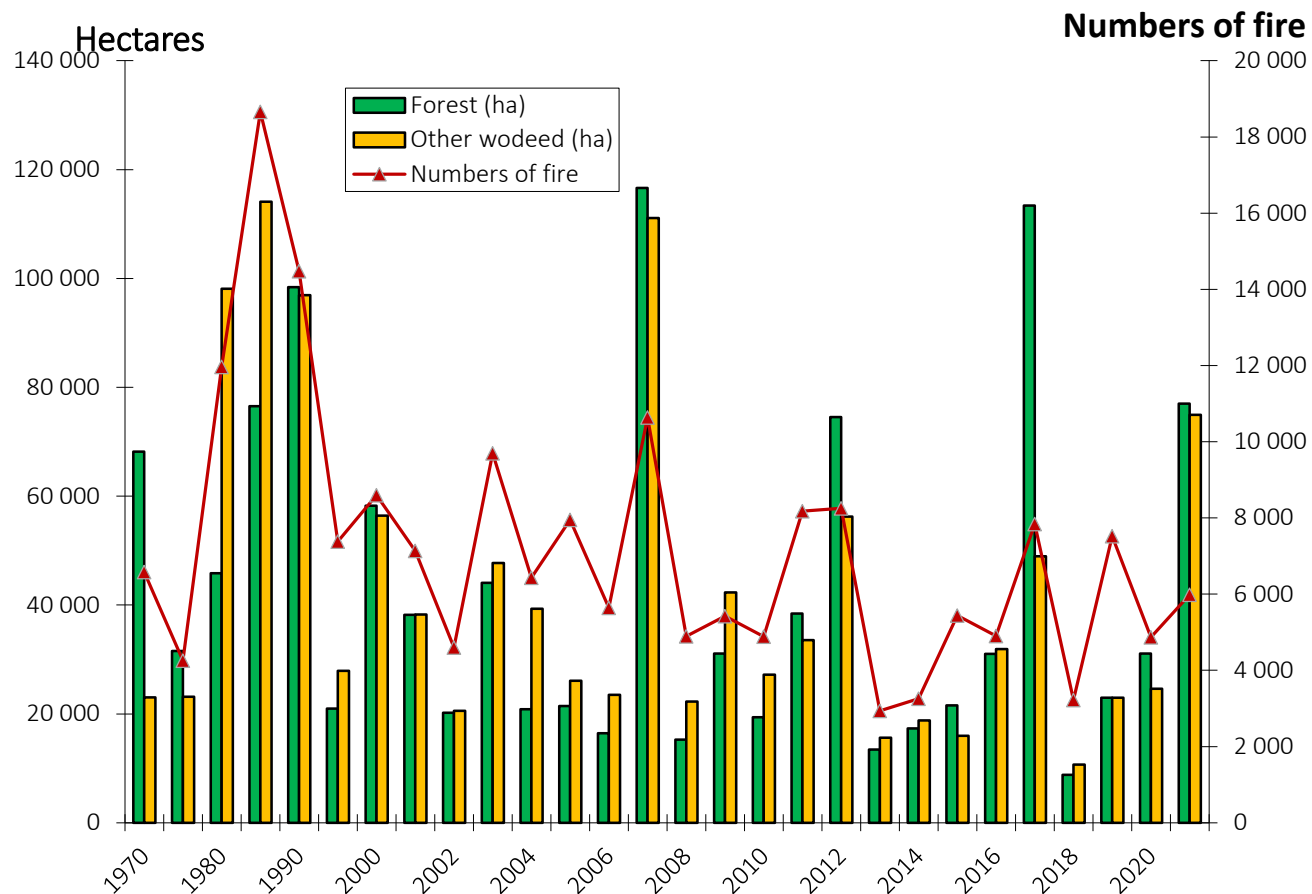


Vaia storm 2018 Source: Raf Italia



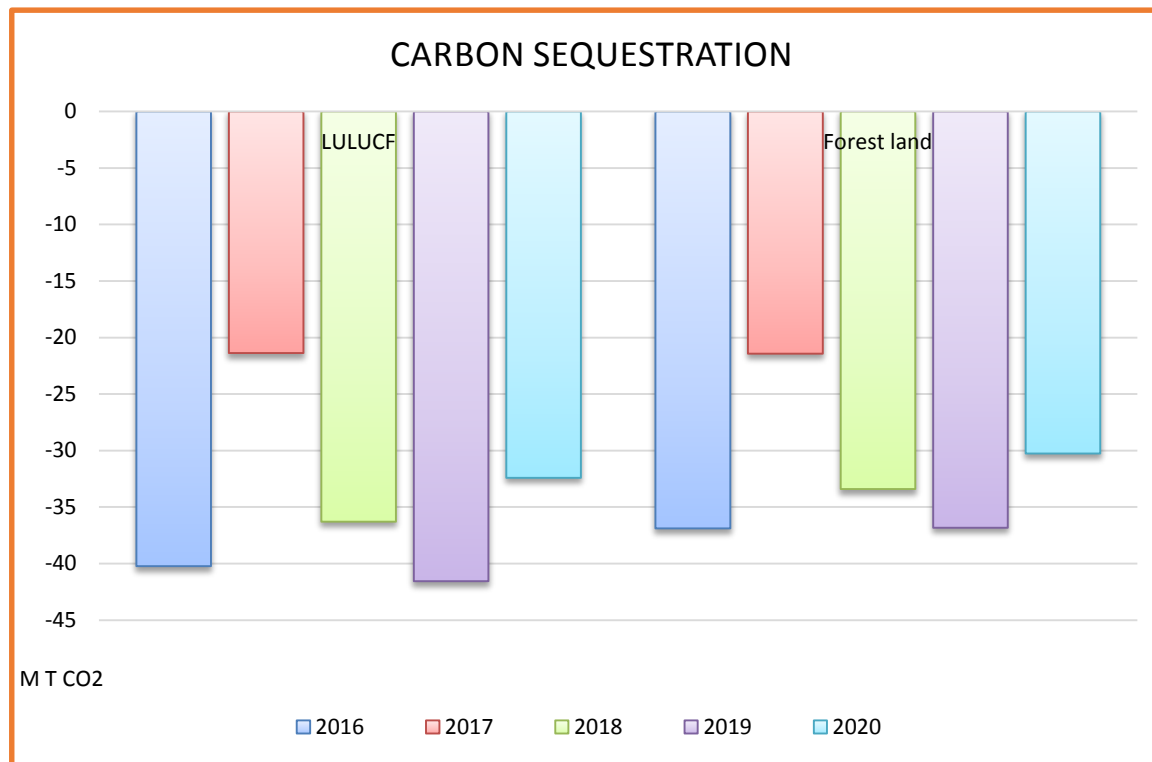
FOREST FIRE

Global warming
Changes in rainfall regimes
Drought
Wind storms
Deforestation
Agricultural abandonment





CARBON SEQUESTRATION AND FIRES



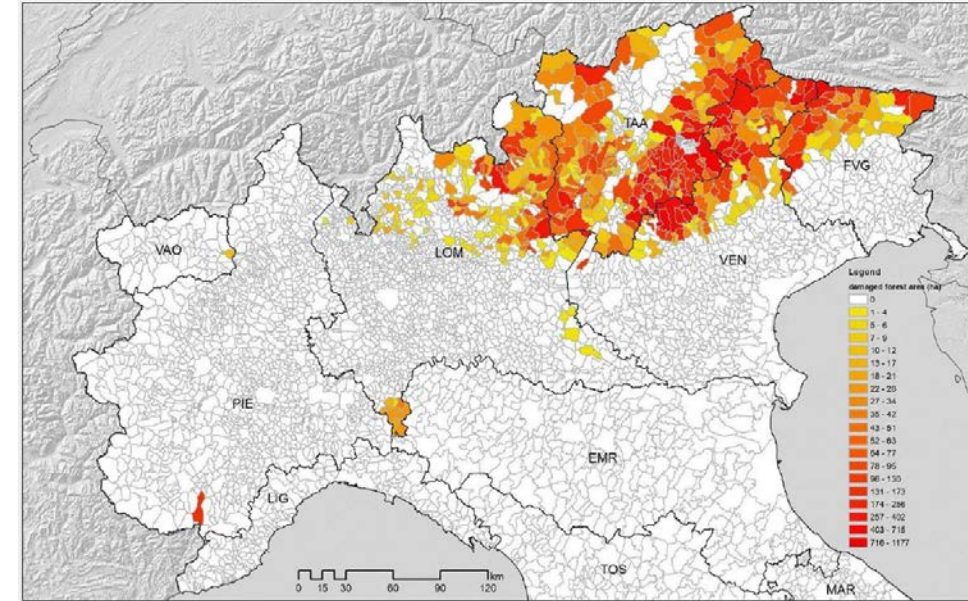
In 2017 forest carbon sequestration decreased by half



VAIA STORM: On October 29, 2018, the Vaia storm hits the North-Eastern regions of Italy by wind gusts exceeding 200 km/h

42.525 ha involved
8,7 Milion m³ fallen trees
7 times more than the quantity of raw material processed by Italian sawmills in one year
260 Milion euros damages to the Italian timber industry
2,5 Bilion damages to forest infrastructures
19,5 Milion euros corresponding to un-provided ecosystem services

Chirici et.al 2019 e pettenella et. al 2019
WEF (2019). The global Risks Report 2018,



Fonte: Chirici *et al.* (2019)



PESTS AND DISEASE

- Higher temperature in winter favour pests and disease, and longer growing season facilitate exposure to them.
- Main pests and disease represented by insects, fungi, bacteria, viruses, mycoplasmas (33,8% forest area with pests and disease and at least 30% damaged canopy), Extreme events such as wind storms, floods, heavy snow (26,5%), fires forest
- Bark beetle: (*Ips thypographus*) one of the main threats to coniferous forests at national level, and VAIA has exacerbated the issue.
- The event facilitated its spread because of the amount of fallen trees. In summer 2020, in Trento more than 80% installed traps were reported to exceed the threshold even at high altitudes. (Provincia Autonoma di Trento, 2020).



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Active forest management and ecosystem services

Public incentives

They are public incentives given by governments or international organisations to forest owners as acknowledgment of the ecosystem services provided

They often are not sufficient and limited in time.

CAP and NATIONAL/REGIONAL FINANCIAL

Voluntary Carbon markets

In Italy there was a market, born 10 years ago, thanks to the will of several profit and non-profit organizations, local administrations and single citizens, in order to, reduce (voluntarily) their carbon footprint through reduction of their emissions and by purchasing carbon credits produced by forest owners.



The most important financing sources for forestry sector is the European Agricultural Fund for Rural Development (EAFRD 2014 -2020):

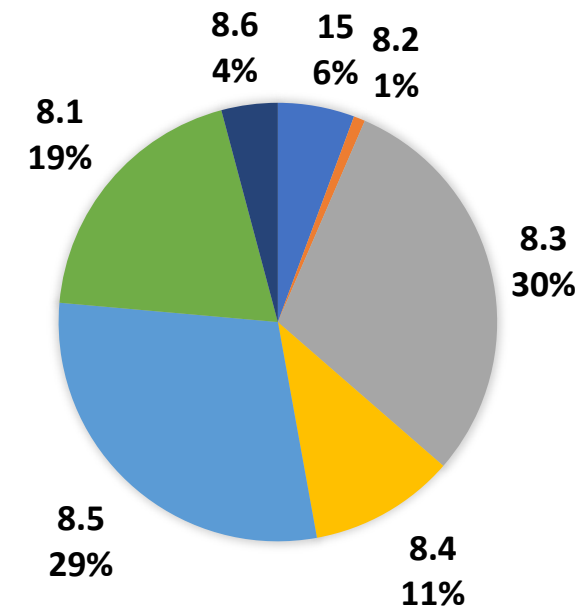
MEASURE 8

- 8.1 afforestation/creation of woodland
- 8.2 establishment and maintenance of agro-forestry systems
- 8.3 prevention of damage to forests from forest fires and natural disasters and catastrophic events
- 8.4 restoration of damage to forests from forest fires and natural disasters and catastrophic events
- 8.5 investments improving the resilience and environmental value of forest ecosystems
- 8.6 investments in forestry technologies and in processing, mobilising and marketing of forest products

MEASURE 15

- 15.1 payment for forest-environmental and climate commitments
- 15.2 the conservation and promotion of forest genetic resources

MONEY SPENT 2014-2020 442 M (€)





Money spent by priority and focus area through Measure 8 and 15

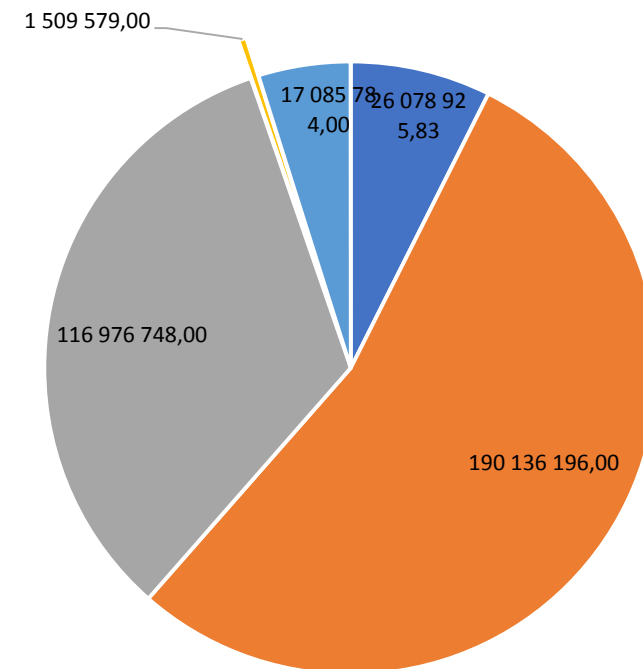
Priority 4: Restoring, Preserving and Enhancing Ecosystems:

- *P4A: Restoring, preserving and enhancing biodiversity*
- *P4B: Improving water management*
- *P4C: Preventing soil erosion and improving soil management*

Priority 5 Resource-efficient, Climate-resilient Economy

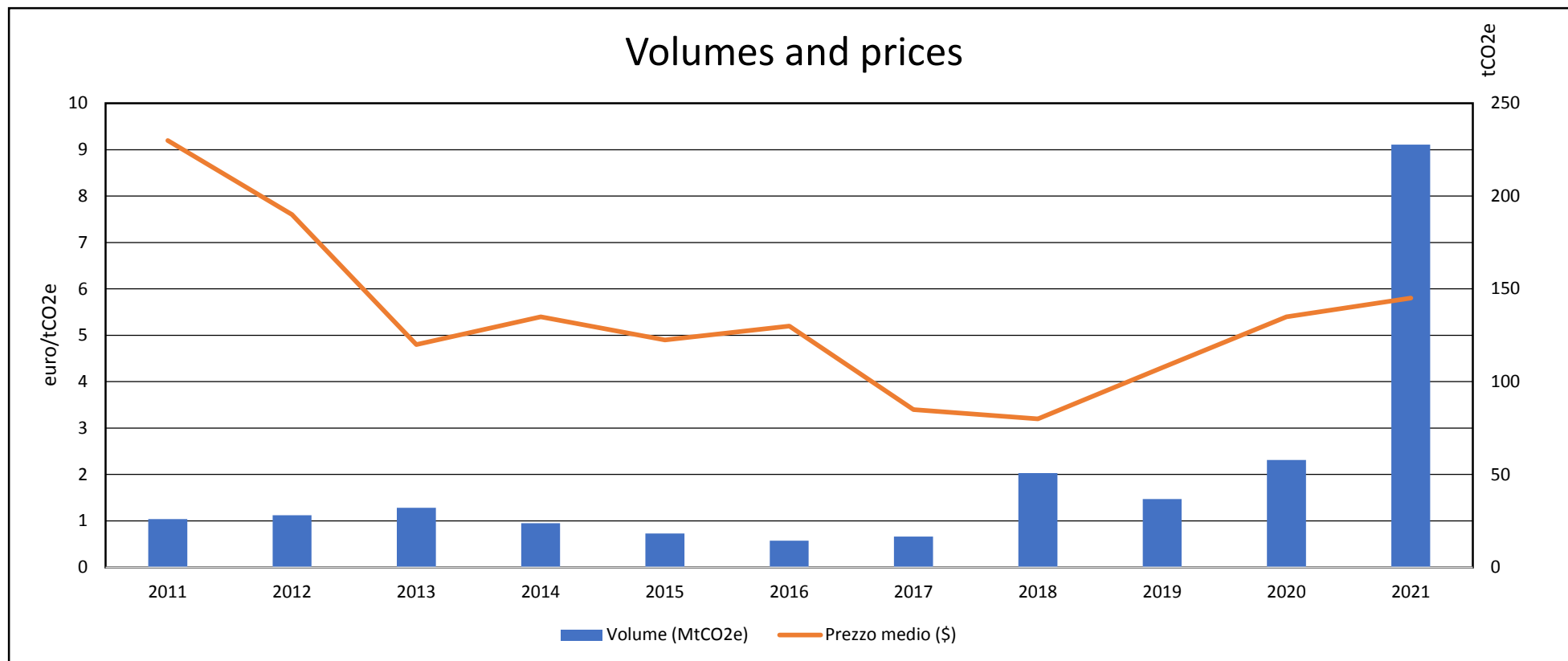
5E Fostering carbon conservation and sequestration in agriculture and forestry

Money spent by FA





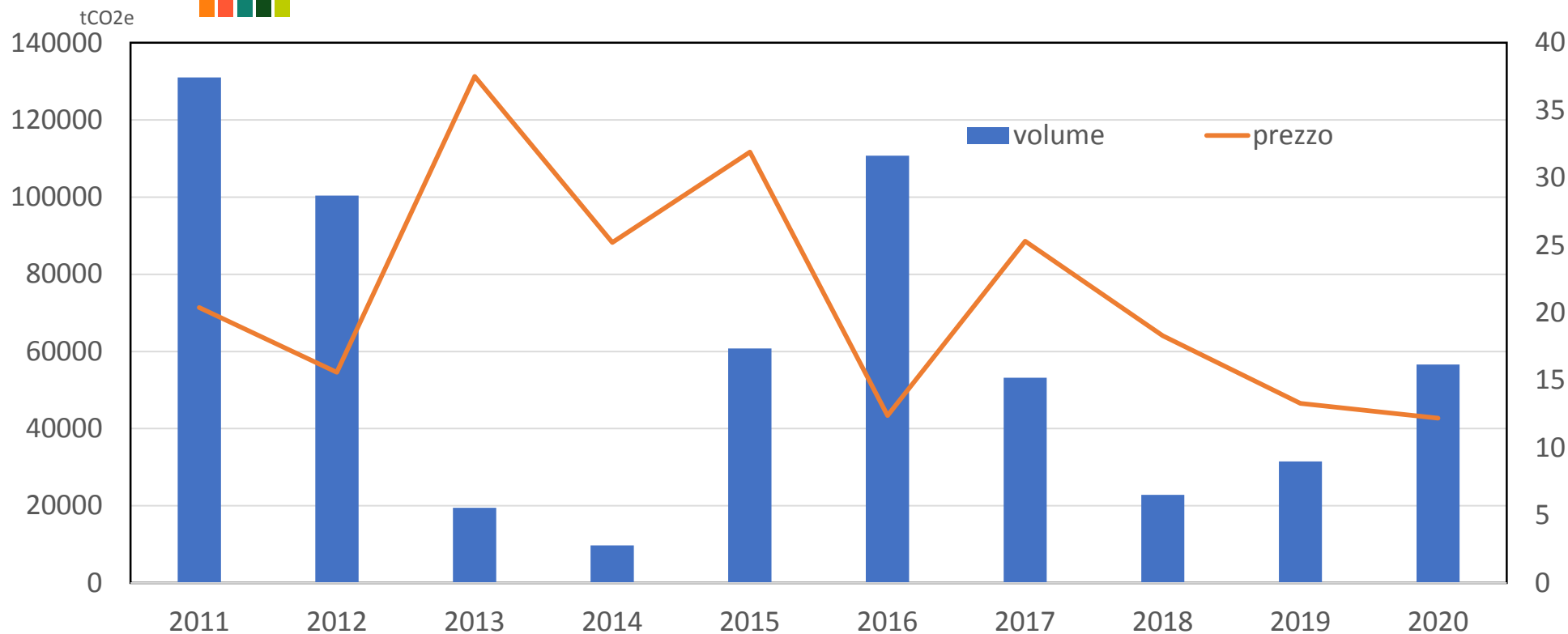
VOLUNTARY INTERNATIONAL FOREST CARBON MARKETS



Our own elaboration based on Ecosystem Marketplace 2022



VOLUNTARY FOREST CARBON MARKET IN ITALY



Source: Monitoring Carbon Center (CREA)

Volume sale: 596.337
Average price: 21 Euro
Total market volume: 11 M EUR

Average price 2021-22 = 25 euro/tCO2e
Volume 2021 and 2022 >1 Million tCO2e/year



ESTABLISHMENT OF THE PUBLIC REGISTER OF VOLUNTARY CARBON CREDITS

(Law, April 21 2023, n. 41 article 45)

- In order to enhance the value of sustainable and additional agricultural and forestry management practices, a **public registry of carbon credits generated on a voluntary basis by the national agro-forestry sector is established at the (CREA).**
- **The credits cannot be used in the EU ETS market and in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSA) market.**
- **The credits contribute to the achievement of the national targets for the offset of greenhouse gas emissions**
- Within 180 days, **guidelines are adopted to identify the criteria and procedures for the certification of credits and the management of the Register.**



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CONCLUSIONS

Active management is a new concept which requires the **responsibility of the management decision for the public interest.**

It is an instrument which reduces the impacts of climate changes on forests
(FOREST RESILIENCE)

It favours the **valorisation of ecosystem services:**

- Increased regulating services (carbon sequestration, biodiversity, hydrogeological stability).
- Increased provisioning services: timber and other non-timber forest products.
- Increased cultural and recreational services.