

## Introduction to the Principles of Dynamic Agroforestry

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In older translations of the Bible, "subdue the earth" was God's famous call to humanity in the creation story, which still serves as the basis for interpretations advocating the unlimited exploitation of nature. As early as the 1960s, American science historian Lynn White<sup>1</sup> interpreted this "subjugation" as the root of the ecological crisis, suggesting that Judeo-Christian thought perceives humanity as the ruler over creation.

The results are obvious: most of Earth's nine planetary boundaries (e.g., climate change, ocean acidification, biosphere integrity, etc.) have been exceeded by human activities, taking humanity far beyond a "safe operating space."

This raises the question: How can humanity emerge from this critical situation? A plausible answer lies in recognizing what distinguishes planet Earth in our universe: life. Understanding the principles of life and applying them to our actions and economic activities, instead of working against them, could provide a way forward.

Sustainability primarily implies ecological sustainability. The ecosystem we inhabit is dynamic, having evolved over three and a half billion years from simple forms to its current complexity. Preserving it is not just about maintaining its current state but about safeguarding its capacity for development, vitality, productivity, elasticity, and robustness.

<sup>1</sup> The Historical Roots of Our Ecologic Crisis

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Ecosystems are dynamic systems capable of growth, creation, and complexity. Through "ecological succession," they shape their environment and determine their development within their own limits.

A broadened holistic approach requires a deeper understanding of the properties and contexts of living systems, as well as the principles of their functioning. The continuous increase of complex forms of organization and life, along with the conversion and storage of solar energy through photosynthesis, are fundamental principles of living systems.

The dynamic stability of ecosystems depends on a continuous supply of energy (the sun), which is mainly converted into higher-energy organic compounds through photosynthesis. This energy flow promotes self-organisation, complexity and dynamic stability, which leads to an efficient use of biological energy and nutrients and thus to a life-friendly biosphere.

While entropy has led us to understand that all concentrated energy in the universe tends to dissipate, simplify, and dissociate, syntropy manifests by forming structures, increasing differentiation and complexity, as occurs with life. In other words, while entropy disperses, syntropy concentrates, and thus life created and maintains the atmosphere on Earth. As human beings, it would be wise for us to integrate the principles of life to avoid cutting the branch we are sitting on.

Current agricultural and forestry practices often reduce highly complex dynamic systems to mere financial interests, disrupting their functionality. The pursuit of short-term profits leads to increasing instabilities, affecting not only agriculture and forestry but also other aspects of life.

A cultivation method aligned with sustainability criteria is "syntropic farming," also known as "dynamic agroforestry." This approach, systematized, formulated, and practiced by Ernst Götsch, is based on the principles of how living systems on Earth are organized<sup>2</sup>. Among other things, this means building production systems with species consortia occupying different life cycles and strata, having a high biomass flow maximizing photosynthesis,

<sup>&</sup>lt;sup>2</sup> "TAO" for our comprehension of life

https://agendagotsch.com/en/syntropic-farming-principles-by-ernst-gotsch (16.7.2024)



allowing permanent soil cover, and considering high biodiversity. The overall result leads to a positive balance of energy and life and does not require external inputs.