

EXPLORING THE ECONOMIC POTENTIAL OF TWO FOOD FOREST FARMS IN THE NETHERLANDS

Oosterhof G^{1*}, Masselink S¹, Van Dorp D¹, Van Dooren N¹, Eweg R¹, Stobbelaar DJ¹

(1) Van Hall Larenstein University of Applied Sciences, Velp, The Netherlands

*Corresponding author: Geartsje.oosterhof@hvhl.nl

Abstract

The aim of our research was to search for viable business models for two business cases in The Netherlands: a commercial polyculture garden (Sprankenhof) and a Robinia forest with pigs (Boeren in het Bos). Our theoretical starting point is that small and medium-sized companies can adopt in general three sustainable development strategies: i) Intensification: cooperation to establish a base of public support for new intensive methods of production; ii) Valorisation: cooperation with new chain partners to open up existing markets; iii) Diversification: cooperation for new products and markets. In the companies surveyed, the diversification strategy is already being used at Sprankenhof and it appears to be a good choice, while the company Boeren in de Bos is trying to intensify sustainable pig farming, with the developing food forest supporting the pig farming. They focus on sustainable intensification by farming in a sustainable way to generate public acceptance and appreciation.

Keywords: valuable business models; development strategies; food forest; natural pig farming; polyculture garden

Introduction

It is generally assumed but not well documented that food forests have considerable positive ecological and social effects (Erisman et al. 2016). Moreover, not much is known about the economic viability of food forest enterprises. As of now, farmers who want to switch to (or include) a food forest in their enterprise cannot rely on reliable data and may hesitate to do so.

The aim of our research was to search for viable business models for two business cases in The Netherlands: a commercial polyculture garden (Sprankenhof) and a Robinia forest with pigs (Boeren in het Bos).

Materials and methods

Our theoretical starting point is that small and medium-sized companies can adopt in general cooperation to establish a base of public support for new intensive methods of production; ii) Valorisation: cooperation with new chain partners to open up existing markets; iii) Diversification: cooperation for new products and markets

To be able to assess the feasibility of these development directions, the companies were analysed on the basis of canvas business model (Osterwalder 2010) and a client-based interview according to Aranya (2013).

The two companies studied are Boeren in het Bos (Farmers in the forest) (in Makkinga, province of Friesland) and the Sprankenhof (in Udenhout, province of Brabant). On the basis of these analyses, a number of scenarios have been set up and assessed and ultimately recommendations have been made for future development of the companies. A general

discussion about what these results mean for the development food forests in The Netherlands concludes the article.

Description of the companies

Case Sprankenhof

The 4 ha plot Sprankenhof in Udenhout started in 2002 gradually evolved into a self-picking garden with fruit and vegetables (www.sprankenhof.com) (Figure 1). The picking garden is the main business of the company. In the design of the picking garden, wooded banks have been included, these are partially planted with edible species including nuts. In the garden there are also some 60 laying hens, in fenced areas protected from predators. Other activities offered by the farm include processing the vegetables into include jams and chutneys, offering cooking workshops, a shop, a guest house for meetings or private gatherings. Most of the income comes from the picking garden. Both entrepreneurs live and work on the property and their objective is to realize an income for both, whereby the current consultancy work for 3 days per week will be continued. They also want to make the wooded banks more edible.



Figure 1: Map of De Sprankenhof.

A number of business development options have been identified for the Sprankenhof, resulting in an increase in turnover. The described developments are examples of diversification.

1. Expanding the store and the product range with other sustainable products ('forgotten vegetables'), preferably from their own land but also from other producers (strategies: intensification and diversification).
2. Making better use of the premises on the property and investing in a break and breakfast. This will result in higher visitor numbers of the picking garden even in the low season and will increase the publicity of the company by the word-of-mouth. The investment for six rooms is an estimated € 250,000 (1000 euros / m², 250 m²) which will result in revenues of an estimated € 50,000 - 80,000 per year gross income. This amount can be earned extra through the break and breakfast, without a lot of extra time to do (strategy: diversification).
3. Applying for a catering permit to serve beer, coffee and tea. This could attract families who would like to spend a few hours with their (grand) children while visiting the picking garden and shop (strategy: diversification).
4. Renting the cooking part of the company to chef entrepreneurs (strategy: diversification).

The combination of expanding the shop, both in terms of size and diversity, along with investing in a B & B in the existing, currently used premises, will strongly support the main objective of both entrepreneurs: to attract more visitors numbers to the Sprankenhof and the picking garden, even in the low season. In addition to this, both initiatives will have a direct positive effect on sales and profitability and the Sprankenhof is likely to provide a living for the family. For the long

term the addition of a food forest will contribute to biodiversity, experience and marketing. For the short term it doesn't give financial advantage.

Case Boeren in het Bos (Farmers in the Forest)

The company Boeren in het Bos in Makkinga, use a total of 61 ha of forest for the Tamworth pigs divided over 3 locations: 7 ha of State Forestry Commission (SBB), 32 ha of a private owner and 22 ha Robinia forest of private owners (Figure 2). The operation includes 8 sows with their piglets and meat pigs (March 2018). In total there are approximately 150 animals. Farmers in the Forest have a closed pig farming system, which means that the meat pigs come from their own sows. The 8 sows annually produce 96 piglets (8 sows with 2 litters of 6 piglets each) and the following year 96 fattening pigs are available for sale. In 2017, 10 meat pigs were sold. The entrepreneurs plan to sell 25 meat pigs in 2018. In the case of unchanged operations, more meat pigs will be available than are currently sold. Holding the pigs too long increases the cost price, including the amount of labor.

If necessary, the entrepreneurs make use of alternate plots for fattening the sows and boars. The sows, piglets and meat pigs are kept outside all year round with shelters. In winter, the pigs are supplemented with whey and kitchen leftovers (swill) and water is brought to the pigs. The pigs are sold through shops, especially health food stores. A web store has also been set up (www.boereninhetbos.nl). The transition from the Robinia forest to the food forest is still in progress and no planting has yet taken place. The general aim is to generate an income for 2.5 fte (1.0 fte 35,000 euros).



Figure 2: Map of robinabos, Makkinga, Boeren in het Bos.

For Farmers in the Forest, three options have been identified that can significantly contribute to the growth in the turnover of the company and that can be earned back at an economically attractive instalment at acceptable costs. The described options are part of a sustainable intensification strategy.

1. Setting up a continuous crowd-farming initiative. This is a promising initiative for the company, which can have several positive effects on the operating result. Firstly, crowd farming will bring in the necessary work capital, which is pivotal to develop growth initiatives (investment in a pop up store, online distribution, investments in online marketing, etc). Secondly, it brings highly committed financiers who can also become regular customers and/or ambassadors and voluntary marketers of the company, the products and the online platform. Crowd farming and the accompanying digital portal, the underlying organization requires a somewhat larger investment in money (€ 300 - 1,000) and time (working hours). However, the research indicates that this initiative is both a solution for the financing of the business activities and will be an important

stimulus for further revenue growth, also outside the local target market in the rest of the country (strategy: intensification?).

2. Setting up a mobile popup outlet. This results in a relatively low investment (estimate: € 400, excluding the cost of labor or time) that gives the company the opportunity to increase brand awareness on local markets and to attract the niche target group more directly, e.g. the environmentally conscious consumer and sustainable investor. In this way the company will find the most dedicated consumers in the local market faster and vice versa (strategy: intensification?).
3. Increasing the revenues and reducing the costs. The company has indicated to seek an income for 1.5 fte from pig farming and 1 fte from cows. The sale of meat pigs requires at least a calculated number of 80 animals (15 euros / kg and 80% meat and correction for variable costs). In view of the entrepreneurs' objective, increasing the sales is paramount.

The three options are complementary to each other and as such "cross sells". The research shows that the initiatives of crowd farming and popup store combined with smart choices such as timely and sufficient sales of pigs can increase the turnover by an average of 10% (conservative estimate) to 20% (optimistic estimate) per year for the coming 5 years. A CAGR (cumulative aggregated growth ratio) of 10% in the period 2018 - 2023 would increase the turnover in 5 years by more than 60% in total. If this ratio would reach the 20% with the aid of the initiatives discussed, 5% of turnover would be able to achieve a growth of more than 140% in 5 years. Such sales growth figures in combination with a reduction of, for example, distribution costs could lead to economic economies of scale and improved profitability, which have not even been included in this study.

Discussion and conclusion

In the companies surveyed, the diversification strategy is already being used at Sprankenhof and it appears to be a good choice, while the company Boeren in het Bos is trying to intensify sustainable pig farming, with the developing food forest supporting the pig farming. They focus on sustainable intensification by farming in a sustainable way to generate public acceptance and appreciation (Altvorst et al. 2011).

For the Sprankenhof, the addition of a food forest to the business operations does not give a financial advantage in the short term. In the longer term it will give an addition in biodiversity, appearance, experience and marketing (Oosterhof et al. 2018). Further diversification with a store and Bed and Breakfast will generate an increase in income.

For Boeren in het Bos, the size of the pig stock is not in balance with the sales. Experience from other pig farmers shows that the market is limited for this luxury product, but is growing cautiously. Keeping the production and marketing balance in mind requires further research and monitoring.

In this way, food forests can contribute to a larger attraction of a company (Sprankenhof) where the 'real' money is earned mainly in B & B, etc. or to produce a recognizable niche product such as a pig in the forest, which can be sold as a luxury product.

References

- Altvorst AC, Andeweg K, Eweg R, van Latesteijn H, Mager S, Spaans L (2011) Sustainable Agricultural Entrepreneurship: the urban area as engine for new economic activity: the six guises of the successful agricultural entrepreneur illustrated on the basis of nine projects. Transforum, Zoetermeer.
- Aranya (2013) Permaculture Design: A Step by Step Guide. Huyden House Ltd.
- Erisman JW, van Eekeren N, de Wit J, Koopmans C, Cuijpers W, Oerlemans N, Koks BJ (2016) Agriculture and biodiversity: a better balance benefits both. *AIMS Agriculture and Food* 1:157-174.
- Osterwalder A and Y.Pigneur (2010) Business Model Generation: a handbook for visionaries, game changers and challengers. John Wiley and Sons, INC, Hoboken, New Jersey.