



Laurea / B.A.
in Global Governance



dipartimento studi
 impresa
 governo
 filosofia





1

- Biodiversity or Biological diversity is a term that describes the variety of living beings on earth.
- In short, it is described as degree of variation of life. Biological diversity encompasses microorganism, plants, animals and ecosystems such as coral reefs, forests, rainforests, deserts etc.

2

Biodiversity also refers to the number, or abundance of different species living within a particular region.

It represents the wealth of biological resources available to us.

It's all about the sustaining the natural area made up of community of plants, animals, and other living things that is begin reduced at a steady rate by human activities that determine habitat destruction.

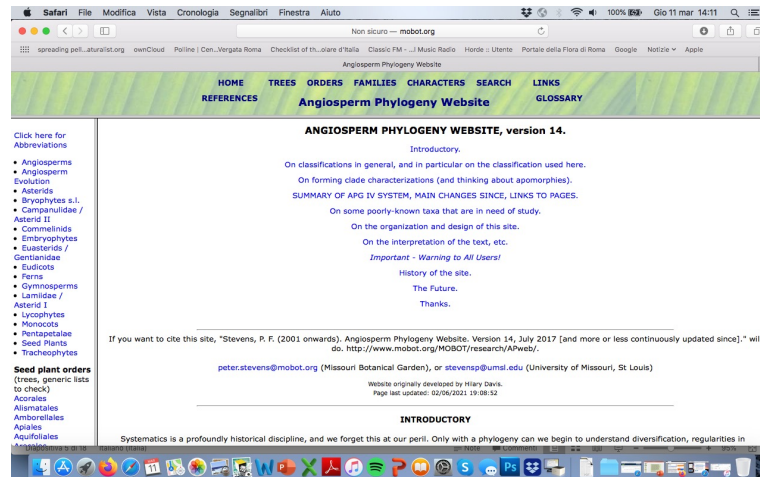
3

Biodiversity has essential elements:

- **Genetic diversity,**
- **Eco system diversity**
- **Species diversity and molecular diversity**
- Biodiversity is the result of 3.5 billion years of evolution

4

<http://www.mobot.org/MOBOT/research/APweb/>

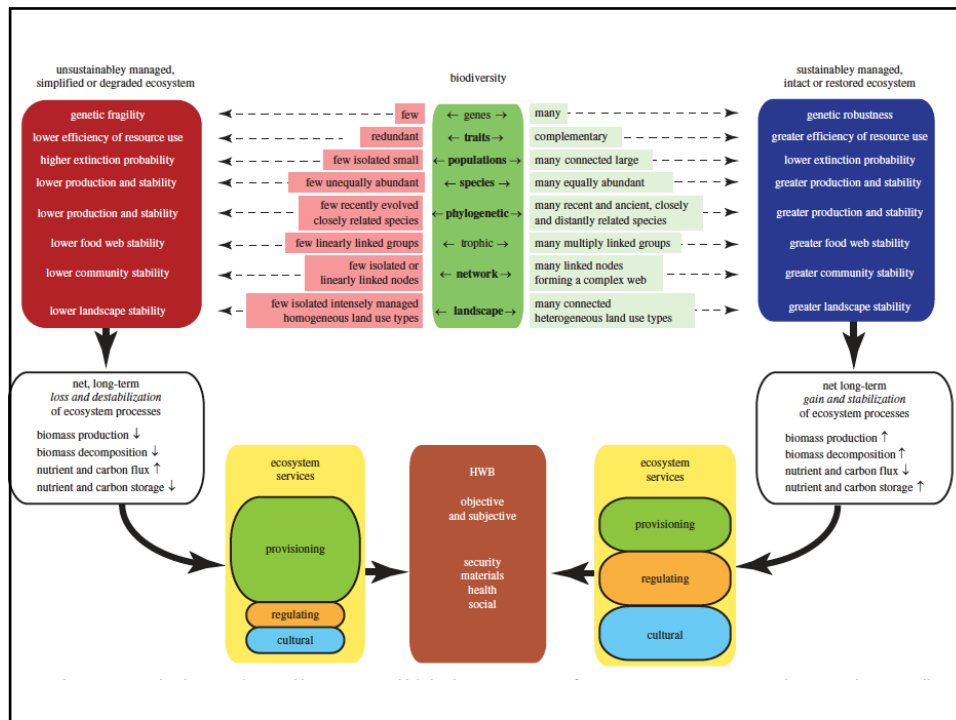


5

Why is Biodiversity Important?

- **Maintaining balance of the ecosystem:** Recycling and storage of nutrients, combating pollution, and stabilizing climate, protecting water resources, forming and protecting soil and maintaining ecobalance.
- **Provision of biological resources:** Provision of medicines and pharmaceuticals, food for the human population and animals, ornamental plants, wood products, breeding stock and diversity of species, ecosystems and genes.
- **Social benefits:** Recreation and tourism, cultural value and education and research.

6



7

United Nations Decade on Biodiversity

- The United Nations designated 2011–2020 as the United Nations Decade on Biodiversity. In biodiversity, each species, no matter how big or small has an important role to play in ecosystem.
- Various plant and animal species depend on each other for what each offers and these diverse species ensures natural sustainability for all life forms. A healthy and solid biodiversity can recover itself from variety of disasters.

8

The 2030 EU Biodiversity Strategy

- The EU's biodiversity strategy for 2030 is a comprehensive, ambitious and long-term plan to protect nature and reverse the degradation of ecosystems. The strategy aims to put Europe's biodiversity on a path to recovery by 2030, and contains specific actions and commitments.



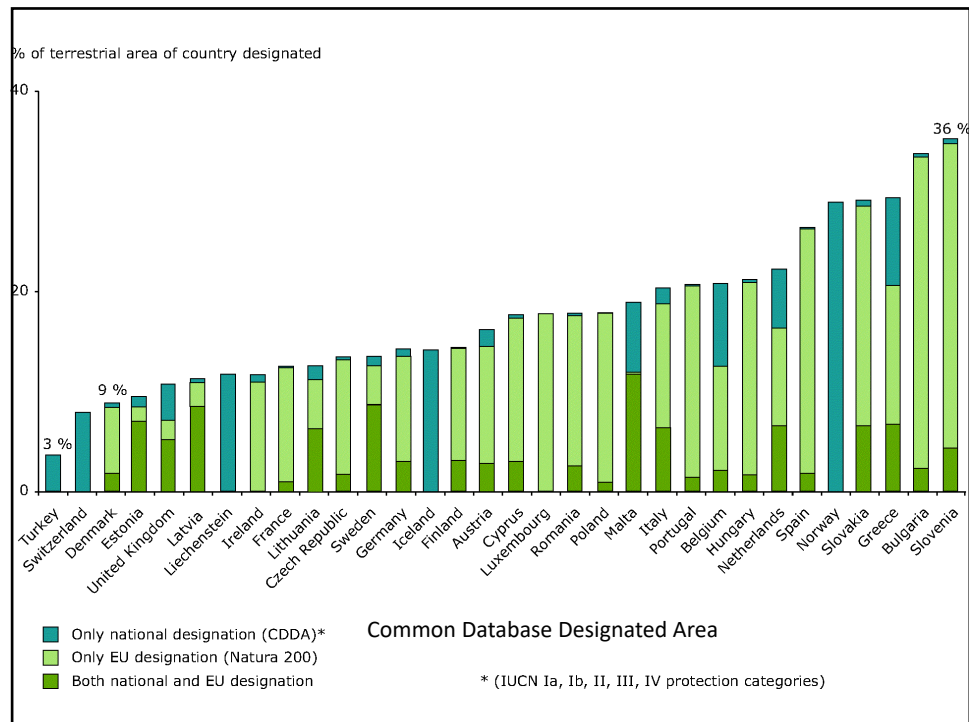
9

Biodiversity strategy for 2030 - concrete actions

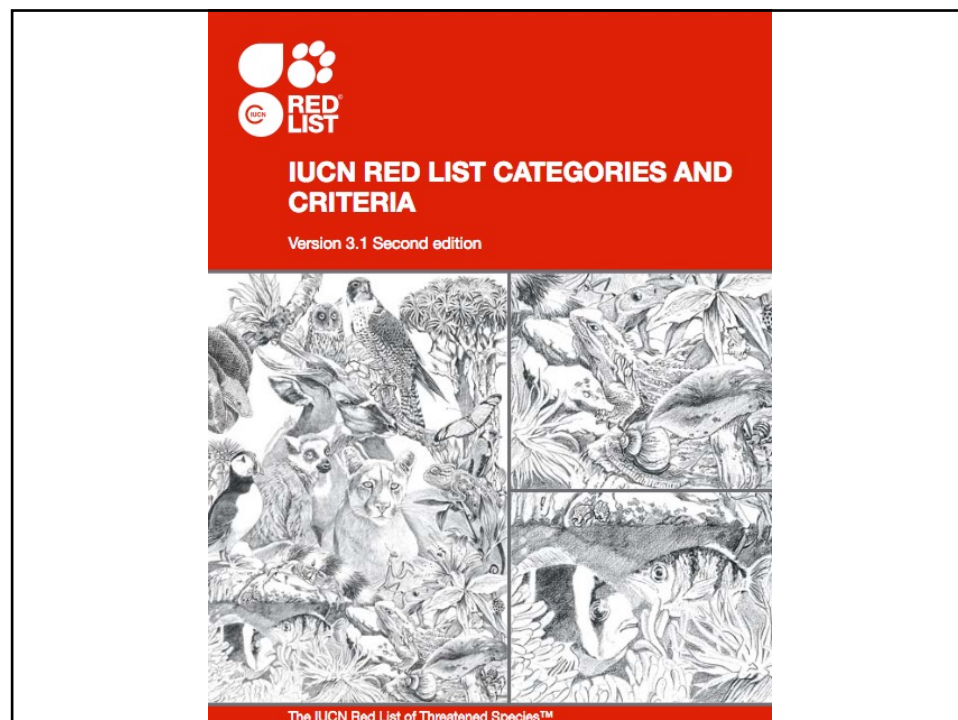
- The new Strategy aims to establish protected areas for at least 30% of land and 30% of sea in Europe, to restore degraded ecosystems at land and sea across the whole of Europe by increasing sustainable agriculture, halting the decline of pollinators, restoring at least 25.000 km of EU rivers to a free-flowing state, reducing the use and risk of pesticides by 50% and planting 3 billion trees by 2030

<https://twitter.com/i/status/1263056314705547266>

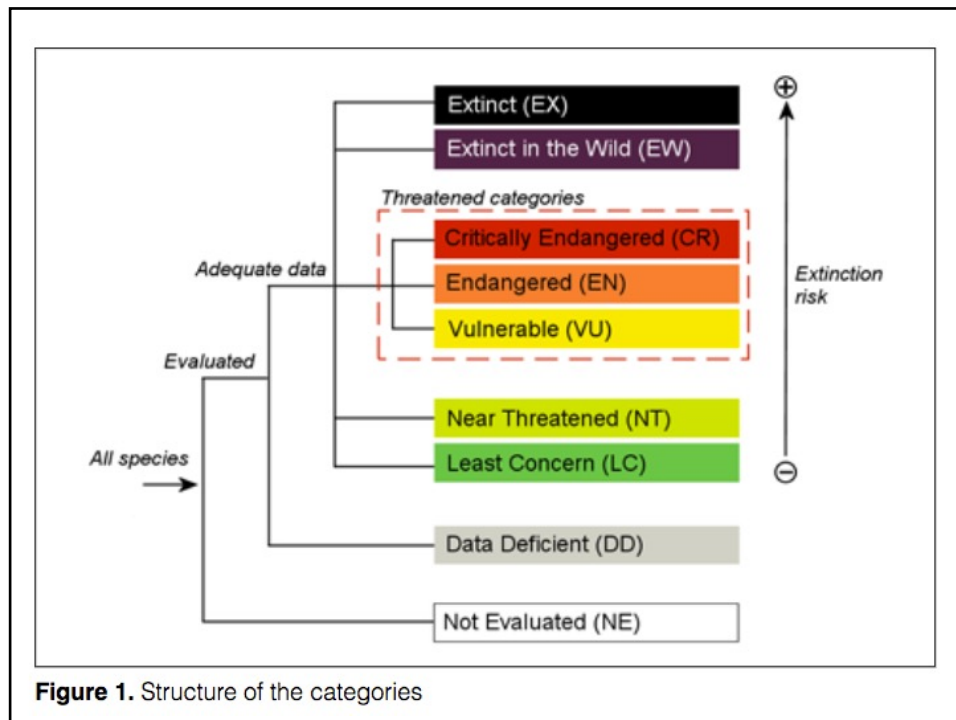
10



11



12



13

- **Biodiversity and food:** 80% of human food supply comes from 20 kinds of plants.
But humans use 40,000 species for food, clothing and shelter. Biodiversity provides for variety of foods for the planet.
- **Biodiversity and human health:** The shortage of drinking water is expected to create a major global crisis. Biodiversity also plays an important role in drug discovery and medicinal resources. Medicines from nature account for usage by 80% of the world's population.

14

Biodiversity strategy for 2030 - concrete actions

- [Bringing nature back into our lives – EU 2030 Biodiversity Strategy](#)
- [Economic impact of biodiversity](#)
- [From farm to fork: Our food, our health, our planet, our future](#)
- [EU Green Deal: Benefits for farmers](#)
- [How the future CAP will contribute to the EU Green Deal](#)
- [EU Biodiversity strategy](#)

15

Bringing nature back into our lives

EU 2030 Biodiversity strategy

May 2020
#EUGreenDeal

 *"Making nature healthy again is key to our physical and mental wellbeing and is an ally in the fight against climate change and disease outbreaks. It is at the heart of our growth strategy, the European Green Deal, and is part of a European recovery that gives more back to the planet than it takes away."*
Ursula von der Leyen, President of the European Commission



Climate change, the unprecedented loss of biodiversity, and the spread of devastating pandemics are sending a clear message: it is time to fix our broken relationship with nature.

The Biodiversity Strategy will put Europe's biodiversity on the path to recovery by 2030, for the benefit of people, climate and the planet.



16

> Restore degraded ecosystems at land and sea across the whole of Europe by:



Increasing organic farming and biodiversity-rich landscape features on agricultural land



Halting and reversing the decline of pollinators



Restoring at least 25 000 km of EU rivers to a free-flowing state



Reducing the use and risk of pesticides by 50% by 2030



Planting 3 billion trees by 2030

> Biodiversity is **essential** for life. Our planet and the economy depend on it. When nature is healthy, it protects and provides.

Biodiversity and ecosystems provide us with food, health and medicines, materials, recreation, and wellbeing. They filter our air and water, help keep the climate in balance, convert waste back into resources, pollinate and fertilise crops and much more.

Nature provides for businesses: half of global GDP, €40 trillion, depends on nature.

> We are **losing nature** like never before because of unsustainable human activities.



The global population of wild species has fallen by **60% over the last 40 years**.

1 million species are at risk of extinction.

17

- Which trees?
- Where can we find all these trees?
- Allochthonous
- or
- autochthonous

18


The business case for biodiversity

The European Green Deal


May 2020

More than half of global GDP – some €40 trillion – depends on nature

Nature restoration will be a central element of the EU's recovery plan from the coronavirus pandemic, providing immediate business and investment opportunities for restoring the EU's economy.



These sectors are all highly dependent on nature, and they generate **more than €7 trillion**.




The **benefits** of biodiversity conservation for the economy:


- ✓ conserving marine stocks could increase annual profits of the seafood industry by more than **€49 billion**
- ✓ protecting coastal wetlands could save the insurance industry around **€50 billion annually** through reducing flood damage losses

19

Creating jobs




Nature Restoration means direct and indirect local jobs that bring life back to local communities.




The Natura 2000 network has been estimated to **support 104,000 direct jobs** in protected areas management and conservation activities and 70,000 more indirect or induced jobs. This is based on annual investment of €6 billion for management and restoration of the network.

In the future, it is expected that biodiversity needs could generate up to **500,000 jobs**.



For **agriculture**, 1.3 million of the 9.6 million farming jobs in the EU are linked directly or indirectly to Natura 2000. **The tourism sector** employs 12 million people in Europe. Of these, 3.1 million have links to protected areas such as Natura 2000.

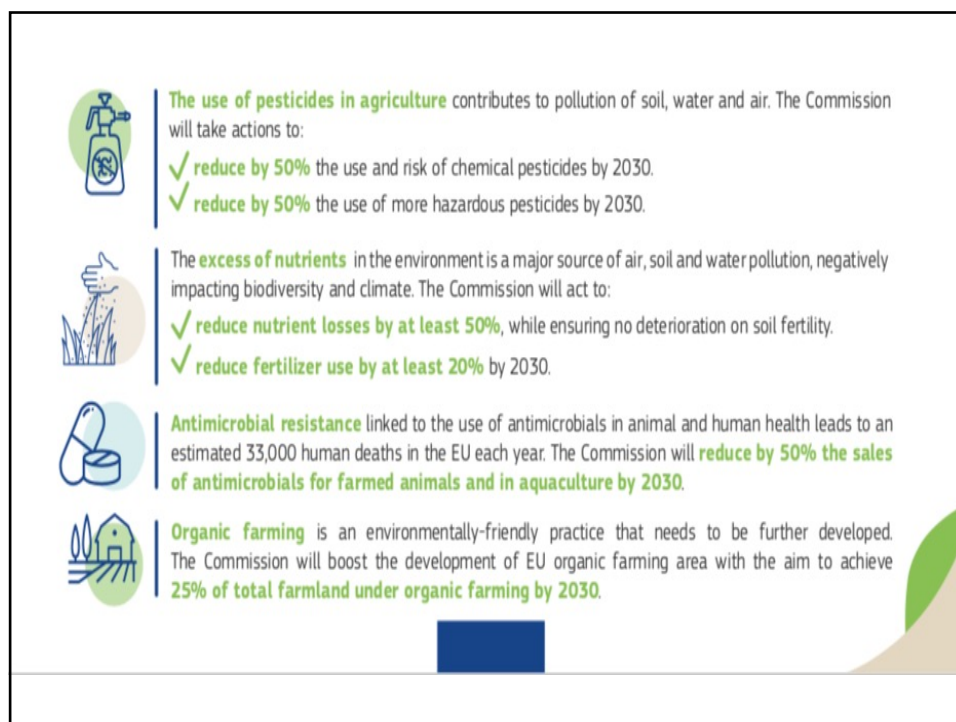


Of the 25% of the EU budget dedicated to **climate action**, a significant proportion will be invested in biodiversity and nature-based solutions.

20



21



22

> The creation of a healthy food environment which makes the healthy and sustainable choice the easy choice.

It is estimated that in the EU in **2017** over **950,000** deaths were attributable to unhealthy diets (one out of five).

A healthy and plant based diet reduces the risk of life threatening diseases and the environmental impact of our food system.

> Food labelling to empower consumers to choose healthy and sustainable diets

The Commission will propose mandatory harmonised front-of-pack nutrition labelling and develop a **sustainable food labelling framework** that covers the nutritional, climate, environmental and social aspects of food products.

> Stepping up the fight against food waste

Halving per capita food waste at retail and consumer levels by 2030.

The Commission will propose legally binding **targets** to reduce food waste across the EU by 2023.

23

> Research and innovation

EUR 10 billion under Horizon Europe to be invested in R&I related to food, bioeconomy, natural resources, agriculture, fisheries, aquaculture and environment. Knowledge transfer will be essential. The CAP's Farm advisory services and Farm sustainability data network will be instrumental in assisting farmers in the transition.

> Promoting the Global transition

Making European food famous for its sustainability can add a competitive advantage and open new business opportunities for European farmers.

The EU will collaborate with third countries and international actors to support a global move towards sustainable food systems. **A sustainability food labelling framework will facilitate consumer choice.**

© European Union 2020

24

EU Green Deal: benefits for farmers

May 2020
#EUGreenDeal

Embedding the concept of sustainability in the way we produce and consume our food will bring benefits for all the actors in the food chain and in particular for farmers.



25



HIGHER RETURNS

Sustainable business models, labelling schemes and marketing standards will link production methods to premium consumer demand, leading to higher returns for farmers and food producers.



STRONGER ROLE IN THE FOOD SUPPLY CHAIN

Tools to contribute to improving farmers' position in the food supply chain.



NEW BUSINESS OPPORTUNITIES

Changing consumer demand and new sustainable systems will bring about new business opportunities, for example in the plant protein sector or the bioeconomy.

26



LOWER COSTS
Advances in innovation, technology and digital solutions (precision farming) will lead to higher productivity and reduced inputs thereby lowering costs.

STRONGER CONNECTION WITH CONSUMERS
Meeting an increasing demand for sustainable food means making a stronger connection with consumers.

NEW GLOBAL MARKETS
Labelling and marketing initiatives will heighten awareness of EU high standards, opening up additional export opportunity.

27

ART. 39 TREATY OF ROME

- a) increase productivity by developing technical progress, ensuring the rational development of agricultural production as well as a better use of the factors of production, in particular of labor,
- b) thus ensuring a fair standard of living for the agricultural population, thanks in particular to the improvement of the individual income of those who work in agriculture,
- c) stabilize the markets,
- d) guarantee the security of supplies,
- e) ensure reasonable prices in deliveries to consumers.

28

FARM TO FORK (F2F) GREEN DEAL

- *Europe's Green Deal offshores environmental damage to other nations. Importing millions of tonnes of crops and meat each year undercuts farming standards in the European Union and destroys tropical forests*
- **Fuchs R., Brown C., Rounsevell M., 2020.** *Europe's Green Deal offshores environmental damage to other nations,*
- *Importing millions of tonnes of crops and meat each year undercuts farming standards in the European*
- *Union and destroys tropical forests, Nature, Vol. 586, 29 October 2020, <https://www.nature.com/articles/d41586-020-02991-1>*

29

Setting the agenda in research

Comment

Europe's Green Deal offshores environmental damage to other nations

Richard Fuchs, Calum Brown & Mark Rounsevell

Importing millions of tonnes of crops and meat each year undercuts farming standards in the European Union and destroys tropical forests.

The European Union's Green Deal risks becoming a bad deal for the planet. This ambitious package of policies, announced in December 2019, aims to make Europe the first climate-neutral

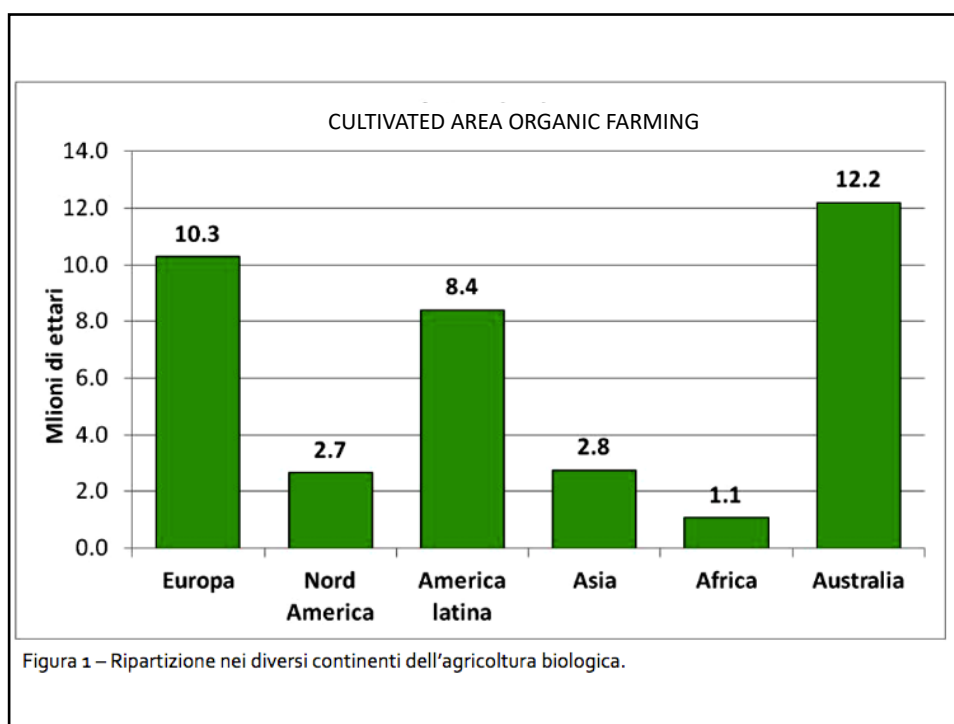


30

organic farm production

- According to the different crop BF PRODUCES 20 TO 70 LESS
- BUT
- According F2F
- European area for BF must increase to 35% (today is 9%)
- In France 4,8 million hectares for wheat with 7,1 tons/ha using conventional agriculture. 2,1 tons/ha using BF

31



32

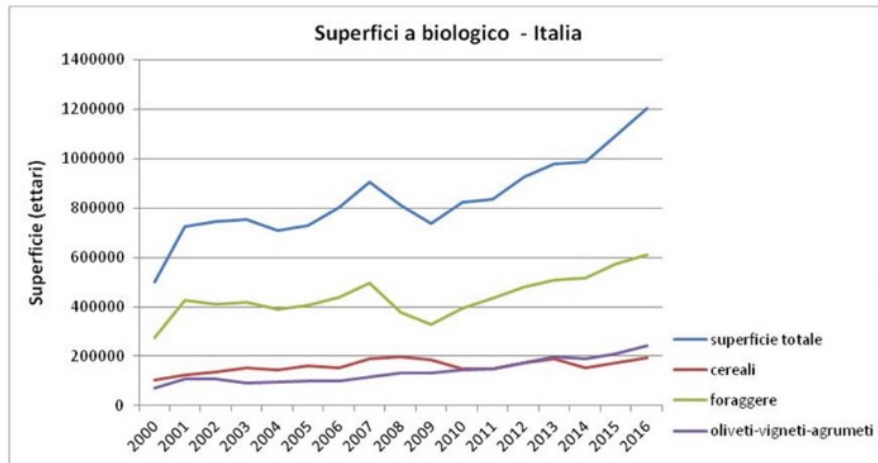


Figura 3 - Andamento delle superfici a biologico. Si noti che la crescita è trainata dalle superfici a prato e pascolo il che ci porta a essere dipendenti dall'estero per cereali, frutta e verdura.

33

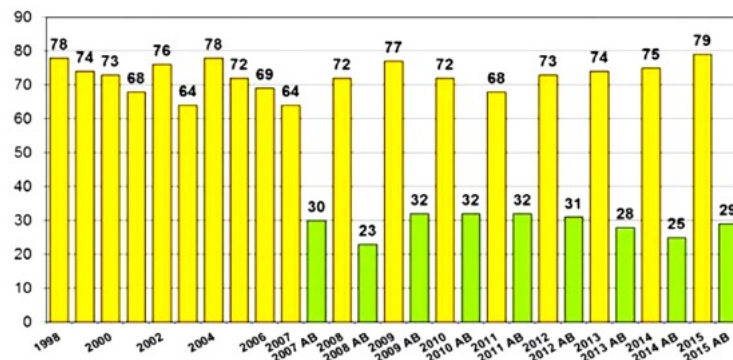
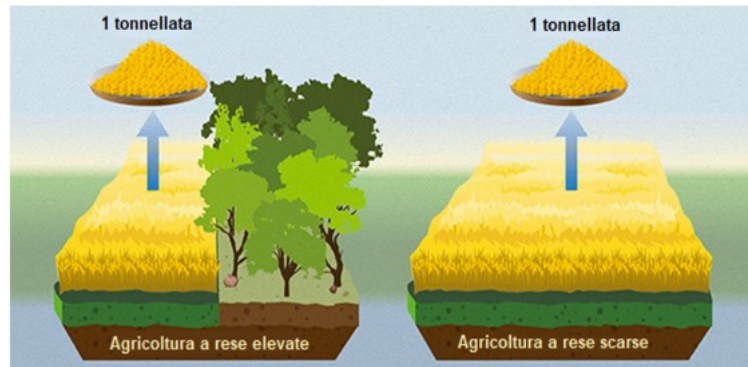


Figura 4 - Rese del frumento tenero francese di agricoltura convenzionale (barre gialle - resa media per il periodo 2007-2015 di 73 q/ha) e biologica (barre verdi - resa media per il periodo 2008-2015 di 29 q/ha, pari al 68% in meno rispetto al convenzionale). (Fonte: Académie d'agriculture de France, 2017 – elaborazioni su dati SCEES, ONIGC, Agreste et FranceAgriMer).

34



nre:<https://www.chalmers.se/en/departments/see/news/Pages/Organic-food-worse-for-the-climate.aspx>

35

How the future CAP will contribute to the EU Green Deal

May 2020
#EUGreenDeal

The European Green Deal is our strategy for sustainable growth. This will happen by turning climate and environmental challenges into opportunities across all policy areas and making the transition just and inclusive for all.

The Common Agricultural Policy (CAP) will help this sustainability transition and strengthen the efforts of European farmers to tackle climate change and protect the environment. 40% of the CAP budget will be climate-relevant.

Sustainability is at the heart of the CAP. The CAP aims at ensuring a sustainable agriculture with respect to economic, social and environmental aspects. The CAP currently offers farmers a number of ways to contribute to our climate and environmental ambitions. In the future CAP, we'll go even further!

36

Green Architecture

The future CAP gives Member States the support, flexibility, evidence-based tools, and responsibility to be ambitious in tailoring the design and funding of environmental and climate schemes.



Enhanced conditionality

Conditionality links EU-funded income support to environment- and climate-friendly farming practices and standards.



Agri-environment-climate measures and investments

EU rural development support will aim to enhance ecosystems, promote resource efficiency, and help us move towards a low-carbon, climate-resilient economy.



Eco-schemes

Eco-schemes will unlock new funding and additional incentives for climate- and environment-friendly farming practices.



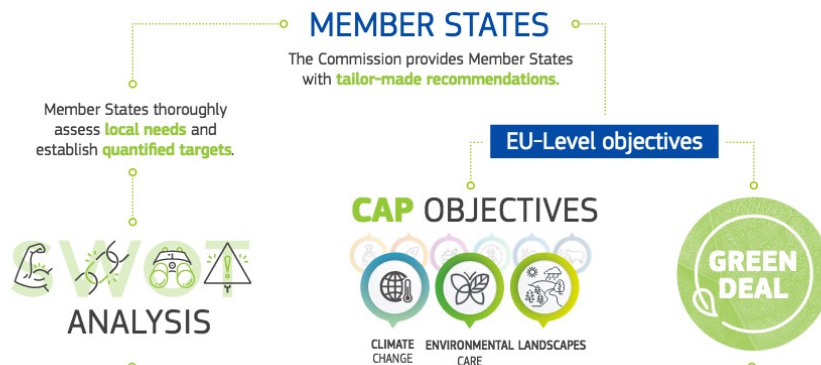
Farm Advisory Service

The farm advisory system will draw on a fuller range of economic and environmental data to deliver up-to-date technological and scientific information to advise farmers.

37

CAP Strategic Plans

Taking into account Member States' specific needs, national level CAP strategic plans will combine a wide range of local and EU-level objectives to deliver targeted, tangible results.



38



39



WE NEED NATURE TO SURVIVE...

- ▶ It gives us the food we eat, filters the water we drink and supplies the air we breathe.
- ▶ Nature sustains our mental and physical wellbeing and is key to our society's ability to cope with climate change, health threats and disasters.

...BUT UNSUSTAINABLE HUMAN ACTIVITIES HAVE BROUGHT IT UNDER THREAT

The global population of wild species has fallen by 60% over the last 40 years.

Around **75%** of the Earth's land and **40%** of its marine environments have been drastically changed.

Unsustainable use of land and sea, overexploitation of natural resources, climate change, pollution and invasive alien species play the biggest role in biodiversity loss.

Damaged ecosystems are more fragile, making our societies more vulnerable to extreme events and new diseases.

40

- **Biodiversity and industry:** Biological sources provide many industrial materials. These include fiber, oil, dyes, rubber, water, timber, paper and food.
- **Biodiversity and culture:** Biodiversity enhances recreational activities like bird watching, fishing, trekking etc. It inspires musicians and artists.

41

Reason for Loss of Biodiversity

The earth's biodiversity is in grave danger.

In the present era, human beings are the most dangerous cause of destruction of the earth's biodiversity.

In 2006, the terms threatened, endangered or rare were used to describe the status of many species.

42

The “evil quartet”, by Jared Diamond

- overkill,
- habitat destruction
- secondary extinctions
- introduced species



43

HIPPO, by Edward Wilson

- **H**abitat Loss,
- **I**nvasive Species,
- **P**ollution,
- **P**opulation growth, and
- **O**verharvesting

44

- Habitat destruction is a major cause for biodiversity loss.
- Habitat loss is caused by deforestation, overpopulation, pollution and global warming. Species which are physically large and those living in forests or oceans are more affected by habitat reduction.