

## FRESH

### *World's wildest supermarket*

A holistic and most outrageous concept

*Man is the only creature that has to pay for living on planet earth. All other creatures get their food directly from nature and the ecosystems they are part of. We share many essential conditions for life with both plants and animals. We share for instance soil, water, air and sun light. Our food comes from nature, and the only reason why we process our food is business. We grow our food in rows on fields. We remove weeds, harvest, store, package, transport and sell our food to process it further.*

*The system is designed out of economic interest and thus fails to address the fundamental values of food. During the production, the essential living conditions for the actual crops are removed. The crops therefore turn sick and are affected by various diseases and pests, which subsequently are controlled with poison. As the produce finally appears in the shelves of the supermarkets, it lacks the quality of proper food.*

*All processing of food diminishes its quality, whether it is the tilling the the soil or the processing of the actual crop. Nutrients diminish from the moment of harvest, so that the food, once it is delivered to the customer in the supermarket has lost most of its nutritional value.*



From: Sepp Holzers Permakultur, Leopold Stocker Verlag

- Fresh is the concept for an organic, living supermarket in cities and villages, where instead of taking the items off the shelf, the customer harvests the produce directly from raised beds.
- A system that works along with nature rather than against it.
- By harvesting, the customer contributes to the work of producing to such a large extent that the produce can be offered at a never before seen quality and low charge. It's almost for free.

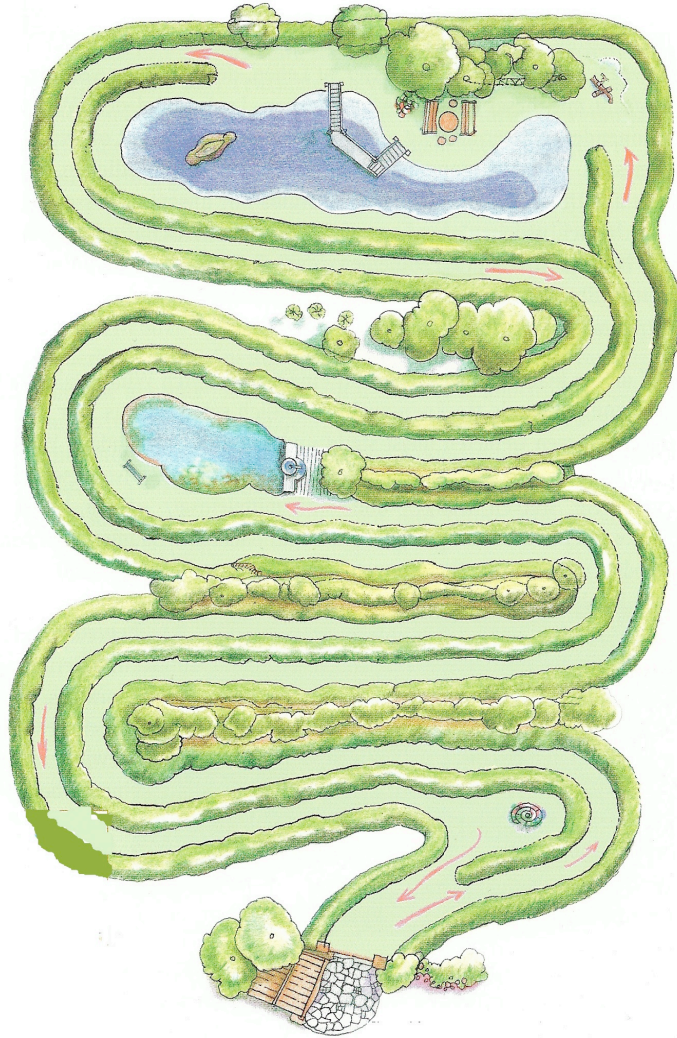
This is what you may call a win win win win situation!

## FRESH



- A highly productive place offering the most fresh and healthy produce at low and sustainable cost.
- An experimental site for the conceptual development of urban farming systems for the future.
- A centre for exchange of knowledge in growing systems, companion planting, plant's interactions with nature and their use for man.
- A centre for courses offered to schools, institutions, associations, companies and private people.
- ...with courses in food preparation, nutrition, herbs, medicine, cosmetics, growing systems, and the use of plants....

## To be established



- A raised bed area in a forest garden environment for intensive cropping and self harvest.
- A place to experience and teach ecology.
- The physical framework for education in plants, healthy food and medicine.
- Literally, an experience of growing with nature, the discovery of old and new crops in mixed setting with plants and animals, where people can become part of the system.

From: Sepp Holzers Permakultur, Leopold Stocker Verlag

## The basic construction



From: Sepp Holzers Permakultur, Leopold Stocker Verlag

- Import of wood (partly as tree trunks, and partly as wood chips) and mushroom mycelium as a basis for the establishment of the raised beds and to start the decomposition process.
- Planting of a forest garden including the planting of fast growing trees as sustainable production of biomass.
- Establishment of a species rich seed collection from breeders and seed collectors.

## Alternative models for possible financial support



- Raising of financial support and employment of a group of professional gardeners that establish the first physical framework, e.g. raised beds.
- In cooperation between the community and local residents as a socio-ecological project or as an activation program for unemployed people.
- Through courses and the active participation of students in the construction.

## The mission

Food production does not need to depend on fossil fuel energy, pesticides or artificial fertilizers. The entire chain from production to consumption can work out completely independent of fossil fuels.

Health does not depend on medical care but nutritious food. Healthy crops produced under natural conditions.

Such benefits cannot be offered by any of the existing production systems in Denmark. Only radical new concepts, such as FRESH, can and will create the desired resilience for the future food production and health of the consumers.



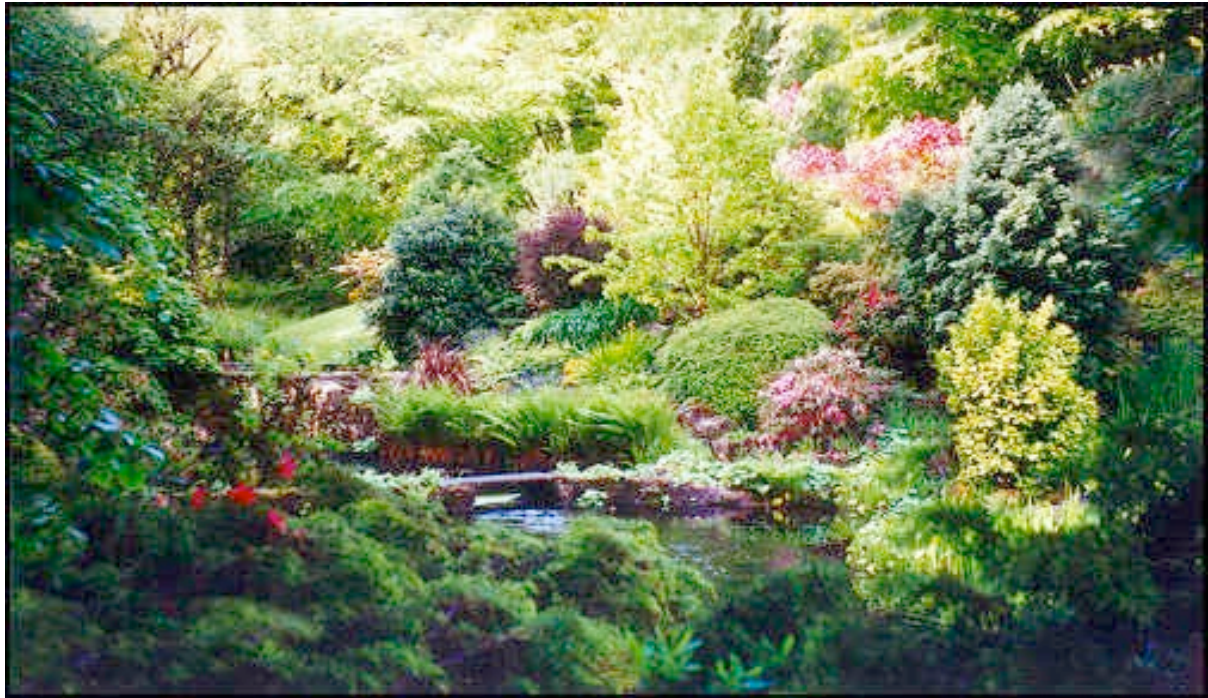
The holistic view on food generates culture. From soil to soil, from table to table and from mouth to mouth.

FRESH will provide the physical framework for development of growing systems and its subsequent circulation to the public. FRESH will serve as inspiration for social entrepreneurs and companies having their focus on social ecology rather than conventional economy.

FRESH will be of benefit for the society at broad, as it will secure food production and resilience independent of the current economic system.

## The vision

Fresh will be an ecosystem with plants, animals and humans. Children will learn about essential living conditions as provided by the garden.



Paradise derives from persian language and means "fenced garden", and if the garden is designed properly, it will contain all the essential conditions for life to thrive.

FRESH provides education in entity.

We learn about the needs for plants as well as human, and we learn about ecology as a sustainable alternative to economy.

The knowledge will be explored in an open and integrating process and will be spread through consultancy, practical demonstration and guidance.

## The growing system

In nature, plants do not grow in separation, do neither grow in rows or in monocultures. Plants are used to growing in accompany with other plants and organisms, and have found in the course of evolution friends, enemies and cooperators.



Some plants are so dependent on the presence of a specific other species, that they depend on each other for survival. But there are also entire groups of plants that support other groups of plants.

Legumes, for example, assimilate with the help of bacteria nitrogen directly from the atmosphere. Other plants are more efficient in assimilating carbon through photosynthesis. These different groups of plants are able to efficiently exchange their assimilates via a dense network of mycelium, so that both groups benefit from each others expertise. There are additional mechanism in plants and their environment to efficiently share water, light and nutrients.



During evolution, plants have developed specific strategies to circumvent direct competition. Most plants do not thrive well in monocultures. Instead, they are coded to cooperate with other species. And there is a wealth of mechanisms for such cooperations beyond imagination.

FRESH can contribute to exploring these mechanisms and to further the develop of growing systems.

We will only be able to study the cooperation between organisms, when we allow the cooperation to take place in the way we grow our crops. Mixed polycultures are therefore the most appropriate way to cultivate plants.

## Crops versus weeds

FRESH will challenge our understanding of food and redefine terms such as crops and weeds. Many of the so-called weeds are rather miracles of nature.



Weeds have important functions in ecosystems. It does not make sense to quantitatively remove weeds from the system. Instead one needs to work together with these plants in order for them to contribute to the system with their particular quality.

Stinging nettle is one example of the most neglected miracles among the plant kingdom. Stinging nettles accumulate a large variety of nutrients from the soil such as sulfur, nitrogen, calcium, potassium, iron and copper. Stinging nettles contain minerals as well as vitamins (A and C) and are beneficial for both humans as well as the soil.

Stinging nettles clean the blood, the kidneys, the liver and even the cells. But stinging nettles can also be used in surface composting by covering the soil between the crops. Surface composting releases nutrients for other plants thereby contributing to the formation of a natural soil structure. Stinging nettle is a healthy component of ecosystems; healthy in a broad sense.

Extracts of nettles can be used as liquid fertilizer as well as protectant against pests and diseases.

Nettles have been used for food, medicine and fiber. But nettles also have important functions in the wild nature. More than 30 species of insects feed on stinging nettles and many spiders depend on them for food and habitat.



## The mycelium

Mushrooms form a large group of living organism that decompose and feed on biomass. Mushrooms are mostly known for their visible fruit bodies. However, their hidden mycelium is a tight network that penetrates the soil in order to find decomposable organic material.



The mushroom mycelium is the planet's natural internet. Individual mycelia are known as the biggest individual organisms on the planet and have extended on areas as large as several hundreds of hectares. The mycelium transports and distributes nutrients and makes them available to soil bacteria and plants. The mycelium decomposes toxic compounds, takes up heavy metals and paves the ground for the establishment of a healthy ecosystem thus allowing many other organisms to flourish. The mycelium cleans and restores ecosystems from the bottom up, both after natural and man made disasters.

A specific group of mushrooms, also known as saprophytic mushrooms, are able to decompose a broad spectrum of the most toxic compounds in our environment, such as PAHs (polycyclic aromatic hydrocarbons), PCBs (polychlorinated biphenyls), or the explosive TNT. The same mycelia can decompose all fractions of oil including products derived from oil. In addition, the mycelium of specific mushrooms can take up heavy metals such as mercury, cadmium, copper and lead, as well as contaminants such as arsenic and radioactive cesium.

The mycelium is a dynamic network that communicates with other organisms, shares and transports nutrients across large distances, while keeping toxic heavy metals out of reach for other organisms. Several mushrooms are known as toxic because of their capacity to accumulate toxic concentrations of specific heavy metals.

A natural soil structure is the most promising way to reestablish the intelligent system mycelium. Tilling the soil destroys the immune system of the soil and releases toxins.

Obviously, the quality of soils cannot be monitored by merely analyzing its elemental composition. The soil is an ecosystem with dead and living organisms in a dynamic and evolving process. It is the healthy state of the soil that determines, whether and how much toxic compounds are taken up from the vegetation above. The quality of the soil can only be determined by the vegetation. Its content of essential minerals versus toxic contaminants.

It is further obvious that a naturally built soils must not be disturbed repeatedly by ploughing, because tilling the soil destroys its natural structure. Permanent, perennial and mixed polycultures are therefore the most appropriate form of cultivating plants.

## Biochar

Long before the discovery of the American continent, the Amazon basin was inhabited by was one of the largest agrarian civilizations.



The Chibcha people practiced a method that became known as 'slash and char' to create and maintain cropping systems in the rainforest. The soil that has resulted from this culture is known as 'terra preta do indio' and is still, 500 years after the disappearance of the culture stable and exceptionally fertile.

Char – or biochar – is amorph carbon which is the product of a fractionated burning (pyrolysis), where - instead of burning the biomass all the way down to ashes - only the light and volatile compounds of the biomass become oxidized, whereas most of its carbon skeleton remains.

Biochar has a gigantic surface structure providing a habitat for mycelia and bacteria, keeping moisture, and binding both nutrients as well as toxic contaminants.

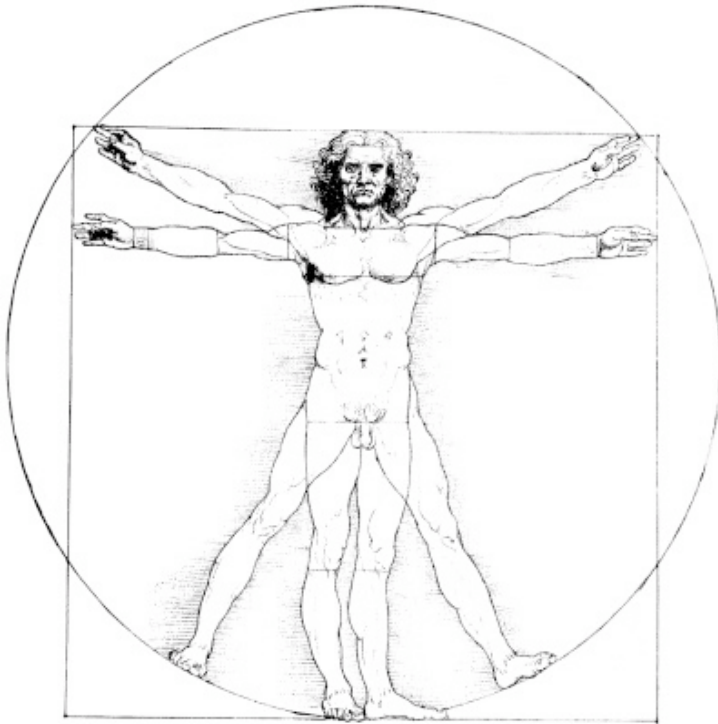


The addition of biochar to soils contributes to the sequestration of carbon from the atmosphere, while at the same time serving to increase the soil's fertility. In turn this creates conditions for better growth and further assimilation of carbondioxid.

Biochar can be produced from all kind of dried biomass with simple technology. Biochar bears many potential applications and can for instance be used in the foundation of growth areas such as raised beds. Here it can serve as a filter to prevent unwanted contaminants to rise into the upper soil layers, while at the same time reducing the loss of nutrients into the ground water.

## Health – body, mind and soul

Standing strong against chronic diseases including depression, stress and burn-out. Our body is our temple. A healthy body is required for health of mind and soul.



We are genetically coded to live in and from nature. Man has eaten food produced in and from nature for 250.000 years. Consequently, our body needs nutrients and metabolites from the soil primarily via plants.

The definition of disease from the school medicine's perspective refers often to a functional failure with the result that symptoms are treated rather than diseases. The body turns sick if it is not provided with the necessary minerals, vitamins and metabolites.

Today, we treat such symptoms with medicine. However, we can also choose to treat the patient and his or her disease, if we instead take a holistic view on the matter and provide the body with the necessary nutrition of healthy food. In fact, then we activate the body's natural healing mechanisms.

Apart from the above, there is a wealth of energies, such as love, that cannot be exactly measured and quantified by any means. Experiments have shown that social accompany, stress via heavy metal music and shouting, excoriating or showing disrespect all affects the development of plants. Mobbing provokes stress so that plants become sick and are negatively affected in their development. In contrast, plants that are treated with the 'god energy' are physiologically and visually healthy and develop faster. Other experiments have suggested that plants can sense, whether they are watered automatically or by a person that cares for the plant. Plants treated with the god energy thrive healthy and better than plants that are treated by an automated process.

The garden is known as a place for therapy. In reality however, it appears that people get sick as they are taken out of nature and the garden.

## Initiators of FRESH

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