



OUR-GREEN-SPINE

Serving food & water structures and cooling our Earth by functional greening our society and restoring nature.

Why Our-Green-Spine?

With Our-Green-Spine (OGS) we can realize a major crucial contribution to:

- **Cool** the earth's atmosphere and surface by finding leverage of nature's own processes and, at the same time, remove and uptake massive quantities CO2 effectively.
- Strengthen and enhance the water and food structures to make regions more resilient and self-supporting and reduce the need for people to leave their home countries and
- In essence it helps mankind survive the potential climate threat's.

How will Our-Green-Spine do this?

OGS uses nature's own strength provided by effect-related green structures in order to restore the green spine of the earth.

What is Our-Green-Spine?

Our-Green-Spine is a multidisciplinary discipline based on long term research on micro and macro climatic properties of plants/plantation/green structures. Our-Green-Spine relies on proven techniques & products.

Our-Green-Spine delivers the **basic control handle of the 'Key-Processes'**

The basic to tackle the 'climate change effects' is to control the effects of nature's key-processes on earth's surface and in earth's Atmosphere. These key-processes involved are **radiation, wind patterns & velocity** and the **water-cycle**.

The handle, the lever to control these key-process are the (new) green urban & green agricultural landscapes.

Why should we control the key-processes?

The key processes are completely entangled with each other. Lesser control on the key-process 'radiation' for instance means lesser control on the key-processes 'wind patterns' and 'water-cycle' whereas controlling the 'water-cycle' is vital for food and drinking water and therefore for prolonging society/man-kinds existence.

Why do we need green structures?

We need to start with a large scale reduction of CO2 emissions. However, the effects of these reductions can take long to show a tangible cooling effect. Green structures have an immediate and decisive influence on managing radiation, wind/velocity and water-cycle on earth's surface and atmosphere, which is needed to safeguard earth's energy balance/the ability to cool earth's atmosphere, that is crucial for our society.

Green starts cooling immediately!

Principles of Our-Green-Spine

Plants properties & the water-cycle:

When ocean water evaporates and condenses into rain clouds, the clouds are sucked onto the edges of continents by pressure differences in the atmosphere and we get the precipitation delivered where we need. To repeat the process of water transport land-inwards we need a next chain of sources of evaporation, green structures which by transpiration of plantation add new water vapor to the atmosphere which condenses to clouds.

Earth emits energy by condensation and therefore cools itself:

Clouds reflects incoming radiations, but also support outgoing long-wave radiation as a result of phase-change processes; when water-vapor condenses, water molecules from high level (gas) transform into a low level (liquid). In this process water-molecules will release latent heat in the form of photons or phonon. (Source: University of Shanghai¹ & Carnegie Institute²).

¹ Analysis of Cloud Droplets Growth and Phase Transition Radiation Process (Biao Zhanga; MingYan Zhub; ChunYu Wang; Xin Guan)

² https://www.youtube.com/watch?time_continue=13&v=HHDMKm4FXsw

Our-Green-Spine will enhance the evaporation-capacity and through this the cooling capacity of earth's surface and earth's Atmosphere.

Interacting green structures through a Spatial-Design Strategy:

Interacting green structures, covering a relative low percentage of an area, have the same cooling and CO₂-sequestration abilities as 100% coverage by forests. By embedding the properties of plantation in an urban and agriculture infrastructure Our-Green-Spine translates the properties of plantation in a spatial-design strategy.

The Spatial-Design-Strategy of Our-Green-Spine:

The Spatial-Design-Strategy is effect-based, providing a 100% green-coverage-effect (without 100% spatial coverage) changing urban deserts/agricultural deserts/any natural desert area into a green climate controlled area.

No need for Regional Rivalry - Make Green - Not War!

The positive Geo-Engineering side effects of Carbon-Dioxide Removal (CDR) + Direct Air Cleaning (DAC):

The effect-based spatial design strategy embeds CDR by finding leverage of nature's own processes (controllable and calculable CO₂ sequestration by plantation) but also enables links to industry, like production bio-based materials, carbon sequestration in soils, liquid CO₂ as raw material for off-grid cooling or raw material for bio-plastics. DAC can also be embedded for optimizing conditions for CO₂-scrubbing.

This simply means zero land-use losses for water-storage/food-production/transport/housing production as the same area can produce all the values which are needed without any environmental or ecological risks.

A new 'social inclusive' circular chain purpose driven green economy:

Our-Green-Spine creates a new social inclusive circular chain purpose driven green economy based on finding leverage by nature's own sources / care Management of earth's resources

Cooling earth and enhancing the strength of our society at tremendously low costs:

Without making our society resilient and future proof a lot of capital is at stake. We estimate that Our-Green-Spine will only cost 0,1% - 0,25% percent per year of the expected losses on financial assets and general assets when nothing is done.

Need for Funding:

Our-Green-Spine needs a multi-disciplinary scientific assessment, coordinated and supported by an independent Our-Green-Spine foundation, including:

- Design simulations OGS urban/country landscapes/deserts;
- Assessment of OGS LUTC on evaporative cooling/atmospheric cooling/heat transfer/transfer radiation in/outwards earth's Atmosphere (University of Shanghai*);
- Assessment on OGS & Finances; private/general assets;
- Spreading the good news in networks;
- Spreading the good news on media and a
- Development Course Program.

Time span

We need a World War II like mobilization to save civilization, in that modus Our-Green-Spine could takes 10 years to get accepted world-wide and can realize the needed tangible world-wide cooling effects within a 30-50 years' time span and also on a shorter horizon better water and food structures. Off-course we also need to reduce CO₂ output by the use of burning fossil fuels and need all the technical help to remove additional CO₂ out of the air.

Time lapse for starting up the first phase of Our-Green-Spine operation is expected to be two to three years.

Website: for additional information visit www.our-green-spine.org

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