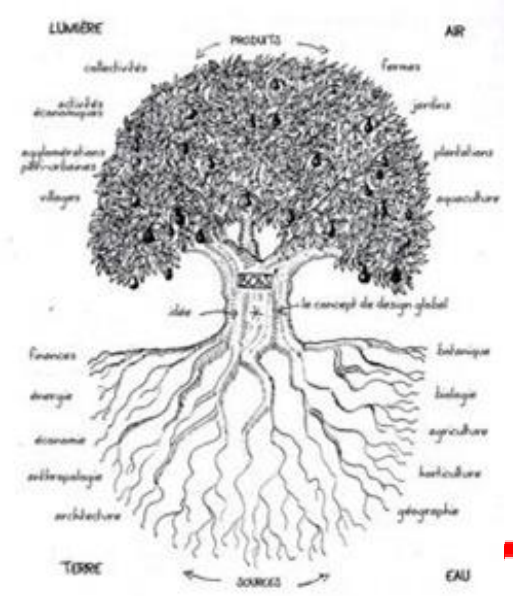

The Forest and the Climate

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Forest Autotrophs

The strength and resilience of a forest* come from:

- **Photosynthesis;**
- **Biomass and plant matter in the soil;**
- **Its biodiversity (which wards off parasites and predators) and density, which are vital for good production;**
- **Its various roles as a source of: food, carbon sequestration, firewood, construction materials, protection from the wind, shelter for many organisms, effortless biomass production, the different stages of ecological succession;**
- **The coolness that it provides.**
- *** (this can be defined as a photosynthesis farm, a solution to all the crucial problems of humanity)**

Water Infiltration

The forest* replenishes springs and enables the circulation and storage of water in the soil.

- **The roots absorb and store water. Bacteria and fungi are fertile organisms that structure the soil and increase resilience.**
1 metre of tree roots = 200km of fungi filaments (Mycorrhiza). This means that the roots of a Lucerne can penetrate up to
80m deep into the soil! Plants need humidity and humus to grow, just like in the forest; so always plant them deep into the ground in a humid place.

- **As the soil is covered, it is sheltered from the wind and rain, significantly reducing compaction and erosion. Below this substantial covering, the soil is also protected from extreme temperatures, enabling its preservation. This makes it resilient.**

- **The organic material decomposes in the soil and breaks down into nutrients consumed by plants. This thick layer of material preserves the humidity of the soil, like in the forest. Therefore watering is minimal, even unecessary.**

- *** (this can be defined as a photosynthesis farm, a solution to all the crucial problems of humanity)**

Evapotranspiration

- **Transpiration is the opposite process to infiltration.**
- **Leaves and pine needles are the organs through which the greatest quantity of water evaporates.**
- **Trees use the sun's energy to extract humidity from groundwater, then release it to form clouds. Around 60% of rainfall is created by trees.**
- **Condensation from plants causes rainfall through the concentration of water vapour.**
- **In summer, trees emit around 10,000kg of oxygen every day into the troposphere, created by photosynthesis and released by a reduction of CO_2 per square kilometre.** ***However, at night, when photosynthesis does not occur, the process is reversed.***
- ***Our daily rate of consumption is one kilo per person, so this meets the needs of 10,000 people.***

Forests regulate the climate

La microbiologie des sols nous enseigne que les arbres sont les seuls qui rechargent les nappes phréatiques et apportent l'eau. La forêt, milieu auto-régulé, produit plus qu'elle ne consomme (c'est la loi de l'abondance naturelle).

- **Les météorologues et les climatologues ont récemment découvert que les forêts provoquent leur propre pluie, selon leurs besoins, par la condensation des gouttes d'eau en vapeur d'eau et son évaporation due à la photosynthèse.**

- **L'interaction infiltration et évapo-transpiration des écosystèmes forestiers détermine la température locale, les précipitations et freine le réchauffement climatique.**

- **Une plus grande compréhension des grands processus hydrologiques et géo-climatiques qui déploient leurs cycles au niveau de la planète nous oblige à reconsidérer le rôle que les grands massifs forestiers jouent réellement.**

- **Les expériences permacoles en plein désert en Jordanie ont fait oindre des sources, aux Philippines, le reboisement de 25000 ha a ramené les pluies et en Indonésie les activités permacoles sur 2000 ha ont apporté 25 % de pluviométrie en plus sur 3 ans.**

How trees and animals regreen deserts (videos)

- **Regreening the planet, VPRO Documentary - 2014 John D. Liu :**

  https://www.youtube.com/watch?v=IDgDWbQtIKI

- **What is Permaculture? Rosemary Morrow :**
- **https://www.youtube.com/watch?v=y6j103TDhMg**
- **How Wolves Change Rivers, Iron Stone :**
- **https://www.youtube.com/watch?v=Vbp7pqolp3U**

- **Permaculture, la Voie de l'Autonomie : http://www.allocine.fr/video/player_gen_cmedia=19583365&cfilm=194811.html**

Conclusion : we must change our perspective

Trees are not in need of water. Rather, all kinds of vegetation (trees, plants) provide water.

Thank you !

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