

Seeding change: What discourse mobilizes the scaling of food forestry in the Netherlands

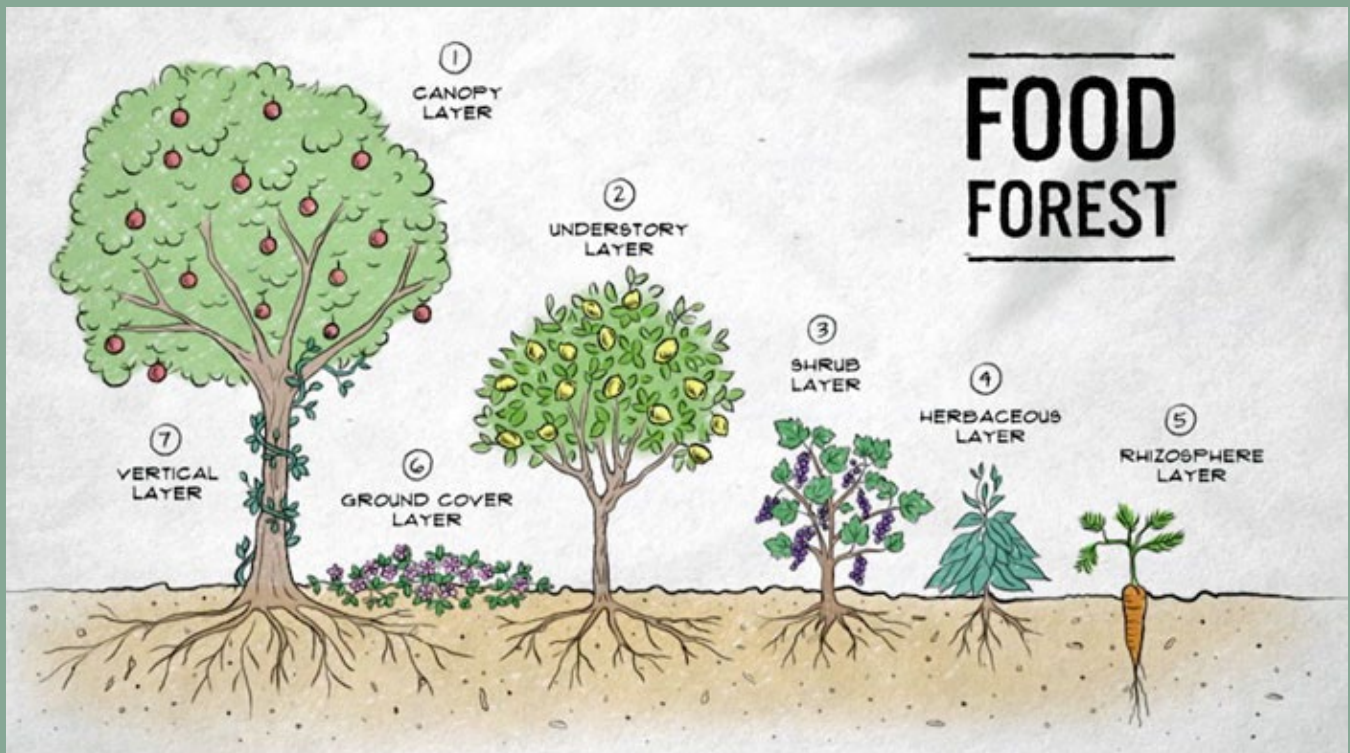


Figure 1 Food forest concept (Australia, 2020)

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2 ABSTRACT / SUMMARY

With the production narrative of the Green Revolution, agriculture's pressure on the environment has risen over the past decades. In response, agroecology gained popularity worldwide. Agroecology is focused on making agriculture more sustainable and in tune with nature, decreasing the pressure agriculture puts on the environment. One type of agroecology is food forestry, which produces different types of food in a forest-like setting. The food forestry sector is still small-scale in the Netherlands, and little research has been done about the potential of food forestry to expand and become a valid alternative to dominant agricultural models. For food forestry to scale, a shift in thinking is needed from an industrial view to a more sustainable view of agriculture. This thesis will research the scalability of food forestry in the Netherlands through the lens of a mobilizing discourse, following the theory of Cacho *et al.* (2018). Chaco *et al.* (2018) describe nine key drivers of scaling agroecology, one of which is the presence of a mobilizing discourse. A mobilizing discourse is a discourse that motivates people to take action. It has the potential to change narratives, in this case, the narrative of agriculture.

The thesis addresses the following central question: How do mobilizing discourses within the food forest concept contribute to the scaling of agroecology in the Netherlands? To answer this question, the following sub-questions are formed:

- What is the central discourse surrounding agriculture, agroecology, and food forests in policy documents from the Dutch government?
- What discourse currently surrounds food forests in the Netherlands, and does it mobilize others?
- How would the current discourse around food and food forestry need to change to scale food forests in the Netherlands?

To answer these questions, qualitative research was conducted through interviews with food foresters and analysis of policy documents about the future of agriculture. This method was chosen because it gives insight into the more profound discourse surrounding food forestry in the Netherlands without losing sight of respondents' full stories.

The policy documents all had a discourse focused on making agriculture more sustainable. The most mentioned way of doing this was the use of circular agriculture. However, other forms of sustainable agriculture were also mentioned. So, the policy documents were written in light of a shared problem, but they lacked comprehensive principles and ideals on how to solve this problem. The policy documents did, however, create a clear frame: agriculture needs to be more sustainable and nature-inclusive without the Netherlands losing its prominent role in the agricultural sector worldwide.

Within the food forestry sector, a mobilizing discourse could be recognized. Food foresters act out of an apparent shared problem: agriculture, as done today, puts too much pressure on the environment. However, principles and ideals within the food forestry sector do differ. Respondents had different reasons for taking up food forestry; the food forests had different elements, and respondents had different views on whether food forestry could be upscaled. Nevertheless, even with these different ideals and principles, the central discourse was clear: It creates a narrative of food forests as an alternative way of producing food, where food is produced in a forest-like setting.

Scaling food forestry creates some problems, some of which can potentially be solved by the presence of a mobilizing discourse. One of these is the fact that food forests are often seen as something only for idealists and not as a productive way of producing food. The presence of a

mobilizing discourse could potentially create a narrative that helps promote the widespread use of food forestry, changing its focus on idealists. One of the main problems mentioned by respondents is this need for money. Starting a food forest is expensive, and in the first seven years, the forest will create almost no revenue. Consequently, there is a high need for subsidies and funding. Creating a solid narrative around food forestry could help make a subsidy change within the agricultural sector possible, making more subsidies available for food forestry. Respondents also mention that spatial rules and policies sometimes tend to block the emergence of food forests. With the presence of a mobilizing discourse and the increasing popularity of food forestry, a narrative of change can emerge that could potentially change these spatial rules. For food forests to be adapted to a larger scale, the narrative around food in the Netherlands needs to change. Food harvested in a food forest is in some ways different than food sold in supermarkets. A strong mobilizing discourse around food forestry has the potential to change this narrative and create a market for food forestry harvest.

It is difficult to say whether a mobilizing discourse within the food forestry sector would actually overcome previously mentioned problems with upscaling food forests. Nevertheless, changing the narrative around food and agriculture and making food forestry more known can help create an environment more suitable for upscaling food forestry. The strength of the mobilizing discourse within the food forestry sector would be more powerful with the presence of shared ideals and principles, which the food forestry sector partially lacks. However, the extent to which these shared ideals and principles matter can be questioned. Having different types of food forest discourses can attract different types of people. Some people can be motivated because they want to focus on sharing knowledge and creating awareness, but others may be attracted to creating a food forest as a business. All respondents mentioned that the sector will probably lose some of its ideals when food forestry scales. Present-day food forests are often arranged romantically, with all sorts of species planted mixed together. Respondents mention that food forests need to be arranged more systematically, possibly even in rows, to upscale. This would indicate a change in discourse.

Interestingly, both policy documents and food foresters emphasize the need to make agriculture more sustainable. Food foresters provide a straightforward solution for this. Namely, using more food forestry. Policy documents dilute this view by mentioning multiple solutions to make agriculture more sustainable. Moreover, the strict definition of the Green Deal Voedselbossen, the prominent Dutch policy document about food forests, excludes many food forest initiatives. Especially these initiatives could be crucial to creating change within the agricultural sector. Overall, it is clear that food forests spread some sort of mobilizing discourse focused on changing the agricultural narrative. The future of agriculture and the upscaling of food forestry will depend on the perseverance of different discourses within the agricultural sector.

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4 INTRODUCTION

Since the eighteenth century, the world's population has grown from one billion to eight billion (Ritchie *et al.*, 2023). This growing amount of people caused a fear of hunger, which partially caused a change in production. Agriculture became more upscaled and industrialized, resulting in a significant yield increase. However, the poorer part of the world's population benefited significantly less than the wealthier part because technologies increasing yields especially became available in the more wealthy part of the world (Bernard & Lux, 2017). Food security only exists when all people, at all times, have physical and economic access to food (Bernard & Lux, 2017). The global food system does not provide this: "More than two billion people experience food insecurity, and close to 700 million are undernourished. At the same time, overconsumption is rising globally, with 39% of all adults considered overweight or obese." (Ickowitz *et al.*, 2022, p.632). Also, about a third of all human-caused greenhouse gases are caused by food production. Animal-based foods are primarily associated with the highest greenhouse gas emissions. However, especially this industry is growing worldwide (Crippa *et al.*, 2021). These animal-based foods also need up to seventy-five percent more land to produce one kilogram of the final product compared to plant-based food (Buckley, 2023).

In the 1960s, this upscaling and industrializing of food production (mainly in Asia and Latin America) was called the Green Revolution (Bernard & Lux, 2017). This green revolution is often called the industrialization of agriculture. There was widespread dissemination of knowledge about industrial agricultural techniques (Bernard & Lux, 2017). A strong narrative about the Green Revolution was created, which was focused on massive yield increases and saving countless people from hunger. Nevertheless, as with all narratives, this view of producing food for all is not only told because it is true. Important counter-narratives about the role of the Green Revolution point to the darker side of intensified agriculture. The current narrative helps maintain political systems focused on making a profit and producing more for less, which otherwise might be questioned (Chappell, 2018). It is important to analyze who decides which agricultural practices and policies are correct and who benefits from them.

The narrative surrounding the Green Revolution is partly based on the ideas of Malthus. In the eighteenth century, Malthus wrote an *Essay On The Principle Of Population*. Malthus states that the population will grow exponentially, but food production will only grow linearly, causing famine and diseases (especially among people experiencing poverty). However, this is not what seems to be happening (Chappell, 2018). There is more than enough food in the world to feed everyone a healthy diet. The average person needs a daily intake of around 2300 kilo calories per person daily (USHHS & USDA, 2015). However, the average US consumer can access around 3639 kilo calories daily (USDA, 2017). So, these available calories are just not spread evenly. The dominant narrative of the Green Revolution, which is to produce more calories to feed the world, does not hold up if enough calories are already available. Focusing solely on producing more food will not end hunger (Chappell, 2018).

The key form of agriculture created during the Green Revolution was monoculture farming. Monoculture is an agricultural method in which a farmer plants only one type of crop on a field to increase yields. Monocultures have multiple downfalls; they are, for example, more prone to pests, degrade the soil, need lots of fertilizer to be sustainable for extended periods, and need a lot of watering. The food industry accounts for approximately seventy percent of all freshwater withdrawals worldwide (Ickowitz *et al.*, 2022). Large amounts of pesticides are used to fight pests because monocultures are highly prone to pests. These often contain chemicals that are not healthy for humans to consume in large quantities (Emanuelli *et al.*, 2009).

Considering this, scholars, farmers, and politicians call for radical change in the agricultural system to provide healthy and nutritious food for everyone while producing sustainably (Ickowitz *et al.*, 2022). Ickowitz *et al.* (2022, p. 632) explain: “A new global food system must produce more significant quantities of a more diverse range of nutrient-dense foods, rather than only providing more calories.” An emerging counter-narrative to the Green Revolution-type monocultures is the agroecology movement. Agroecology can be seen as either a scientific discipline, agricultural practice, or political or social movement (Wezel *et al.*, 2009). Overall, agroecology focuses on intertwining ecology and agriculture, aligning agriculture with nature (Wezel *et al.*, 2009). Gliessman (2006, p. 599) defines Agroecology as “the science of applying ecological concepts and principles to the design and management of sustainable food systems.” Agroecology as a political and social movement is focused on increasing farmers’ control over their food production, fostering transformative social processes to spread the use of agroecology, and providing healthy and nutritious food available to everyone. “In the long run, agroecology aims to reduce dependence upon external inputs, thereby contributing to the autonomy of food-producing families and communities.” (Cacho *et al.*, 2018, p. 3).

Food forestry is one of these alternative agroecology systems, growing in popularity in the Netherlands. Food forestry aligns nature with agriculture by producing food in a forest-like setting, mimicking a forest ecosystem. A food forest is a biodiverse agroforest; it contains several layers of plants with different heights, like trees and shrubs (Albrecht & Wiek, 2021a). Food forests have many advantages; they store carbon, improve the water cycle and soil formation, and contribute to a more biodiverse environment. They have the potential to not only provide sustainable food but also create a place for recreation and education (Albrecht & Wiek, 2021a). The popularity of food forests is rising in the Netherlands as an alternative way of producing food without chemicals while also restoring soil health and biodiversity (Albrecht & Wiek, 2021a). It is an effective way of erasing the scars that monoculture farming left on the Dutch landscape.

Though technically sound, can Dutch food forestry displace the industrial food system that dominates the Netherlands? Doing so would represent a significant change in institutions within the food sector. Governmental policies shape agriculture in the Netherlands, but institutions like education and large firms within the food sector should also change to adapt food forestry on a larger scale. Chappell (2018) describes institutions as big, nearly invisible, perniciously influential, and hard to change. However, they do change over time. The national food system is built around free trade, multinational companies, and the notion of modernity and progress. The world system is driven by financial benefits, which gives multinational corporations much power (Chappell, 2018). Chappell (2018) describes how international philanthrocapitalism shapes international institutions. Philanthrocapitalism is focused on doing charity in a way that mirrors the way everyday business is done. Within the food system, this often results in wealthy individuals and institutions donating to charity, providing food security for people who do not yet have this. Even though it is precisely these individuals and institutions that are the root cause of people having no food security (Rhodes & Bloom, 2020). Agroecology and the food forestry movement focus on providing healthy and nutritious food for all people, changing the way current-day institutions work, and solving these problems from the root (Wezel *et al.*, 2009).

In conclusion, upscaling food forests is not just a technical challenge. It also requires a change in institutions. The discourse around food and agroecology plays a vital role in this change. Agroecology and food forests go against the traditional industrial way of thinking about food. The agro-industrial way of thinking is focused on producing as much food as possible, as efficiently as possible. The agroecology way of thinking is focused on producing sustainable, nutritious food for everyone. These

views clash. To understand the upscaling of food forests in the Netherlands, the theory of collective action plays a vital role. This theory states that rational, self-seeking individuals would fail to produce collective goods (Mefina, 2013). From an agricultural view, this means powerful people and institutions will produce in a way that results in the most significant benefit for them, not in a way best for everyone. Discourse plays a vital role in overcoming this problem. A clear mobilizing discourse surrounding agroecology and food forests could help create the framing of a collective problem and a common identity, changing the narrative of agriculture. A mobilizing discourse is a discourse that motivates people to take action, in this case, to start and scale food forestry in the Netherlands. A mobilizing discourse is one of the eight key drivers to scale agroecology based on Cacho *et al.* (2018). They describe that a mobilizing discourse would help farmers and consumers undertake complex agricultural transformations (Cacho *et al.*, 2018).

In 2017, there were 54 food forest initiatives in the Netherlands. However, there are hardly any consumers yet, and the forests are often constructed small-scaled (de Groot & Veen, 2017). These food forests mainly provide social and educational services and are relatively small (Albrecht & Wiek, 2021a). The presence of mobilizing discourse could have the power to scale food forestry in the Netherlands. That will help change food forestry from a small-scale idea focused on social services to a large-scale way of producing healthy food. Until now, little research has been done on the mobilizing discourse around food forests in the Netherlands. This study will focus on this knowledge gap and research how a mobilizing discourse around food forests relates to the scaling of agroecology in the Netherlands.

5 RESEARCH OBJECTIVE AND RESEARCH QUESTIONS

This thesis focuses on food forests in the Netherlands. Firstly, it aims to map the central discourse around agriculture, agroecology, and food forests in policy documents. Then, it focuses on the current discourse of food forestry in the Netherlands and analyzes whether it mobilizes others. Lastly, it focuses on the discourse change needed to scale food forestry.

To answer these questions, the following research questions with sub-questions are formulated:

- How do mobilizing discourses within the food forest concept contribute to the scaling of agroecology in the Netherlands?
 - What is the central discourse surrounding agriculture, agroecology, and food forests in policy documents from the Dutch government?
 - What discourse currently surrounds food forests in the Netherlands, and does it mobilize others?
 - How would the current discourse around food and food forestry need to change to scale food forests in the Netherlands?

These research questions will be answered by conducting qualitative research. The data being researched consists of transcripts of interviews with people engaged in food forestry and analysis of Dutch agricultural policy documents. This data *set* allows us to understand whether there is a mobilizing discourse around food forestry and how this can influence the scaling of food forests in the Netherlands. The discourse analysis of this thesis will be based on the book “What is discourse analysis” (Taylor, 2013) and a paper written by Atkin *et al.* (2000), which will be further explained in the methodology chapter.

6 RELEVANCE

6.1 SOCIETAL RELEVANCE

Contemporary ways of food production strain the environment worldwide. Emissions from the food industry alone will push the world past the goal of 1.5 degrees heating, mainly due to the emissions from the meat and dairy industries, two of the largest agricultural industries in the Netherlands (European Commission, 2020). The Netherlands aims to reduce emissions by at least 55 percent in 2030 compared to 1990 (CBS, n.d.). Without reducing emissions from the agricultural sector, this will not be achievable since the agricultural sector makes up 12 percent of the total greenhouse gas emissions of the Netherlands. Moreover, by heavy use of pesticides, irrigation, and plowing industrialized agricultural systems often degrade the soil and water systems in the Netherlands (Bernard & Lux, 2017).

One way of reducing the negative consequences of agriculture is using forms of agroecology, such as food forests. Agroecology is focused on producing food with less environmental impact while also making healthy and nutritious food available to everyone (Ickowitz *et al.*, 2022). Agroecology helps farmers escape a system that continues to generate and reproduce the conditions of rural poverty by creating a new system of producing food (Levkoe & Offeh-Gyimah, 2019). Food forests are seen as a way of producing food while also capturing carbon, restoring soil health, and creating a space for learning and recreation (Albrecht & Wiek, 2021a). Because food forests have the potential to be a self-sustaining ecosystem, pesticides, and fertilizers are unnecessary, creating healthy produce without health risks. Food forests also bring food closer to its consumers by supplying food to local consumers instead of consumers hundreds of kilometers away. This reduces the amount of greenhouse gases emitted by the food industry. According to the Ministry of Agriculture instructions, the master plan on agroforestry was produced. It discusses potential advantages, disadvantages, and difficulties surrounding agroforestry systems, like food forestry (Agroforestry Nederland, n.d.). Nevertheless, food forestry is still unused to feed people in the Netherlands because the current agricultural system in the Netherlands does not yet support large-scale use of agroforestry (Albrecht & Wiek, 2021a). The Dutch system remains focused on large-scale production and monocultures, with many farms producing cattle for the meat and milk industries. To change this, research is needed into what is needed to use food forests on a larger scale. This thesis will analyze a part of this question by looking into how mobilizing discourse around food forests could influence the scalability of food forests in the Netherlands.

Certain policies and rules tend to block the emergence of food forestry in The Netherlands (Albrecht & Wiek, 2021b). Creating more knowledge about food forestry can help give food foresters tools to gain more legitimacy and change these rules. By convincing policymakers and other important institutions of the benefits of food forestry, they may change their policies to suit food forestry better. The image of food forestry is often focused on social goals and education, not on producing food. Researching food forestry helps create more knowledge about food forestry and its potential to scale and produce food. The more known food forestry is, the higher the chances that it will be more widely adopted.

6.2 SCIENTIFIC RELEVANCE

Food forests are a relatively recent phenomenon; the first food forests emerged around thirty years ago in England (Riolo, 2019). Since then, the movement has gained popularity in the Netherlands, with an increasing number of initiatives emerging. However, most of these initiatives are small-scale, with the average food forest being only 1,9 acres big, and are not used to gain profit or feed large amounts of people (Albrecht & Wiek, 2021). Only 11% of the food forests in the Netherlands are used to feed people. The other 89% serve other, often social, services (Fig 2).

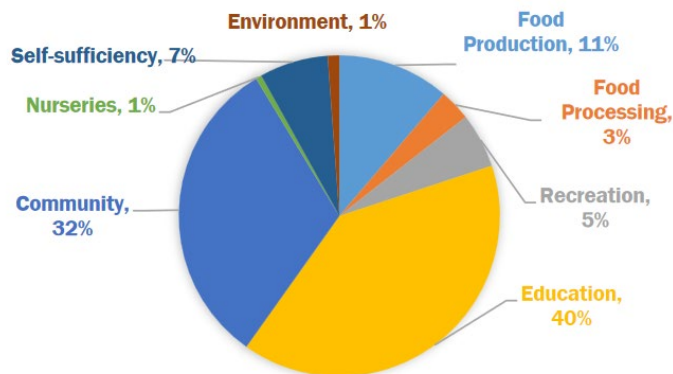


Figure 2 Main services food forest (Albrecht & Wiek, 2021)

One of the factors that hinders agroecology from scaling is the fact that the discourse surrounding agroecology and food forests is often contested with that of industrial agriculture. Industrial agriculture is focused on producing as much food as possible, as efficiently as possible. Often using modern technologies and monocultures (McNeill, 2019). Agroecology is more focused on sustainably providing healthy and nutritious food for everyone, working with nature instead of against it. To scale food forestry, a shift in thinking is needed, from efficiency to providing healthy and nutritious food for all in harmony with nature. Kelinsky-Jones *et al.* (2023, p. 2) argue that the “agroecological food system is unlikely to be realized without a significant shift in thinking among governmental, private, and educational organization leaders.” This significant shift in thinking could be started in multiple ways. One way is the presence of a mobilizing discourse around food forestry. A mobilizing discourse motivates people to take action and change the system and can thereby help create a narrative that creates a shift in thinking. Cacho *et al.* (2018) describe eight key drivers for scaling agroecology after researching five case studies of agroecological initiatives that scaled successfully (Table 1). One of these drivers is the presence of a mobilizing discourse. This thesis will look further into how a mobilizing discourse around food forestry can influence the scaling of agroecology in the Netherlands and thereby help create a shift in thinking focused more on agroecology.

Table 1 Cacho *et al.* (2018) eight key drivers to scaling agroecology

There is a need for crises that encourage the search for alternative food systems like agroecology.
There need to be social organizations and intentional social processes regarding agroecology.
Effective and simple agroecological farming practices need to be used.
Constructivist teaching-learning processes must educate people about agroecological practices.
The discourse around Agroecology needs to be mobilized.
External allies need to support agroecological initiatives.
Markets favorable to agroecology need to be established.
Favorable policies and political opportunities need to occur that support agroecology.

Another factor influencing agroecology's scalability is that food forest systems require knowledge different from mainstream agriculture. Bernard & Lux (2017) describe agroecology as highly knowledge-intensive; it follows a bottom-up approach, integrating knowledge from different fields. This knowledge is not widely available, and food foresters today are still learning. Agroecology is thus often used on a small scale with local knowledge. However, agroecology systems do contribute to food security in the global South, proving that they could be used on a large scale (Bernard & Lux, 2017). The presence of a mobilizing discourse can have the power to spread the knowledge needed to scale food forestry.

Ickowitz *et al.* (2022) mention that trees and forests often receive attention for their role in mitigating climate change. However, trees can also be essential in transforming the food system into a more sustainable practice to supply food for all. Ickowitz *et al.* (2022) state that forests are already supporting the sustainability and the resilience of food systems, but four areas of intervention can enhance this: scaling already existing tree-based agricultural systems, reorienting agricultural research to more diverse foods supplied by trees, redirecting producer and consumer incentives toward tree based foods and lastly integrating food into forest restoration. All these interventions could be enhanced by the presence of a mobilizing discourse. Having a discourse that motivates people to take action can create a narrative that motivates scaling tree-based agricultural systems and redirects producer and consumer incentives toward tree-based foods. The more research done on the subject of food forestry and agroecology, the higher the chances of agricultural research picking up this trend.

Analyzing these factors influencing scaling, it becomes clear that a mobilizing discourse can shape them. This thesis will specifically look further into how a mobilizing discourse within food forestry influences the scalability of agroecology.

7 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

7.1 FOOD FORESTS

7.1.1 Food Forest Concept

Food forests often aim to promote local, sustainable food, improve human health, and make healthy food available to everyone (Hemmelgarn & Munsell, 2021). Albrecht & Wiek (2021a) found that food forests do not only aim at food production but also serve social-cultural services. These social-cultural services include community building and education (Albrecht & Wiek, 2021a).

A food forest is a concept where food is produced in a forest-like setting (Fig. 3). Albrecht & Wiek (2021a, P. 101) describe a food forest as: “Multifunctional biodiverse agro-forestry systems using several (3 to 7) plant layers of different height (strata), including trees, shrubs, and groundcover”. Food forests are a polyculture system aimed at being low maintenance, resilient to climate change, and highly efficient.” They are designed to minimize the need for fertilizer and irrigation but maximize yield and output (Lehmann *et al.*, 2019). Food forests can also store more carbon than traditional agricultural methods. This is because they are constructed with a large variety of perennial plants, creating a dense forest of species that can grow for decades, storing carbon (Lehmann *et al.*, 2019). A food forest usually takes five to ten years to grow fully; after that, they are almost self-sustaining (de Groot & Veen, 2017). Due to the diversity of plants, food forests are less prone to pests, making pesticide use not necessary (Albrecht & Wiek, 2021a).

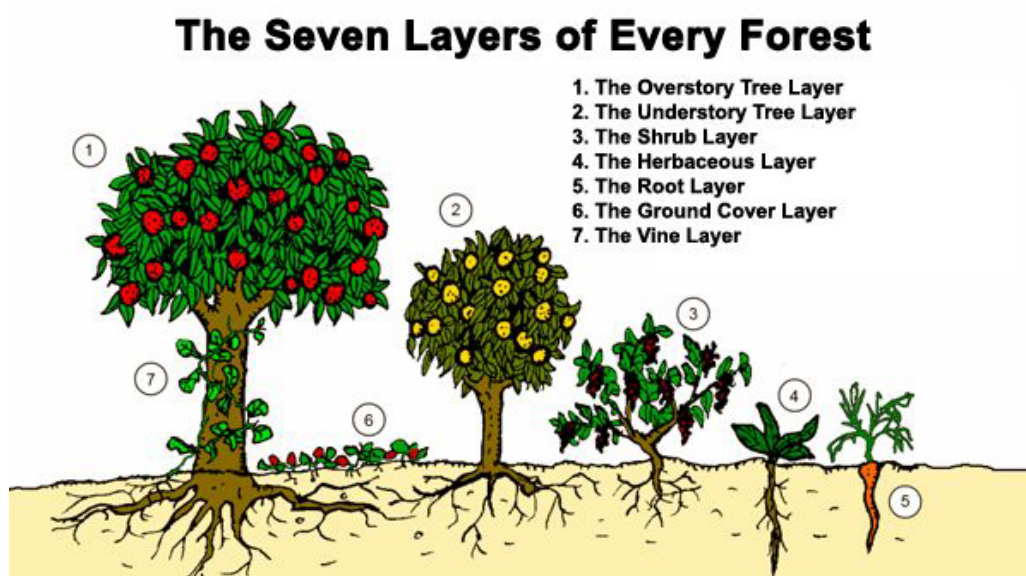


Figure 3 Layers of a food forest (Burnett & Mars, 2008)

For the past couple of decades, an increasing amount of food forests have emerged in the Netherlands. However, it was not until 2018 that the Dutch government started promoting food forests. In 2018, the ‘Green Deal Voedselbossen’ (2018) was published. Green Deals are made to help carry out sustainable plans. This deal promotes the collaboration between citizens, companies, organizations, and the government in the search for more green growth. Bottom-up initiatives are the basis of the deal. The deal promotes research and initiatives surrounding food forests and helps analyze bottlenecks in current policies.

The Green Deal describes a food forest as:

- “A human-designed productive ecosystem based on a natural forest, with a high diversity of perennial and/or woody species, parts of which (fruits, seeds, leaves, stems, etc.) serve as food for humans.”
- “Presence of a canopy layer of higher trees.”
- “Presence of at least 3 of the other niches or vegetation layers. Of respectively: lower trees, shrubs, herbs, ground covers, underground crops, and climbing plants.”
- “Presence of rich forest floor life.”
- “A robust size, in other words: an area of at least 0.5 hectares in an ecologically rich area environment; in a severely impoverished environment, a minimum area of up to 20 hectares is required.”

This definition of food forestry is limited and leaves out a lot of valuable food forest initiatives in the Netherlands.

7.1.2 Food Forest Success Factors and Obstacles

Albrecht & Wiek (2021b) researched seven food forests in Europe and concluded nine success factors for implementation (Table 2 and Fig 4). However, Albrecht & Wiek do not mention that discourse may shape success factors and obstacles, even though discourse can play a fundamental role in resolving some of these issues (Table 2, second row).

Table 2 Nine success factors of food forests (Albrecht & Wiek, 2021b)

Factor	How a mobilizing discourse could help
Recruiting motivated entrepreneurs. People who start a food forest need to be motivated to create and sustain a food forest	A mobilizing discourse could help motivate people to start a food forest.
The possibility of land access to start a food forest.	A mobilizing discourse could raise awareness for food forests, which can help access land.
The securitization of start-up funds to start the food forest.	A mobilizing discourse could raise awareness within the government of NGO’s, which are institutions that can help with funding.
Having the acquired know-how and tools to start and sustain a food forest.	A mobilizing discourse could help create general know-how on how to sustain a food forest.
The site needs to be professionally planned and designed for a food forest to work.	
The requirement of farming know-how and equipment.	
Regulatory restrictions need to be overcome.	A mobilizing discourse could help change rules around food production.
Diversifying revenue streams	
The existence of a network and strong partnerships.	A mobilizing discourse could help create these networks. By having a similar idea about food forests.

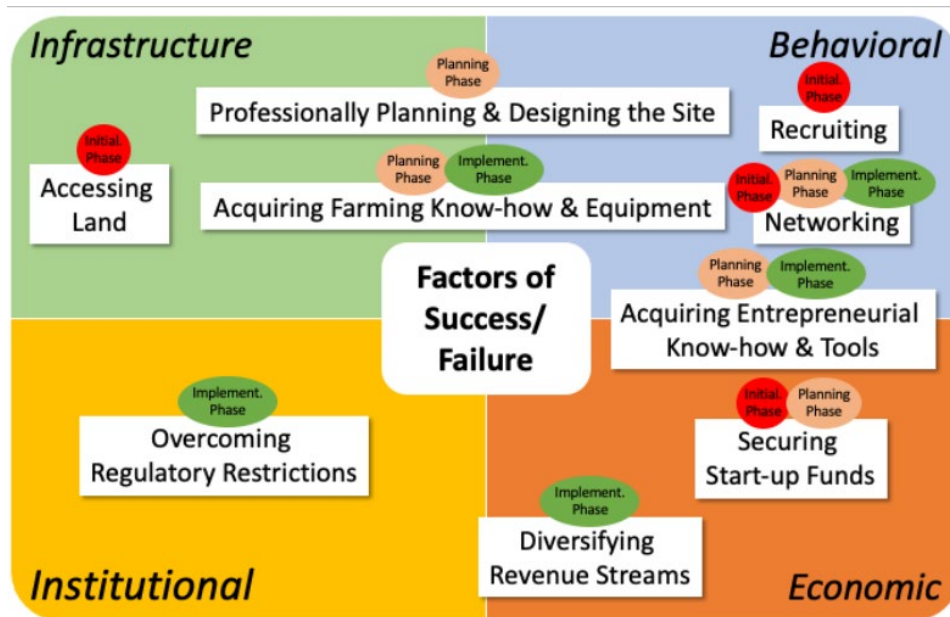


Figure 4 Success factor when implementing a food forests (Albrecht & Wiek, 2021b)

From this and other studies, key challenges unique to the food forestry model emerge. Food forests struggle because the reliance on tree species locks in a time lag before the full benefits of the production model are realized. It usually takes five to ten years for a food forest to be fully grown when operating from bare ground. Thus, farmer investment may take at least five years to show a return. Furthermore, food forestry requires a lot of knowledge. Trees and other plants must be planted in logical layers for the food forest to function well. The food forest also does not produce the same types of food all year round, which means that a food forest only provides certain foods at certain times of the year. When food forestry is used on a large scale, people will have to change their diet (de Groot & Veen, 2017). A mobilizing discourse might create a narrative of a shared identity with a shared problem and thus create a change in eating behavior.

7.1.3 Food Forest Sustainability

Another study from (Albrecht & Wiek, 2021a) gives insight into the long-term sustainability of food forests. Their main findings were that food forests perform well on social-cultural, educational, and environmental criteria but less well on economic criteria. This can partly be explained by the fact that young food forests (under five years old) are not fully developed and, therefore, are less economically valuable than fully-grown food forests.

Regarding the social-cultural criteria, food forests often provide meaningful employment and activities with a social purpose; they contribute to community building and provide education on food forests and sustainable food, which makes food forests social and cultural benefits to a community. Food forests also performed well on environmental criteria. Most food forests studied in this research tried to create better soil formation and conserve water. Most forests also had a high biodiversity rate. However, cooling effects were not often shown, partly because not all studied food forests were fully grown. Food forests tend not to perform well in terms of economic criteria. Most food forests studied were not economically viable, making them expensive to maintain.

A mobilizing discourse can promote social action by creating a shared problem and having an understandable frame and common identity. This could help motivate people to take up food forestry, creating more knowledge about how food forestry can be done in a successful way.

7.2 DISCOURSES OF AGRICULTURE

7.2.1 Discourse of Upscaling

A leading examination of the Dutch agricultural transition from applied ecology to intensive agriculture came from historian Jan Bieleman (2010). He traced the agricultural transition from 1500 to 2000 in the Netherlands. His work will be analyzed to understand the discourse of upscaling of agriculture in the Netherlands. Around 1600, the growth of the European population stagnated, lowering the demand for agricultural products. This, in combination with higher wages, taxes, and prices to keep water from entering the polder, caused a hard time for farmers. To still make a profit, farmers started using more innovations. This could be seen as the beginning of the transition to a more industrial way of farming (Bieleman, 2010). From 1700 till 1850, prices of agricultural products rose and fell, leading to periods of stagnation and innovation in the sector. However, even with these innovations, in the period until 1850, farming could often be seen as applied ecology in the Netherlands. Food production was based on the skills of the farmer and his know-how about ecology. To produce food, a farmer worked together with nature (Bieleman, 2010). These techniques date back centuries. The Maya society, which lived between 1800 and 3000 years ago in what is now Mexico, already used methods that are now seen as agroecology and agroforestry. They used terraces for irrigation and grew various foods on their lands. Evidence shows that the Maya's modified their landscapes while also maintaining a diverse, self-sustaining ecosystem (Miller, 2022).

After 1850, the percentage of the Dutch population working in agriculture decreased from 44% (1850) to 19% (1950). The average income of the Dutch population rose, causing a rise in the demand for more expensive and luxurious types of food. This meant the demand for eggs, dairy, vegetables, fruit, and flowers rose. During this period, a technical change in transport occurred; steam vessels and trains allowed agricultural products to be imported from and exported worldwide. The export of agricultural products grew enormously in the Netherlands (Bieleman, 2010).

This export was only possible because of the rapid intensification of agriculture in the Netherlands. This started with the scientification of agriculture, which made more scientific knowledge about agricultural processes available (Bieleman, 2010). Alongside more knowledge about agriculture came more technological innovations to help produce more efficiently. Agriculture became less about applied ecology and more about science. Farmers learned how to control and influence biological processes (Bieleman, 2010).

In the 1950s, artificial fertilizers became available, increasing yields. Monoculture and livestock farming grew in the Netherlands, and the agricultural sector became increasingly industrialized. Before the war, Dutch agriculture was marked by the search for land-saving technologies. However, with labor prices increasing, the search for labor-saving technologies emerged in the 1950s. These processes were aimed at increasing the production per unit of labor. One of these processes was the process of mechanization. This is most noticeable when replacing horses with tractors. The intensification of agriculture was particularly noticeable in the widespread use of fertilizers (Bieleman, 2010).

During this period of mechanization, the first critiques of the industrialized agricultural sector emerged. One of the first critiques on pesticide use occurred in the book *Silent Spring* by Rachel Carson (1962). In her book, Carson alerts the public of the toxic side effects of insecticides used to industrialize agriculture worldwide (Carson, 1962). After this publication, more and more articles were published on the side effects of the industrialization of agriculture. An increasing amount of research was conducted on topics related to more eco-friendly farming, like agroecology. This can also be seen in Fig 5, which shows the rising number of publications about agroecology worldwide (Jeanneret *et al.*, 2021).

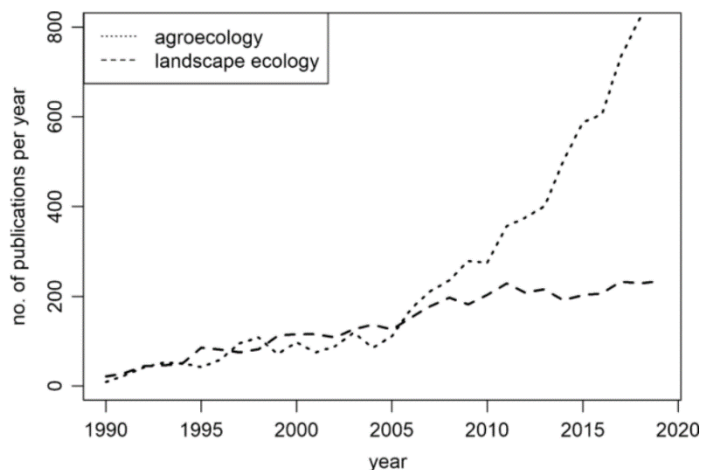


Figure 5 Scientific publications about agroecology (Jeanneret *et al.*, 2021).

This history shows that agricultural practices constantly change, depending on available knowledge and societal trends. For decades, a dominant source of intensification was present in the Netherlands, focusing on producing efficiently. However, an increasing amount of research is being conducted about the side effects of intensified agriculture for both humans and nature. Over the past few years, the agricultural trend has increasingly moved towards agroecology. This thesis will look further into this change in the agricultural narrative, focusing on discourse within the food forestry movement.

7.2.2 Discourse Around Agroecology and Industrial Agriculture

The main goal of Agroecology is to connect sustainability and agriculture. However, this goal is part of a more significant conflict: that of seeking sustainable development versus maximizing economic growth (McNeill, 2019). In the agricultural setting, this debate can also be seen. McNeill (2019) analyzes this contested discourse in an analysis of tension within the SDG's about agriculture. He states that in the agricultural debate around sustainability, two major approaches can be distinguished: industrial agriculture and Agroecology. Industrial agriculture tends to support large-scale farming to optimize and increase production. Agroecology argues that these practices harm the environment and are not sustainable in the long run (McNeill, 2019).

In the 1970s, the world population grew rapidly, causing people to fear that insufficient food was produced to feed everyone (Bernard & Lux, 2017). As a potential response, more food was produced. This protectionist approach, based on industrializing food systems, increased yields. Nevertheless, it also got criticized. One critique was that the poorer part of the world benefited less from this production increase than the wealthier part. Thus, increasing yields did not create food security for all people. Another critique came from the Food and Agriculture Organization of the United Nations (FAO) (2011). They stated that industrial farming practices were putting pressure on nature by, for example, reducing local biodiversity, depleting water sources, and degrading the soil. Globalized food

systems tend to favor large industrialized farming practices, making food travel around the globe before getting to consumers' houses. Later, the United Nations published the sustainable development goals to ensure sustainable growth in the future. Goal number two is: 'End hunger, achieve food security, improve nutrition, and promote sustainable agriculture.' However, this can be seen as a very conflicted goal. On the one hand, it stated that hunger has to end, and food security needs to be achieved. Something industrial agriculture is very capable of, especially by boosting the productivity of agricultural systems. On the other hand, nutrition needs to be improved, and agriculture needs to be more sustainable, which is more fit for agroecology. This is causing debates on which paths to follow in the future, often resulting in a power contest between actors (McNeill, 2019).

So far, scientific researchers and policymakers have failed to prioritize Agroecology. To understand this, it is important to note that powerful private- and public actors want to maintain the current food system (Constance *et al.*, 2018). The existing dominant discourse regarding food systems mediates how agricultural policies make room for agroecology (Kelinsky-Jones, Niewolny & Stephenson, 2023). Kelinsky-Jones *et al.* (2023, p 2) argue that the "agroecological food system is unlikely to be realized without a major shift in thinking among governmental, private, and educational organization leaders. To view agroecology as a legitimate possibility, our gaze must move toward different discourses that might enable that possibility." Discourses can change over time when actors advocate change. This can also happen within the agricultural sector. An increasing amount of publications about agroecology emerge, having the power to change discourses (Jeanneret *et al.*, 2021).

Agroecological practices often include ecological and community development practices. Ecological practices focus on the environmental aspect of agroecology, such as using less fertilizer and producing without chemicals. Community development practices focus on scientists, policymakers, and community residents, including farmers, coming together and co-producing agroecological solutions to present-day agriculture. This practice is rarely seen in industrial agriculture, dominated by only science (Kelinsky-Jones *et al.*, 2023).

Kelinsky-Jones *et al.* (2023) performed a critical discourse analysis (CDS) on nine texts from the United States Agency for International Development (USAID) regarding agroecology. They take Fairclough's (1992 and 2003) definition of critical discourse analysis here:

"Critical Discourse Analysis (CDA) is a theory and methodology that allows scholars to illustrate the power relationship among individual texts and larger sociological phenomena. The approach illustrates how individual texts, or 'discursive events', influence, reflect, reproduce, and challenge larger social phenomena in the social and material world."

They found out that the USAID mostly has a neo-liberal view of the world, stating that we need to move away from aid and social support. The USAID documents embraced and called upon market-based approaches and private-sector leadership as development drivers. They state that:

"This perspective limits livelihoods to a constricted view of economics, which can lead to blindness to other values and valuation strategies that might be employed to understand these basic systems-scale dynamics. In this way, the imaginary now dominant in USAID policy actively hinders consideration of agroecological possibilities."

In addition, they found that making people aware of this discourse encourages reflection, making room for alternative discourses like agroecology. A mobilizing discourse around food forestry in the Netherlands could help create this awareness.

7.3 THEORETICAL FRAMEWORKS

As discussed, discourses might be the key to changing the agricultural sector. Discourse is made through various actors, such as research and media organizations, policies, and religion. Discourse can change over time. It starts with a few people advocating change, which can then slowly become a new (leading) discourse if picked up by powerful actors (Dixon & Hapke, 2003).

The key theory this thesis will be based upon is from Cacho *et al.* (2018), a proposed framework that elaborates key drivers to scale agroecology. Through analysis of multiple cases where agroecological models demonstrated successful trajectories, eight key drivers to bringing agroecology to scale are identified; “(1) recognition of a crisis that motivates the search for alternatives, (2) social organization, (3) constructivist learning processes, (4) effective agroecological practices, (5) mobilizing discourses, (6) external allies, (7) favorable markets, and (8) favorable policies.”

This thesis will focus on the driver ‘mobilizing discourse’ since discourse can play a vital role in changing systems (Dixon & Hapke, 2003). The theory of collective action plays a role in the importance of mobilizing discourse to constitute change. This theory states that rational, self-seeking individuals would fail to produce collective goods (Mefina, 2013). By creating a shared problem and horizon of struggle, this problem can be overcome. Cacho *et al.* (2018) write: “Discourse is a key element in social mobilization processes when it allows the definition or framing of a common problem, a shared adversary, a horizon of struggle, a common identity, and common principles.” The presence of a mobilizing discourse can create a strong narrative of change.

Cacho *et al.* (2018) state that this mobilization of discourse is also vital to bring agroecology to scale. The authors write:

“Successful agroecology movements combine ‘agroecology as farming’ (farming practices that work) with ‘agroecology as framing’, a discourse that (among other things) motivates peasant and farmer families to undertake sometimes-difficult agroecological transformations. This discourse also needs to be framed in a way that is culturally relevant to society; this relevancy can differ from society to society.”

Since discourses can potentially change people's thinking, they can influence governance and policies. Janin *et al.* (2023) describe how governance is at the transformation of agricultural systems. Governance is described as a “mode of interaction among the public sector, private sector, civil society, and consumers to identify, implement, resource, and monitor solutions for achieving healthy, sustainable, resilient, just, and equitable food systems without leaving anyone behind” in this study. Janin *et al.* also stress the importance of norms, values, and beliefs (socio-anthropological underpinnings) of the actors within a food system; these are seen as the first drivers of change (seen as dark blue in Fig. 6). When these social-anthropological underpinnings do not change, a food system will also not change. Discourses constitute social order and thereby influence people's values, beliefs, and norms (Howarth, 2000). Consequently, discourse has the potential to change social-anthropological underpinnings and thereby change the agricultural system.

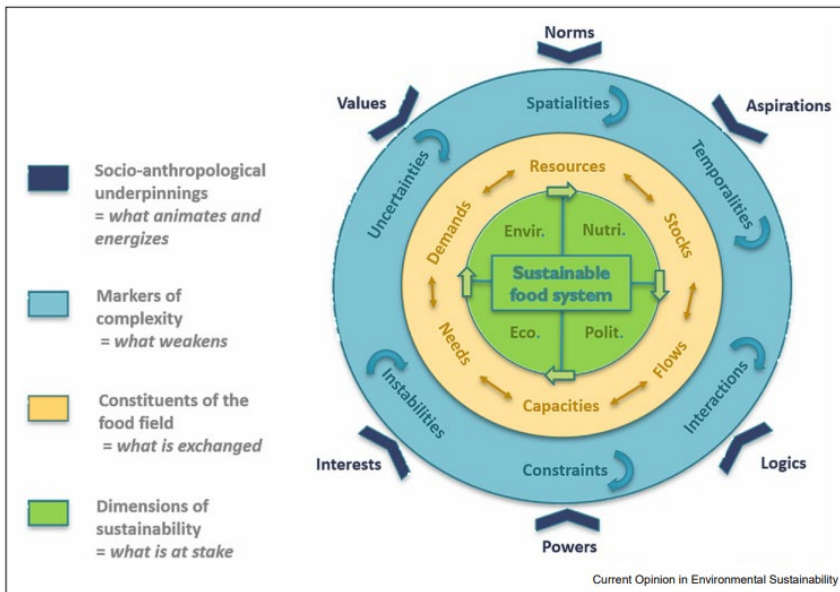


Figure 6 Governance challenges for sustainable food systems (Janin et al., 2018)

This thesis will look into the discourse surrounding food forests in the Netherlands and how this influences the scaling of food forests. The concept of discourse in its modern form was elaborated strongly by Foucault (1972), who defined it as a system of interacting statements that influence our understanding of the social world. He stated that discourse can reveal what is known and believed and is directly linked to knowledge and power. Hall (2004) stated that language, symbols, and ideas embedded within discourse contribute to meaning-making. It can help people share a common understanding, but it can also reflect relations of power. Fairclough (2003) also researched discourse and marked that discourse could control the possibilities and alternatives used in the world. Making it a powerful concept when researching societal change, like the scaling of food forests. In conclusion, discourses have the potential to constitute social order and control the alternatives used in the future. Having a mobilizing discourse within food forestry could motivate more people to take action and eventually change the leading discourse around agriculture in the Netherlands.

8 METHODOLOGY

8.1 RESEARCH METHODS

The research strategy of this thesis is qualitative in nature. I used desk research, policy analysis, and interviews to discover how discourses of agroecology shape the capacity for Dutch food forests to scale.

Qualitative research addresses questions about developing and understanding the meaning and experience of human lives and social worlds (Fossey *et al.*, 2002). I used qualitative research because it gives insight into the deeper discourse surrounding food forestry in the Netherlands without losing sight of the full story by breaking stories down to numbers, like quantitative research. First, I analyzed policy documents to determine the current discourse of agriculture and agroecology in the Netherlands from a governmental view. Then, I conducted semi-structured interviews to understand the food forestry sector's underlying discourse and discover if it mobilizes others. I also used the interviews to understand the problems of scaling food forestry and how these relate to discourse.

To analyze the selected policy documents, I used a form of discourse analysis to conduct a document analysis. Discourse analysis is the name given to various approaches to studying texts. There is not one 'discourse analysis'; there are many different styles of discourse analysis. What they have in common is that they reject the fact that language is a neutral way of describing the world. They stress the importance of discourse in constructing social life (Atkinson *et al.*, 2000).

Discourse analysis also describes phenomena outside individual experience (Taylor, 2013). Text can give insight into which knowledge the writer takes for granted and what underlying ideas in society might have triggered that. By analyzing Dutch agricultural documents, this taken-for-granted knowledge and underlying ideas, priorities, and values can be analyzed and give insight into their underlying view on agriculture and agroecology.

"Discourses are ways of displaying (through words, actions, values, and beliefs) membership in a particular social group or social network." (Taylor, 2013, p 17). By analyzing the way Dutch agricultural policies mention food forestry, underlying discourses can be found.

The key features of discourse Atkin *et al.* (2000) describe are:

1. A critical stance towards knowledge that is taken for granted and skepticism towards the fact that observations reflect the world directly as it is.
2. The way we understand the world is historically and culturally specific.
3. Knowledge is socially constructed. Our ways of understanding the world are shaped by social processes and not by the nature of the world itself.
4. Discourse analysis explores how socially produced knowledge influences action and practices.

In this thesis, discourse analysis of Dutch agricultural documents and policies focused primarily on the last two features of the discourse described Atkinson *et al.* (2000). The discourse analysis conducted for this thesis will analyze how these documents mention agroecology and food forests and how this may be shaped by certain understandings around agriculture. This will help me gain knowledge about the possibility of underlying mobilizing discourse and the possibility of scaling food forests in the Netherlands. This focuses on how socially produced knowledge can actually influence action.

Furthermore, interviews were held with actors involved in food forestry. These will give insight into how people who work with a food forest or are experts in the field think about food forestry and their scalability. The interviews will focus on what underlying discourse motivated people to start a food forest and what goals the food forests they are working with have. They will also try to give insight into what these specialists experience as hindering or nurturing food forests from scaling. This can give insight into a possible mobilizing discourse within the food forestry movement in the Netherlands.

The interviews conducted will be semi-structured. semi-structured interviews are a way of conducting research focused on the respondent's unique perspective. They permit interviews to be focused on certain topics while still giving the researcher the autonomy to explore ideas that emerge during the interview (Adeoye-Olatunde & Olenik, 2021). They provide in-depth information on the topic being researched. To ensure the interviews are done ethically, multiple aspects are considered:

- The interviews will be anonymously incorporated into the thesis.
- The date will be kept private and confidential.
- Respondents participate voluntarily.
- Respondents will always have the ability to opt out.
- Questions will be asked neutrally, without implying relations.

The following documents are analyzed, and interviews are conducted:

Some of the respondents' names were anonymized for ethical reasons. To ensure the readability of the result section, pseudonyms are used throughout the text. These do not reflect real names in any way. Respondents who specifically specified they wanted to be mentioned by name are Hanneke Spaans from Milieuvrienden Duiven, Chantal van Genderen and Chris Frencken from Voedselbos Nieuwe Erven, and Gerrit Fonk from EcoVrede; they are mentioned by their true name throughout the thesis. Other respondents are either mentioned in the acknowledgment section or remain completely anonymous.

Table 3 Documents and interview overview

Data collection method	Respondent/source (+ pseudonyms)	Type
Interview	Respondent 1: Gerrit Fonk	Food forester EcoVrede
Interview	Respondent 2: Hanneke Spaans	Food forester Milieuvrienden Duiven
Interview	Respondent 3: Jan	Food forester with a group accommodation
Interview	Respondent 4: Eva	Food forester
Interview	Respondents 5a and 5b: Chantal van Genderen and Chris Frencken	Food foresters Voedselbos Nieuwe Erven Brummen
Interview	Respondent 6: Mees	Food forest construction company
Interview	Respondent 7: Mia	Food forester and constructor
Interview	Respondent 8: Levi	Food forest construction company
Document analysis	Ontwikkeldocument Nationaal Programma Landelijk Gebied chapter 1 to 4	Policy document: development Dutch rural area
Document analysis	C-219 Green Deal Voedselbossen	Policy document: Food Forestry in the Netherlands
Document analysis	Het strategisch GLB-plan Nederland	Policy document: EU agreement common agricultural policy
Document analysis	Landbouw, natuur en voedsel: waardevol en verbonden. Nederland als koploper in de kringlooplandbouw	Policy document: Circular Agriculture

I analyzed the selected policy documents with ATLAS.ti. This is a program that allows you to code pieces of text. Coding allows data to be categorized to analyze the constructed meaning of a text. Coding is an inductive way of doing research, which creates a theory from the collected data instead of testing an already made-up theory against data (Williams & Moser, 2019). The text is coded in two steps. First, a codebook is created by open coding, assigning keywords to parts of the text to create broad domains within the text. The second step of the coding process is axial coding. Axial coding is focused on categorizing the themes that emerged during open coding. While axial coding, the constant comparison method is used. Williams & Moser (2019) describe this as “continually comparing data collected, emergent themes, and their coding to continually create, refine, and newly create categories in preparation for selective coding.” This coding process is not linear. During the coding process, a researcher can go back and forth between different levels of code to create a working theory (Williams & Moser, 2019).

The interviews were digitally transcribed as soon as possible to preserve as much information as possible. After transcribing, they were also analyzed using ATLAS.ti, using the same coding process as the one used for the policy documents.

In short, the following research is conducted:

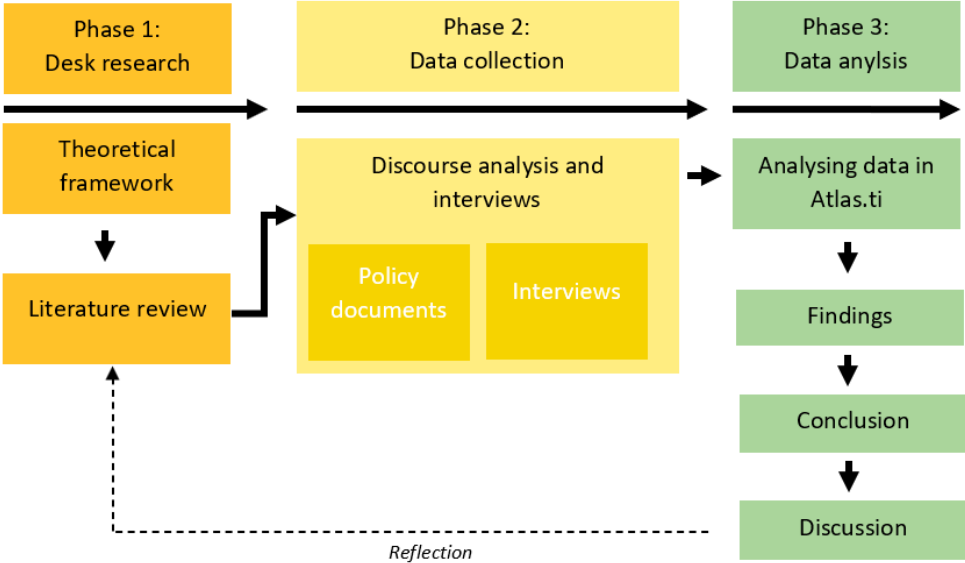


Figure 7 Clear overview of the steps taken during the research

This research plan brings along certain bottlenecks or limitations. This thesis will be written in a relatively short time period, limiting the amount of data that can be collected. Therefore, the research scope is kept small, as are the number of interviews held and policy documents analyzed. Furthermore, there could be an issue of the researcher’s positionality. When conducting research, I search for a certain relationship between factors. Especially when conducting qualitative research focused on narrative, there is a danger of filling in or leaving out aspects that do not fit the anticipated results. This can lead to data being misinterpreted and relations being found that are not actually present. Therefore, I will be highly critical of the relations shown in the collected data. Lastly, it can be difficult to find enough respondents. Therefore, interviews were planned at the beginning of the research process. This way, there is enough time to reach out to many people.

8.2 PHILOSOPHY AND ETHICS

This thesis uses discourse analysis, which is constructivist of nature. Constructivism focuses on the fact that an interplay between subject and object creates meaning; the subject constructs a reality of the object. This does not mean there is not one reality or one true object. It means that how the subject perceives or describes this object is not the same as the true nature of this object. This also means that the researcher and the research object are linked in an interplay between giving meaning and true meaning (Moon and Blackman, 2014). As a researcher, I will try my best to describe the discourse surrounding agroecology and how this relates to the scaling of food forests in the Netherlands. I want to try to interpret the data freely from personal influences and interpretations, but I also acknowledge that these will always be a part of my research.

Not many ethical dilemmas occur when conducting the policy analysis in this thesis since this part mainly consists of analyzing documents. Conducting interviews, however, does bring along some ethical dilemmas. Nii and Ogbewe (2023) describe five key ethical considerations for conducting interviews, as stated below.

1. Anonymity.
Anonymity is important when conducting interviews. This means that the data collected during this research will be devoid of personal details like names, email addresses, or addresses. Ensuring anonymity creates a safe space for respondents to share all the information they wish to share.
2. Privacy and confidentiality.
All the data collected during this research will remain private and confidential. Only my bachelor's thesis supervisor will have access to the raw data, such as interview transcripts.
3. Voluntary participation.
Participants are completely voluntarily involved in this thesis. This also means that every respondent understands the research area and goal before engaging in data collection.
4. The option to opt out.
During the interviews, there will be an option to opt-out at any time before finishing the interview. The already collected data will be discarded.
5. Non-maleficence and beneficence.
Non-maleficence and beneficence mean that the researcher avoids harming the respondents. This, for example, means that I will not overburden the respondent with questions and will try not to make the respondents uncomfortable or ask about overly sensitive areas.

These five principles will also be used during the research for this thesis. Furthermore, the interview questions will all be formed neutrally, without implying relationships between the concepts asked for. This ensures that relations that emerge in the collected data are not only there because I implied these relations.

8.3 VALIDITY AND RELIABILITY

Generalization, or external validity, is mostly done when conducting quantitative studies. However, it is also a part of this qualitative research. Qualitative research can be suited to reveal higher-level concepts and theories (Glaser, 2002). This aligns with the goal of finding out how a mobilizing discourse around food forestry could influence its scalability in the Netherlands (Polit & Beck, 2010). To ensure external validity, the following concepts are used throughout the research: maximum variation, context similarity, and recognition of patterns (Larsson, 2009).

First of all, to get a better idea of the food forestry sector as a whole, a wide variation among respondents was established by purposefully selecting different kinds of people involved in food forestry. Purposeful sampling helps the research be replicable (Thyer, 2001). The respondents selected for this research vary in age and how they are involved in food forestry. There is also a variation within the food forests these respondents work in (age, goal, size, and location). Secondly, context similarity is tried to be achieved. By interviewing different people involved in food forestry, a broad idea of the discourse within food forestry is created. Overlap within these cases was found, making the probability of overlap between this study and a broader context more possible (Larsson, 2009). Thirdly, pattern recognition is used within this study. This research is based on a guiding theory about scaling agroecology. While interviewing respondents, certain patterns emerged from the data. These patterns could later also be identified within other interviews. Making the first recognized pattern more likely to be generalized (Larsson, 2009).

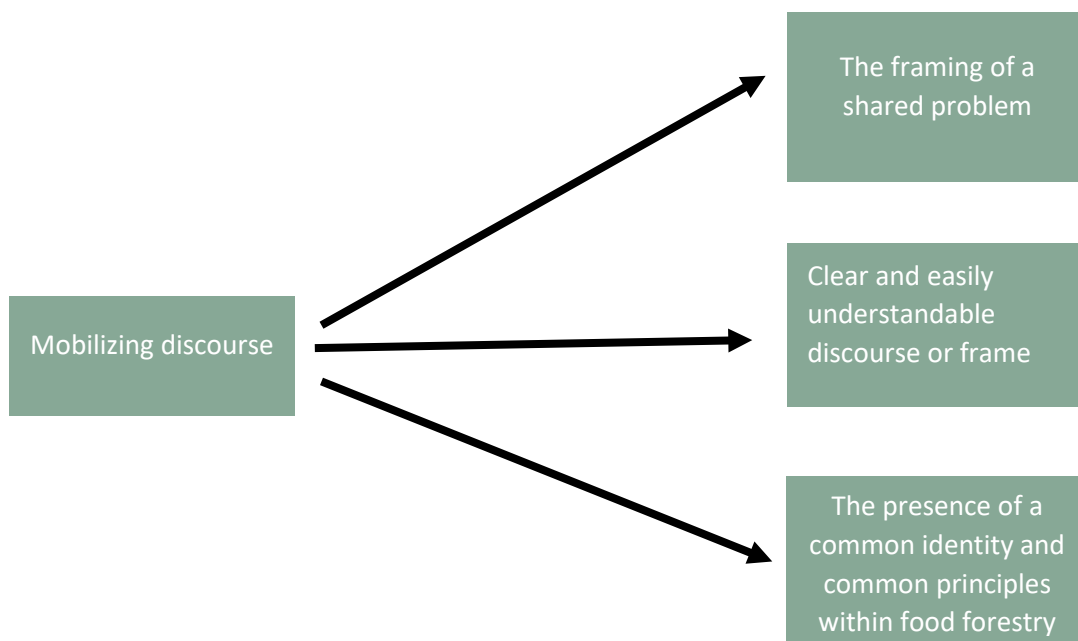
The internal validity of this research is also ensured in multiple ways. I asked respondents to elaborate on their stories or follow up on certain questions to ensure they were properly understood. To be sure I understood the respondents correctly, I often summarized what they told me (Thyer, 2001). The codebook of this research is constructed after conducting the interviews. This ensures that the codebook represents the data as well as possible (Thyer, 2001). As a researcher, I try not to be biased while conducting interviews. I asked the questions relevant to my thesis without implying relationships or searching for relationships that did not emerge from the interviews (Thyer, 2001).

The research conducted for this thesis is analyzed in an iterative process of analyzing the data to break it down into themes relevant to this research. The concept of a mobilizing discourse is operationalized to make it clearer. This also makes it easier to reproduce this research. However, this research is partly based on individual stories and opinions. These cannot exactly be reproduced; this is also not the goal of qualitative research since it also wants to explain a contextualized understanding of the research question. These two factors do, however, contribute to the reliability of the research, referring to how they increase the chance of this research getting the same results on different occasions (Golafshani, 2015). Another way to ensure reliability is the use of computer software. I used Atlas.TI to code all the interviews and then group them together in themes. This gives a clear overview of all the collected data. It is important to note that this does not analyze the data for you; it still requires good analysis by the researcher (Thyer, 2001).

8.4 OPERATIONALIZATION

In this thesis, a mobilizing discourse surrounding food forests is operationalized using multiple, more measurable variables. These variables are: The presence of a shared problem, a clear and understandable frame or discourse, and the presence of a common identity and common principles within food forestry. This is based on the definition of a mobilizing discourse from Cacho *et al.* (2018):

“The theory of collective action holds that discourse is a key element in social mobilization processes when it allows the definition or framing of a common problem, a shared adversary, a horizon of struggle, a common identity, and common principles. The ability to establish a clear, easily understandable discourse or frame that helps promote social action in a way that is understood and reproduced by the collective is important for the scaling of agroecology.”



The definition of a food forest used in this thesis will not be the official Dutch definition from the Green Deal Voedselbossen. During the research process, not all interviewed respondents had a food forest that completely complied with this definition. Some food forests were too small to be officially food forests or missed a full-grown canopy layer. Therefore, in this thesis, food forests will be seen as human-designed polyculture systems based on a natural forest with a high diversity of plants, part of which can be used for human food. A food forest is low maintenance, resilient to climate change, and highly efficient when fully grown.

9 RESEARCH RESULTS

This chapter of the thesis will describe the findings of policy analysis and interviews. These findings will be based on eight interviews conducted with food foresters and the analysis of four policy documents regarding agriculture in the Netherlands. These findings will contribute to answering the main research question: “How does mobilizing discourse around agroecology and food forests relate to the scaling of food forests in the Netherlands?”

First, findings regarding the policy analysis will be discussed; these will be about the current discourse on agriculture, agroecology, and food forests in the Netherlands. Then, findings from the interviews with food foresters will be discussed. This will be about what discourse underlies the emergence of food forests in the Netherlands and whether a mobilizing discourse can be detected. The last section will discuss the discourse needed to scale food forests in the Netherlands. This part will also be based on the views of the interviewed food foresters.

All quotes used in this chapter were originally in Dutch. These quotes were translated into English as closely as possible, trying not to lose their original meaning.

9.1 CURRENT GOVERNMENTAL VIEW ON AGRICULTURE IN THE NETHERLANDS

Governmental policies published in recent years tend to have a discourse focusing on making agriculture more sustainable. The policy documents analyzed for this thesis were all focused on creating an agricultural transition, with themes around circular agriculture, nature, and climate change emerging from the text. These documents also tend to focus on achieving international or European-set goals regarding climate action and agriculture while also supporting the agricultural sector. These international rules and obligations form national agricultural goals by shaping policies. They are often driven by trying to reduce climate change over the next decades.

The policy documents mention that the goal of achieving a more sustainable way of doing agriculture in the Netherlands has to be achieved without losing the prominent role of agriculture in the Dutch economy. Farmers need to be supported when transitioning to different forms of agriculture to ensure the agricultural sector will remain a prominent sector in the Dutch economy. Science and innovation play an important role in this transition. Making agriculture more sustainable is not only done by interweaving nature and agriculture but also by innovating the agricultural sector. This ensures that the Netherlands will keep its prominent role in agricultural innovation worldwide. This focus creates a discourse of economics and science. This discourse is more in line with the industrial view of agriculture, focusing on producing efficiently and creating large revenue streams.

For these plans to work, cooperation is needed. Actors from different fields, like farmers, governmental actors, and private investors, need to work closely together for this transition to work. Another challenge involving the agricultural area in the Netherlands is the ever-rising pressure on space. An increasing amount of municipalities are using agricultural land to build houses. In future plans for agricultural land, a mix of living, working, producing food, and recreation needs to be created. Agricultural lands need to be attractive places to produce food, as well as places to live in and use for recreation. In this agricultural area, water and nature will be the veins of the area; in most Dutch policy documents, this is called green-blue veining. Water and nature play a prominent role in rearranging the area (Fig 8). Edges of agricultural land will be places for nature and water to return. Bringing water back into agricultural areas will also contribute to water management in the Netherlands.

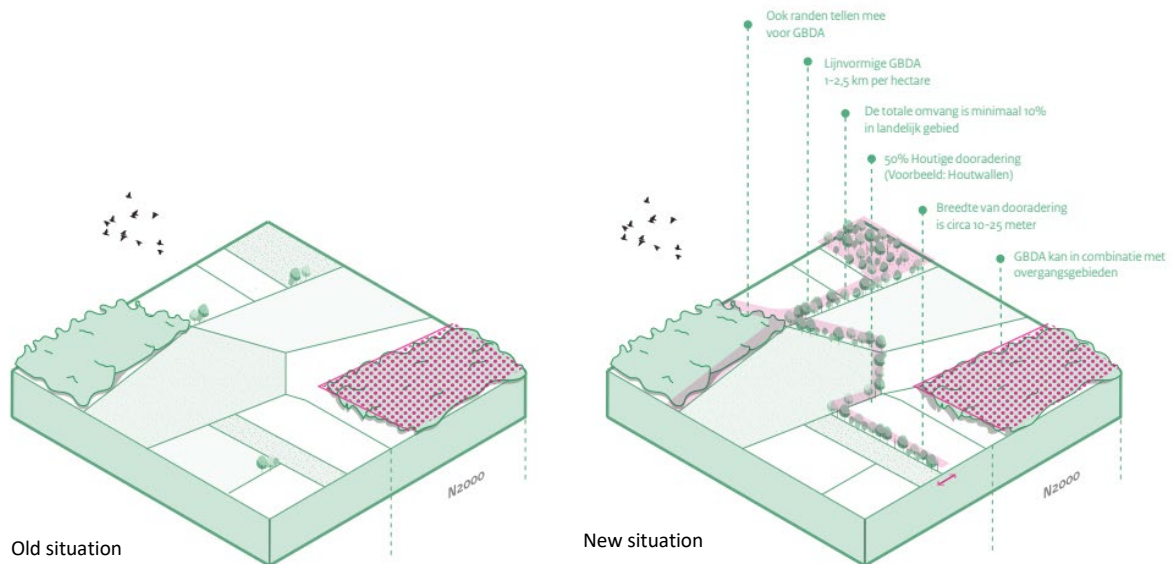


Figure 8 Visual representation of green-blue veining ((Ministerie van Landbouw, Natuur en Voedselkwaliteit, 2022)

The following sections will explain other prominent themes emerging from Dutch agricultural policies.

Circular agriculture

One of the themes emerging from Dutch policies about the future of agriculture is the need for circular agriculture. Circular agriculture is a way of doing agriculture where most input and output cycles are closed. This means that resources that get into the system get recycled over time without being discarded as waste. The policies often focus on making these resource cycles as regional as possible: “Locally what is possible, regional or international if needed.” Flows from one sector can also be used as resources for another sector, like using food waste to feed animals. By giving more attention to soil health and biodiversity, circles within agriculture can also be closed. This need for circular agriculture comes from the conclusion that current-day agriculture is no longer a viable long-term option. The pressure on the environment created by this current way of farming is too much. That comes at the expense of the environment, water quality, soil quality, and the quality of the Dutch landscape. Circular agriculture creates a narrative away from producing more for less and to using resource cycles more efficiently, with only minimal losses of input.

Circular agriculture can also be achieved in a nature-inclusive way, like using agroforestry or biological agriculture. By caring for biodiversity and soil health, circles within agriculture become more closed. However, using nature-inclusive ways is only a small part of achieving circular agriculture. This transition to circularity also needs to be made without farmers losing their prominent economic role, both in the Netherlands and worldwide. The Dutch agricultural sector must also keep its international role in innovation and science. Overall, creating a discourse focused on innovation as well as nature.

Other forms of sustainable agriculture

Circular agriculture is not the only theme emerging from policy around agriculture in the Netherlands. There is also an overall trend towards a discourse of making agriculture more sustainable. All policy documents describe the need for a change in agriculture. These changes vary from using less fertilizer and pesticides to biological production or using forms of agroecology.

Whereas modern-day agriculture often uses many pesticides and fertilizers for monocultures to grow, the policies try to explore new ways of producing. Soil health is another theme often mentioned. These documents stress the importance of agriculture in helping to create healthy soil. This can be done using less fertilizer and pesticides, but agroecology is also mentioned several times. By using permanent crops instead of crops that only grow one year, soil health can be increased. Food forestry has also been mentioned multiple times as a good, sustainable way of doing agriculture that supports soil health. However, the policy documents lacked a widely promoted narrative of agroecology initiatives.

Nature

The policy documents about the future of agriculture also mention that agriculture and nature need to be more harmonious. Creating a discourse where agriculture and nature are in harmony. Agriculture should work with nature instead of against it. There is also a focus on restoring nature that has been lost in the past couple of decades. In some policy documents, agroforestry types are mentioned to bring agriculture and nature back in harmony, but these initiatives are not supported on a large scale.

One item mentioned most throughout the policies is biodiversity. By using many agricultural lands for grazing fields and monocultures, biodiversity has dropped significantly in the Netherlands. Instead of lowering biodiversity, agriculture should start using biodiversity to, for example, create healthy soil, help pollinate, fight pests, and create a safe space for animals. How to achieve this biodiversity varies per policy document. 'Ontwikkeldocument Nationaal Programma Landelijk Gebied' focuses on achieving biodiversity by restoring nature and changing agriculture. What this change exactly is remains unclear. The policy document 'Landbouw, natuur en voedsel: waardevol en verbonden. Nederland als koploper in de kringlooplandbouw' aims at achieving better biodiversity by using circular agriculture. By closing cycles within agriculture, less damaging substances, like fertilizer, will end up in nature. This way, nature can slowly restore and become more biodiverse. Farmers should also start working together with nature. 'Het Strategisch GLB-plan Nederland' focuses on achieving biodiversity by protecting biodiverse nature but does not really link nature with agriculture. 'The Green Deal Voedselbossen' aims to create biodiversity by using more food forestry. Food forestry is proven to bring biodiversity back by using many different plants that attract all sorts of animals, but it is not mentioned as a viable option in the documents.

Water management and quality are also mentioned throughout the policy documents. Protecting soil health allows the soil to retain water better, which helps during severe rain and drought. Water quality should also be protected by using fewer pesticides and fertilizers. These water quality values are also set in European guidelines, creating a narrative of just following the rules.

Climate change

Climate change is an important driver of change in the policy documents. However, these documents focus more on international goals and obligations than on the intrinsic value of preventing climate change, creating a discourse focused on rules and preventing fines.

Lowering emissions to battle climate change is mentioned throughout the documents. These goals are also set in international and European agreements like the climate agreement (klimaatakkoord) and the Global Methane Pledge. Using less fertilizer lowers emissions from both the use and production. Emissions from livestock farming also need to be lower. By using circular agriculture, fewer substances escape the circle. "After all, we must prevent us from depleting soil, water, and raw materials and from raising the earth's temperature unacceptably." Like stated in Ontwikkeldocument Nationaal Programma Landelijk Gebied. Another important focus of these documents is lowering nitrogen emissions. Too much nitrogen can harm nature and soil, causing certain plants to die. Nitrogen emissions harm the environment, especially around Natura-2000 areas. N-2000 areas are areas with nature that are selected by European member states through the Birds Directive and under the Habitats Directive. Nitrogen is, among other actors, emitted by agricultural practices. European set obligations force the Netherlands to cut down on nitrogen emissions.

Food Forests

Food forests are a concept mentioned a few times throughout the policy documents. "By combining livestock farming and agriculture with woody plants (trees and shrubs), revenue models can be strengthened and broadened and, at the same time, contribute to a solution for the various challenges in an area." In short, using forms of food forestry is seen as a way of strengthening current agriculture while also providing solutions for current problems the agricultural sector faces. They bring the economy and ecology together and can be seen as a viable option for making agriculture more sustainable.

Food forests are not only seen as ways of producing food; they are multi-functional. They combine agriculture, economy, social values, recreation, and education. Multiple advantages of food forests were mentioned: they provide high-quality products year-round, with decreasing cost; they provide a biodiverse habitat for multiple species of plants and animals; they mitigate climate change by storing CO₂; they help create climate adaptation by increasing the water capacity of the soil and direct and indirect buffering of climate extreme, they create a healthy soil; provide opportunities for education about food and awareness around food; they can provide recreation; and lastly, they can be managed within societies.

However, not every forest setting that is used to produce food officially counts as a food forest. The official definition of the Green Deal Food Forestry is:

- "A human-designed productive ecosystem based on a natural forest, with a high diversity of perennial and/or woody species, parts of which (fruits, seeds, leaves, stems, etc.) serve as food for humans."
- "Presence of a canopy layer of higher trees."
- "Presence of at least 3 of the other niches or vegetation layers. Of respectively: lower trees, shrubs, herbs, ground covers, underground crops, and climbing plants."
- "Presence of rich forest floor life."
- "A robust size, in other words: an area of at least 0.5 hectares in an ecologically rich area environment; in a severely impoverished environment, a minimum area of up to 20 hectares is required."

In the sections about food forestry, a discourse of bringing ecology and agriculture together forms, but the definition of a food forest remains limited and leaves out a lot of food forest initiatives in the Netherlands.

Realistic division of agricultural sectors

These policies all focus on making agriculture more sustainable. However, this agricultural change cannot yet be seen in the actual production values of Dutch agriculture. When looking at the emissions of the Dutch agricultural sector from 2020 compared to 1995, most emissions remained the same or even became higher. Only Ammoniac emissions lowered a bit (Fig 9). So, there has not yet been a real change in emissions within the agricultural sector.

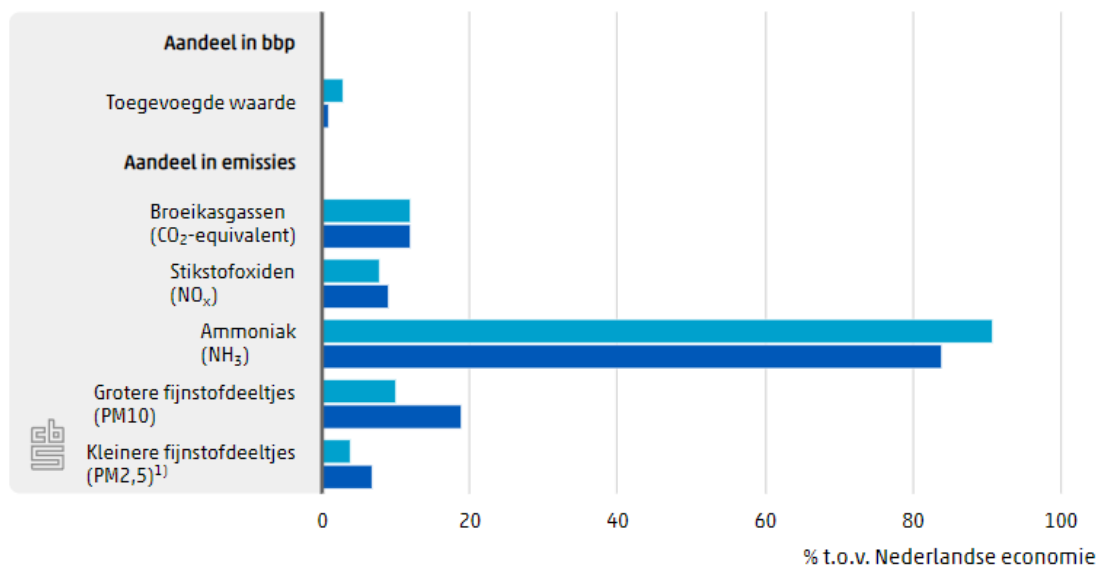


Figure 9 Emissions by agricultural sector (Brand, 2023)

Overall, the underlying discourse in these policy documents about the future of agriculture in the Netherlands tends to be based on a discourse of making agriculture more sustainable. It is clear there is a shared problem underlying these choices: the way agriculture is done now is not viable in the future. However, some of the underlying goals to create more sustainable agriculture are not intrinsic and come from internationally set rules to make the world more sustainable. About how this shared problem with agriculture should be solved is not one agreement. Circular agriculture plays an important role in the majority of the analyzed documents. Nevertheless, other forms of sustainable agriculture, like agroforestry and food forestry, are also mentioned. The red line in the documents is that nature needs to be more in harmony with agriculture. However, these goals to make agriculture more sustainable must not interfere with the prominent role of agriculture in the Dutch and international economy, and farmers need to be supported while making this transition. Creating a narrative of innovation. There is a clear and understandable frame that promotes action here: agriculture needs to be more sustainable and nature-inclusive without the Netherlands losing its prominent role in the agricultural sector worldwide. However, how this should be realized remains partly unclear. So, there seems to be a discourse towards making agriculture more sustainable, but there are varying ways to achieve this mentioned.

9.2 UNDERLYING DISCOURSE FOOD FORESTS IN THE NETHERLANDS

The conducted interviews give insight into why people are involved in food forests, how their food forests are constructed, the hindrances they encounter, and what support they get. Some of the discourse emerging from these interviews is shared among most respondents, but some are not.

9.2.1 The Underlying Discourse

Reasons to start

One discourse detected in the food forest sector is the will to create awareness around sustainable food production and how food forestry can help with this. Food foresters mention that they think it is important to educate people about food and where food comes from. Fonk states: “And in addition, we want to create awareness of the soil and awareness that food comes from the soil. So, we try to incorporate that into our entire policy. So that is the education side of the food forest, the information side.” Eva says: “And we focus not so much on the idea that other people should also create a food forest themselves, but more on conveying the message that you can restore the soil and how this soil restoration works. And also what that means for the animals, bees, and plants.” Only Levi did not have the specific goal of creating awareness since he constructs food forests for other people and is not really involved in socially creating awareness.

Another discourse that returned was a discourse of change in food production. Food foresters mentioned the problems that come along with present-day agriculture and mentioned they would want to see a change in this system. Fonk sees the situation of our society as: “having a noose around its neck.” Levi states: “I think if you open your eyes a little, it will be clear that things must be different. I don’t think we should solve all that with the food forest. However, it is a very good and very attractive methodology.” Not all interviews with food foresters share this same view, but the notion of changing how we produce food was mentioned in all interviews. Respondents often wanted to create a better future and contribute to solving society’s problems.

Furthermore, all respondents mentioned ‘being outside and in nature’ as a reason to work within food forestry. Creating a discourse of being outdoors. Mees mentioned: “I think many people would benefit from being in nature again occasionally. And to be busy with their hands.” Participants mention liking to work outside in contrast to most everyday jobs being inside and behind computers. Frencken also mentioned that getting to know new people within his neighborhood was an important reason for him to start volunteering in the food forest. However, this longing to get to know people was not something returning in all interviews.

In addition, two respondents also mentioned that having a food forest contributes to getting attention or attracting guests. Jan states: “Well, for us, it’s really just making sure that we have something unique that allows us to get customers here.” Mees also mentions the following about a food forest he helped construct in Nijmegen: “And what also plays a role is that the whole initiative of having a restaurant, healthcare, a physiotherapist, and everything under one roof is quite new. They also want attention and their initiative to be highlighted, which I completely agree with because things are going well there. And it really helps if you choose something new.” This creates a narrative of having a food forest for marketing reasons. However, the first differences emerge in discourses within the food forestry sector here. Jan and Mees create a discourse of marketing, but this discourse is not shared among other respondents.

Lastly, it is good to mention that three of the respondents interviewed have a food forest constructing business (Respondents 6, 7, and 8). They help people or organizations create their own food forest. These people are involved in food forestry for multiple reasons, but also because they see it as a business model. Levi and Mees especially believed in the possibility of economically viable food forests. Levi states: “Once it is completely installed, the input needed to keep the system running is zero. And that is super interesting from a business perspective.” He stresses the benefit of the low input needed for a food forest to grow food when it is fully grown. Mees mentions: “I also think that more and more people are starting to realize that they can also earn a living from it.” These respondents create a strong business discourse that is not shared within the whole food forest sector. Fonk is against business models surrounding food forests and states: “Food forests should, in our opinion, not be, let me say it carefully, not about money. You have to be very careful with the revenue model for food forests.” He thinks our dependence on money should decrease and that we should change how our economy works to produce more sustainability in the future. Eva mentions: “You are improving your bottom line. You’re doing the insect world a favor. You are serving the rabbits, the hares, and the other wildlife. So I see many advantages. However, if you have to base an income model on it, then I don’t think you’ll get there.”

The majority of respondents state that it is difficult to make a business model around food forestry. Nevertheless, they also mention that a milder version of food forestry could be more interesting in our current economic system. Participants often mention a watered-down version of food forestry, which is a food forest constructed in rows of the same species of plants. Jan states: “But if you actually want to do it more professionally, then you will have to have a whole row of blueberries, perhaps 100 or 200 meters long, so that you can easily harvest those blueberries.” This way of constructing a food forest is more agroforestry-like, with permanent crops, but less constructed like an actual forest. Changing the way food forests are constructed would also mean a change in discourse within the sector.

Goals of food forests

Throughout the interviews, multiple discourses around the goals of food forests have been mentioned. One of the discourses emerging most prominently is raising awareness about food and where food comes from. This can be seen as a reason for people to start being involved in food forestry and as a trait of the forest itself. For example, Van Genderen mentions that the municipality she works with chooses to create a food forest: “Because you can actually make it very tangible that food can come close to you. And this was really the intention of the municipality to make people a little more aware of the fact that we have biodiversity problems. That we have a CO2 problem and need climate adaptation. And that we can also get food nearby.” Van Genderen also states:

“ Our food forest helps to create awareness about what you can actually do with the produce from food forestry. Because people know those apples and pears. And they can also add some rosemary. However, of course, there are so many plants that we don’t know about or that we haven’t included in our menu yet. Especially the perennial plants. So you really have to open up an entire market there or create awareness about it. And that is also a challenge for this field of food forests.”

So, a food forest can help create an environment where people can learn about food and how food is produced. Although this goal was not mentioned by every respondent, food forests can be a good way to create awareness about food.

Another important discourse emerging from the interviews is the goal of restoring biodiversity. All but one respondent stated specifically that food forests can contribute to biodiversity recovery in the Netherlands. Fonk states: “The food forest also becomes a species refuge. And a place that hopefully makes a small contribution to biodiversity development.” Often, respondents mentioned that their food forest was created to feed people, but also specifically to feed animals and provide a safe space for these animals. Some food forests’ main goals are even to produce food for animals or to create a place where insects can thrive, creating a very strong biodiversity narrative. Eva mentions: “Our actual goal is for you to become a hub for insects and other critters. In an environment with many bare fields and grass fields.” Some food foresters also tried to create a long blossoming season so that insects have food for a longer period of time.

Education is also a vital discourse in the food forest community. Almost all respondents mentioned education as a goal of the food forest. Spaans states:

“A very important goal of ours is education. Stimulate awareness. We have created a place outside for learning. So we have schools visiting here and every month we do a walk. Every last Thursday evening of the month, everyone can come to the food forest. At half past seven, we gather here, and we go for a walk for an hour or an hour and a half. We have a group of volunteers. We have regular courses for the volunteers. In which we delve into all kinds of facets related to the food forest. So, we have had courses on soil health and birds, and we have a course about permaculture planned.”

Food forests researched for this thesis often invited schools or other people to learn about food forestry and sustainable food production. Some food foresters also gave courses or lectures about food forestry. Education was often specifically for kids to teach them more about food. However, there was also a strong education aspect present within the sector, with food foresters following various courses to learn new things.

Another discourse that emerges from most interviews is the discourse of food forests restoring soil health and soil life. Food forests can restore the soil of locations with non-optimal soil health, for example, due to prior agricultural practices. Jan uses certain types of plants to increase soil health. He explains: “Both lime trees and bird cherry are soil improvers. And together with our other plants, they must slowly improve the soil.” Mia also states about her food forest: “It’s simply alive. You will find many worms if you put a shovel in the ground here.” Most respondents also mentioned that a big advantage of restoring soil health is that proper soil helps with water management and supply. A healthy soil retains water, creating a buffer in times of heavy rainfall or long periods of drought.

For some food foresters, a discourse of local food security was an important goal. Mia is constructing a large food forest in Almere. She stated that the municipality of Almere aims to produce more food within the region: “The municipality of Almere also plans to get an x percentage of their food from their own region.” Fonk also warns that Arnhem and most Dutch cities cannot provide food for their citizens. Food forests could help provide local food security, especially in times of crisis.

The last discourse emerging from the food foresters is one of community building. Volunteers often maintain food forests and can form a close community. Community building was a returning aspect, especially in the interview with respondents Van Genderen and Frencken. Frencken mentions, “In a food forest project, that community building aspect is very prominent.”

A few respondents also mentioned other goals for food forests, such as having a sustainable way to make money, harvesting all year round, and creating a self-sustaining system. But these were not mentioned enough to call a discourse.

Elements of the forest itself

Not all food forests the respondents worked with had the same elements, but the main focus of all food forests was creating an ecosystem with trees, shrubs, and other perennial crops. This creates a certain discourse focused on trees and perennial plants being the focus of food forestry. All food forests contained nut trees, fruit trees, berries, and other edible plants. Most foresters also included some non-edible trees and plants to create shade, fight pests, or help restore soil health. Sometimes, these non-edible trees were already present in the location where the food forest was created. No food forests included invasive exotic species of plants since the Dutch government does not allow that. Fonk also mentions that it was sometimes hard to explain to certain Dutch nature organizations which species count as exotics and which do not. Species like apple trees are common in the Netherlands but can be seen as exotic since their origin is not Dutch. He states about this problem:

“This actually causes enormous resistance from nature organizations, and in many cases, this still occurs when shouting the term food forest. Like, ah yes, that is at the expense of our native species, that is bad for us, then we get metastases in our nature reserves, we should especially not have them as neighbors and things like that.”

Most respondents mentioned that letting nature take its own course in a food forest is important. Creating a discourse where it is motivated to let nature take action, and people are discouraged from interfering. Sometimes, by letting nature decide the course, plants occur that the respondents did not plan for. However, most of the respondents acknowledged the importance of these species. Eva mentions: “Surprises keep popping up. And we allow that.” Sometimes, unwanted species like thistles and blackberries also occur, taking over parts of the food forest. In some cases, these unwanted species were removed (partly). Respondents also mentioned that nature decides when food produced in food forests is ready to be harvested. Levi describes the food forest system as follows: “The system as nature intended. Simply put, trees will grow wherever we humans do not interfere.” The goal of a food forest is, in principle, to create a system that sustains itself. Most respondents tried to create a natural succession in their food forest. This means starting small and then slowly creating a bigger forest-like setting. However, this did not always work and came with some problems because this process can take a long time. Van Genderen describes that the food forest in her municipality had to be constructed in one take, which came with several problems:

“So our food forest is basically designed the way everything is usually being designed for municipalities. Namely, think everything through at an early stage and then start to create that idea. While with progressive insight. I now also teach food forest courses. We actually always advise against doing it this way. Because you want to cooperate with nature. Thus, you will have to follow the natural succession. If you just put certain trees in the grass, you are asking for many problems, or at least a lot of species and time loss. And we have had that here, too. It was not too bad, but there were several very beautiful trees that actually belonged in the middle succession, which we have lost.”

Overall, a discourse of letting nature take the lead was also applied to maintaining the food forests. Respondents tried to maintain the food forest as little as possible, but some ways of maintaining the food forest varied among respondents. Some did not water at all, while others did to help plants that had a hard time. Overall, only pathways were, in some cases, mowed; the rest of the forests were left only and allowed to grow as nature wanted without weeding. Pesticides and fertilizers were not used in the forests. Natural ways of increasing soil health were used. Fonk tells about his food forest: “Mainly because of the heavy clay soil we are situated on, with a very small fraction of sand, we have

now worked horse manure, woody material, tree stumps, vegetable and fruit compost, coffee grounds in enormous quantities into the soil. To increase soil health.”

The size of the food forests respondents worked with varied from three hundred square meters to thirty hectares, so not all of them count as official food forests according to the Dutch Green Deal Voedselbossen, which requires a food forest to be at least five hectares to be an official food forest. The respondents seem to create a different definition of food forestry that includes more initiatives; even respondents who worked with a food forest that does not meet the official criteria still call their forest a food forest. Trying to change the narrative of the Green Deal Voedselbossen and create a discourse where more initiatives are seen as food forests. Mees explains why he thinks these requirements are unnecessary:

“I think that if a lot of people do something small that is good, you create something great. If you have a hundred people who start a food forest in their garden of, let’s say, 20 square meters, then you can turn it into a kind of network so that you really make an impact. So that’s what I always try to say to people. You do not have to plant a hectare immediately; you can start small”.

There seems to be no clear discourse on how to arrange food forests. The food forests respondents worked with were sometimes romantically arranged, which means all different kinds of plant species grew without order. However, some were structured in rows of certain types of plants. Mia has a more structured food forest in her garden. She described her food forest as follows:

“In my case, I have mainly made a number of those rows where I start with an olive willow, and then an apple, a nashi, or a moor bee, or a hybrid plum, a walnut, or a chestnut. And behind that, either hazelnuts, elderberries, or gingerbread nuts. So yes, that’s a total of twenty, 25 different species in such a forest.”

The owners of the food forests differed per location. Some food forests were privately owned, some were owned by municipalities, and some by foundations. This did not perse make the goals of the food forests different. In almost all situations, the forests were maintained by volunteers. Jan describes:

“Actually, our approach was to do as little as possible. We had to provide water during the first few years, so paid workers did that. However, we also try to make a bit of a connection with our guests. We are a group recreation company. A school comes here a few times a year with a few classes. Some people from the area help regularly, and because we are a foundation, we also work with volunteers. We also occasionally use those volunteers to work in the food forest. And a group of volunteers from Landschap Overijssel helped with the final planting of 400 trees.”

Food production

There seems to be no clear discourse on large-scale food production within the food forestry sector. Most respondents interviewed worked in a food forest that was not specifically created for food production, specifically not large-scale food production. Spaans mentions that her food forest produces food on a small scale. She explains what they do with the harvest: “We also regularly make all kinds of products that we sell together with the volunteers.” She also says that these products are sold at events to create awareness about food forests and what you can do with the products they supply. Fonk states that the food forest he works with intends to produce food, but especially for animals. Jan states that the food forest he works in is still too small to produce food, so the small

amount it produces is for the person picking it. Eva also says her food forest is still too young to produce food. However, when it does, she says: “But by the time we start having harvest, it’s primarily for the volunteers.” The food forest Van Genderen and Frencken work in is created on municipality grounds. Frencken states: “Everyone can pick here freely.” So, the produce is directly for the neighborhood but on a small scale. Mees describes that his company is not really focused on creating food forests for large-scale produce but more on individuals wanting to create a smaller food forest. However, he mentions that one of his projects intends to sell their produce to a restaurant. Mia has her own food forest at home to (in the future) produce natural-grown food. She is also helping to create a food forest in Almere, which, in time, has to produce food for the surrounding neighborhoods. She explains the concept as follows:

“The plan is to develop six hectares of production forest. The six hectares serve as a basic income for a cooperative. And then the remaining 24 hectares that are planted, we want to see if we can have regular customers. They then contribute to the cooperation and also take care of the management of these 24 hectares.”

Only Levi creates food forests for actual production. He constructed food forests for several farmers who intended to sell their produce.

(Governmental) Support

Respondents indicated that there are certain subsidies to apply for as a food forest. Especially the municipality-owned food forests got a lot of (financial) support. Spaans states that the food forest she works with does not have financial problems because the municipality owns the forest and pays for the maintenance and new plants. Fonk mentions that the food forest he is working with was created out of prize money from a competition about who had the best idea to redesign a certain area in Arnhem. He explains that creating a food forest costs a lot of money and that it is hard to do so when the forest needs to make a financial return. The food forest Van Genderen and Frencken are working with is owned and created by the municipality. While they do not have a yearly budget, Van Genderen states: “We have some very nice agreements. When a job becomes too big for the volunteers. That we can return to the municipality.” Eva mentioned she did not get a subsidy to create her food forest, but she did receive some plant material and shrubs from the province. Mees and Levi mention that their customers often receive subsidies from either the municipality or province when initiating a food forest. The food forest Mia constructed in Almere is financed fully by the province. Jan also states that the group accommodation in his food forest is located in used European subsidies to create their food forest.

Almost all respondents mentioned using some governmental help when creating a food forest. They also all mentioned that it is hard to create a food forest without this support and subsidy since the initial investment is large, and creating a revenue model for a food forest is hard. There are also some non-governmental forms of support in the food forestry sector. Mia mentions that there are two network organizations within the food forestry sector: Voedselbosbouw Nederland and Voedsel Uit Het Bos. She explains: “You actually have two parties that are now mainly involved in the network. That is food forestry in the Netherlands. They are mainly in the professional farming sector, with at least 5 hectares. And then you have Food From The Forest. It has just become an association to build that network. They actually focus on individual initiatives. These initiatives can also be large; there are people who also have several hectares.” So, for all food forests, an organization exists to join. Which can also be seen as a form of support.

Large-scale use of food forestry?

Most respondents mentioned that they think it is possible to use food forestry on a larger scale, implying there might be a discourse of scale within the food forestry sector. Mia states the following answer to the question of whether food forestry could be used on a larger scale: “The answer is yes. That is absolutely possible. And that is also why the Food Forestry Foundation heavily promotes it and why we also try to influence political agendas.” However, the majority of respondents also mentioned that the concept of food forestry may need to change to be used on a large scale. Eva explains that view:

“I think it is absolutely possible to use food forests on a large scale. However, I think you should choose a different approach than what we did. Then you will probably end up with a kind of row cultivation. Where the trees or permanent plants do have a place. However, it is not really designed as a forest environment.”

Jan shares this view and states: “If you actually want to do food forestry more professionally, then you will have to have a whole row of blueberries, perhaps 100 or 200 meters long, so that you can easily harvest those blueberries.” So, respondents seem to state that it is possible to use food forestry on a larger scale, but it will be more (cost) effective when done in a structured way. Mia also mentions that the people who use food forests will change over time. It starts off with the early majority, people who pioneered food forestry because of their ideals to change the world. If they create a workable concept, more and more people will start to adopt this: the early adopters. Nevertheless, she mentions that these people will do it from different ideals and will be more focused on making a business model out of it. These will be the people who create large-scale food forestry. Overall, there is a discourse of scale within the food forestry sector, but this discourse is more focused on scaling different types of food forests than are present today.

9.2.2 The presence or absence of a mobilizing Discourse

Multiple discourses can be detected in the food forest movement. This section will focus on whether these discourses form a mobilizing discourse or not. In this thesis, mobilizing discourse is operationalized in different components. The first component is the presence of a shared problem. The interviews indicated the presence of a shared problem within society that motivated all respondents to start with food forestry. All respondents mentioned that our current agricultural system is not sustainable in the long run and that something needs to change. This indicates a clear shared problem: the need for an alternative form of agriculture. For the respondents of this study, this alternative agriculture is food forestry. Mees states about our current agricultural system: “I think that people are slowly starting to see that agriculture as we currently have it is not sustainable in the long term. And not sustainable in the sense of maintainable, so to speak.” Rietjens agrees with this idea and says: “If we continue this way, then we know for sure that everything will just die, including ourselves.” So, from the interviews conducted, it becomes clear that a shared societal problem motivates people to start doing food forestry, indicating the presence of a mobilizing discourse. However, as discussed before, this does not mean that all food foresters have the same ideals and think the same about large-scale food forest use.

The second component is the presence of a common identity and common principles within the food forestry sector. In some ways, the food forestry sector seems to have a strong common identity. Almost all respondents are involved in food forestry because they want to see a change in agriculture and produce food in a more sustainable way. For them, food forestry is the solution to achieve a better relationship between nature and agriculture. They want to create awareness about food and where food comes from and want to show that food forestry is a possible way to produce food in harmony with nature. However, as discussed above, there are also major differences within the food forestry sector. Fonk mentioned that he noticed that people start food forestry for different reasons. He explains that he required this knowledge because the organization he is working with has a consultation hour for starting food forest initiatives. He states:

“There is a huge difference between food forests. We have a regularly used consultation session for people who start a food forest initiative. We have a tour and things like that as options. I think we participated in about five or six different publications. You notice that several food forests are putting a lot of effort, as mentioned, on the money side, on creating a business model. They should do that, but as I have just said, paying attention to how this works is very important. Of course, there are also major differences in the content of the food forest, with goats, chickens, cows, and possibly horses.”

Jan agrees that there are differences within the food forestry sector. He explains:

“So many people, so many ideas, so many people. We started with a completely different idea than, for example, other prominent pioneers in the food forest sector. One of these pioneers really believes that food supply is possible. And we really just want to show that food is a beautiful thing. It grows on a tree or a shrub. You can encounter it everywhere.”

Jan shoots down the ideas of a prominent figure in the food forest sector here. These quotes make clear that there are prominent differences within the food forestry sector. These differences seem to occur because of different underlying ideas about food forestry and because of different goals when starting a food forest. Having these differences within a discourse can weaken its potential to be a mobilizing discourse. A mobilizing discourse is a discourse with the potential to mobilize actors to take action. The more differences within the food forestry sector, the more the view of food forests is segmented. This makes it more difficult to understand food forestry as one principle. Nevertheless,

Levi mentions that it is okay that not every food forest is founded with the same ideas. He explains: “I would rather see a food forest founded from different ideals than no food forest at all.” He also mentions that it is important to realize that not every food forest location asks for the same approach. Farmers that start a food forest would want to make money from it, but a food forest in the middle of a city will have completely different goals. So, differences in discourses could also attract different people. In conclusion, there are some clear differences in identity within the food forest section, especially in the food forests’ goals and the reasons for people to start.

The principles within the food forestry sector also vary. Some respondents did not water or weed their forests and completely trusted natural succession to create a self-sustaining forest-like ecosystem, focusing on a discourse that encourages nature to decide and discourages people from interfering. Others watered their forest to save newly planted species and removed unwanted species. Some food forests aimed to produce food and even create a business model, while others had no intent to create a profit. All respondents, however, mention that food forestry is a great way to contribute to a more sustainable way of doing agriculture. However, not all of them were focused on making this view come true with their own food forests. This influences the way food forests are structured. Food forests that were created to supply food were more systematically planted. Food forests that were created to create awareness around food usually contained all sorts of species that were more randomly planted throughout the forest. Overall, this weakens the potential for food forestry discourses to have a mobilizing discourse, according to Cacho *et al.* (2018).

There might be a lot of differences in principles and identities in the food forestry sector, but the overall frame of food forestry can be seen as easily understandable. It creates a narrative of food forests as an alternative way of producing food, where food is produced in a forest-like setting. Respondents describe it as a way of agriculture where nature and agriculture meet. The food foresters do not use pesticides or fertilizers and try to create a form of food production that does not deplete the soil but nourishes it. By challenging the way agriculture should be done, food foresters promote social action.

9.3 DISCOURSE OF SCALE

Respondents explain that food forestry is often seen as something for idealists, in Dutch: iets voor mensen met geitenwollensokken (something for people wearing goat wool socks). Levi, who also constructs food forests for farmers, explains that farmers are often still skeptical about food forestry as a way of producing food. For food forestry to scale up and produce food in the Netherlands, it needs to be seen more as a productive form of agriculture and not as something only for idealists and volunteers. Food forests often prioritize social goals and not (large-scale) food production. This can discourage people from investing in food forestry since social goals often do not bring along money. Levi strongly believes in the business model of food forestry and mentioned that farmers are still hesitant to invest in food forestry, partly because of its image. When the discourse around food forestry changes and focuses more on food production, potentially more farmers and other starters will be motivated to create a business model around food forestry. The respondents interviewed for this thesis almost all worked in a food forest run by volunteers since the food forests did not have a business model. This comes with struggles. It is hard to find volunteers and keep them around for extended periods of time.

Respondents mentioned that the people who initially started food forestry are especially considered idealists. The first food forests created in the Netherlands were often romantic food forests with hundreds of types of edible plants that were planted without a system (Albrecht & Wiek, 2021). Respondents mentioned that these initial starters had strong ideals and really wanted to change the world. However, in order for food forests to really contribute to food production, respondents think the food forestry sector will have to lose some ideals. One thing most respondents think has to change to adopt food forestry on a larger scale is producing in rows, meaning the food forests will consist of rows of the same plants and trees. This makes harvesting easier, but it will also mean the food forest sector must undergo a discourse change, as the majority of food forests are now arranged romantically and focused on social goals.

When the discourse around food forestry changes and food forestry is seen as a valuable way of doing agriculture, a possibility of more subsidies and funding can be created. Nowadays, food forestry is not officially seen as agriculture but also not as a forest. This can create a situation where it is sometimes difficult for a food forest starter to get funding or subsidies. However, getting funding and subsidies is especially important for starting food foresters since money is mentioned as one of the biggest problems in food forestry. The initial investment to start a food forest is high. Plant material is expensive, and the forest will take more care in the first seven years. It takes at least seven years before a food forest will really start producing food. Consequently, it will take years before a food forest starter can earn back the investments made to start the forest. This is not necessarily a problem when a municipality or province pays for the construction of the forest. However, it can be problematic when people want to start a food forest with a business model. This is also why Fonk stresses the importance of a change in the financial system we currently have. He believes food forests should not aim to have a business model. However, not all respondents share this view. Levi believes it is absolutely possible to create a food forest with a strong business model. Fonk also explains that the government should stop motivating farmers to quit farming and instead help them change to a more sustainable way of doing agriculture, like food forestry. So, there seems to be a problem with funding and subsidies. With the presence of a mobilizing discourse, food forestry could gain popularity, increasing the change of funding.

Respondents also mentioned the existence of spatial and agricultural rules that can hinder the emergence of a food forest. Jan mentions:

“Well, if you look at the regulations, food forests do not officially fall under a legal form of forest, but neither does it fall under a legal form of agriculture. And we are not really concerned about that, but people who want to turn a forest into a food forest may have trouble with this because there is a chance that they will miss out on subsidies.”

Some respondents also mention that they experience hindrances from spatial rules themselves. Eva mentioned while walking through her food forest that she was not allowed to create a pool or put any building on her land. With a mobilizing discourse around food forestry, a strong narrative of change will be created, urging spatial rules that better suit food forestry.

One other change in discourse that is needed to scale food forestry is that around food consumption. Food forests produce different kinds of food than are currently available in the supermarket. Some foods like apples, pears, different types of nuts, and raspberries are well known in the Netherlands. Nevertheless, a food forest can produce way more types of food than just the known species. If food forestry starts contributing to food production on a larger scale, this consequently means that people have to change their eating behaviors. Van Genderen explains: “There are so many plants that we do not know yet or that we have not included in our menu yet. Especially the perennial plants. So you really have to actually break open an entire market or raise awareness around that.” These different types of produce also bring along a distribution problem. Food produced in a food forest often comes in smaller batches, and predicting when the produce will be ready to be harvested is more difficult. This can make distribution to supermarkets a challenge. When food forestry is adapted on a larger scale, eating behavior has to shift from annual crops to perennial crops. This does not mean people cannot eat annual crops anymore. However, harvesting from food forestry can greatly improve people’s diets. A strong mobilizing discourse within the food forestry sector could create a strong narrative promoting these societal changes. Levi also notices this problem and explains how he tries to solve it in Limburg: “We are now forming a cooperative so that food foresters can sell and combine those harvests together. Then, it also becomes a larger party towards food processors. Then, when you come together, it becomes much more interesting for buyers.” With the presence of a mobilizing discourse, an increasing amount of people will take up food forestry. This can create a shift in thinking not only among people but also among businesses. Creating an environment more suitable for the use of food forestry.

In conclusion, food forests exist today mainly to teach people about food and food forestry. There are a lot of differences within the food forestry sector. Some food forests are for private use, some serve a social function, and others are used to make a profit. The absence of a common ideal is a factor that influences the existence of a mobilizing discourse and could thereby influence the scalability of food forestry in the Netherlands. In order for food forestry to be adapted on a larger scale, food forestry has to be seen as a productive way of producing food. This indirectly means some of the discourses within the food forestry sector have to change. This does not mean food foresters today are not doing the right thing. Change comes slowly, and educating people about alternative agriculture methods can eventually spark change.

10 DISCUSSION

10.1 EVALUATION

The results of this thesis can be analyzed in the light of the theory of Cacho *et al.* (2018), explained in Chapter 6. Cacho *et al.* (2018) mention nine drivers that help scale agroecology, one of which is a mobilizing discourse. A mobilizing discourse is a concept that is hard to define since it has no clear definition. In this thesis, the definition of Cacho *et al.* (2018) is used. With this definition, there seems to be a mobilizing discourse within the food forestry sector, but some aspects are more strongly present than others. There is a clear shared problem within the food forestry sector, focused on how present-day industrial agriculture strains the environment. However, ideals and principles within the sector differ. Nevertheless, overall, a clear and understandable discourse can be detected. This discourse is focused on making the agricultural system more sustainable and nature-inclusive because the present-day agricultural system strains the environment. It is interesting that this discourse is an underlying discourse in both the policy documents and for food foresters. However, the ideals and principles of how to change the agricultural system differ. Policy documents focus on multiple solutions to making agriculture sustainable, whereas food foresters state that food forests are the solution. Therefore, policy documents water down the mobilizing capacity of the food forest discourse. Stressing the importance of creating circular agriculture, which is a prominent principle in the policy documents, will not motivate a food forester to start a food forest. Maybe the discourse of making farming more nature-inclusive will motivate a food forester to start a food forest since this is mentioned in the policy documents as well as the interviews.

Food forestry could be a great way to meet the goals set in the policy documents, like restoring soil health, making farming nature-inclusive, and battling climate change while also keeping the rural area attractive. However, food forestry is not a solution that is often mentioned. The documents Green Deal Voedselbossen, specifically focusing on food forestry, have hard rules for defining something as a food forest. This creates a clear frame and clear principles but also excludes the majority of food forests in the Netherlands. And it is precisely those initiatives that are also important. As Janin *et al.* (2023) explain, public actors play an essential role in changing the norms and rules within a food system. These initiatives can, with the help of a mobilizing discourse, change norms, values, and beliefs within agriculture. So, not officially counting these smaller initiatives that do not meet the official definition of food forestry can impede this process. The policy documents also have a clear view of how the Netherlands should maintain its prominent role in agriculture worldwide, something that does not fit well with the discourse in the food forestry sector. Food forests are a great way of producing food locally, but multiple respondents mention the difficulty of transporting food harvested from food forests.

It is hard to say whether a mobilizing discourse around food forestry actually overcomes some of the problems mentioned by respondents. However, changing the discourse around food and agriculture and making food forestry more known can help create an environment more suitable for the upscaling of food forestry. This supports the fact that a mobilizing discourse could positively influence the scaling of food forestry in the Netherlands. However, the effect of this mobilizing discourse would be more powerful if principles and ideals within the food forestry sector were more aligned and maybe even more focused on producing food. It is possible that when food forests get upscaled, they will be arranged less romantically and more systematically, creating a kind of row cultivation. This may look different than the food forests created today and also go against some ideals in the food forestry sector. However, as Levi mentioned: "Better a food forest with different

ideals than no food forest at all.” And that could be an important lesson. It is also questionable whether these differences within the food forestry sector are really that much of a hindrance. Cacho *et al.* (2018) state that one aspect of a mobilizing discourse is the presence of a common identity and common principles. I think this common identity is indeed very important in creating a comprehensive discourse. However, differences in principles and types of food forests may not be bad. Having different types of food forest discourses can attract different types of people. Some people can be motivated to focus on sharing knowledge and creating awareness, but others may be attracted to creating a food forest as a business. The more food forests are created, the bigger the movement gets, and the more attention is drawn to it. Food forestry may change over the years, and ideals may change over the years. However, there is definitely some sort of mobilizing discourse surrounding food forestry at the moment that has the potential to scale the whole sector.

10.2 REFLECTION

This thesis comes with some limitations. To start, not every code made during the coding process is used in the result section. Codes that were only once mentioned are often not used in the thesis. This can dilute the true discourse surrounding food forestry, especially since relatively few respondents were interviewed. However, even when taking this into consideration, there seems to be a clear overall principle in the food forestry sector: using a forest-like setting to produce food. However, these differences within the food forestry sector can make the mobilizing discourse less powerful.

It is important to notice that for agroecology to scale effectively, Cacho *et al.* (2018) describe multiple drivers, not just the presence of a mobilizing discourse. This thesis focused on the driver of the presence of a mobilizing discourse only, leaving out parts of the story. It is hard to say whether the presence of a mobilizing discourse will actually scale food forestry in the Netherlands. Even when food forestry scales, this can be for other reasons than just the presence of a mobilizing discourse.

Another shortcoming of this research is the fact that due to the limited time available to conduct it, the research pool is relatively small. Only four documents were analyzed, and eight people were interviewed. This provided the ability to research all data thoroughly, but it made generalization more complicated. However, despite all these limitations, this thesis can provide valuable insights into the mobilizing discourse surrounding food forestry and its potential to help scale food forestry in the Netherlands.

10.3 RECOMMENDATIONS

This research was conducted with a small respondent pool. Consequently, it gives a very detailed description of the discourse of these few respondents. This gives precious insides into the possibility of a mobilizing discourse in the food forestry sector. It would be interesting to conduct research with a broader respondent pool to see whether this gives the same insights or whether the overall discourse changes when looking at more opinions. It might also be interesting to conduct a longitudinal study on the discourse around food forestry in the Netherlands. Food forestry is now still in its early stages, with food forests focusing on spreading knowledge and ideals. The potential scaling of the sector could change this overall discourse. It would be interesting to see how the discourse around food forestry changes over the years and possibly becomes focused on other aspects, like food production.

Furthermore, Chaco *et al.* (2018) described nine drivers for the scaling of agroecology. This study gives valuable insights into the possibility of scaling through a mobilizing discourse, but the other drivers are not researched at all. A more comprehensive study could research all nine drivers, and thereby give a more complete answer to whether food forestry can be scaled in the Netherlands. This study could also give insight into which drivers may be more prominent in the Dutch food forestry sector and which drivers are not yet established. Giving valuable insight into possible difficulties when scaling food forestry.

More knowledge is needed about how food forestry can effectively produce food in the Netherlands so that food forestry can scale. Multiple food forests in the Netherlands are pioneering food production. However, more research into this subject could provide an effective overview of the aspects needed to scale food forestry. This study could also be linked to discourse by linking how discourse could influence or create certain aspects that help the food forestry scale.

11 CONCLUSION

This thesis aimed to discover how a mobilizing discourse around food forestry could influence the scalability of food forestry in the Netherlands. This was done by researching the central discourse surrounding agriculture, agroecology, and food forests in policy documents from the Dutch government, the discourse around food forests in the Netherlands, and what discourse would be needed to scale. Using more food forests could reduce the pressure of agriculture on the environment and create a healthier food supply in the Netherlands. A mobilizing discourse is a discourse that motivates people to take action and has the potential to change narratives. In this thesis, a mobilizing discourse is operationalized using the following three concepts: the presence of a shared problem, clear and understandable discourse, and the presence of a common identity and common principles.

The main discourse in the policy documents about the future of agriculture in the Netherlands was focused on making agriculture more sustainable. The need to make this transition came from an underlying shared problem: how agriculture is done today is not sustainable in the future. In the documents, there was no consensus about how to make this agricultural transition. The most mentioned solution to make agriculture more sustainable was starting to make agriculture more circular. Nevertheless, other forms of sustainable agriculture, like food forestry, are also mentioned. Throughout the documents, nature plays a vital role. Agriculture should regain its harmony with nature, and soil health must be prioritized. These goals should be realized without the Netherlands losing its prominent agricultural role worldwide, creating a narrative of innovation and science. The documents seem to have a clear and understandable framework that promotes action: agriculture needs to be more sustainable and nature-inclusive without the Netherlands losing its prominent role in the agricultural sector worldwide. However, the principles and ideals for creating more sustainable agriculture vary. So, there seems to be a mobilizing discourse towards sustainable agriculture but with varying principles on how to do so.

Within the food forestry sector, a mobilizing discourse can be recognized. A clear shared problem can be identified: how agriculture is done right now is not viable in the future and impacts the environment too much. Nevertheless, many differences can be found in the main discourse around food forestry. Reasons to start vary from creating awareness around food and where food comes from to changing the food system and being outside. The goals of different food forests also vary. The goals mentioned were creating awareness about where food comes from, restoring biodiversity and soil health, education, and community building. All food forests were structured differently. Some produced food while others did not. However, even though there are differences in principles and ideals within the food forestry sector, there are also many shared principles and ideals. The red line in these ideals is that food forestry can positively change agriculture and contribute to a more biodiverse landscape. Food forests are often used as a display to learn about food and food forestry, and whether or not it also functions to produce food differed per location. A clear and understandable frame emerges here about how food can be produced in a forest-like setting to harmonize nature and agriculture.

Multiple problems come along with the scaling of food forestry. The presence of a mobilizing discourse could potentially help scale food forestry. Following this theory, a mobilizing discourse should thereby help overcome some of the problems mentioned by respondents. Food forests are sometimes seen as something only for idealists and not as a productive way of doing agriculture. In order for food forestry to upscale and produce more food, food forests need to be seen as a viable way of producing food. Having a mobilizing discourse around food forestry could create a narrative that helps promote the use of food forests and eventually help to scale the sector. Creating a stronger narrative around food forestry could also help create more possibilities for agricultural-related subsidies and funds to be available for food forestry, helping to solve the financial difficulties surrounding the sector. Most food forests present today have no intention of producing food on a larger scale. In order to scale food forestry, it is important to motivate people who do have the intention to produce food in food forests. Having a mobilizing discourse around food forestry could motivate these people. Food forestry is a new concept, so spatial rules do not take food forestry into account. Respondents mention that spatial rules and policies sometimes tend to block the emergence of food forests. When the popularity of food forestry increases, a narrative of changing these rules can emerge that could potentially change these spatial rules. Lastly, food that comes from a food forest is in some ways different than what is now available in supermarkets. To use more food forestry, a change in consumption would be needed. The stronger the discourse around food forestry, the stronger the narrative for change a change in consumption will be. This could lead to changes within society and business models. In conclusion, people now spreading the word about the possibilities of food forestry can explore the possible hindrances that come along with it and create a strong narrative to change these hindrances.

It is interesting that both policy documents and food foresters emphasize the need for a more sustainable and nature-inclusive agricultural system. Food foresters advocate for food forestry as a clear solution, but policies often dilute this focus, emphasizing broader goals. The strict definitions in Green Deal Voedselbossen exclude many food forest initiatives, but these initiatives could be crucial for changing norms and values within the agricultural sector. Public actors can play an essential role in changing the norms and rules within a food system, so all initiatives are important. Overall, people who are now advocating the use of food forestry are creating a mobilizing discourse that can definitely help scale up food forestry. However, the exact future of agroecology and agriculture depends on which discourses will be most prominently argued for.

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13 APPENDIX

1. Interviewguide

Dutch version:

Interviewguide	
Maaïke Smaak Radboud University	
Introductie	
Intro	<p>Mijn naam is Maaïke Smaak, ik studeer geografie, planologie en milieu aan de Radboud Universiteit. Voor mijn scriptie onderzoek beweegredenen om een voedselbos te starten en naar de steun en hinder die voedselbossen krijgen. Daar zal dit interview ook over gaan.</p> <p>Ik zou dit interview graag opnemen, zodat ik het later terug kan luisteren. Alleen ik luister het interview terug en dit zal alleen voor onderzoeksdoeleinden zijn. <u>Vind u dat goed?</u></p>
Vragen	
Food forest itself	<ul style="list-style-type: none">- Wat is u functie in het voedselbos waar u aan mee werkt?<ul style="list-style-type: none">o Fulltime/ parttime- Zou u mij wat meer kunnen vertellen over het voedselbos waar u mee werkt?<ul style="list-style-type: none">o Groteo Leeftijdo Type planteno Hoe wordt het onderhouden<ul style="list-style-type: none">▪ Hoe veel mensen helpen met onderhoudo Privaat of publiek eigendomo Grootste doel van het voedselbos (voedselproductie, onderwijs, groepsvorming)
Food forestry	<ul style="list-style-type: none">- Hoe denkt u dat voedselbossen bij kunnen dragen aan duurzame landbouw en de voedselindustrie in Nederland?<ul style="list-style-type: none">o Wat denkt u dat de meest essentiële voordelen van een voedselbos zijn, vergeleken met normale landbouw?
Reasons to get involved in food forestry	<ul style="list-style-type: none">- Wanneer bent u begonnen met voedselbossen te werken?<ul style="list-style-type: none">o Welke idealen zitten achter deze keuze (milieu, biologisch eten, etc)?- Hoe en waarom zou u mensen motiveren om in een voedselbos te gaan werken?- Denkt u dat alle mensen die zich bezig houden met voedselbossen dit om dezelfde reden doen?<ul style="list-style-type: none">o Ziet u dit als een support netwerk?o Denkt u dat deze zelfde idealen belangrijk zijn om voedselbossen te laten groeien in Nederland?
Desire to upscale	<ul style="list-style-type: none">- Als u door de tijd kijkt naar hoe het voedselbos waar u mee werkt. Welke dingen zijn verbeterd en welke dingen gingen lastig?<ul style="list-style-type: none">o Productiviteit

	<ul style="list-style-type: none"> ○ Machines ○ Mankracht ○ Wens om te vergroten ○ Hoe zijn jullie met deze dingen om gegaan? <ul style="list-style-type: none"> - Denkt u dat het mogelijk is om voedselbossen op grotere schaal in te zetten in Nederland? - Zou u willen dat we meer voedselbossen gebruiken in Nederland?
Hinder	<ul style="list-style-type: none"> - Zijn er bepaalde regels waar jullie als voedselbos aan moeten voldoen? <ul style="list-style-type: none"> ○ Helpen deze regels jullie, of zitten ze in de weg? - Welke potentiële moeilijkheden bestaan er op het moment die het verhinderen om grootschalig voedselbossen in te zetten in Nederland? <ul style="list-style-type: none"> ○ Wat zou helpen om deze te verminderen?
Support	<ul style="list-style-type: none"> - Krijgt uw voedselbos steun van de overheid of andere instanties? <ul style="list-style-type: none"> ○ Genoeg? ○ Is er genoeg steun voor voedselbossen in Nederland? - Hoe denkt u dat beleidsmakers en inwoners van Nederland effectief betrokken kunnen worden bij voedselbossen?
Outro	
Outro	<p>Dit is het einde van het interview. Heeft u nog iets aanvullends dat u mij graag wil vertellen, waar we nog niet over gesproken hebben? Of heeft u nog vragen over het interview?</p> <p>Ik wil nog benadrukken dat dit interview anoniem blijft en de opname alleen voor onderzoeksdoeleinden gebruikt wordt.</p> <p>Ik ga dit interview transcriberen en dan analyseren. Als u wil, kan ik u het transcript of de uiteindelijke scriptie opsturen.</p> <p>Ik wil u nogmaals bedanken voor het interview vandaag, dit gaat mij enorm helpen met het schrijven van mijn scriptie.</p> <p>Mocht u achteraf nog vragen hebben, kunt u mij altijd een mailtje sturen.</p>

Interviewguide

Maaik SMAAK Radboud University

Introduction

Intro

My name is Maaik SMAAK; I study geography, planning, and environment at Radboud University. For my bachelor thesis, I research discourse around food forestry. That is also what this interview today will be about.

I would like to record this interview if you are okay with it. This is for research purposes only; your recording will stay within the limits of this research and will not be published.

Are you okay with me recording this interview?

Questions

Food forest itself

- What is your function within the food forest you are working in?
 - Fulltime / parttime
- Can you tell me more about the food forest you work with?
 - Size
 - Age
 - Type of plants
 - Maintenance
 - How many people help to maintain the forest
 - Private or public
 - Goal of the forest (food production, education, group building)

Food forestry

- How do you envision food forestry contributing to (sustainable) agriculture and the food industry in the Netherlands?
- What do you think are the most essential benefits of food forestry compared to regular agriculture?

Reasons to get involved in food forestry

- Denkt u dat deze zelfde idealen belangrijk zijn om voedselbossen te laten groeien in Nederland? When did you start working with this food forest?
- Do you work for this food forest as hobbyist or as a paid job?
- When did you start working with food forestry?
 - What ideals are behind this choice (environment, biologically produced food, etc)?
- Do you think that all food foresters enter the food forestry business with the same ideals?
 - Does this support you in your work in food forestry?
 - Do you think it is helpful to have a collective discourse around food forestry?

Desire to upscale

- When you look at the food forest you work with, through time. Which things improved and which things went difficult?
 - Productivity
 - Machines
 - Manpower
 - Desire to upscale
 - How did you handle those difficulties?
- Do you think it would be possible to scale food forestry?

	<ul style="list-style-type: none"> - Would you like to see this food forest being upscaled?
Hinder	<ul style="list-style-type: none"> - Are there specific rules you must comply with as a food forest? <ul style="list-style-type: none"> o Do these give support or hinder? - What potential barriers exist to the widespread use of food forests in the Netherlands? <ul style="list-style-type: none"> o What would help overcome these?
Support	<ul style="list-style-type: none"> - Do you think there is enough support from government agencies, NGO, and private stakeholders for food forest initiatives? - Is this food forest supported by (government) funds? <ul style="list-style-type: none"> o Enough? o Are food forests supported enough in the Netherlands? - How could the public and policymakers be effectively engaged in using food forests like this one?
Outro	
Outro	<p>This was the end of the interview. Do you have anything left you want to tell me that has not yet been discussed? Do you have any questions regarding the interview?</p> <p>I want to emphasize that this interview will stay completely anonymous and that the recording is for research purposes only.</p> <p>This interview will be <u>transcribed and then analyzed</u>. If you want, I can send you a copy of the transcription and/ or my final thesis.</p> <p>I want to <u>thank you</u> again for conducting this interview with me today, it will really help me with writing my thesis.</p> <p>If you have any questions or comments left, you can always contact me.</p>

2. Code books

Codes that were only mentioned once are not taken into account in the code book.

Code book policy documents:

Code	Explanation	Example from document	Times coded
Code group: Circular agriculture			
Circular agriculture	Agriculture with a closed input and output circle	“We repeatedly came to the conclusion that we can only secure the future of our food supply if we switch to circular agriculture.,	21
Short and closed supply chain	Supply chains within agriculture must remain closed and as short as possible	“The government’s aim is to close cycles of raw materials and resources by 2030 at the lowest possible national or international scale.”	18
Stop waste	Create as little waste as possible within the agricultural sector	“At the same time, we will have to put an end to waste that takes place at various links in the food chain: from primary production to the waste bins in Dutch kitchens.”	8
Code group: Climate change			
Climate adaptation	Adapt agriculture to climate change	“From 2050, the physical living environment in the Netherlands – in terms of policy, design and management – will be adapted to the changing climate. All governments have committed to this ambition, which is laid down in the National Adaptation Strategy (NAS) and the Delta Program on Spatial Adaptation (DPRA). This means that damage and disruption caused by weather extremes is limited as much as possible.”	3
Climate goals	International set goals to reduce climate change	“The agricultural sector has committed to the 2019 climate agreement”	8
CO2 bonding	Carbon bonding to reduce carbon emissions in the air	“ By realizing the forest expansion task of the Forest Strategy, 0.15 ton CO2 sequestration per year can be achieved in the long term.”	6
Lowering Nitrogen	Lowering nitrogen emissions from the agricultural sector	For nitrogen, NOx emission targets for other sectors such as industry and mobility will be formulated in early 2023	13
Reducing emissions	Reducing emissions from the agricultural sector	Companies and organizations in the agricultural sector are already in discussions with each other in the context of drawing up a Climate Agreement to reduce greenhouse gas emissions: together at least 3.5 megatonnes of CO ₂ equivalents less in 2030.	15

Sustainable energy	Making more use of renewable energy and using less energy over all	Recycling companies use as little energy as possible and use as much renewable energy as possible.	5
Code group: Cooperation			
Cooperation actors	To create a more sustainable way of doing agriculture cooperation between all different sorts of actors is needed	But it can only achieve this if the entire system and all participants in it, from farmer to citizen, cooperate.	32
Integral process	To create a more sustainable way of doing agriculture, an integral process is needed	We tackle the major challenges for our living environment, such as nature, nitrogen reduction, water quality and climate, together in an integrated approach.	5
Regional cooperation	Regions need to cooperate, without losing sight of regional differences	Such cooperation on a regional scale can also be set up more broadly. A regional partnership can enter into consultation with municipalities, water boards, nature managers, suppliers and retailers. A region can distinguish itself, as the Betuwe and the Vechtdal, among others, have long done, with the typical products and flavors that "its" sector produces.	11
Code group: farmer support			
Conservation agricultural sector	Making the agricultural sector sustainable, while maintaining the sector as a whole	And to maintain an agricultural sector that contributes to this and fits within these boundaries and the quality of life in the countryside	7
New rules	New rules needed to create a more sustainable agricultural sector	However, small-scale producers, who are often committed to sustainability and animal welfare and are close to their customers, encounter obstacles. For example, they are often confronted with regulations based on large-scale production systems. It is often not possible for them to comply with this due to the costs and/or administrative burden involved. The government will therefore develop appropriate legislation and regulations to create more room for the production of small-scale regional products	3
Solving gap between farmer and consumer	Farmers and consumers need to come more together	Consumers who know where their food comes from and therefore respect the producer and product can contribute to this.	5
Supporting farmers	Support farmers in the Netherlands more	Farmers, gardeners and fishermen are hardworking entrepreneurs and they deserve a solid position in the chain	12

Code group: Food forest			
Definition	Definition of a food forest in the Green Deal Food forestry	Highly diverse ecosystems with the layered structure and diverse functions of a natural forest.	1
Ecosystem services	A food forest fulfills ecosystem services	Like natural forests, they also provide ecosystem services for their wider environment	1
Multi-purpose food forest	A food forest has multiple purposes, like education, food production, recreation. And can be created within city planning	Contemporary food forests are ideally suited to be developed as multifunctional systems, in which food production can be combined with added values in domains such as education and recreation.	1
Code group: International			
Climate goals	Climate goals motivate to make agriculture more sustainable	The agricultural sector has committed to the 2019 climate agreement	8
International obligation	International goals motivate to make agriculture more sustainable	Goals that arise directly from international obligations have the highest priority	9
Code group: Nature			
Animal welfare	There should be more focus on animal welfare in agriculture	The livestock farming and transport sectors are increasingly taking measures with a view to animal welfare.	4
Biodiversity	Protecting biodiversity while doing agriculture	It can no longer be the case that agriculture and nature are opposed to each other and that agriculture puts pressure on biodiversity.	16
Green-Blue veining	Create a green-blue veining within the agricultural area	Green-blue interconnection improves ecosystem services and creates ecological balance in the agricultural area	4
Livable environment	The agricultural area should be a livable and healthy area again	The story behind why we do it is essentially about our quality of life	10
Nature-inclusive	Nature and agriculture should be connected again	Nature is of value to all of us and to agriculture in particular. It can no longer be the case that agriculture and nature are opposed to each other	25
Nature recovery	Nature should recover again in the Netherlands	it is important to also achieve a broader Basic Quality of Nature, in which general species remain common or become common again.	11
Planting new forest	New forest should be realized in the Netherlands	In the 2020 Forest Strategy (Parliamentary Paper 33 576, no. 202), the government and provinces have agreed to take measures that contribute to biodiversity recovery in the Dutch forest	4
Soil protection	Soil protection should be a priority within farming again	Aspects that mainly determine the functioning of the soil are: management of organic matter and soil fertility, management of soil structure and management of soil life and resilience.	19

Water management	Water management and quality s	For example, we will provide water storage to temporarily collect water in the event of flooding and to retain it for periods of drought.	27
Code group: science and innovation			
Efficiency	Making agriculture more efficient	These chains from producer to consumer function very efficiently and at low costs.	5
Innovation	Creating innovation within the agricultural sector	Close cooperation in the chains and regions (greenports), the possibility of producing in closed systems close to the consumer and a great innovative capacity form a good basis for tackling social challenges.	9
Modification of plants	Change the qualities of plnats to make them for example more climate resistant	The breeding sector is already busy adapting crops to the changing climate and the demand for more sustainable production.	3
Science based	Making agriculture more sustainable should be done based on science	They are supported by world-class scientific research	5
Technology	New technology can help create the future of agriculture	New technology contributes to even higher food safety and lower environmental pressure	4
Code group: sustainable agriculture			
Agroecology	One way of making agriculture more sustainable is agroecology	New technology contributes to even higher food safety and lower environmental pressure	6
Future proof agriculture	Agriculture needs to be future resistant	The NPLG should lead to a more future-proof design and use of our rural area.	9
Less fertilizer use	The agricultural sector should use less fertilizer	In soil management, we are working towards the use of processed animal manure and less and less artificial fertilizer. Arable land and meadows receive high-quality organic fertilizer based on crop residues or animal manure. This means that the currently important role of fertilizer is increasingly decreasing	
Less pesticide use	The agricultural sector should use less pesticides	For example, support will be available for the development of business plans, for investments in digitalization with a view to reducing pesticide and fertilizer emissions into waterways,	4
Locally produced	Food should be produced and sold more locally	The motto is: locally what is possible, regionally or internationally what is necessary	3
Making international markets sustainable	The Netherlands should also motivate more sustainable markets worldwide	Thanks to the strong Dutch position in these chains, we can discuss the sustainability of cultivation in other parts of the world and thus have a beneficial leverage effect on international environmental and nature goals and biodiversity. The commitment to process	4

		the residual flows associated with this import in a circular manner remains unchanged.	
Multi-purpose agricultural area	The agricultural area should be attractive again	The joint ambition is clear: our rural area is and must remain attractive for living, working, producing food and for recreation.	8
Nature and agriculture in harmony	Nature and agriculture should be brought more in harmony	In the NPLG we bring together the interests of farmers, nature, water and climate with a view to a vital countryside	9
Soil protection	Soil protection should be a goal of agriculture again	and good soil quality requires a balanced and responsible use of manure and crop protection products	19
Structural change primary sector	The primary sector in the Netherlands should change (and be more sustainable)	There are therefore plenty of reasons to think about a structural change in the position of the primary sector in society.	11
Need for sustainable agriculture	The future of the agricultural sector should be more sustainable	The strategy aims to support farmers who contribute to the transition to sustainable agriculture	14

Codebook interviews:

Code	Explanation	Example from document	Times coded
Code group: Elements of the food forest			
Berries	Respondents mentioned berries as a part of their food forest	Res 2: Here are all recently planted berries	6
Fruit trees	Respondents mentioned fruit trees as a part of their food forest	Res 8: Szechuan pepper,..., but also regular pears, plums, apples, you name it	11
Let nature decide	Respondents mention they let nature decide in their forest	Res 1: Well, as said, nature is going to react, you get a completely different plan than you originally had. You see species fail and you see other species explode because they are doing very well. And that above all requires a creative mind to deal with it	8
Nature-like system	Respondents mentioned they created their food forest as a nature-like system	Res 8: Yes, actually very simple. By asking Mother Earth what she wants. That sounds a bit vague. But very simply put, trees will grow wherever we as humans do not interfere.	3
No invasive exotics	Respondents mention not to plant invasive exotics	Res 1 : Only there was one very big but, and you can still see that. And that is importing exotic species, which are not seen as native species.	3
No pesticides	Respondents mention not to use pesticides	Res 3: And I don't think the use of pesticides is necessary, so we don't do that	3
Nut trees	Respondents mention nut trees to be part of their food forest	Res 7: Almonds, walnuts of course, hazelnuts	5
Privately owned	Some food forests were privately owned	Res 4: No, it's ours. So we bought it with three people.	4
Self-sustaining forest	Some food forest aimed at being completely self-sustaining	Res 7: The biggest goal of Eemvallei is to become self-sustaining. Both ecosystem, but also economic	2
Size	Respondents mentioned different sizes of their forest	Res 3: It's 7000 square feet.	8
Spices	Some respondents mentioned spices to be part of their forest	Res 7: Then that herb layer comes	4
Succession	Respondents mention their food forest grows like natural succession	Res 6: Basically we choose things between hip and shoulder height	5
Systematic planting	Respondents mention they planted their food forest systematic, sometimes in rows	Res 7: And then a kind of forest, much smaller of course, in terms of numbers. In my case, I have mainly made a number of those rows where I start with an olive willow, and then an apple, a nashi, or a	4

		moor bee, or a hybrid plum, a walnut or a chestnut	
Volunteers	Respondents mention their food forest is run by volunteers	Res 1: We don't employ people. Everyone works as a volunteer sometimes. It has actually been that way from day 1 and has always remained that way.	6
Watering	Respondents mention sometimes watering their food forest	Res 2: And yeah, you know, do you want those trees to die? No, of course you don't want that. So we were here about four or five times, with a large tractor with a 10,000 liter tank, to water the trees one by one. So that's just really important.	3
Code group: encountered problems			
High budget needed	Respondents mention food forests are expensive to start	Res 8: One problem may be financing	11
Knowledge and education needed	You need certain knowledge to maintain and create a food forest	Res 1: Lack of knowledge	3
Labor intensive	Respondents mention a food forest to be labor intensive	Res 3: It will always be somewhat more labor intensive than current agriculture.	2
Long grow time	Respondents mention a food forest has a long grow time	Res 1: The moment you start, for the first seven years, your production is approximately equal to zero. This means that we are now on the eve of a major famine	7
New accounting model	One respondent mention that for food forest to scale a new accounting model is needed	Res 1: And that is actually mainly because the traditional accounting model that we still use here in Western society, which is actually from the beginning of the last century, roughly speaking, does not take into account added value, natural value, social value, or even the health of the population. people involved and all that kind of stuff, that's not possible. It's just about the numbers, dry numbers on paper and what they say as returns.	6
No business model	Respondents mention that food forest cannot have a business model	Res 4: But if you have to base an income model on it, then I don't think you'll get there.	3
Shortage in volunteers	Respondents mention it is hard to find and maintain volunteers	Res 4: One of the problems is actually finding volunteers or retaining volunteers as well.	5
Soil remediation	Respondents mention it is expensive to remediate the soil when needed	Res 1: the soil had to be remediated, which is very expensive	2
Tree loss	Respondents mention trees dying in the early stages of the food forest	Res 5: Or at least a lot of downtime. And we have had that here too. It wasn't too bad, but there were a number of very	2

		beautiful trees that actually belong in the middle succession. We have lost that.	
Unintentional species growth	Respondents mention unintentional species popping up in the food forests	Res 7: We have enormous thistle pressure there. You will mainly encounter thistles there	4
Work around rules	Respondents mention sometimes working around rules to create a food forest	Res 6: It's best to follow rules, of course you have to follow rules, but sometimes it's better to start with something and then see if there are any rules that prohibit that. Because often you don't get it. And the moment you call the municipality to ask if something is allowed, you often get a no, and then they know that you exist, and then everything starts to go against you, so to speak.	2
Code group: Food production			
Food for volunteers	Respondents mention the food produced in the food forest is solely for volunteers	Res 4: But by the time we start having revenue, it's primarily for the volunteers.	2
Food for harvest	Respondents mention the goal to harvest food from their food forest	Res 7: In the Eemvallei we are now building this year by year. Last year we created six hectares of production forest.	4
Not only food goals	Respondents mention not only having food goals within their food forest	Res 6: We are not so concerned with the harvest.	
Code group: Goals of the food forest			
Biodiversity	Respondents mention biodiversity as goal	Res 7: It is about enriching biodiversity	13
Business model in future	Respondents mention food forests could make profit when fully grown	Res 6: I would actually say that it would be very nice if this was not only done from idealistic motives, but also because it is simply economically profitable	7
Carbon storage	Respondents mention carbon storage is a goal of their food forest	Res 8: That we use that primal power to capture carbon	3
Community building	Respondents mention community building as a goal of their food forest	Frencken: Yes, for me it is committed to the neighborhood and bringing people together	8
Create awareness	Respondents mention creating awareness as goals of their food forest	Res 4: Stimulate awareness. We have created a place outside for learning	20
Education	Respondents mention education as a goal of their food forest	Res 4: But a very important goal of ours is education.	11
Explaining food forestry	Respondents mention they want to explain food forestry	Res 1: During the process, we discovered that initially, in 2009, no one in the Netherlands even knew what a food forest was. So you had to start explaining. You then also had to make it clear to the	3

		authorities what the effect would be on ecology and biodiversity and so on. Well, they were completely convinced that it was useful for biodiversity	
Harvest all year	Respondents mention harvesting all year as a goal and benefit of their food forest	Res 2: In such a way that we have something to harvest as much of the year as possible	2
Involve kids	Respondents mention involving kids in their food forestry	Res 3: And that we show children that a walnut grows on a tree and does not just come out of the bag in the supermarket.	3
Local food security	Respondents mention creating local food security as a goal of their food forest	Res 7: The municipality of Almere also plans to get an x percentage of their food from their own region	7
Not only food goals	Respondents mention their food forest has not only food-producing goals	Res 6: But really, purely as a food supply, yes, it's just a difficult story	2
Restoring soil health	Respondents mention restoring soil health as a goal of their food forest	Res 8: But they are in it with somewhat the same goal. Also the recovery of the soil.	14
Self-sustaining forest	Respondents mention their goal is to create a self-sustaining forest	Res 8: After it is completely installed, the input needed to keep the system running is zero	2
Social goals	Respondents mention their food forest has social goals	Res 5a: So we brand ourselves, and we do it from a social point of view, as you may notice	3
Support animals	Respondents mention their food forest supports animals	Res 4: Our actual goal is for you to become a hub for insects and other critters. In an environment with many bare fields and grass fields.	4
Support insects	Respondents mention their food forest supports insects	Res 4: Our actual goal is for you to become a hub for insects and other critters. In an environment with many bare fields and grass fields.	4
Water management and supply	Respondents mention their food forests support water management and by storing water in the soils also contributes to water supply	Res 7: It's not just biodiversity. But also water storage.	3
Code group: Governmental support			
Governmental support	Respondents mention that their food forests get some sort of governmental support	Res 1: Yes, luckily. So, there is certainly support on all sides. We have already had some clubs visit from the province of Gelderland a few times. We have already had people visit us several times from different municipalities, from nature organizations, from all sorts of things, from different schools.	5
Multi-actor cooperation	Respondents mention multi-actor cooperation was	Res 7: And various parties have registered for this. Such as Staatsbosbeheer, Voedingbos Bouw Nederland and two	2

	needed to create the food forest.	other parties. And then the municipality or province said: Okay, I like your plans. Now we sit down at a table and make a plan. And that is where the Eemvallei food forest emerged	
Municipality owned	Respondents mention their food forest is owned by a municipality	Res 2: We have a loan agreement with the municipality, I believe the loan agreement states ten or twenty years. And then we just hope they stick to it. And that a housing project will not appear around the corner all at once.	6
Subsidy	Respondents mention they have gotten subsidies to create their food forest.	Res 8: So the province of Limburg has a very nice subsidy scheme to adopt food forests. So we gratefully make use of this to our customers.	4
Code group: Large-scale use food forestry			
Combination within farming	Respondents mention that food forest can be a great addition to current-day agriculture, but there will always be a combination of “normal” agriculture and food forests	Res 5a: I think a combination is the most successful. And I think that food forests really shape themselves according to the function they have. And then it just depends on what they were founded for.	6
Large-scale food forestry possible	Respondents mention that they think large-scale food forestry is possible	Res 3: There are already projects that have been started on 10 or 15 hectares, as read here and again on LinkedIn	9
Row cultivation	Respondent mention that in order to scale food forestry row cultivation is the best option.	Res 3: But if you actually want to do it more professionally, then you will have to have a whole row of blueberries, perhaps 100 or 200 meters long, so that you can easily harvest those blueberries.	5
Code group: Possible problems			
Blocking rules	Respondents mention that blocking (spatial) rules could make it difficult to start a food forest	Res 2: But if you want to start a food forest and the destination is agricultural, you have to be very careful that you try to change the destination. Because otherwise you can only dedicate 20% of the space or something like that to trees. Yes, and then it is a bit more difficult to turn that into a food forest.	9
Change in eating behavior	Respondents mention people need to change their eating behavior to scale food forestry	Res 1: Producing differently is very possible, but if you want to produce differently and also produce different crops, this means that the consumer will have to eat differently.	3
Dependent on municipality	Respondents mention it can sometimes be difficult to be dependent on a municipality	Res 4: A difficulty is the dependence on municipalities. One municipality reacts very differently to it than another municipality. Renting land from the municipality or receiving land.	2

Distribution problems	Respondents mention it is difficult to distribute food harvested from a food forest	Res 6: But the problem remains distribution. So you can arrive with crates of apples, but the market simply asks for trucks with apples. At a time, what you can plan in advance. And not about crates that are only there when nature is ready for them. And unfortunately, or well unfortunately, fortunately that is how it should be in a food forest.	2
Code group: Reasons to start			
Be in nature	Respondents mention being in nature as a reason to be involved in food forestry	Res 2: I enjoy being in nature anyway	7
Change in agriculture	Respondents mentioned a change is needed in the agricultural sector which motivated them to be involved in food forestry	Res 6: And I think that people are slowly starting to see that agriculture as we currently have it is not sustainable in the long term. And not sustainable in the sense of sustainable, so to speak.	7
Construct food forests	Respondents mention they had the goal to construct food forests as a reason to be involved in food forestry	Res 8: And for the rest, we have a company in the development and construction of agroforestry systems in general and food forests specifically. So yes, we do a translation of projects. Making a design and realizing it, where necessary and desirable, realizing it.	2
Contribute to the solution	Respondents mention they want to contribute to the solution of making the world better as a reason to start food forestry	Res 7: And the fact that I contribute more to the solution than burying my head in the sand. And furthermore, I indeed hope to make the world a little more beautiful with my time and hours.	
Create awareness	Respondents mention they want to create awareness around food forestry	Res 3: We receive around 7,000 guests here every year, and we introduce them to the food forest phenomenon.	20
Getting attention	Respondents mentioned that having a food forest helps their company stand out and get attention. This motivated them to start a food forest	Res 3: Well, for us it's really just making sure that we have something unique that allows us to get customers here.	2
Getting to know new people	Respondents mention getting to know new people as a reason to be involved in food forestry	Frænken: But also just getting to know new people was very important to me. I knew people in the municipality of Brummen, but of course not here.	3
Inspire people to change	Respondents mention they started food forestry to inspire people to change and eat and live more sustainable	Res 6: Personally, I really enjoy inspiring people.	2
Pioneering	Respondents mention they like pioneering with a new concept.	Res 2: I also like to set examples. I enjoy pioneering. So I am someone who is always	5

		trying things out. And initiates. And then preferably pass it on in the end, of course.	
Code group: Support network			
Cursus	Respondents mention they get support from courses they followed	Res 2: I'm also in contact with several people from our own course, so to speak.	7
Support network	Respondents mention they feel like there is a support network within the food forestry sector	Res 3: Some things are being organized. And you also have Food Forest Netherlands. There is another club on the Veluwe on Landgoed Welmaak where Frank is active.	7