

Diana Mazhari – Greener

Day 11: Forests

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My key takeaways from the infographic about the importance of forests:

- Annual demand for wood alone is expected to triple by 2050 to more than 10 million m^3 .
- There are three different forest types
- Managing these forest types responsibly means reducing climate change risks, providing critical ecosystem services that make life on earth possible, generating industrial wood and fiber for a wide range of traditional products and innovative bio-product solutions, providing food and renewable energy, sustaining livelihoods and delivering recreational benefits.
- The forest products industry employs 14 million people globally.
- Energy from wood is the single most important source of renewable energy, representing 9% of the total primary energy supply worldwide.
- Managed forests play a key role in reducing pressures on natural forests, connect fragmented ecosystems to intact land use mosaics and make a meaningful contribution to conserving biodiversity.
- Forested catchments supply 75% of fresh water.

Ecosystem Services

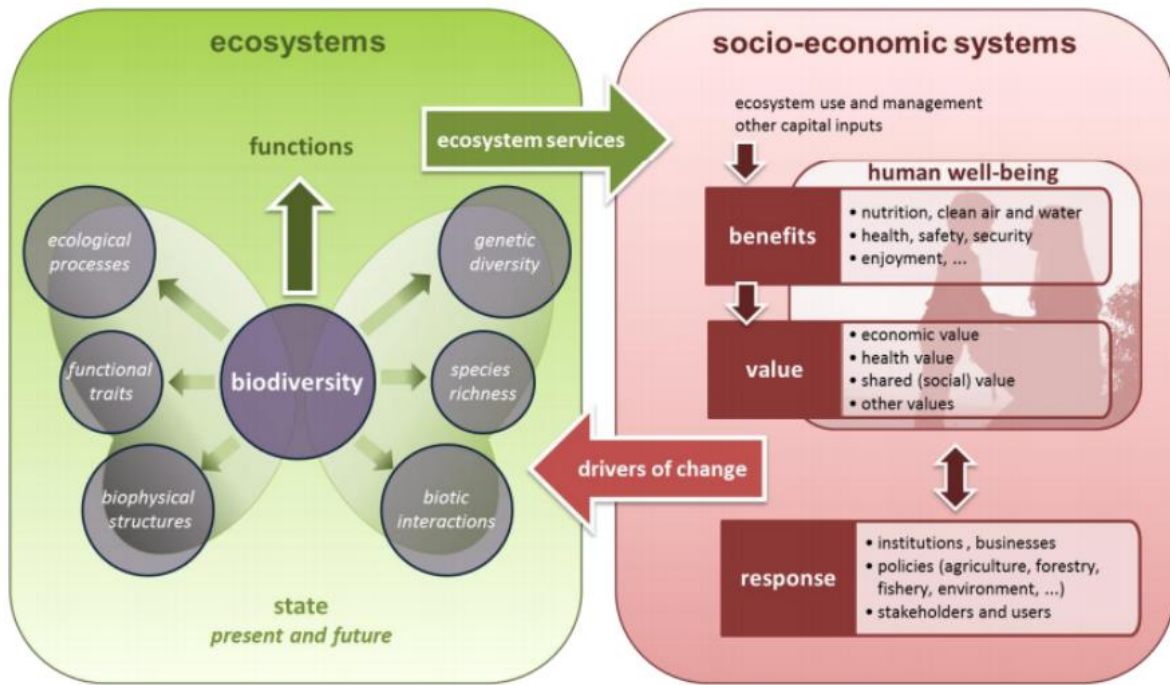
There are three interlinked concepts related to the provision of ecosystem services, i.e. ecosystem process, ecosystem function, and ecosystem service.

Ecosystem process is any change or reaction which occurs within ecosystems, physical, chemical or biological. Ecosystem processes include decomposition, production, nutrient cycling, and fluxes of nutrients and energy (MA 2005)."

The second concept is ecosystem function that is a subset of the interactions between biophysical structures, biodiversity and ecosystem processes that underpin the capacity of an ecosystem to provide ecosystem services (TEEB 2010).

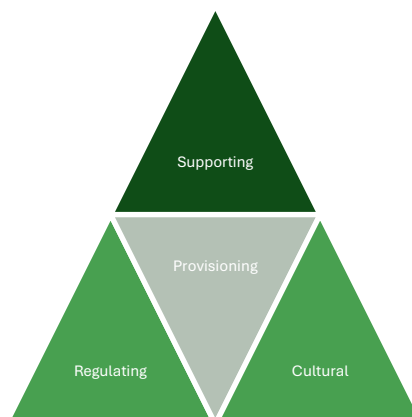
And finally, ecosystem services, otherwise known as nature's benefits, are the multitude of benefits that come from healthy natural systems. They include tangible benefits like food, fiber, fresh water, and climate regulation as well as less tangible services like spiritual,

recreational, and aesthetic benefits. Ecosystem services also cover the basic processes that underlie these benefits including oxygen production, soil formation, habitat creation, and nutrient cycling.



Conceptual framework for EU wide ecosystem assessments (MAES, 2013)

Ecosystem Services are divided into 4 categories:



Supporting:

- Nutrient cycling
- Photosynthesis
- Soil formation

Regulating:

- Air quality regulation
- Climate regulation
- Water regulation
- Erosion regulation
- Water purification and water treatment
- Disease and pest regulation
- Pollination
- Moderation of extreme events

Provisioning:

- Food
- Raw materials and Medicinal resources
- Fresh water

Cultural:

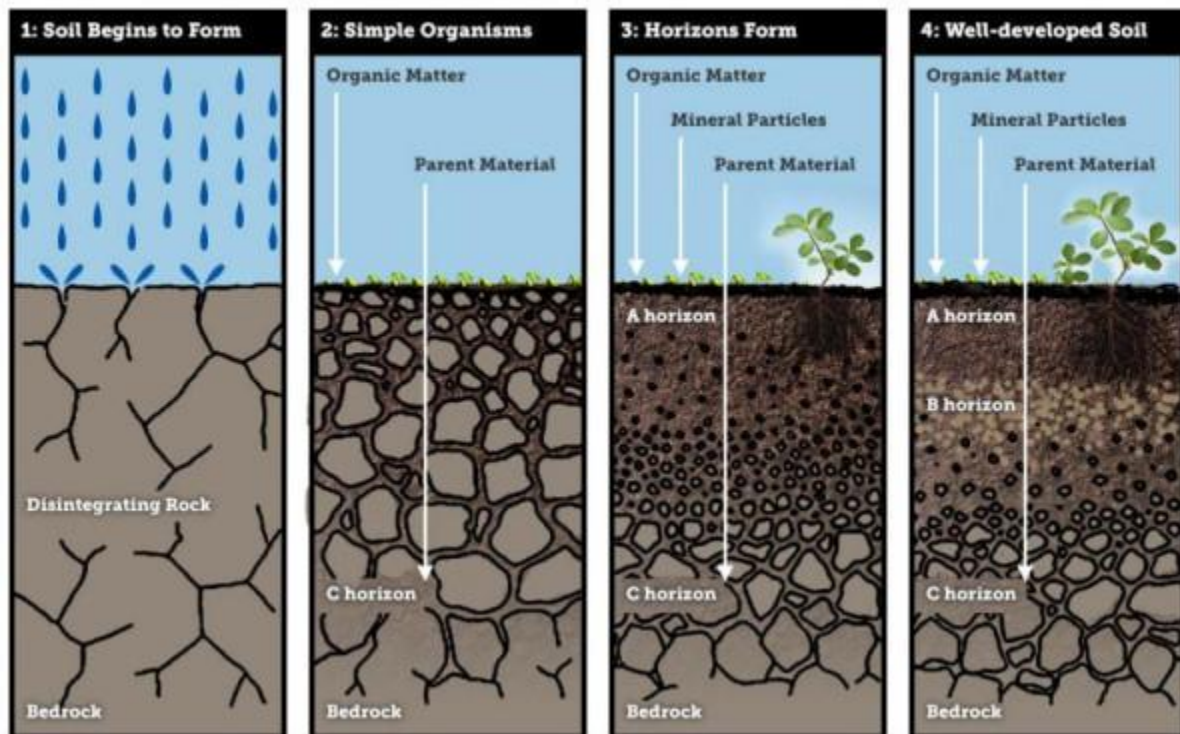
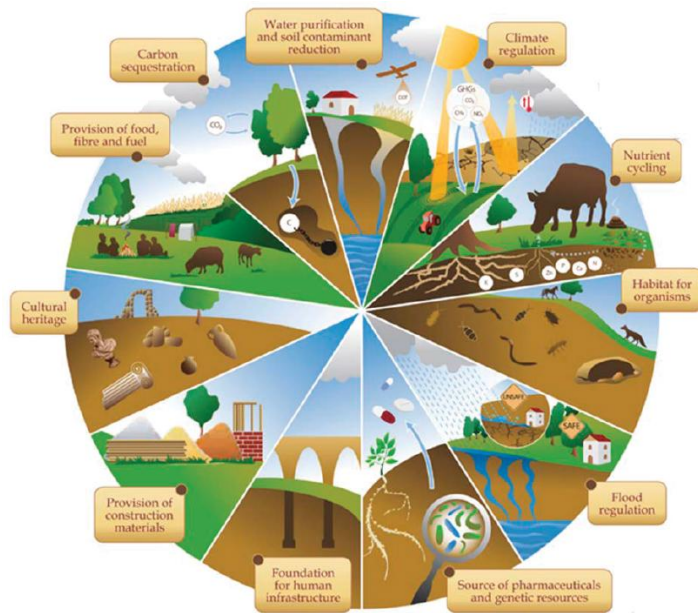
- Mental and physical health
- Recreation and ecotourism
- Aesthetic values
- Spiritual and religious values

My five chosen services are

- Soil formation
- Air quality regulation
- Climate regulation
- Fresh water
- Disease and pest regulation

Soil formation

This service involves the natural processes that create and maintain healthy soil over time—through the breakdown of rocks, decomposition of organic matter, and activity of organisms like worms and fungi. It's essential because fertile soil supports plant growth, stores nutrients, and filters water, forming the foundation for most life on land.



Air quality regulation

Plants, trees, and microorganisms help keep the air clean by absorbing pollutants, filtering dust, and releasing oxygen. Forests and green spaces act like natural air purifiers, improving the air we breathe and reducing harmful effects from vehicle emissions or industrial pollution.

Climate regulation

Ecosystems like forests, oceans, and wetlands play a major role in stabilizing the Earth's climate by absorbing carbon dioxide and storing it for long periods. They also help control local temperatures, rainfall patterns, and humidity, reducing the impacts of climate change and extreme weather.



Fresh water

Ecosystems regulate the movement and quality of freshwater through natural filtration, groundwater recharge, and the water cycle. Wetlands, forests, and vegetation help capture rain, filter pollutants, and maintain steady water supplies for people, animals, and agriculture.

Disease and pest regulation

Healthy ecosystems help control the spread of diseases and pests naturally. Predators like birds, bats, and insects keep pest populations balanced, while biodiversity can prevent outbreaks by limiting the spread of pathogens. This reduces the need for chemical pesticides and supports both human and ecosystem health.

Instagram Link: <https://www.instagram.com/p/DPsic3fjljA/?igsh=MTQ3NmtibWM0djxdQ==>

ECOSYSTEM SERVICES

Systems that keep our world in balance

Diana Mazhari

MY 5 CHOSEN SERVICES

Soil formation



Fresh water



Air quality regulation



Climate regulation



Disease & pest regulation



SOIL FORMATION

The slow process that builds fertile ground for life through decomposition and rock weathering.



AIR QUALITY REGULATION

Trees and plants act as natural filters, cleaning the air we breathe



CLIMATE REGULATION



Forests, oceans, and soils store carbon and help balance the Earth's temperature



FRESH WATER

Ecosystems filter and store water, ensuring clean supplies for all living things



DISEASE AND PEST REGULATIONS

Balanced ecosystems control pests naturally and prevent disease spread



Sources:

<https://research.fs.usda.gov/managingland/ecosystem>

<https://foresteurope.org/ecosystem-services/>

<https://therockgroup.biz/core-business/areas-of-expertise/biodiversity/>