

# THE EMERGING PRACTICE OF FOOD FOREST - A PROMISE FOR A SUSTAINABLE URBAN FOOD SYSTEM?

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## Abstract

In the Netherlands, “food forests” recently became very popular. The broader perspective is that of agroforestry. This paper explores in a speculative way the starting points for a range of projects in our professorship. Taking a landscape perspective, we ask what role food forests can have in regional food systems, and how a large-scale development of food forests could be spatially organized.

**Keywords:** food forest; landscape; agroforestry; food system; design

## Introduction

In the Netherlands, a growing number of initiatives can be noted that address themselves as “voedselbos” or food forest, partly building upon international examples and experience, as for example provided by Hart (1996), Crawford (2010), and Shepard (2013). We consciously use “food forest” here, and not the broader term agroforestry, as will be explained. Most of the newly planned or realized initiatives in the Netherlands measure about 0.5 to 5 hectares, with Van Eck's Ketelbroek near the city of Nijmegen as one of the leading examples. Food forest as a conceptual idea combines trees, shrubs, perennials and annuals in a variety much larger than in common agriculture. The variety of plants, and the organization in different layers, is said to contribute to a system that sustains itself with a minimum input of external energy and human effort, and a minimum output of waste. Generally, the production of food is seen as one of the goals, but ecosystem services and social services are put forward just as much as benefits of food forests.

New initiatives are started by farmers wanting to transform their enterprise, and to develop a food forest on (part of) their land, but just as often the initiators stem from other backgrounds. This also implies that it is not always land in agricultural use that is transformed; it is today also urban green areas, wasteland, estate or even nature areas that are transformed into food forests.

## Aim

Our professorship starts from the larger question of how western metropolises will feed themselves in the future, in the context of a circular economic system, and with the requirement of an accessible, attractive, healthy landscape. It is in that context that we study alternative approaches to food production for their possible contribution to such sustainable regional food systems. Food forests, or agroforestry, may be such an alternative approach. In the Netherlands, with its very intensive agricultural system, such views had and have no strong position. Today, however, both from the side of farmers seeking for alternative roads, and of non-farmers with a wide range of backgrounds, food forests are seen as an attractive new model. And perhaps the relatively small scale of these new initiatives help to literally find a place within the very intensive agricultural system. From a research perspective, we cooperate with

these new initiatives, to find out how they function and why they succeed or fail. This addresses several questions, ranging from clarifying the theoretical background to proposing feasible business models, to developing alternative logistic chains, and to assessing ecological value, but always in the context of landscape and design. Our professorship seeks to interpret potential effects on landscape, and engages via design, by which we mean actively creating the conditions for such new initiatives, visualizing what they would look like, and integrating them in the larger spatial system.

Seen from the aim of regional and sustainable food systems, many of the current initiatives are too small to make a difference. Therefore in a speculative way we think of food forest systems on a very large scale – be it in large numbers of small enterprises of a few hectares, or big ones of 200-1000 hectares. Then, food forests can make a difference, and the perceived advantages in comparison to today's agriculture can be played out.

As the research projects and the food forest initiatives related to this are in their starting phase, this paper wants to give an overview of the thoughts that drive these projects.

### **Larger frame**

The larger frame for our food forest engagement is a strong concern for sustainable food production, and a desire for a sustainable way of treating the earth. Today's agriculture comes with big problems, from land degradation, extinction of species and pollution of ground water to larger societal problems such as obesity, injustice and alienation of nature. New roads are seen in different directions. High tech production in closed systems, allowing for maximum health, minimal input and zero waste, or a more multifunctional agriculture, serving more goals at the same time, such as wildlife management. Often the global system is blamed to be a major cause and as a response it is said that our food system should be organized more on a regional scale (i.e. 50-300 kilometres around major cities).

Food forests, as an idea, could fit in some of the perceived solutions, as a manifestation of a broader phenomenon that is best addressed with the word agroforestry. In the Netherlands, currently, the term 'food forest' is much more in use. Apart from the linguistic debate this has an economical dimension. Food forest is more easily associated with gardening, whereas agroforestry is certainly seen as a commercial agricultural practice, and would be in strong competition with traditional agriculture.

### **Food forests, but no food?**

Whether we should be sceptical or positive, or both at the same time, about such ideas, depends on our expectations. At Van Hall Larenstein, we take as a shared starting point that we want to look at such new initiatives from the viewpoint of food production – that is to say, other social or ecological or economical services we consider of secondary interest. Seen in that way, we discuss with new initiatives their ambitions: how much, and what food ingredients, do you expect to be produced? We note that more often there is a certain shyness to speak about food forests in that way, or even a resistance, as in comparison to common agriculture the production is presumably less, and certainly less quantifiable. This in fact points at a contradiction: due to its multifunctional approach, the isolated question towards measurable produce becomes difficult to answer, especially if we look at it in terms of business models. In some cases it even goes as far as the production of food only being the background for a number of very different services, that guarantee an income –even if that income is often very moderate- and give meaning. For us, however, the food production side is crucial, if only because the word food forest in itself underlines the aspect of food. But primarily it helps us to decide why we should engage in food forests. Speaking about the food production side helps to think of food forests as a potentially sustainable business model. And such sustainable business models imply organization. If food has to be produced in a way that it can be quantified, and harvested efficiently, and planned over the years, we immediately see that this comes with design – such as, for example, an organization in rows that are accessible for machinery – in that sense, alley cropping cannot be too far away from food forests aiming for a serious food production. For us,

from a landscape point of view, this is interesting, as it tells something about spatial organization, visual impact, and perhaps accessibility.

### **An urban perspective**

In certain parts of the world agroforestry, or food forest, is developed as a new road in agriculture for itself, covering large rural areas. In the Netherlands, such initiatives generally orient themselves on the nearby city, as their legitimacy relates to changed perceptions of food and agriculture within the urban culture. That also means that such initiatives partly have to shape their own market, for various reasons: their products may be niche products with higher prices, they may produce a larger variety, and less known species, so that a bit more curiosity of consumers is required, and they certainly will produce less quantity, so that consumers and producers relate in a more specific way – we will not find the produce in the large supermarkets. In the Netherlands with its high land value and strong competition on every square metre, the perceived legitimacy of such a new way of producing food is essential. From the perspective of landscape this is highly interesting, as it broadens the issue from mere food production or business models to landscape design: accessibility, attractiveness, and identity become important.

In the context of our professorship, studying sustainable foodscapes in relation to cities, we want to take these initiatives seriously, and to carefully search for how these initiatives can become a steady part of the landscape in terms of (agro)economy and planning. That is one of the reasons we want to look for food forests on a much larger scale than the current small initiatives. We are convinced that studying these new perspectives on a regional scale, in terms of hundreds or thousands of hectares, allows to see the specific challenges for planning and landscape design. Therefore, we not only respond to initiatives that look for support in terms of research, but we also intend to *shape* or co-shape initiatives on the larger scale, as a means to study the challenges that come with it.

### **From idealism to reality**

In our experience, many of these new initiatives rely on idealism, or even the strong belief that the road as proposed simply is *good*. This enshrouds what we think is important, and that is a debate on how such food forests would function in a regional food system, and in what way they can be designed to fit in regional landscapes. That requires to rethink such food forests and to describe them as rather regular farming systems, to be compared with other ways of farming and producing food. In a small piece of research, presented in another paper, we studied the transformation of two farms, to be able to be more precise about what is exactly the future business model, and to be able to consider what would happen if such businesses, in all their variety, would be multiplied. The focus on food and the business model does not deny the innovation and wider services such farms bring for nature and society, but enables to understand them as enterprises with an economic rationale. A focus on a regional scale also requires looking at such food forests as components of a bigger landscape, more than the very small experiments we see today in the Netherlands. From the perspective of landscape planning, landscape architecture and urbanism, such food forests become very relevant if they can be upgraded to systems of hundreds of hectares, and convincingly can show to be a serious alternative for traditional farming on a regional scale. If so, they may propose an entirely new agricultural landscape, and in terms of a food system, entirely new chains of food towards the nearby city. Specifically in the Netherlands this is essential, as the high value of land entails a need for a substantial income per unit land area. Currently, we are testing this with research activities carried out in the surroundings of the city of Nijmegen.

We are interested in the fact that perhaps small enterprises in the range of 1-5 hectares work together in larger networks, and together can provide a range of produce. At the same time, we engage in projects for large enterprises, in terms of 100-1000 hectare. The question of whether one strategy (many small) has advantages above the other (few large) is one of our research questions. The same goes for the comparison between food production on areas previously not

considered in terms of food, and 'traditional' agricultural land. This happens in our *Vruchtgebruik* project –best translated as 'usufruct'- in which we study the options for public urban green space to produce substantial quantities of fruit, which does not happen, currently. We look at this in terms of planting and management, but it is vital to think through the potential food chains: what are appropriate harvesting techniques, what is the range of produce and what is the market for this produce? For example, on our own estate of 30 hectare we study to what extent the school canteen can integrate produce of a new food forest. What type of produce will we have, how will this develop over time, and what products can be made out of it? Can this be sustainable, also in economic terms, or is it merely a nice hobby without relevance for a food system that also has to be efficient, reliable and relatively cheap? This will be developed as a research project in which we can measure, count and experiment.

## Outlook

In the coming 2-3 years we will be engaged in a number of projects all revolving around the words food forest or agroforestry. We will study and work with initiatives on a very small scale, and grouped towards large-scale transformations of landscape. Different cities will be part of such projects, such as Nijmegen and Almere. We cooperate with the cities and universities of Barcelona, Ghent and Coventry to compare our experiences on this, and we will test on our own 30 hectare school estate both planting, managing and harvesting a small-scale food forest as well as the integration of it in the business model of our own canteen. Combining such experiences, we believe to obtain interesting research outcomes.

## References

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