



Co-funded by the
Erasmus+ Programme
of the European Union



The Silent Work of Plants

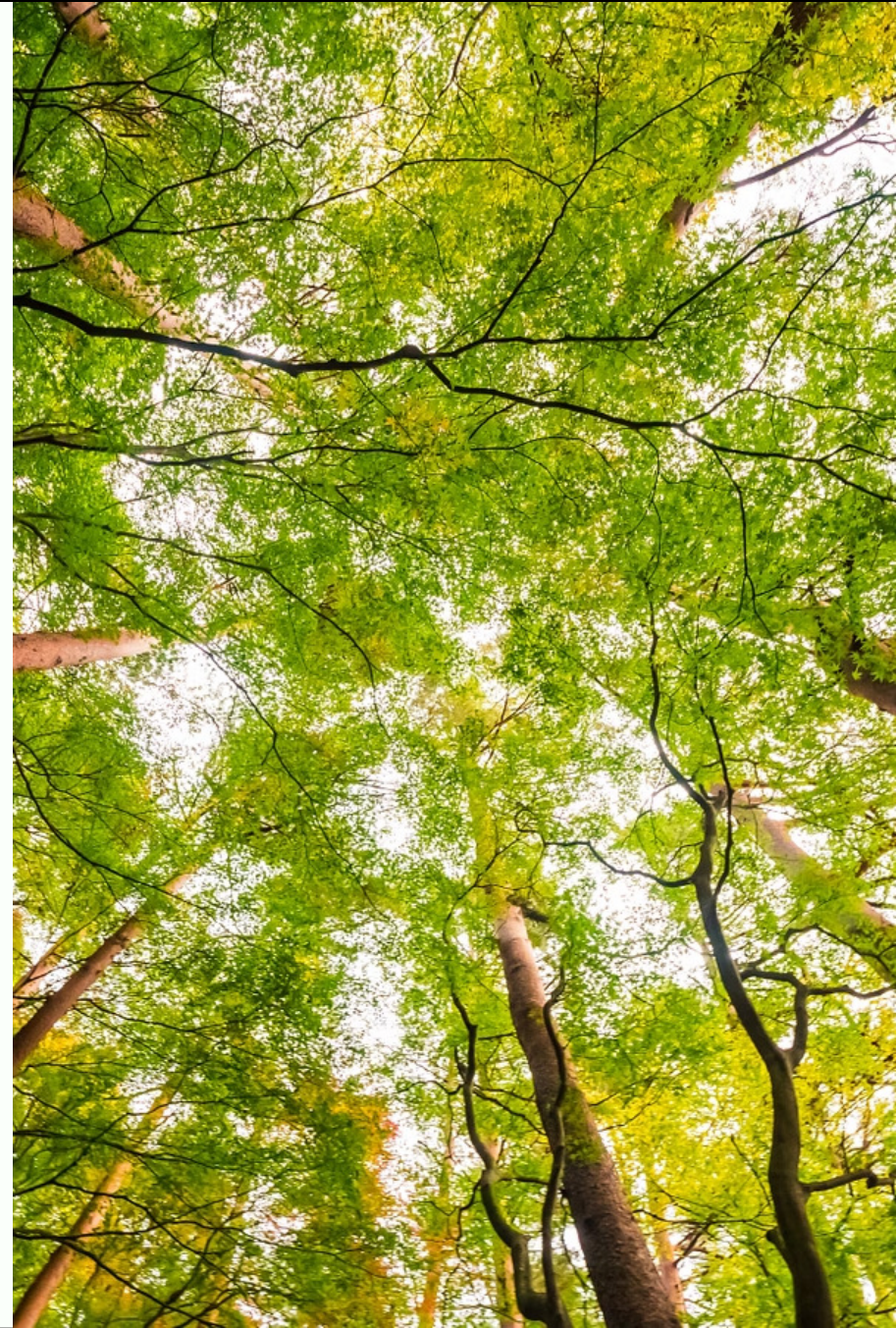
Nicola Palmieri



Introduction

Everything around us comes from plants

Good morning everyone, I am Nicola Palmieri from the association il Pianeta Naturale, partner of the European project WAVE approved under the Erasmus+ KA 210 programme. Today I want to talk to you about something we all take for granted, but which is extraordinary when we stop to reflect: everything around us, literally everything we use in our daily lives, comes from the silent and tireless work of plants.





From Plants to Our Daily Lives

Direct products: manufactured goods

Let's look around for a moment. The house we live in? The wood for beams, floors, walls, stairs, doors, windows – all comes from plants. The furniture we sit on, the tables where we eat, the things that furnish our spaces.

The books we read, the paper we write on, even the frames on the walls. And our clothes? Cotton, linen, hemp, jute – still plants.

Our Food

Direct products: food

And food, of course. Cereals, fresh and dried fruit, seeds, vegetables, legumes, oils, spices.

The sugar in our coffee, the cocoa in chocolate, the tea we drink - every single element comes directly from plants.





Animal Products

Indirect products through animals

But it doesn't end there. Even when we think we're consuming animal products, we are in fact depending on plants indirectly.

The meat we eat – cattle, sheep, pigs, chickens – comes from animals that feed on plants.

Fish, crustaceans, and molluscs depend on food chains that always begin with photosynthetic organisms.

Animal Products

Indirect products through animals

Milk, cream, butter, all cheeses – ricotta, mozzarella, parmesan – come from herbivorous animals.

The eggs we cook come from poultry fed with grains.

Even materials like wool, silk, leather and hide, or products like honey and pollen, exist only thanks to the bond between animals and plants.





Energy?

Almost all energy originates from plants

And energy? Almost all of the energy that powers our modern civilisation originates from plants. The oil that moves our cars comes from algae and prehistoric plants decomposed over millions of years. Coal comes from prehistoric forests buried and transformed. Even modern biofuels – ethanol from corn and sugarcane, biodiesel – are nothing more than solar energy captured and transformed by plants.



Derived Products

A Vast World

And if we were to list all the materials produced from oil, an even vaster world would open up. Plastics of every kind, synthetic fabrics, chemical fertilisers, medicines, cosmetics, detergents, the asphalt of the roads we travel every day. The list would be endless.

But at the base of all this, what do we find? Always them: prehistoric plants decomposed and transformed over geological eras.

Other Materials

Essential materials we use every day

And then there are all those other essential materials we use every day without thinking: natural rubber, resins, essential oils, creams, inks, natural dyes, varnishes, natural chemical substances.

Everything, absolutely everything, originates from the plant kingdom.





Ecological Functions

Beyond what we use

But plants are not only the source of what we use.

They perform fundamental ecological functions for the survival of the planet and our species.

Through photosynthesis, they continuously transform



Through photosynthesis, they continuously transform CO₂ and water into glucose and oxygen – the oxygen we breathe.

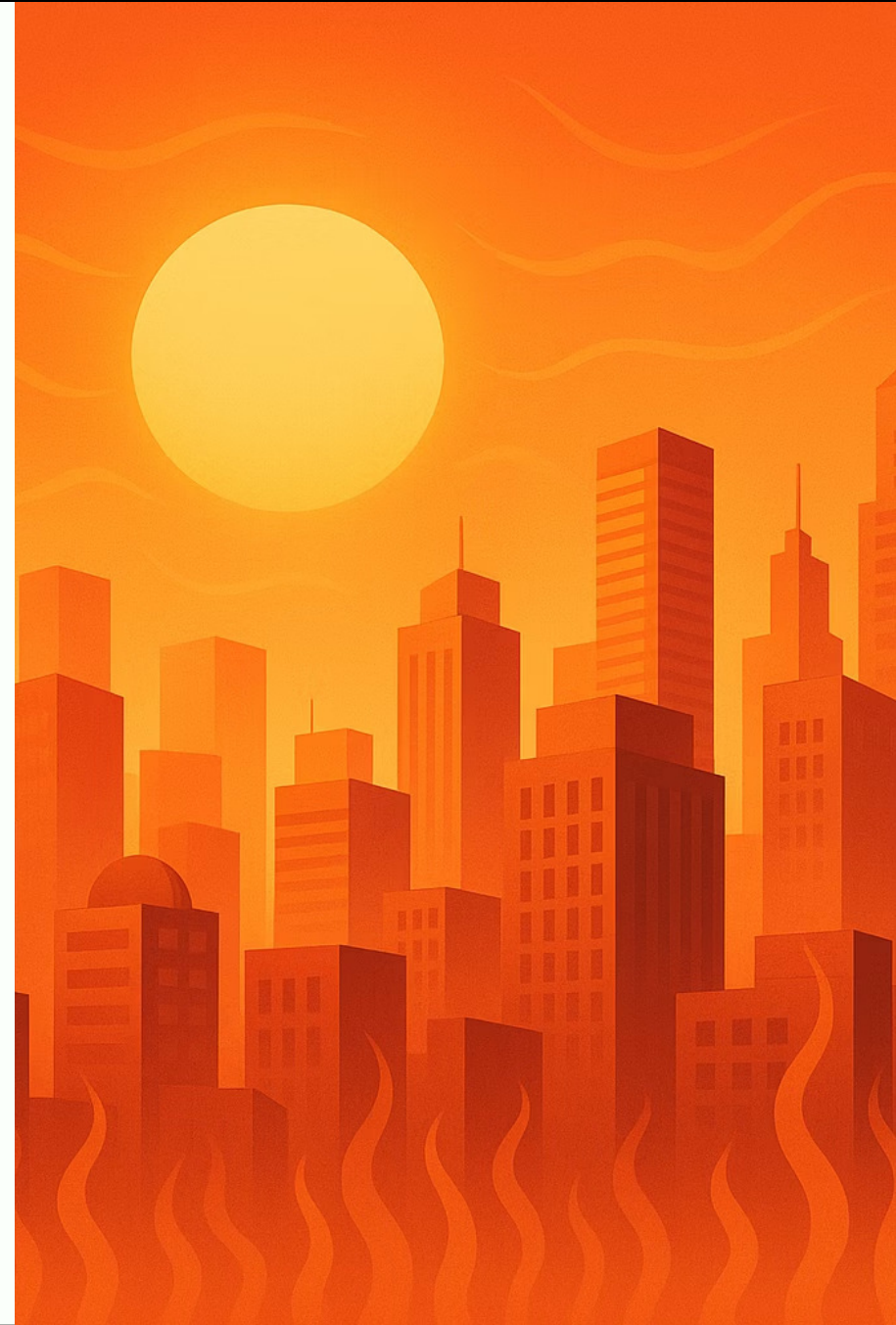
They act as enormous "carbon sinks", absorbing greenhouse gases from the atmosphere. Their biomass – roots, trunks, branches – accumulates and stores carbon for long periods, preventing it from contributing to global warming.

Climate Regulation

Local and global impact

Plants regulate the climate at both local and global levels. They lower temperatures through shading and evapotranspiration, create cooler and more humid microclimates, and mitigate the "heat island" effect in cities, reducing urban overheating by up to ten degrees.

And through evapotranspiration, they release moisture into the atmosphere, promoting the formation of clouds and rainfall – think of rainforests, true rain factories.





SOIL PROTECTION

Multiple protection mechanisms

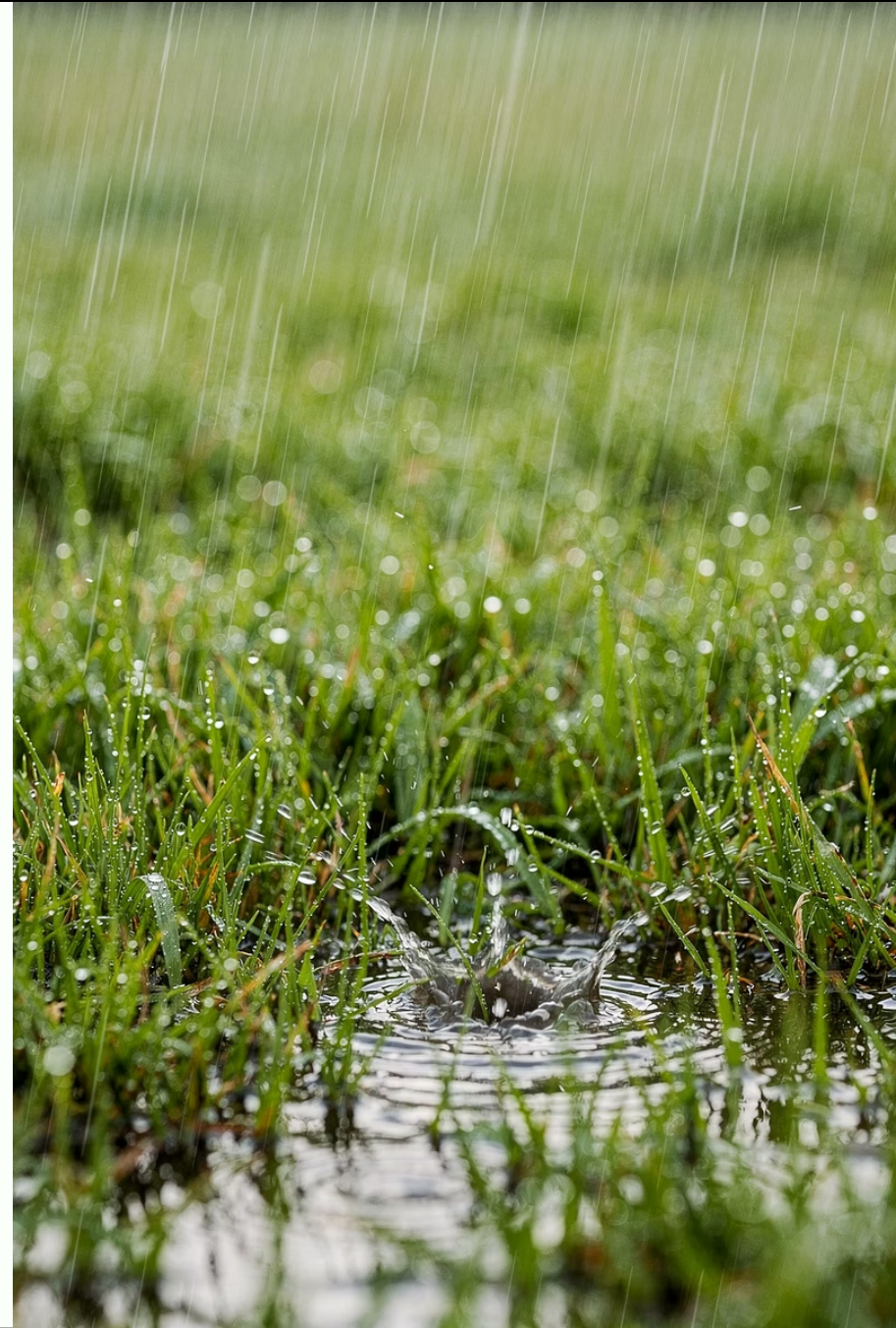
They protect the soil in ways we often underestimate. Roots anchor the ground, preventing erosion, landslides, and mudslides. Fallen leaves and plant residues decompose, enriching the soil and improving its fertility. Vegetation cover - even so-called "weeds" - protects the soil by maintaining moisture and reducing evaporation. Some plants, like legumes, fix atmospheric nitrogen, naturally fertilising the soil. And they limit erosion caused by winds.

Water and Nutrient Cycle

Essential ecological services

Plants are fundamental to the water and nutrient cycle. Through transpiration they control moisture in the air and contribute to cloud formation.

Roots and grass cover retain water, allowing rainfall to penetrate the soil and recharge aquifers instead of running off on the surface.





Cycle of Water and Nutrients

Essential ecological services

They maintain soil fertility through complex biogeochemical cycles. Roots filter pollutants from water – this is what we call phytoremediation.

And they purify the air: through their stomata they absorb toxic gases and particulate matter, which are then detoxified and metabolised within the plant itself.

Biodiversity & Ecosystems

Foundation of all life forms

Plants are the foundation of every ecosystem and of biodiversity. They are the first link in the food chain, providing nourishment to herbivores, insects, and microorganisms. Forests and grasslands host an incredible variety of animal species.

They create ecological corridors that allow movement and genetic exchange between animal populations. They provide nests and shelters, safe places of reproduction for countless species.





Protection from Natural Disasters

Plants as natural barriers

And finally, plants protect us from natural disasters. They stabilise the ground and reduce flooding and overflows.

Forests act as natural barriers against extreme winds and hurricanes.

They prevent desertification by maintaining soil moisture and protecting it from erosion.

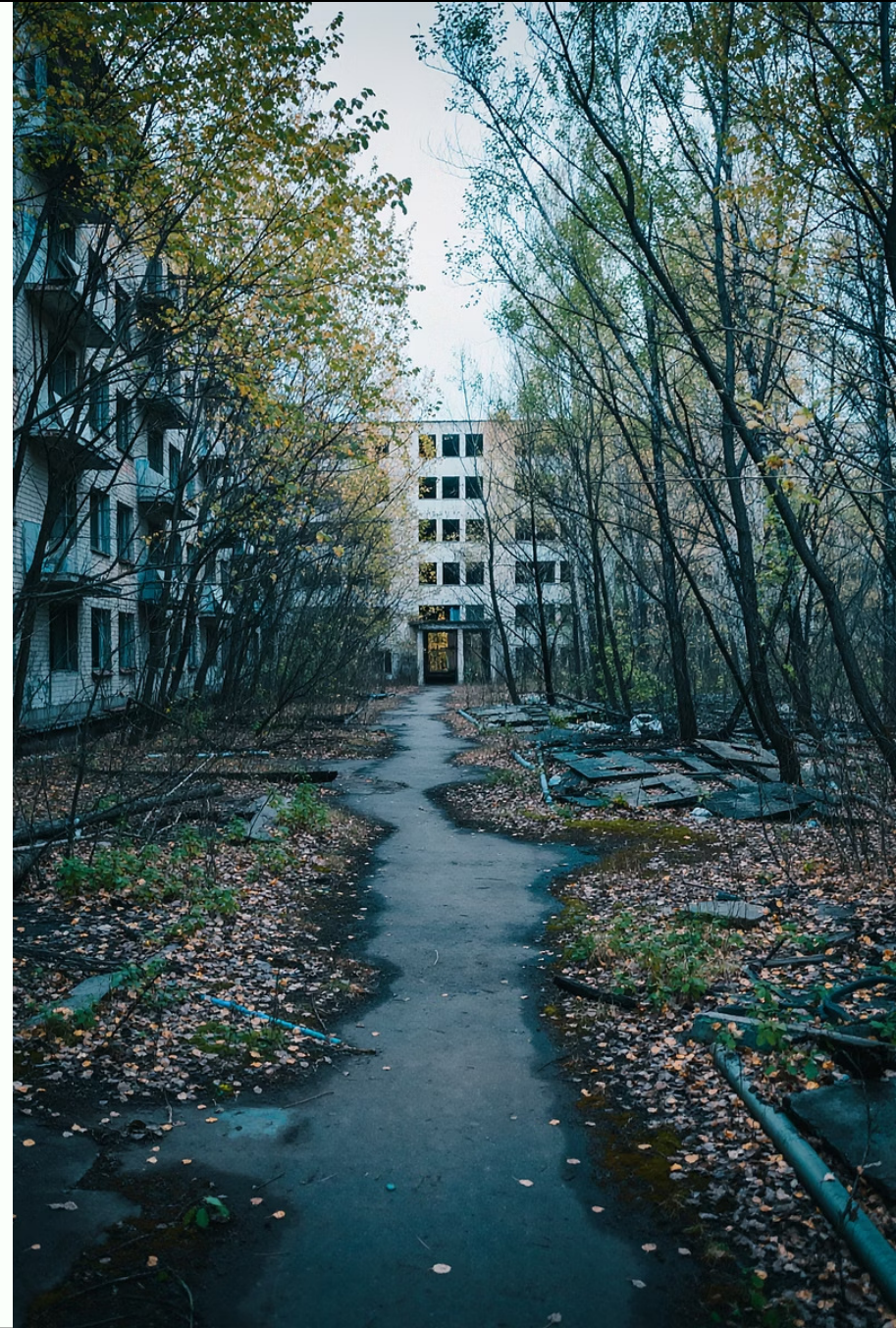
The Paradox

Silent work vs. human destruction

All this work happens in silence, continuously, without pause.

Plants ask for nothing, they do not protest, they never stop.

Yet we, as a species, continue to destroy them, burn them, pave over the land, and fragment ecosystems.





The Truth

Without Plants = No Life on Earth

The truth is simple and powerful: without plants, there would be no life on Earth.

There would be no oxygen, no food, no energy, no planet as we know it.

Every breath we take, every meal we eat, every object we touch – all of it exists thanks to the silent work of plants.



Call to Action

It is time to act

It is time to recognise this fundamental debt and act accordingly.

Protecting plants is not an environmentalist option, it is a matter of survival.

Our survival.

