

Food forest case study: from forest to table

POTENTIAL B2B SALES CHANNELS FOR THE FUTURE HARVEST FROM
'VOEDSELBOS 'T MORTELKE'.

INTERNSHIP REPORT



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Research period: September 2021 – January 2022

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Executive summary

In the Netherlands, the food forest sector is a relatively new sector. Many food forests are still in the early stages of development and considered a start-up. Start-ups are characterised by having certain challenges, such as the lack of a customer base and an underdeveloped supply-chain (Corporate Finance Institute, n.d.). This makes it hard to find customers and to realise collaborations. At Voedselbos 't Mortelke, they are aware of this challenge and therefore want more information on the demands of potential sales channels for a collaboration with the food forest. Based on this information, choices can be made, and action can be taken in order for Voedselbos 't Mortelke to realise these collaborations in the future.

The research objective of this study is to create a clearer image on possible sales markets for the products that will be offered by Voedselbos 't Mortelke. The following research question is explained in this report: **What are B2B sales channels for the products offered by Voedselbos 't Mortelke?** The research is solely focussed on the products that can be offered by the food forest (in this case the harvest) and not on the services. Additionally, there is also a focus on B2B sales channels as these partnerships seem to be the most realistic to realise in the near future.

To answer the research question, a qualitative study is conducted, consisting of a data analysis and interviews. Based on the food innovation model, a structure was given to the research. Using steps from the workbook 'Plantje verhaal', an internal analysis was conducted on Voedselbos 't Mortelke and an external analysis on the food forest sector. Combining this into a SWOT-analysis and a confrontation matrix, it can be concluded that it is useful to look into collaborations with (high-end) restaurants in order to meet the needs of Voedselbos 't Mortelke and the market. Interviews with restaurants and other potential sales channels in the area that had similar views compared to the food forest were held. Twelve interviews were held. 7 interviews were with restaurants of which 6 high-end restaurants. 2 interviews were individuals and 3 were other parties of which was clarified that they are not interested in a collaboration.

Based on the results of these interviews, it can be concluded that the needs of the participants in a potential collaboration lie in the following:

- There is an interest in both fresh and processed harvest;
- Quality and quantity are more important than the price;
- There is an interest for a yearly harvesting calendar with associated flavours;
- The participants preferably want the harvest to be delivered;
- They value honest and clear communication.

Based on this it was concluded that Voedselbos 't Mortelke can take the following steps to meet the needs of the potential sales channels:

- Make a harvesting calendar with associated flavours. This extra information is useful for the restaurants as it will then be easier for them to apply it to their menus. Additionally, they can prepare better for the year and know what harvest is coming when.
- Once a collaboration with a B2B sales channel is initiated and it is clarified what exact steps needs to be taken to realise that collaboration, someone at the food forest should focus on collecting the harvest thereby increasing the efficiency of the harvest.
- The quality of the product has to be preserved by experimenting with suitable packaging, transportation and storage.
- Develop the processing of the food forest product, either by collaborating with specialists and/or by establishing a kitchen at the food forest's location.

However, the most important step that needs to be taken is to start the conversation with an interested party which will give clarity on what needs to be done in order for this collaboration to succeed. Starting a conversation is relevant as the supply-chain of food forests is underdeveloped and needs to be set up from scratch, this can only be done by starting the conversation and clarifying the details with the other party.

The biggest limitation in realising these collaborations is inefficient harvesting. Harvesting at the food forest is done by hand, takes up a lot of time and therefore makes it hard to supply a consistent amount of harvest on a regular frequency.

As a result, more research is needed on how to turn this weakness into a strength.

In addition, further research should be done on the financial aspects, preservation of harvest quality, suitable packaging, logistics and determination of harvest quantities.

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1. Introduction

More and more food forests are being developed in the Netherlands as the sector is gaining in popularity. A food forest is a relatively new agricultural system with “a diverse planting of edible plants that attempts to mimic the ecosystems and patterns found in nature” (Project food forest, n.d.). The concept itself isn’t entirely new, as it is inspired by nature’s ecosystem. Food forestry pioneers became aware of these dynamics in nature and decided to apply them to create a new food production system (Eet meerbosch bij Boer Siem, 2021).

1.1. Project background

Food forestry in The Netherlands

In The Netherlands, food forestry was introduced by pioneer Wouter van Eck. In 2009, he set up the first educational food forest in Groesbeek. Twelve years later, the concept has gained in popularity (Boonen, Agrifirm onderzoekt haalbaarheid voedselbossen, 2021). According to John Vermeer, it is almost impossible to draw up a map of all food forests existing in the Netherlands, as there are so many new initiatives being started every single day. In the province of Brabant alone (this is also where Voedselbos ‘t Mortelke is situated), there are currently more than 200 food forestry initiatives (Vermeer, 2021).

The popularity of these initiatives is rising as there is a realisation that we have to manage our food production in a different and more nature-inclusive way compared to conventional agriculture.

They had the same realisation at Voedselbos ‘t Mortelke, which is a project initiated by the founding company Föda Silva.

Föda Silva

Föda Silva is a family initiative set up by Just, Saskia, Kyara and Carlyn (Family Smit). Kyara and Carlyn are the entrepreneurs and project leaders of the initiative. Saskia and Just have an advisory role. In the future, several projects will be set up under this name realising nature-inclusive food production. As a family, they became aware of the devastating effects of conventional agriculture on the environment. They are convinced this could be done in a different way. With the educational background of Carlyn and Kyara in sustainable development, they started their first project; Voedselbos ‘t Mortelke in Borkel and Schaft – Noord Brabant.

Föda Silva aspires to establish food production projects that function in harmony with nature rather than going against it. They intend to use the natural processes occurring in the ecosystem to create a more sustainable food production system. Think of natural pest control and increasing biodiversity. Föda Silva seeks to avoid disturbing the existing natural processes. Föda Silva aims for these projects to become socially, environmentally and economically sustainable and collaborates with entrepreneurs to realise this.

It is critical to allow time for the damaged soil to rebuild, as this is the foundation for healthy growing plants and thus for healthy food (Föda Silva, 2021). To make this possible, they invest directly and in collaboration with other investors. Investors can get involved if they want to support the mission and vision of Föda Silva.



Figure 1. Family Smit. From left to right: Just, Saskia, Kyara and Carlyn

Voedselbos 't Mortelke

Föda Silva's first project is called Voedselbos 't Mortelke. The project was initiated in 2019 and covers a total of 2,5 ha of land and will include several different business models. Farmer agricultural land and pine forest is converted to various types of food forests (romantic and rational food forest), a perennial vegetable garden, a flower picking garden, and a small nursery. Because the area was barren and disturbed prior to the start of this project due to historical traditional agricultural practices, a significant amount of effort was required to regenerate the soil. The project involves a variety of stakeholders, including, volunteers, and an intern (Föda Silva, 2021). The goal is to develop a food forest that is profitable, and hence has a future in this world. The challenge with this initiative, however, is that it is a start-up, which means there is no existing client base and an underdeveloped/non-existent supply chain (Corporate Finance Institute, n.d.). They do, however, want to penetrate the food market, and they are working extremely hard to achieve this goal.



Figure 2. Voedselbos 't Mortelke.

Challenges of food forests

Because most food forests, such as Voedselbos 't Mortelke, are in its beginning stages and because it's a new sector, challenges arise. In the first few years, the harvest of a food forest mainly exists out of annual crops and some perennial crops. After 10 years, the harvest should be at its peak. However, because most food forests in the Netherlands are still very young, the collected harvest is minimal. The consequence of this minimal supply is the lack of a substantial sales market for food forest products.

Thus, the question rises how to get the produce/harvest of a food forest to the consumers whilst at the same time safeguarding the principles of this concept (Boonen, Agrifirm onderzoekt haalbaarheid voedselbossen, 2021). Examples of these principles are: produce no waste, integrate rather than segregate and use small and slow solutions (Jaber, 2010).

How to go from forest to table?

1.2. Research objective & question

At Voedselbos 't Mortelke, they had a similar question. As they have the objective to create an economically feasible food forest; To whom do we sell our produce once it's ready to be sold? And who do we target, taking into account our own intrinsic values? There is a general lack of knowledge in the food forest sector on the customer base and practicalities of doing sales and therefore this research is of relevance for both the company as the food forest sector.

The following research objective is defined:

To create a clearer image on possible sales markets for the products that will be offered by Voedselbos 't Mortelke and how to target them?

The following research question will be answered:

What are B2B sales channels for the products offered by Voedselbos 't Mortelke?

To answer this research question, the following sub-questions were formulated:

1. **Discover phase:** What does the food forest sector look like in the Netherlands, what is the brand identity of Voedselbos 't Mortelke in this sector and how are the two linked to each other?
2. **Ideate phase:** What are possible products (concept ideas) that can be offered by Voedselbos 't Mortelke based on their intrinsic values and the needs of the market?
3. **Develop phase:** What are potential sales channels and how will the distribution routes of the products offered to these stakeholders, be organized?
4. **Deliver phase:** What is needed to realise these potential distribution routes?

The scope of the project:

- The focus in this research was solely on food forest products and not on food forest services. As this was the question of the client. An explanation on the meaning of food forest products can be found in appendix 2.
- The research is conducted on Voedselbos 't Mortelke and not on the founding company Föda Silva.
- The research is focussed on B2B sales channels. Argumentation for this can be found in the ideate phase.

1.3. Reading guide

In chapter 2 and 3, the theoretical frameworks and methods are described.

After which, in chapter 4, the **discover phase** is introduced. In this phase an internal analysis on the food forest and an external analysis on the sector will be combined to form a SWOT-analysis (Strengths-Weaknesses-Opportunities-Threats analysis) and a confrontation matrix.

In chapter 5, the **ideate phase**, concept ideas are created. These ideas have a focus on B2B-sales channels and will be worked out in the develop phase.

In chapter 6, the **develop phase**, research will be conducted through interviews with potential sales channels on the viability of these B2B concept-ideas.

Lastly, in chapter 7, the **deliver phase**, the marketing mix for the food forest will be illustrated. After these phases, the report will be finalised with a discussion, conclusion, recommendation, references and the appendix.

2. Theoretical frameworks

This research is a qualitative case study. To answer the research question, five theoretical models are used; The food innovation model, workbook 'Plantje verhaal', SWOT-analysis, confrontation matrix and the marketing mix. These theoretical frameworks were used to provide structure to the research and to answer the sub-questions effectively.

2.1. Food innovation model

The food innovation model is a framework created by students from the study program of HAS university, Food Innovation. This framework will help create a structure for the sub-questions. It is based on a five-step thinking model, called design thinking. This study follows the following definition of design thinking:

'Design Thinking is an iterative process in which we seek to understand the user, challenge assumptions, and redefine problems in an attempt to identify alternative strategies and solutions that might not be instantly apparent with our initial level of understanding' (Dam & Siang, 2020).

Thus, the goal of the model is to activate an alternative way of (design) thinking and thereby creating creative and new concept-ideas for your business which would not have been thought of in the first place. This theoretical framework is consulted as there is a need at Voedselbos 't Mortelke for the discovery of ways to connect with the customer and to sell the harvest. Applying a different way of thinking seemed suitable to move forward and innovate when it comes to creating sales channels from scratch.

With the Food Innovation model, five phases of thinking are defined:

The first phase is the **discover phase** in which an internal analysis will be done on Voedselbos 't Mortelke and an external analysis on the food forest sector. An internal analysis is important for the exploration of the competitive advantage of a business (Indeed Editorial Team, 2021). What makes a business unique and how will this be communicated to the target market. An internal analysis is about creating a brand image. In a later stage, this brand image of 'Voedselbos 't Mortelke' is then linked to the needs and characteristics of the target market (Draaijer, Ingenhoven, Klein, & Slappendel, June 2020). The first three steps of the workbook 'Plantje verhaal' were used to make an internal analysis on Voedselbos 't Mortelke.

In the external analysis, the existing sales channels in the food forest sector are analysed.

The internal analysis and external analysis will be combined into a SWOT-analysis and Confrontation Matrix, after which opportunities will be identified to create suitable concept ideas for potential sales channels in the next phase.

The main objective of the second phase, **the ideate phase**, is to brainstorm. Opportunities will be transformed into concept-ideas.

The third phase, **the develop phase**, will focus on the feasibility and viability of the concept-ideas.

The next phase, **the deliver phase**, focusses on the steps that need to be taken to realise these concept-ideas. The marketing-mix (product, price, place and promotion) will be the basis for this step.

Lastly, the final phase, **the evaluation phase**, focusses on the process after the research has been done. What is the feedback of Voedselbos 't Mortelke on the research and how will they use it to set up their possible future

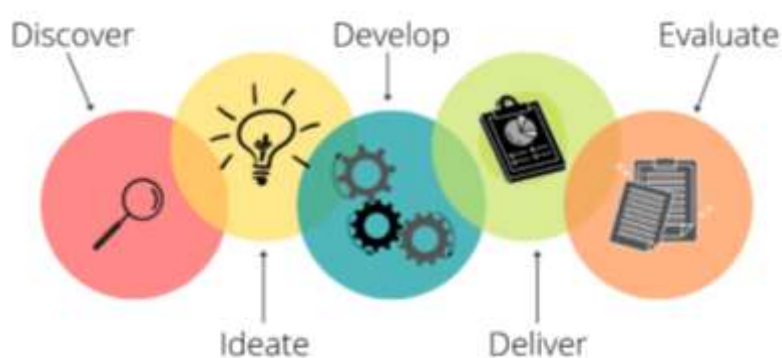


Figure 3. The five phases of the food innovation model (Swart, Five phases of food innovation model, 2021).

sales channels? This last step will not be included in the research. However, it will be discussed in person and seen through the development of the company after this research (Draaijer, Ingenhoven, Klein, & Slappendel, June 2020).

These five phases are the basis of the following sub-questions:

1. **Discover phase:** What does the food forest sector look like in the Netherlands, what is the brand identity of Voedselbos 't Mortelke in this sector and how are the two linked to each other?
2. **Ideate phase:** What are possible products (concept ideas) that can be offered by Voedselbos 't Mortelke based on their intrinsic values and the needs of the market?
3. **Develop phase:** What are potential sales channels and how will the distribution routes of the products offered to these stakeholders, be organized?
4. **Deliver phase:** What is needed to realise these potential distribution routes?

2.2. Workbook 'Plantje verhaal'

The five-phases of the Food Innovation model, which were explained in the previous chapter, were used by students from HAS university to create a marketing workbook for food forests, called 'Plantje verhaal' (Slappendel, Ingenhoven, Klein, & Draaijer, 2020). The purpose of this workbook is to identify a brand identity, which can then be presented to potential customers. This theoretical framework will help with analysing the internal analysis of a company and will therefore be used to answer sub-question 1, the discover phase: What does the food forest sector look like in the Netherlands, what is the brand identity of 'Voedselbos 't Mortelke' in this sector and how are the two linked to each other?

The workbook consists of 8 steps that will help you answer the following questions:

- What story do you want to tell as a company?
- Who is your target audience?
- What products do I want to sell?
- And what steps can I take to achieve the goals set for the company?

In the workbook, the steps are accompanied by assignments which are useful to answer the relevant questions. In the following table, the steps in the workbook will be explained as well as their purposes.

Step:	Activity
1- 'Planting a seed'	Find out in what category food forest you fit in: <ul style="list-style-type: none"> - Self-sustaining; - Community; - Product; - Ecosystem
2- 'Rooting'	Define the intrinsic motivation of the company with the help of the Japanese concept ikigai. Vision definition.
3- 'Germinate'	Define your voice and target audience.
4- 'The first leaves'	From long-term goals to short-term goals through back-casting.
5- 'Towards the sun'	Judgement of the feasibility of your concept-ideas. Are you meeting the needs of your target audience?
6- 'Branch out'	Action plan based on SMART-goals.
7- 'Growing buds'	Create a 91-day action plan.
8- 'Deepening'	Social media tips.

Table 1. 8-steps of workbook 'plantje verhaal' (Slappendel, Ingenhoven, Klein, & Draaijer, 2020).

Step 1: consist of defining the type of food forest.

Step 2: The purpose of step 2 is to define the intrinsic motivation of a company with the help of the Japanese concept ikigai. A series of questions were created to discover the WHY, the HOW and the WHAT of a company, to eventually determine 'that what is worth living for' (meaning of ikigai; see figure 4). Ikigai is the passion of someone in which 4 elements meet each other: what you love, what the world needs, what you are good at and what you can be paid for (see figure 4).

Step 3: consists of defining the target audience and voice of a company. According to Laura Lake (2019) a target audience is defined as: "a group of people identified as being likely customers of a business" (Lake, 2019). Different archetypes/personas were created and the assignment for the company is to choose an archetype you want to sell your product to. The task is then to find the right tone of voice and product to attract this persona. In this research the target audience is defined, and this regards the customers of the potential distribution channels, thus the customers of for example a potential supermarket the products will be sold to. The potential sales channels that will be researched in this paper are B2B. However, the target audience will be determined based on B2C because the target audience of the B2B sales channels is B2C. When you determine the target audience of the B2C, indirectly the target audience of the B2B sales channels is also determined. For example, the customers at a restaurant is the target audience of both the restaurant as well as Voedselbos 't Mortelke.

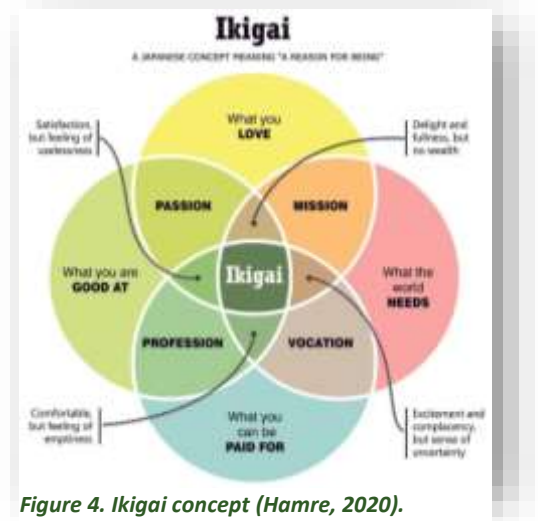


Figure 4. Ikigai concept (Hamre, 2020).

Steps 1, 2 and 3 from the workbook 'Plantje verhaal' will be used to help answering sub-question 1, the discover phase: What does the food forest sector look like in the Netherlands, what is the brand identity of 'Voedselbos 't Mortelke' in this sector and how are the two linked to each other? In this phase, an internal analysis of the company is made. This workbook will be used for that purpose. The first three steps of the workbook serve as the foundation for the internal analysis of a company. (The internal- and external analysis will be elaborated upon in the methods)

2.3. SWOT-analysis

The SWOT-analysis is a model used for companies' market research. It's a fast way of finding out where the opportunities for a company lie as well as where improvements need to be made based on their strengths and weaknesses. An internal analysis will result in the **strengths** and **weaknesses**. An external analysis will result in the **threats** and **opportunities**. These 4 aspects will give an illustration on possible opportunities and points of improvement. The SWOT-analysis will be used in this research as a means to combine the internal- and external analysis of the client's company (kvk, n.d.). The purpose of analysing the link between the internal and external analysis is to give insights into strategic combinations for possible concept ideas that will be created in the ideate phase. The results will be elaborated on in the confrontation matrix.

This theoretical framework was chosen to help answer sub-question 1, the discover phase: What does the food forest sector look like in the Netherlands, what is the brand identity of Voedselbos 't Mortelke in this sector and how are the two linked to each other?



Figure 5. Visualization of the SWOT-analysis (Slide team, n.d.)

2.3.1. Confrontation matrix

A confrontation matrix is a tool that is used to analyse the market in relation to the company itself, based on the SWOT-analysis. “The confrontation matrix is a matrix that shows (visually) how the organisation and the market come together. It shows organisations which opportunities are feasible and which threats are in the way or can be tackled” (Almora, n.d.). How do you respond to the market with your company?

- “Strengths – Opportunities: Are the strengths of the organization used to respond to market opportunities?”
- *Strengths – Threats*: Are strengths being used to ward off threats from the market?
- *Weaknesses – Opportunities*: Are the weaknesses of the organization strengthened to respond to market opportunities?
- *Weaknesses – Threats*: Are the weaknesses strengthened to resist the threats in the market?” (Almora, n.d.)

This theoretical framework was chosen to help answer sub-question 1, the discover phase. It will give an even more detailed analysis on what opportunities exist for Voedselbos ‘t Mortelke to further elaborate on.

		OPPORTUNITIES				THREATS			
		O1	O2	O3	O4	T1	T2	T3	T4
STRENGTHS	S1								
	S2								
	S3								
	S4								
WEAKNESSES	W1								
	W2								
	W3								
	W4								

Figure 6. Visualization of confrontation matrix (Capellen, 2020).

2.4. Marketing Mix

The marketing mix is used for companies to determine which elements need to be combined to reach its marketing goals and objectives. This includes the 4P's: product, place, price and promotion. It is used as a supportive theoretical model for a company to offer new products that will meet the needs of target markets as well as effectively promote a brand's unique value. In this research it will be used to analyse the results and give an overview of the product that would be advised to offer. To determine the 4P's, an internal- and external analysis needs to be conducted (Manthei, 2017). This theoretical framework was chosen to help answer sub-question 4, deliver phase: What is needed to realise these future possible distribution routes?



Figure 7. Marketing mix (Powerslides, 2010).

3. Methodology

This research was conducted in a timespan of 20 weeks. The discover phase was researched in the first 4 weeks, the ideate phase from week 4 till week 6, the develop phase from week 6 till week 18 and the deliver phase from week 14 till week 18.

In the following chapter, the methods used for answering the sub-questions are described. It is a qualitative study that combines literature research with interviews.

3.1. Data analysis

To answer the sub-questions mentioned above qualitative data was collected and analysed, mainly supported by the theoretical frameworks. The structure created in the project plan was conducted.

1. **Discover phase:** What does the food forest sector look like in the Netherlands, what is the brand identity of 'Voedselbos 't Mortelke' in this sector and how are the two linked to each other?
 - **Internal analysis:** See interview section.
 - **External analysis:** For this external analysis, the research that supports the creation of the workbook 'Plantje verhaal' was used. Additionally, a general internet research was conducted on the food forest sector, mainly focussing on existing B2B sales channels.
 - This internal analysis is then combined with the external analysis to form the SWOT-analysis and confrontation matrix.

2. **Ideate phase:** What are possible products (concept ideas) that can be offered by Voedselbos 't Mortelke based on their intrinsic values and the needs of the market?
 - In this phase, the opportunities that were researched in the discover phase were developed into concept ideas, based on the SWOT-analysis and the confrontation matrix. The goal of Voedselbos 't Mortelke was taken into account as well as the brand identity that was analysed in the internal analysis.
 - The focus is on concept ideas that can be realised in the near future.

3. **Develop phase:** What are potential sales channels and how will the distribution routes of the products offered to these stakeholders, be organized?
 - Potential sales channels that fit the brand identity and concept ideas of Voedselbos 't Mortelke are contacted by email for planning an interview.
 - An interview template was created in collaboration with the project leaders of Voedselbos 't Mortelke.
 - Interviews were held with potential sales channels to discover the needs of the market either on location or online.
 - The results are summarized and illustrated in this chapter.

4. **Deliver phase:** What is needed to realise these future possible distribution routes?
 - The results of the develop phase were analysed and combined into a marketing mix. Then, in order for Voedselbos 't Mortelke to be able to take steps toward collaborations with B2B sales channels, an action plan was outlined.

3.1.1. Interviews

This research is a qualitative research based on interviews. To answer the research question, there needs to be knowledge on the views and needs of companies in the market and of Voedselbos 't Mortelke. By conducting interviews with employees at a potential sales channel's company, a better understanding of the requirements for future collaborations with the food forest was gained. Thus, the results of the interviews give information on THEIR needs. It needs to be decided whether Voedselbos 't Mortelke wants to conform to those needs.

Discover phase:

In the discover phase, Kyara and Carlyn Smit were interviewed to determine the intrinsic motivation behind Voedselbos 't Mortelke. They were both interviewed for reliability reasons as there are multiple project leaders. As it is a family company, the research cannot be based solely on one interview with one employee. It was decided upon to interview the main employees of the company, the project leaders, and thus Kyara- and Carlyn Smit. The interview questions were drawn up using step 2 of the workbook 'Plantje verhaal':

WHY?

- Why do you get up in the morning to work on the food forest?
- Where does your interest in food forests originates from?
- What is the purpose of this food forest?
- What do you believe in at 'Voedselbos 't Mortelke'?
- Why would an outsider care for your food forest?

HOW?

- What is unique about your food forest?
- How will you stand out from other food forests?

WHAT?

- What products and services do you currently offer and with what do you earn money?
- What do you create in your food forest?

Develop phase:

In the develop phase, the concept ideas created in the ideate phase were researched through interviews with potential sales channels. The purpose of the interviews was to identify the needs of the targeted market. What is needed to realise a collaboration between the food forest and a potential customer? Based on the answers of the interviews, an action plan for the future was created in order for Voedselbos 't Mortelke to reach the desired customers by meeting their needs. The area surrounding the food forest was researched, finding potential sales channels.

The places that were contacted for an interview were chosen based on the following parameters:

- The distance from the food forest (max 30 kilometres)
- In case of a restaurant: whether they had flexible menus
- Companies having the following characteristics: ambition to be sustainable, creative and open-minded as these characteristics fit the ambitions of Voedselbos 't Mortelke.

Food forestry products are usually unfamiliar to the common citizen. It takes a creative and sustainable mindset to successfully incorporate it into your business. When looking for possible sales channels, close observation of the website and intrinsic motivation of the company were made, after which it was decided upon whether to contact that company for an interview or not. Several restaurants, catering company's, farm shops, organic supermarkets and green grocers were contacted. Mainly restaurants responded enthusiastic to our request. 7 out of 12 interviews were restaurants. 2 out of 12 were individuals, one specialised in food processing and preserving and one specialised in vegan catering. The other 3 were parties not interested in a future collaboration. The restaurants were segmented into fine dining/high-end, casual dining and contemporary casual, to be able to make conclusions in the end, and to analyse the interviews.

The illustrated segmentation of the restaurants can be found below, as well as the product overview of Voedselbos 't Mortelke which was used to support the interviews and the interview questions that were asked. The purpose of the product overview was to give the potential customers an idea of the harvest that is offered.

The first contact with the companies was made through an email. Afterwards, appointments were made either at their company, the food forest or online. The interviews were recorded and afterwards transcribed.

Segmentation

In the following table a segmentation is illustrated of the restaurants contacted. Types of restaurants that weren't contacted, were left out of the segmentation.

Type of restaurant	Characteristics
Fine-dining/high-end	<ul style="list-style-type: none"> - Formal dress code and fine dining etiquette - Formal atmosphere - Menus include exotic and interesting dishes. - Staff members are formal - Sommeliers - €€€-€€€€
Casual-dining	<ul style="list-style-type: none"> - Table service - Low-key atmosphere - Unique décor - €€
Contemporary casual	<ul style="list-style-type: none"> - Table service - Focus on healthy and sustainable food - Modern casual yet trendy atmosphere - Instagram worthy food presentation and décor - €€-€€€
Café	<ul style="list-style-type: none"> - Usually serve coffee, tea, pastries, and small items for breakfast and lunch - Casual, relaxed atmosphere - Many people might work or socialize for periods of time at a cafe - €-€€

Table 4. Segmentation of restaurants contacted (WebstaurantStore, 2018).

Product overview

A product overview is created to present to the potential customers. The plants that are currently in the food forest and will give a harvest in the near future are listed in this overview. On top of that, the name of the plants in Latin, number of plants, edible parts and harvest period are noted as well. The list is segmented in the following layers of the forest: canopy/tall tree layer, lower tree layer, shrub layer and herbaceous layer. Additionally, vegetables, berries and weeds are stated. We want to see how people will respond to this overview and whether people are familiar with the plants. This plant overview will be used for some of the interview questions. A section of the plant overview illustrated:

PLANTENLIJST VOEDSELBOS 't MORTELKE				
PLANT	LATIJNSE NAAM-CULTIVAR	AANTAL	EETBAAR	OOGSTPERIODE
<i>Boomlang 'voeg'</i>				
Japannse Walnoot/Hartnoot	<i>Juglans ailantifolia cordyformis</i>	1	Vrucht	Sept-Okt
Bocmbaankas	<i>Corylus x colarumoides</i> Melchior	1	Zaad	Sept-Nov
Kers	<i>Prunus avium</i> 'Udenne spontane	1	Vrucht	Juni-Juli
Papierbeek	<i>Betula papyrifera</i> Vancouver	1	Bapstroom	/
Amerikaanse persimmon	<i>Diospyros virginiana</i>	1	Vrucht	Okt-Nov
Boternoot	<i>Juglans cinerea</i>	1	Noot + Bapstroom	Sept-Okt

Figure 8. Plant list Voedselbos 't Mortelke.

Interview questions

A set of questions were created that will clarify practical aspects of a protentional collaboration. The questions are of interest to Voedselbos 't Mortelke and thereby the needs of the market will be analysed. Based on the results from these questions, future decisions can be made. The questions are in Dutch. Before conducting the interviews, the list of plants stated in the paragraph above was send to the interviewee.

- 1. Wat vindt u van de plantenlijst? Staat alle relevante informatie erop? En bent u bekend met de planten die erop staan?**
 - Is er ook behoefte aan een oogstkalender?
 - en/of meer gedetailleerde cijfers over de hoeveelheid planten er aanwezig zijn van een soort?
- 2. De oogst bij voedselbos t' Mortelke, zal fluctueren per seizoen/week. Het zal dus verschillen per keer wat er beschikbaar is voor de oogst. Dit vergt een bepaalde flexibiliteit van de afnemers en de menukaart. Is dat iets waar jullie voor open staan?**
- 3. Zouden jullie bereid zijn om op een regelmatige basis, onder begeleiding, zelf de oogst te komen plukken bij het voedselbos? Zo ja, wat is daarvoor nodig van ons?**
 - Ondersteuning van een specialist bij het plukken?
 - Een informatiegids over hoe je de producten het best kan bewaren?
 - Een informatiegids over hoe te oogsten?
- 4. Zou u graag vóór uw plukbezoek/afname geïnformeerd willen worden over de beschikbare pluk? Dus wat er valt te oogsten in dat moment? Of wilt u liever verrast worden in het moment en kijken wat er beschikbaar is door te voelen en proeven in het voedselbos?**
- 5. In wat voor planten zou u voornamelijk geïnteresseerd zijn?**
 - Kruiden/specerijen
 - Noten
 - Vruchten
 - Fungi/paddenstoelen
 - Groenten
 - Bijzondere producten zoals uiensoepboom en de krentenboom
- 6. Is er een specifieke plant dat voor jullie van interesse is, die misschien moeilijk te verkrijgen is?**
- 7. Wat zijn de minimale hoeveelheden alvorens jullie gaan afnemen? Hoeveel kilos van een bepaald product?**
- 8. Zou u interesse voor een samenwerking groter zijn als de producten al ingemaakt zouden zijn, bijv. in een jam, siroop, chutney etc.? Of heeft u meer interesse in de verse oogst?**
- 9. Zijn er bepaalde hygiëneregels waar we rekening mee moeten houden?**
- 10. Hechten jullie waarde aan het hebben van een specifieke certificering en is dat een vereiste?**
- 11. Onder welke (andere) voorwaarden zouden jullie een samenwerking aan gaan met ons, Voedselbos t' Mortelke?**
- 12. Zouden jullie geïnteresseerd zijn in een initiatief waarbij de oogst van meerdere voedselbossen naar een centraal punt wordt gebracht en van daaruit gedistribueerd wordt?**

At a later stage in the research the following question was added:

- 13. Kunt u uitleggen hoe het proces met uw leveranciers op het moment verloopt?**

4. Discover phase

What does the food forest sector look like in the Netherlands, what is the brand identity of Voedselbos 't Mortelke in this sector and how are the two linked with each other?

4.1. Internal analysis

The steps from the workbook 'Plantje verhaal' will be the basis for this chapter and thus the internal analysis. In each step, reference will be made to the conducted interviews. Steps 1,2 and 3 of the workbook 'Plantje verhaal' will be followed by paragraphs on the mission and vision, the competitive advantage and Unique Selling Points of the project.

Step 1: Planting the seed

Step 1 of workbook 'Plantje verhaal' has the purpose of determining to what type a specific food forest belongs. According to this workbook, you have 4 food forest types: community, production, self-sustaining and ecosystem. Below, each type is characterised.

Community:

Producing food accompanied with a high added societal value and involvement. Connection is key, with a transparent outlook to the external world. Networking is very important to make the relevant connections. Recreational purposes can be of high value to the food forest community, and it can also make it profitable.



Self-sustaining:

Producing your own food, from the point of view for the environment, education, self-reliability or for your own health. Making your own choices about which food is planted and harvested. Creating a transparent, beautiful, and healthy environment. A small CO2 footprint and in which nature is connected to agriculture. However, it is important to have another source of income in addition to the self-sufficient food forest. Examples could be education and/or an advisory role about food forests.



Production:

The food forest is designed for growing and harvesting products. The forests are planted in a way which makes it easy to harvest, with crops that provide a stable yield. Market driven and careful attention is paid to the crops that can be grown. The production food forests have been set up to market the final harvest. The range of products can also be more than just the food from the food forest.



Ecosystem:

In the ecosystem category, farmers mainly strive to offer ecosystem services such as increasing biodiversity, improving the soil and reducing CO2 emissions into the air. Farmers often choose to provide information, exchange knowledge and raise awareness for the agroforestry construction sector as well as for the food forest sector. Monitoring for universities, courses, guided tours and public speeches are often extra activities for the farmer.



According to both Carlyn and Kyara Smit (the founders), Voedselbos 't Mortelke can be characterised as a food forest that has a focus on both Community and Production.

Community

On the one hand, the founders aim to provide a comfortable environment for people to visit as well as an opportunity to interact with others and learn about the food forest.

To provide this, they want to offer tours, workshops, and volunteer days. The beautiful surroundings of the food forest will contribute to peoples' wellbeing.

Production

On the other hand, they want to prove to society that you can make a profitable business out of growing food sustainably in a food forest. To achieve this, the food forest was designed having in mind different production purposes whereby the focus is on selling the harvest (Smit, 2021).

Step 2: Shooting roots

In this paragraph a summary will be given on the interview answers getting into the WHY, the HOW and the WHAT of Voedselbos 't Mortelke.

WHY?

Cultivating sustainable change. The average man/woman are sometimes unaware of the existence of environmental problems and thereby also of the negative influence of conventional agriculture on these problems. Often, resistance to new alternative agriculture systems arises in this target market. Therefore, it is of great importance to both Kyara and Carlyn, to connect these people to the food forest, thereby changing the behaviour and beliefs of this target group about the current food system and the need for nature-inclusive food production. Additionally, Voedselbos 't Mortelke is the pilot project of Föda Silva, the purpose is to experiment, learn and observe what works best in order for the project to become financially viable.

HOW?

The way Voedselbos 't Mortelke stands out from other food forests is through their diversity.

Voedselbos 't Mortelke is much more than just a food forest; they have a diverse variety of business models. They have a romantic, an ornamental, an educational and a production food forest, giving a diverse harvest. Combining the answers from both Kyara and Carlyn, gives the following Unique Selling Points (USP).

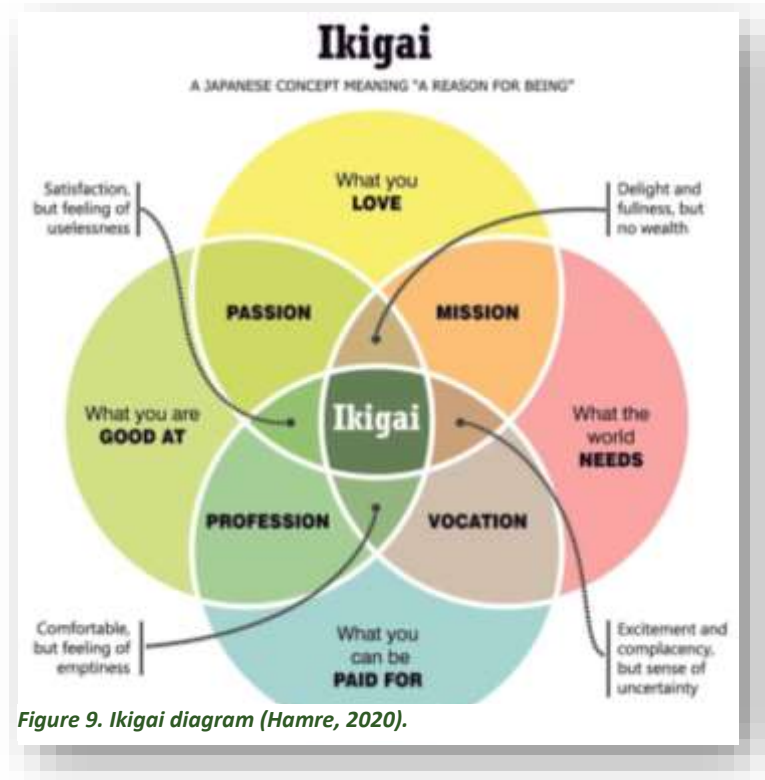
Unique selling points Voedselbos 't Mortelke → **diverse, local, sustainable.**

WHAT?

Voedselbos 't Mortelke has yet to generate money from their work. The products and services that are available for future sales are the following:

- Flowers; either fresh or dried.
- Perennial vegetables
- Food forest products; harvest either fresh or processed.
- Seeds + propagated plants
- Services such as workshops

What is created in the food forest is sustainable food production, peace and wellbeing, activity and collaboration, a place to fantasize and enjoy healthy, local and sustainable food.



Step 3: Germinate

In step 3 an analysis is done on the target audience of a company. According to Laura Lake (2019) a target audience is defined as: “a group of people identified as being likely customers of a business” (Lake, 2019)

The target market, Voedselbos 't Mortelke is aiming to attract are the average man/woman. In the workbook 'Plantje verhaal' they are characterised along the following sentence: 'Everyone is equal. I'd rather do things together than alone and find connection.

'it's better to have close relations with your neighbour than it being a distant friend'.

'Just act normal that's crazy enough'.

This will be a challenge as there is a lot of controversy on the topic. The average man/woman isn't familiar with the concept of food forests. Therefore, they first have to get used to the idea of food forests, as it is introduced to society.

However, they will most likely easily attract the magician from the beginning. They are open-minded and idealistic. The characteristic of the magician is explained in the following text: 'I like to make the impossible possible in a simple way. Observing and understanding fundamental laws. Looking for win-win solutions.' 'All big ideas start with a sketch, what's yours?' (Slappendel, Ingenhoven, Klein, & Draaijer, 2020).

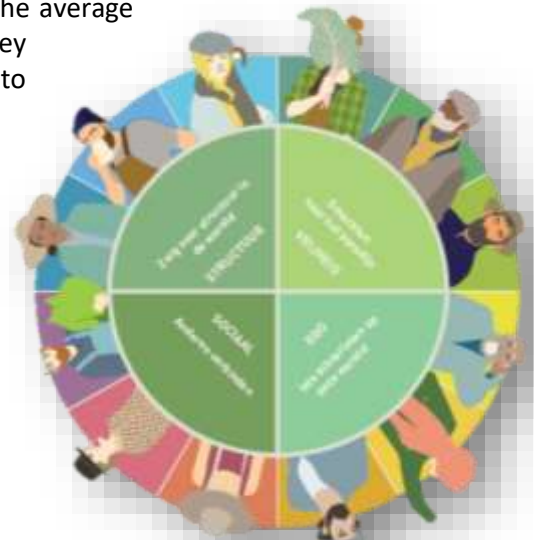


Figure 10. Archetypes step 3 workbook 'Plantje verhaal' (Draaijer, Ingenhoven, Klein, & Slappendel, June 2020).

Tone of communication:

According to the interview with Kyara Smit, Voedselbos 't Mortelke wants to activate people to fantasize more. Additionally, 'Down to earth' communication to normalize the food forest sector, is strived towards.

Mission (what we stand for):

Voedselbos 't Mortelke stands for honest and transparant nature-inclusive food production through the creation of a food forest. Food and humans aren't separate, they are interconnected. When the right collaboration is applied, a symbiosis will arise. A symbiosis that is created at Voedselbos 't Mortelke. The food forest is a place where all people are welcomed with lots of warmth and cordiality, where everyone is equal and respected. Connection is key! (Braakman & Zijp, 16 nov 2020).

Vision: (what we're going for):

At Voedselbos 't Mortelke we aspire a world in which food is being produced in a nature-inclusive and as well as economically sound way. Voedselbos 't Mortelke is a place that inspires people and food production to act differently and produce and live more in connection with nature. People enjoy coming to the food forest, have a connection where their food comes from and with nature.

Competitive advantage:

Diversity of food forest and business models. There is a big ambition to do things differently and even be a little stubborn.

4.2. External analysis

In the following chapter an external analysis is made on the current food forest sector. The purpose is to get an overview of already existing sales channels which are applied by other food forests. With this information, new concept ideas and possible opportunities may be created for Voedselbos 't Mortelke. After conducting literature research on this topic, it became apparent that food forest Ketelbroek is just about the only food forest with a visible presence on the internet that provides extensive information about the food forest's activities and business models as regards to the sales of the harvest. Other food forests are either in the early stages of development and hence lack a well-designed website, are not active on social media or have a community focus and thereby offer workshops etc. As a result, food forest Ketelbroek is the only food forest of which the existing sales channels of the harvest could be analysed. Therefore, an overview of the revenue models of food forest Ketelbroek is presented in the following chapter.

Existing sales channels – production based

Restaurants

What are existing business models whereby the harvest of a food forest is sold? Firstly, what is already being done at Ketelbroek, founded by Wouter van Eck, is the distribution of harvest to a restaurant. Michelin star restaurant 'De Nieuwe Winkel' uses ingredients from the food forest in their dishes. It is a high-end restaurant that has one Michelin star as well as one green Michelin star, which is an indicator for sustainability. The main ingredient in their dishes are vegetables. Chef Emile van der Staak visits Ketelbroek once a week on Monday to collect the preferred harvest. Whilst collecting the harvest, Emile is guided by Wouter and informed about the gastronomic possibilities of certain plants (Draaijer, Ingenhoven, Klein, & Slappendel, June 2020).



Figure 11. Stem of Toona Sinensis. Harvested by Emile van der Staak. (Restaurant de nieuwe winkel, 2021)

Catering

Wouter van Eck also supplies part of his harvest to a catering company called: bioCatoetje (Draaijer, Ingenhoven, Klein, & Slappendel, June 2020). It is a vegetarian and organic catering supplier. Additionally, Vitam, a caterer who delivers meals for 180 companies all around the Netherlands, has shared that they are interested in buying part of the future harvest from a foodforest (Boonen, Agrifirm onderzoekt haalbaarheid voedselbossen, 2021). They currently have their eye on a 20 ha food forest in Schijndel, which initiated planting in 2019.

Organic supermarkets

An obvious but difficult to realise other distribution route is through supermarkets. Supermarkets usually have strict rules and purchase large quantities of one food. These conditions are not ideal for food forests as they usually cannot supply large quantities and don't have a developed supply chain yet.

At the moment, the most appealing supermarkets for possible collaboration with food forests are organic supermarkets, such as Ekoplaza. Organic supermarkets are known to be more open for alternative food production sectors and usually already have existing collaborations with farms that promote sustainable farming practices. Looking once more at food forest Ketelbroek, since 2018, they have had a collaboration with Ekoplaza, Nijmegen Ziekerstraat. The products offered by Ketelbroek differ from time to time, depending on the available harvest. In september 2018, they offered Discovery Apple and Nashi Pear in the organic supermarket (Ekoplaza Nijmegen Ziekerstraat, 2018).

As you can read from this final chapter on existing sales channels, not many concept ideas are already realised. This indicates the relevance of research on potential sales markets and business models in the food forest market.

4.3. SWOT-analysis

In the following table, a SWOT-analysis is created based on the internal- and external analysis.

Strengths	Weaknesses
<p>S1: Ecologically sustainable S2: Entrepreneurial and experimental attitude S3: Unique & exotic products</p> <p>High intrinsic motivation Family company Willingness to collaborate Open-minded Viability is the goal</p>	<p>W1: Plants are not planted for efficient harvesting W2: Time inefficiency W3: No clear strategy for future</p> <p>Small acreage Location Shortage of staff</p>
Opportunities	Threats
<p>O1: Trend: transparent and sustainable food O2: Trend: healthy diet O3: High end restaurants are in search of being unique and innovative</p> <p>Trend: local food</p>	<p>T1: Efficiency of conventional agriculture T2: Little knowledge on food forests by the public and potential customers T3: Lack of existing sales channels</p> <p>Growing population</p>

Table 2. SWOT-analysis Voedselbos 't Mortelke

The internal analysis results in the following main strengths: ecologically sustainable, entrepreneurial and experimental attitude and unique products. The main weaknesses are identified as following: plants are not planted for efficient harvesting, time inefficiency and there is no clear strategy for the future.

The external analysis can be concluded by the following threats: efficiency of conventional agriculture, little knowledge on food forests by the public and a lack of existing sales channels.

The main opportunities resulting from this SWOT-analysis are: the trend of transparent and sustainable food, the trend of a healthy diet and the search of high end restaurants for innovative and unique ideas (Draaijer, Ingenhoven, Klein, & Slappendel, June 2020).

The top 3 of every different aspect is used in the confrontation matrix.

Strengths:

Having done an elaborate internal analysis on Voedselbos t' Mortelke, it can be concluded that they have a **high intrinsic motivation** to prove towards conventional agriculture that a food forest can be both environmentally sustainable as well as profitable. One other reason why the intrinsic motivation is high, is because the project is **family owned**. This will improve communication as well as stimulating accountability. The human aspect is very important for everyone and therefore, connection is key. Connection with its employees as well as with people in the area. This creates both a high sense of cohesion and a **willingness to collaborate** from both sides. In this collaboration with people/employees, being **open-minded** is an important quality that the Smit's (the family name) value. This on its turn creates more innovation and creative brainstorming. Because the main purpose of this food forest is showing that it can be **profitable** to produce food sustainably and that you can create a successful business model with a food forest, the family has an **entrepreneurial attitude** towards this project. And lastly, a food forest is a form of food production which is **ecologically sustainable**, this is a strength because the demand from the consumer for sustainable food is high.

Weaknesses:

There are several aspects to this project that can be seen as weaknesses. One of them being that the food forest is set up on a **small acreage**. This is a weakness because it means that the harvest will be limited, and a big sales market is difficult to realise. Looking at the sales of the products from the food forest, another weakness is that a big part of the land is not designed for **efficient collection of the harvest** (One part of the food forest is however designed for efficient harvesting).

Food forests are a relatively new sector, therefore lots of innovation is required. Additionally, because it's a new concept, there is no existing customer base and an underdeveloped supply chain (Corporate Finance Institute, n.d.). And because there is no current demand for food forest products, Voedselbos 't Mortelke has **no clear strategy for the future**. Looking at the **location**, the food forest lies far from the city centre of Eindhoven (+/- 30 min by car) and that is where you find the most people in the area. And lastly, it takes +/- 10 years for a food forest to reach maximum production capacity. Therefore, you need to have patience and adapt to the time of nature and the growth of the trees and plants, which makes you dependent on **time**. Compared to conventional agriculture, food forests are more time inefficient.

Threats:

There are a lot of threats for food forests as it is a relatively new niche market which is still developing and in its beginning stages. Growing a food forest takes time. However, we are living in a fast-paced world with an **ever-growing population**. Therefore, the general opinion is that we have to continue with food production from **conventional agriculture** as it is more efficient on the short-term compared to food forestry.

And because food forests is a relatively new sector, **prices for courses are high**. Additionally, the public isn't familiar with the food and products from food forests, there is **little knowledge** and therefore there is a lot of **distrust from stakeholders**. 'Unknown is unloved'

Lastly, another threat is that there are currently few existing sales channels for food forest products. The question rises whether demand will meet supply in the future.

Opportunities:

Opportunities are important for the creation of new concept ideas. When looking at Voedselbos 't Mortelke several opportunities arise based on market research and an internal analysis. Firstly, due to the rising **trends of sustainable food production and a healthy diet**, future demand will be likely to rise (Slappendel, Ingenhoven, Klein, & Draaijer, 2020). Additionally, to make food supply more sustainable there is a bigger demand for **locally grown food** (Dormaar, 2020). This is an opportunity as Dutch people are more likely to buy food from their area instead of buying food from supermarkets which usually comes from overseas. The food forest responds well to this trend by offering a new sustainable way of food production. And when looking at the sales channels, (**high end**) **restaurants** are usually looking for new creative, innovative and unique ingredients (Ruig; passie voor food sinds 1891, 2021). These restaurants can also afford to have a flexible menu, thereby cooking based on what the season is offering. Food forests offer unique seasonal products and therefore restaurants are a great potential sales channel (Capellen, 2020). Other potential sales channels such as supermarkets and catering seem to have shown less interest in collaborations with food forests. This can be concluded from the lack of response to the emails that presented the possibility of conducting an interview for this research. Several restaurants replied excitedly, while organic supermarkets, catering companies, and farm shops did not respond at all.

Additionally, there is a general bigger demand for sustainable food production, and therefore companies that can easily move with the trends and thus are interested in sustainably, locally and freshly grown produce are potential sales channels for the food forest.

4.4. Confrontation matrix

The confrontation matrix is conducted with the purpose of analysing the link between the internal and external analysis and to give insights into strategic combinations for possible concept ideas that will be created in the next phase.

The top 3 of every group in the SWOT-analysis will be used for the confrontation matrix.

In this matrix the influence of different aspects on each-other is illustrated by the numbers; 2 being a very positive influence and -2 being a very negative influence. For example, what is the influence of a certain strength on a certain threat? Is it a positive or a negative influence?

		Opportunities			Threats			
		O1	O2	O3	T1	T2	T3	
Strengths	S1	2	1	2	2	0	1	8
	S2	1	1	1	1	-1	2	5
	S3	0	1	2	0	-2	-1	0
Weaknesses	W1	2	0	-2	-2	0	-1	-3
	W2	1	-1	-2	-2	0	-1	-5
	W3	-1	0	-1	0	-1	-2	-5
		5	2	0	-1	-4	-2	

Figure 12. Confrontation matrix based on SWOT-analysis

2= very positive influence

1= positive influence

0= neutral

-1= negative influence

-2= very negative influence

S1: Ecologically sustainable

S2: Entrepreneurial and experimental attitude

S3: Unique products

O1: Trend: sustainable food

O2: Trend: healthy diet

O3: High end restaurants are in search of being unique and innovative

W1: Plants are not planted for efficient harvesting

W2: Time inefficiency

W3: No clear strategy for future

T1: Efficiency of conventional agriculture

T2: Little knowledge on food forests by the public

T3: Lack of existing sales channels

Positive link

In the confrontation matrix (figure 9) you can see that the strength of being ecologically sustainable (S1) has the biggest positive influence on both the threats and opportunities. Therefore, this strength should be used to respond to the market opportunities such as a transparent and sustainable food production (O1), a healthy diet (O2) and high-end restaurants looking for unique and innovative products (O3). Luckily, Voedselbos 't Mortelke is aware of this. The food production at Voedselbos 't Mortelke is produced according to permaculture, agroforestry and food forestry principles. These principles are known for its environmental sustainability (Duurzaam nieuws, 2020). Therefore, a healthy diet is also promoted as no pesticides are used and fresh produce is offered. The food forest also has a focus on increasing biodiversity and promoting native plants. Therefore, lots of different plants are available for harvest in the future and this results in a diverse, sustainable and healthy supply of food. This might be of interest to high end restaurants, as unique and innovative products are offered by the food forest.

Negative link

The biggest challenge for the food forest lies in the weaknesses of having an inefficient harvesting system (W1) and a time inefficient system (W2). You can see that both the opportunity of high-end restaurants having an interest in diverse and innovative produce (O3) and the threat of the efficiency of conventional agriculture (T1) are negatively influenced by the W1 and W2. Having an inefficient harvesting system and a time inefficient system will negatively influence potential collaborations with high-end restaurant. In the first few years, the harvest will be minimal, and harvesting by hand will make it more of a challenge to deliver the products as fresh as possible to the purchaser. It is of great importance that the harvest will arrive at the location of purchase as soon as possible. Harvesting by hand will slow down the process of delivering fresh harvest. This is combination with the limited harvest in the first few years will make collaborations with sales channels such as restaurants more difficult. The food forest hasn't figured out yet how they will collect the harvest efficiently. Once they do, collaborations with restaurants will be more realistic.

The efficiency of the food forest sector can also be compared to the efficiency of conventional agriculture. Plants are grown in conventional agriculture to ensure efficient harvesting and maximize yield. This is a big competitive advantage of conventional agriculture compared to food forests.

Concluding

The weaknesses of having an inefficient harvesting system (W1) and a time inefficient system (W2) should be developed into strengths in order to make food forests more attractive compared to conventional agriculture and to stimulate collaborations with restaurants. A time inefficient system (W2), however, is a characteristic of food forests and therefore the focus of improvement should not be on this weakness (Traynor, 2019). The focus should be on turning an inefficient harvesting system into a strength in order to realise the opportunity of collaborations with high-end restaurants.

5. Ideate phase

What are possible products (concept ideas) that can be offered by Voedselbos 't Mortelke based on their intrinsic values and the needs of the market?

In the following chapter, new concept ideas will be illustrated and researched partly based on the opportunities presented in the SWOT-analysis and the confrontation matrix. Other ways to determine concept ideas are by looking at intrinsic value of Voedselbos 't Mortelke, as the ideas should be in line with their brand identity.

In this chapter, the focus will be on the business models that will be both potentially realistic and will fit the brand of Voedselbos 't Mortelke.

5.1. B2B concept ideas

As you can see in the SWOT-analysis, one of the threats for food forests is the lack of knowledge of the public about food forest products and therefore also a general distrust in this new food producing system. Having spoken to Kyara and several other experts, it can be concluded that it won't be realistic to sell produce from the food forest directly to the consumers in the short-term. It can be realised to sell part of the harvest to a handful of people that come to visit the food forest or are present at volunteering days. However, reaching the bigger public and making a solid business model from this will be a big challenge. The public first needs to get used to the idea and be introduced by it via other sales channels as for example restaurants. If they can taste and experience what you can make with the products and ingredients, the public might become more and more open to the idea of involving food forest products into their daily meals. This will then also make demand for the products rise and maybe people would come and visit the food forest to buy products.

As you can see in figure 11, it takes some time for the majority of the people to be interested in newly introduced products. Therefore, to introduce food forest products to the common citizen and to make it more accessible, Voedselbos 't Mortelke has the idea to create a food forest cookbook. An introductory research on this business model can be found in appendix 3.

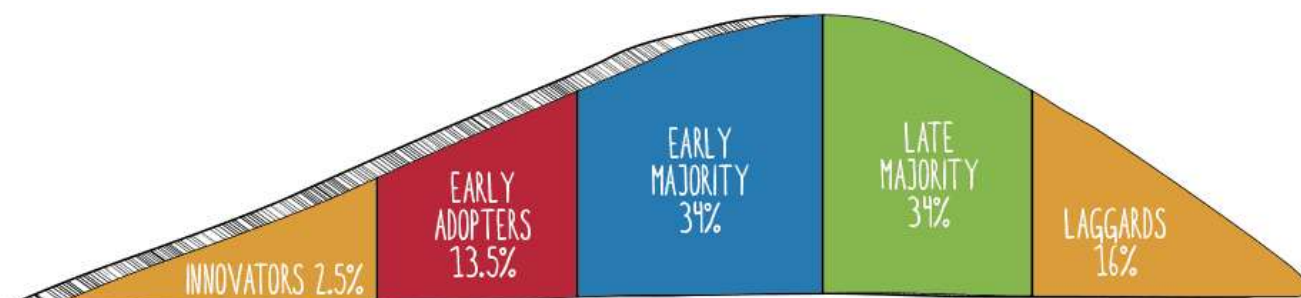


Figure 13. Innovation model. (dbgedrag, n.d.).

When looking at the short-term, Voedselbos 't Mortelke will be focussing on producing and selling harvest. As already mentioned, the majority of the people isn't ready yet to buy these products directly from the food forest. Because of this argumentation, the concept ideas in this research will be solely focussed on B2B sales channels, as it is realistic to realise these collaborations in the near future and the people can slowly be introduced to the products.

For the B2B concept ideas, an elaboration will be given on the opportunities from the SWOT-analysis. These opportunities will create a pathway for reasonable concept ideas that could be achieved on the short-term. When looking at Voedselbos 't Mortelke, several opportunities arise based on the SWOT-analysis and Confrontation Matrix.

One of the opportunities is the interest of **high end and luxurious restaurants in unique and innovative products**. There is a current trend in the restaurant sector of cooking with more sustainable products (Ruig; passie voor food sinds 1891, 2021). Food forest products are sustainable, but also unique and innovative! This makes for a

perfect combination to spark the creativity of chefs. These high-end restaurants can usually afford to have a flexible menu, thereby cooking with the seasons offering. Food forests offer unique and seasonal products and therefore restaurants are a great potential sales channel for Voedselbos 't Mortelke. However, what can be analysed from the confrontation matrix is that there exists a challenge of harvesting efficiently and thereby supplying fresh harvest to for example restaurants. This is a difficult task because there will almost certainly be incoherence between the plants. A ripe harvest on one tree does not necessarily imply a ripe harvest on the other. It's hard to predict when the harvest will be ready. Furthermore, once the harvest is ready, it must be picked as soon as possible to preserve its freshness. However, driving for this seems pointless if you don't have enough to provide to the buyer. At first, the idea was to invite chefs to harvest themselves, in this way the chefs could harvest what and how much they want. This is however not efficient as chefs don't have a lot of time for this.



Figure 14. Dish from restaurant Noma. (Bluebiz, 2014)

Interviews will be conducted to clarify the needs of this market (restaurants) and other markets, in a possible collaboration. When this is clarified, Voedselbos 't Mortelke can work towards making this weakness of inefficient harvesting into a strength.

There is a general bigger demand for sustainable food production, and therefore B2B sales channels that can easily move with the trends and thus are interested in sustainable, local and fresh grown produce are potential sales channels as well (Draaijer, Ingenhoven, Klein, & Slappendel, June 2020). A list of the contacted companies for an interview and that thus fit these criteria can be found in the methodology.

For the B2B channels, the concept ideas were chosen that are either already applied by various food forests, that have shown interest in collaborations with food forests and/or that fit the goals and strengths of Voedselbos 't Mortelke. At food forest Ketelbroek, Wouter van Eck sells part of his harvest to a restaurant, catering and to an organic supermarket. Places similar to an organic supermarket, where they sell lots of fresh produce is in farm shops and at the greengrocer. Hence, the choice for the latter two collaborations.

The following B2B sales channels will be elaborated upon and researched in the develop phase:

- Collaborations with chefs/restaurants
- Collaborations with catering
- Collaborations with organic supermarkets
- Collaborations with farm shops
- Collaborations with greengrocer
- Collaborations with interested individuals

The organization of the distribution routes of these potential collaborations will be researched through conducting interviews with the possible sales channels.

6. Develop phase

What are potential sales channels and how will the distribution routes of the products offered to these stakeholders, be organized?

In the following chapter the results of the conducted interviews will be summarized.

This information is withheld from the published version of the report because of privacy reasons. For interest in the interview results, info@voedselboshtmortelke.nl can be emailed.

Organization of distribution routes:

Based on the needs presented in the results of the interviews the organisation of the distribution routes could be presented in the following way:

The distribution route of the restaurants should be organised in the following way; The harvest will be transported from Voedselbos 't Mortelke directly to the restaurant. Voedselbos 't Mortelke will arrange transportation.

Restaurants:



Figure 15. Organisation of restaurant distribution route (Swart, Organisation of distribution routes, 2022).

For the individuals the distribution route will be organised in the following way; the individual will pick up the harvest with their own transportation. After that they will process the harvest either to serve it to people in the form of catering or they sell it via Voedselbos 't Mortelke on for example the market.

Individuals:



Figure 16. Organisation of distribution route for Individuals (Swart, Organisation of distribution routes, 2022).

7. Deliver phase

What is needed to realise these potential distribution routes?

In the following phase, the marketing mix and action plan are presented. This serves as an analysis of the results from the research in the previous phases.

This information is withheld from the published version of the report because of privacy reasons. For interest in the marketing mix and action plan, info@voedselboshetmortelke.nl can be emailed.

7.1. Marketing mix

7.2. Action plan

8. Discussion

This research describes the potential B2B sales channels that can be realised for the harvest from Voedselbos 't Mortelke. The results of interviews and analysis indicate that there are multiple B2B sales channels that can be realised in the near future. The best possibility would be fine-dining restaurants as their ambitions are in line with the products offered by the food forest, they were most excited about the concept and had an proactive attitude towards realising a collaboration. However, this requires Voedselbos 't Mortelke to undertake action to meet the needs of the target market, the B2B sales channels. A key finding is that both parties (Voedselbos 't Mortelke and the B2B sales channels) were unsure about what exactly had to be done to realise a partnership. The companies, on the other hand, have voiced their needs in the interviews, and it is now up to Voedselbos 't Mortelke to decide which of those needs they want to meet. Examples of steps that can be taken are to hire someone to do the harvesting, create a harvesting calendar with associated flavours, arrange packaging to preserve quality but mainly to start the conversation with the companies that have shown interest, on how to collaborate.

Challenges are however in the inefficiency of harvesting, logistical issues and time management. This is supported by a study published in 2019 by Wageningen University student Ester Klein Hesselink, who found that harvesting poses the most significant logistical issue; this will most likely be done by hand, which will take a long time.

Next to this issue another obstacle will then arise. Once harvested, the food forest offers a great variety of products. The challenge with this is that different products require different packaging and care and most people, including chefs, are unfamiliar with the products (Hesselink, 2019).

Strengths

The strength of this research is in its practicality. Voedselbos 't Mortelke wanted to collect more information on the needs of potential sales channels. Companies that showed interest in a possible collaboration were contacted and interviewed. The interviews showed the needs of these companies for realising a collaboration. The potential sales channels were used as a direct source. This makes the data very clear, concise and easy to apply. Concrete steps can be taken to realise these collaborations.

Limitations

Limitations, however, can be found in the completeness of the data. When analysing the needs of the potential sales channels, prices and financial indications were not included in the interviews. The scope of the project would then be too elaborate for a 20-weeks research project. Financials are, nevertheless, an important factor in determining whether or not a collaboration can be realized. Hence, the financial viability of a potential collaboration remains a concern on both sides.

Additionally, no general conclusions about the data can be made based on the segmentation of the companies contacted. The companies were contacted based on observation. A few rough indications were applied: whether or not a restaurant had a flexible menu, whether the company was located within a 30-kilometer radius, whether the company shared similar views compared to Voedselbos 't Mortelke and whether they have previously expressed interest in food forest products. If a company would miss one of these indications and it was still believed that the collaboration could be a possible match, the company would be contacted. Thus, no clear segmentation was applied as a random number of companies were chosen to be contacted and, in every segment, there was a different number of participants. Therefore, a general conclusion about the results of the interviews was avoided.

Lastly, this research is specifically aimed at Voedselbos 't Mortelke and therefore no conclusions can be drawn for other food forests. However, it can be used as an inspiration for other research as the methodology can be applied.

Further research

Further research should be done on new concept ideas that would differentiate Voedselbos 't Mortelke from other food forests. On some of these ideas, an introductory research was done: on the food forest cookbook, CSA farming and food forest cooperative. These ideas should be researched more elaborately. Other interesting concepts that can be researched are:

- Food-truck
- Local market
- Processing harvest by preserving and then selling
- Picknick baskets
- Collaboration with Voedselapotheek
- Fungi food forest
- Plant nursery

When looking at the action plan and the results of the interview, further research should be done on:

- Packaging possibilities
- Ways to preserve the quality as this was the most relevant aspect for the participants of a potential collaboration.
- How to increase efficiency of the harvesting process → a lean approach.
- Pricing → How to determine a sales price
- Thinking about how to get some kind of certainty in your collaborations. If purchasers order every week, there is no certainty for the food forest. One week they could have lots of orders and the next week nothing. How to create certainty? And do we want to adapt to the working ethics of the companies interviewed or do we want to create our own work ethics?
- How will you monitor and predict the harvest amounts? How many collaborations can you initiate based on the amount of planned harvest?

9. Conclusion & recommendation

The food forest: Voedselbos 't Mortelke was initiated in 2019. Therefore, it is identified as a start-up. The food forest sector is relatively new in the Netherlands and therefore, there is no existing customer base and an underdeveloped supply chain (Corporate Finance Institute, n.d.). This will have to be built from the ground up. Hence, Voedselbos 't Mortelke asked for research on what would be realistic sales channels for their harvest and what procedures would be required to establish these collaborations. The research question is as follows: What are B2B distribution routes and sales channels for the products offered by 'Voedselbos 't Mortelke'?

Because the food forestry sector is relatively new, consumers aren't familiar with the products and have little knowledge on the preparation of the food. Because the consumers aren't prepared yet to purchase directly from the food forest, the focus in this research is on B2B collaborations. This could also be concluded from the internal- and external analysis in the discover phase. B2B collaborations would fit the brand image and are also the main existing sales channels of other food forests.

When combining the internal and external analysis, the most important conclusion that can be drawn is that voedselbos 't Mortelke should focus on discovering collaborations with high end restaurants. Reasons for this are that high end restaurants were most excited about the concept, were interested in conducting an interview and had an proactive attitude towards realising a collaboration. The most difficult aspect of this potential collaboration is to harvest efficiently. This is something that needs to be elaborated on in an extended research.

To analyse the degree to which this B2B collaboration would be realistic and what decisions need to be made by Voedselbos 't Mortelke to realise the collaborations in the future, the needs of the targeted high-end restaurants were identified. Interviews with these possible sales channels were used to conduct a qualitative study. Besides high-end restaurants, other interesting B2B companies were also contacted; if they were located in the area and seemed to have similar views as the food forest and/or showed interest in the initiative. The more information was gathered on the needs of different companies to realise a collaboration, the better.

The product that was presented in the interview that can be offered by Voedselbos 't Mortelke, is fresh harvest.

The results from the interviews gave the following interesting insights:

-Collaborations will be realised in conversation with each-other. From the interviews, it can be concluded that there are still many uncertainties and unclarities when it comes to exact steps that can be made by the food forest to realise collaborations. However, indicators were given on the most relevant aspects of a business partnership. Voedselbos 't Mortelke can respond to this by taking steps based on these indicators. In this case, it is best to discover all the details and practicalities along the way by starting a conversation with the companies that have shown interest. However, some details were already clarified and thus action can be taken on the following aspects:

-Harvesting calendar with indicated flavours is desired by all participants of the interviews. It is advised to make one that can be send to companies in order for them to get more certainty.

-Good packaging and communication is required to preserve quality. Different products require different packaging.

-Price is something that can be discussed; however, quality and quantity are more important aspects for the participants.

-Because of time constraints, almost everyone wants the harvest to be delivered to them. Some were also open for picking-up the harvest themselves. Only one participant was interested in collecting the harvest themselves.

-Quantity is also a very important aspect. There should be enough harvest from one plant for it to become interesting for a collaboration. Quantities differ per product.

-Communication can be done weekly via email, informing the purchasers about the available harvest, with the associated flavours.

-Interest was shown into processed and preserved harvest. A kitchen at the location of the food forest and a HACCP-course would be the logical next step to take. Unless other parties can process the harvest at their location.

-Someone should be hired for collecting the harvest. This can then be accomplished in a timely manner.

High-end restaurants are the most viable partners to start a collaboration with within the near future. They were most excited and proactive in this potential collaboration. Other contacted companies such as farm shops or organic supermarkets, showed little interested in a collaboration with Voedselbos 't Mortelke.

To summarize and to provide an answer to the research question: despite the lack of an existing customer base, lots of stakeholders are enthusiastic and interested in the initiative and in purchasing the harvest in the future. However, there are many different requirements and uncertainties that need to be considered and addressed. Voedselbos 't Mortelke's responsibility is to make informed decisions based on the insights that were given. However, part of it is simply initiating the conversation with businesses.

Thus, what are realistic B2B sales channels for the harvest of Voedselbos 't Mortelke? Restaurants that have a flexible menu, are open-minded and have the ambition to be more ecologically sustainable. Additionally, individuals are also a realistic option for a collaboration. Ekoplaza was also interested and can be contacted. However, the quantities of the harvest from the food forest should be monitored as you have to have enough supply for all the purchasers. Therefore, start with one and then work towards more purchasers.

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Appendix

Appendix 1: archetypes step 3 workbook 'Plantje verhaal'

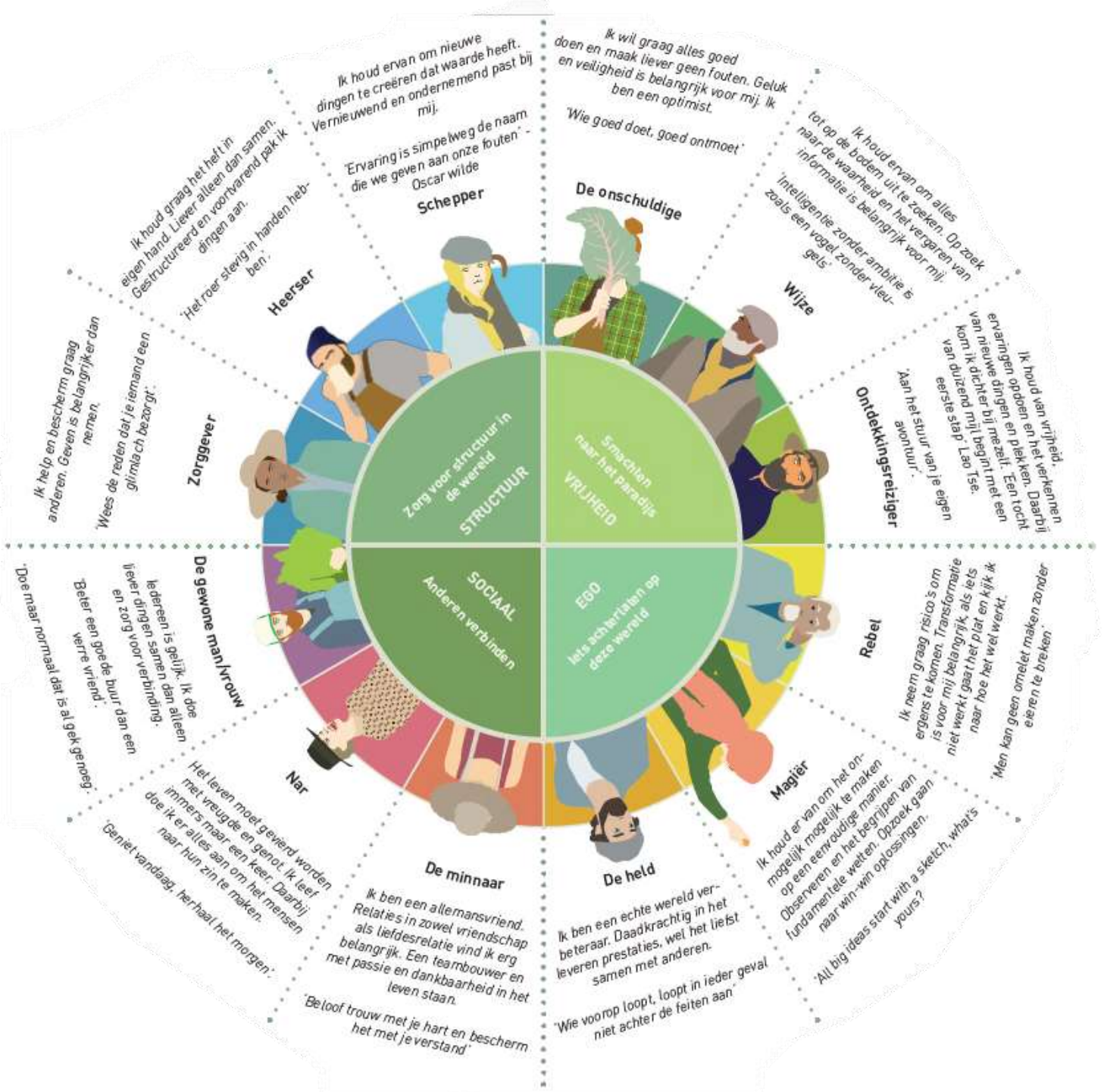


Figure 17. Archetypes step 3 of workbook 'Plantje verhaal'

Appendix 2: information on layers in a food forest

Existing food forest products

A production-based food forest is the focus of this research. But what kind of products can be offered from this? A food forest is built up of 7 layers of vegetation. When conducting the interviews with the potential sales channels, it was assumed that the products offered by Voedselbos 't Mortelke consisted of harvest from these layers.

The 7 layers consist out of a canopy/tall tree layer, lower tree layer, shrub layer, herbaceous layer, root layer, ground cover layer and vine layer. Some even claim there is an 8th layer, consisting of the fungi. Each of these layers have different opportunities when it comes to offering products. Every layer is a niche market and therefore food forest products are very unique and also difficult to market and sell. You can also think of concept ideas by combining products from different layers.

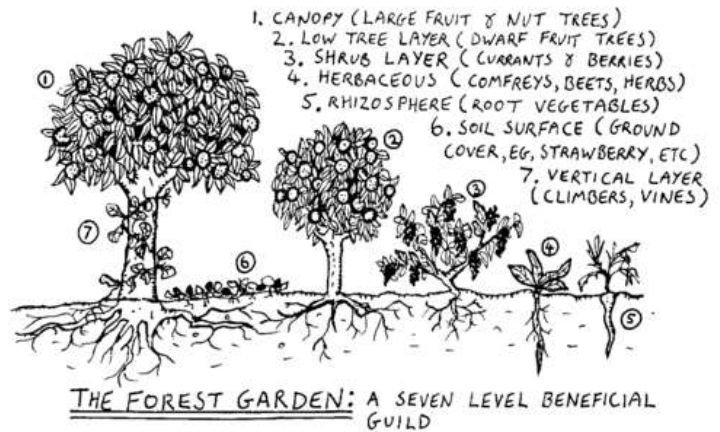


Figure 18. (Chin, n.d.).

First layer: canopy/tall tree layer

The trees existing in this layer are the biggest of all layers. They usually also have the biggest harvest. The height of the trees is on average above 12 m. Examples of trees, that produce edible harvests, in this layer are: Walnuts, Chestnuts, Heartnuts, Persimmons, Mulberries, Cherries, Birches and Big fruit trees.

Second layer: lower tree layer

The trees in this layer are slightly smaller than the canopy layer mounting to a height between 6-12 meters. Examples of trees in this layer are: Hazel, Apples and Pears. High bushes: Goumi, Autumn Olive, Figs, Cornelian cherry, Plumbs, Peaches and Nashi-pears.

Third layer: shrub layer

This layer includes shrubs that are between 0.5-6 m in height. Common shrubs found in food forests are: Currants, Raspberries, Blackberries, Elderberries, Buckthorn and Gooseberries.

Fourth layer: herbaceous layer

The herbaceous layer “consists of perennial plants without woody stems, used as medicinal herbs, vegetables and bee- foraging plants” (Doomen, Puhe, & van Leeuwen, 2019). Edible flowers are also part of this layer. Examples are: Basil, Rosemary, Lemon Balm, Dandelion, Stinging nettles, Horsetails, Ramson, Chamomile, Daylilies and Thyme.

Fifth layer: root layer

The root layer is part of the rhizosphere which is defined as “the region that is a few distances (2-80mm) extended from the root system. It can also define as a zone, which favours the physical and chemical activity of the microorganisms and responsible for the intense microbial activity” (Supriya, 2019). These crops are often avoided when planting a food forest, for practical reasons. Examples are: Potatoes, Groundnut, Carrot, Indian cucumber root, Oca and Skirret.

Sixth layer: ground cover layer

The purpose of this layer is the coverage of the soil surface. This layer has many positive ecosystem services, such as the prevention of soil erosion as well as the fixation of nitrogen. Examples in food forests are: Forest strawberry, Nasturtium, Ground elder, Creeping dogwood, Wallflowers, Clover and Columbine.

Seventh layer: vine layer

It's a layer that is vertical. The plants have the characteristic of having a vining habit. These plants usually are very efficient as they will climb up trees and thereby not using extra space. Examples are: Kiwi (berries), Vanilla, Grapes, Hops, Chocolate vine, Magnolia vine and Honeysuckle.

Eighth layer: fungi layer

This layer includes all kinds of mushrooms and fungi, which can either be used for medicinal purposes or as a food product. Some fungi can even be used as psychedelics (Schwartzberg, 2019). Much more scientific research needs to be done on this layer, in order for it to reach it's full potential. It is relatively unknown territory for many people, however, it's gaining popularity. Examples are oyster mushrooms, morels and boletus mushroom (Doomen, Puhe, & van Leeuwen, 2019).

Appendix 3: CSA farming

Voedselbos 't Mortelke has shown interest in Community Supported Agriculture (CSA). Therefore, in the following chapter an introduction is given on the topic and the opportunities of this farming system are elaborated upon. CSA farming is a collaboration between farmer and consumer. Both farmer and consumer apply to the CSA network and thereby become members. CSA farmers and CSA members enter into a partnership, in which the consumer members commit themselves for a longer period of time to purchasing the products of one or more farmers or producers. This can be in the form of subscriptions or you can become a shareholder of the farm. The purpose of this model is that responsibilities, risks and yields are shared amongst several stakeholders, allowing the farmer to share the risks of growing food. As a consumer or CSA member, you know exactly where your food comes from and you can even have input in, for example, the choice of grown vegetables.

There are multiple forms of CSA's:

1. **Becoming a member of a production company such as a farm or a horticulture company.** As a member, you agree upon purchasing products from a specific horticultural company, for a longer period of time. Additionally, you can also become a shareholder or investor of the company, at the same time receiving part of the harvest.
2. **Food cooperation.** A food cooperation is a cooperation consisting of a group of consumers that develop a permanent relationship with farmers in the area. The advantage of such a cooperation is the joint purchasing power, allowing the members to support farmers in becoming more sustainable or helping start-ups. If the cooperation feels like there is a product missing, the farmer is consulted to see what the options are (CSA netwerk, n.d.).

Examples of such food cooperations are: de herenboeren, de boerschappen and hofweb.



Figure 19. (CSA netwerk, n.d.).

The main advantages of CSA farming are the support which is provided to the farmers to make a good living from their food production. Additionally, alternative types of farming can be supported without large-scale farming taking over. And lastly, the consumer can benefit from healthy and local food.

CSA farming also contributes to an increase in biodiversity, combatting climate change, improved water management and an appealing landscape (CSA netwerk, n.d.).

Why is this interesting for Voedselbos 't Mortelke:

1. You can build up a community.
2. Attract both investors and customers.
3. Can grow faster through shareholders.
4. Close connection to customers and their needs.
5. Income.
6. A permanent sales channel.

Options for Voedselbos 't Mortelke:

- “Producing vegetables for a weekly vegetable box or for members who harvest themselves and pay a fixed amount per season.
- Deliver your products to a neighbourhood market (buurtmarkt) near you.
- Leasing a piece of land to a local group of people who want to grow their own vegetables.
- Organize working days for enthusiastic participants.
- Receive financial support from your participants in sustainable investments” (CSA netwerk, n.d.).