

THE CASE OF THE BANKRUPTCY OF URBAN-FARMERS IN THE HAGUE

GROOF ANALYSIS

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PUBLICATION

November 2019



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INTRODUCTION

In July 2018, one of the biggest European rooftop greenhouses (RTG) went bankrupt. Located in The Hague (Netherlands), this project, named UF002 De Schilde (UF), was built in 2016 and maintained by "Urban-Farmers", a Swiss company which already made a pilot RTG based in Basel (Switzerland) in 2013.

UF's project produced tomatoes, eggplants, peppers and leafy greens on a 1 200 m² RTG; and fish, tilapia species (120m³), just beneath on the 6th floor of the building. The project total cost was 2,7 M€ which corresponds to 2 250€/m².

Despite the project being developed by experienced urban growers, it had to close in 2018. Why did it close so quickly? What are the main reasons for this bankruptcy? Which mistakes have been made? What could be learned?

Thanks to the documents available online and interviews that we could hold, we are going to see that the strategy, the internal disagreement, and the production techniques challenges, are all linked to the failure of this project. Indeed, the business model of this company, which looked very appealing on paper, didn't reach economic viability.

FIRSTLY, THE STRATEGY.

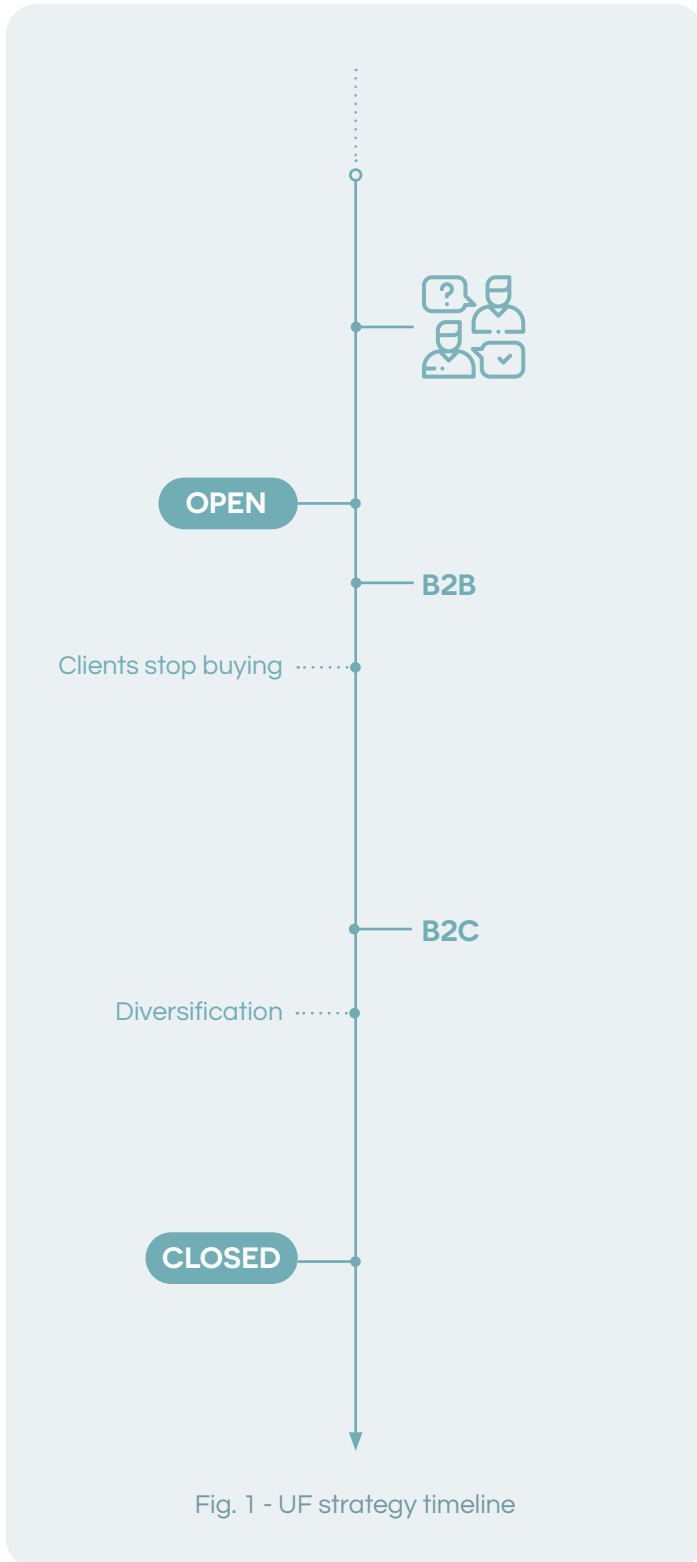


Fig. 1 - UF strategy timeline

The model of UF looked sound and strong enough to convince investors. Unfortunately, it did not work. We analysed several incoherencies in the strategy development.

UF had a first pilot site in Basel, Switzerland, in order

to experiment their future model. After that, contacts were established with a dozen of restaurants and canteens (to target professional customers) in The Hague as a market study to decide if the Business to Business (B2B) strategy would be suitable for the project they had in this area.

Their target, professional customers, looked quite interested and UF achieved to manage Rooftop Greenhouse (RTG) aquaponic systems production in Basel. Therefore, they build this RTG project in The Hague which needed an investment of 2,7M with a B2B model, selling them local and fresh vegetables and fish.

Few weeks after the opening, professional clients changed their mind and didn't want to continue the partnership with UF.

WHY?

In essence, the products quality UF were proposing to the B2B customers weren't worth the price for the latter. Consequently, they came back to their old and cheaper suppliers.

Indeed, the main advantage of the urban farming and short food supply chain is the freshness and taste of the products. But the customers weren't taking advantage of this, and stored the vegetables several days in the fridge as there were used to store vegetables from normal chain supply instead of using them directly. Then, vegetables lost their freshness and taste.

Nevertheless, UF had a second B2B client, "GastroPartners". But the sales volume of UF were too low for that client. It did not make a change on their scale of operations.



GROOF ADVICES

- Try your pilot in the same environment (same country, same city, same neighbourhood, same customers, etc.) that your project.
- Meet your potential customers to discover their needs.
- Having a middle or long-term contract guaranteeing the commercial relation with your clients would be a security.
- Take some time to make a trial period to test your project and the relation with your potential customers in order to ensure that is it going to work.



Thus, UF had a production going on but too few customers to sell it. They changed the strategy from a B2B to a business to a consumer (B2C) one.

They built a B2C model and they diversified their offers through services, summarised in the following picture :

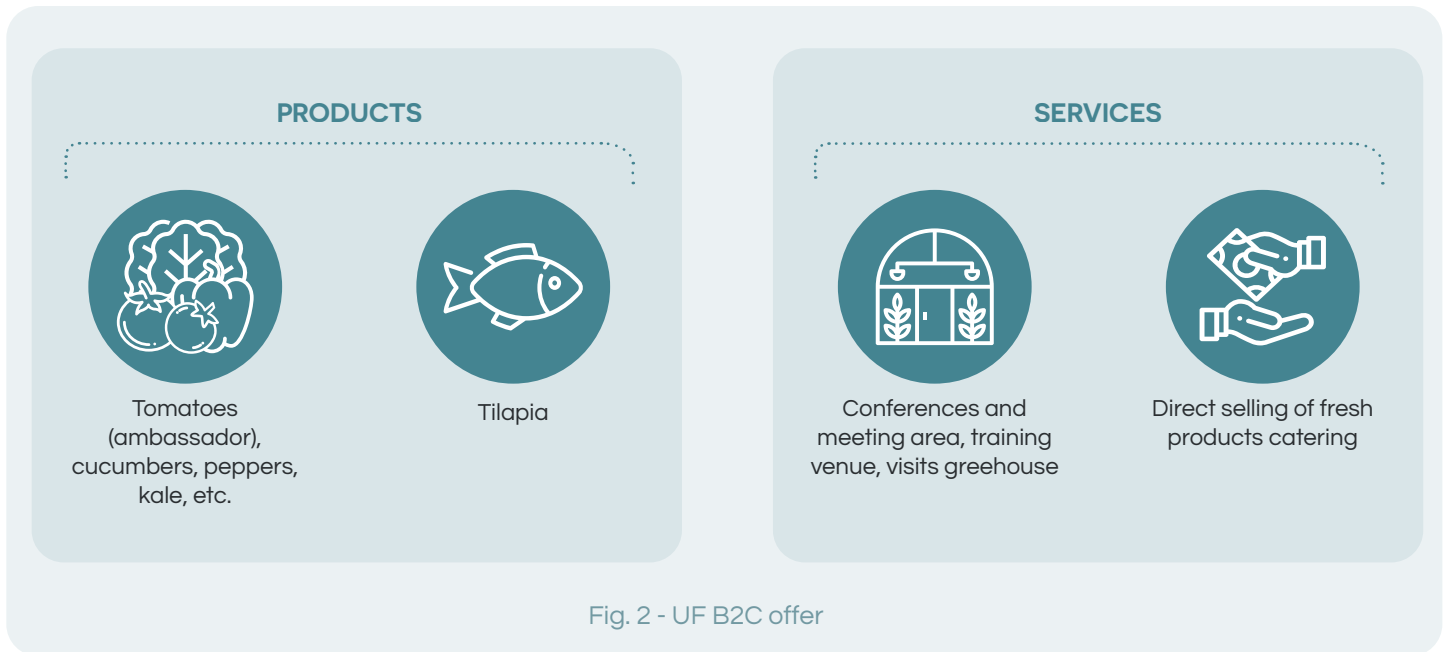


Fig. 2 - UF B2C offer

At first sight, the model seems to be economically interesting and viable.

We identified two main reasons for the failure of their B2C strategy :

- The customers misunderstanding ;
- The competition misunderstanding.

As UF switched their strategy to a consumer oriented one, they diversified into services like visits of the greenhouse, meeting areas rentals, on site direct selling, catering, etc. The products were still the same : tomatoes as the ambassador product and Tilapia fresh fish. Apparently, they didn't take into account who the consumers were. Indeed, The RTG was located in the poorest neighbourhood of the Netherland. UF were offering high quality products with high prices to non-wealthy customers. An easy accessibility for customers (for direct selling, events and communication) seems to be really important for urban farming projects. In that case, even if the project was located on a roof and within the city, it was not downtown and not close enough to its potential customers.

Usually, urban agriculture does not compete with peri-urban growers. That's why "niche products" are mostly produced. But, in that specific urban farming case, they chose "tomatoes as ambassadors", meaning, a product that everybody knows and

which is easy to sell when starting your project. Unfortunately, on selling price, it is hard to compete with local growers from the Netherlands.

Which leads us to the competition environment. If this strategy of "tomatoes as ambassador" can work for big cities, like New York, where producers are far away from city consumers, it is problematic in a city like The Hague where "all growers are urban farmers here"¹. Effectively, at just few kilometers around this RTG, many conventional growers already produce and sell soilless vegetables worldwide, especially tomatoes, growing under 35 million m² of greenhouses². Moreover, the city is very close to the sea and has a large supply of fresh fish. Therefore, customers have already access to fresh fish and vegetables.

Notwithstanding, UF chose to offer tomatoes at 6,5-8€/Kg against 2€/Kg (competition prices) and Tilapia fishes, which are poorly known in Europe, against fresh well-known fish from the sea.

In other words, UF chose to make a diversification into their activities, and a differentiation from the competition with high prices for customers who were price oriented and had already access to a large range of cheaper products.

As Roman Gaus, co-founder of urban farmer, claimed³ : "We certainly underestimated the price sensitivity of Dutch consumers,

¹ By the Urban Farmers's CEO Roman Gaus in Hortidaily - "Vertical farming is difficult in the Netherlands".

² This is called the Westland region

³ Roman Gaus, "when things go wrong", LinkedIn

but probably also didn't get the right type of target customer segment into the farm that was well educated, modern & affluent [...]. Our average retail ticket value at the farm shop was around 9 euros. Not enough turnover to make it a business".



GROOF ADVICES

- Make sure to understand :
 - Your customers. Who are they? What do they want?
 - Your competitive environment. What are you planning to offer? Who are your competitors? What are they offering? What makes you different? Products and services that you will offer have to be in coherence with your customers' and competitions' understanding.
- Choose the right location in order to improve your communication and visibility.



SECONDLY, THE PRODUCTION CHALLENGES.

The operation of a combined fish and vegetables production system is a technical challenge. According to Andreas Graber, co-founder of Urban-Farmers, a high technological level providing a high productivity is a key success factor. Indeed, the first pilot' RTG in Basel was small (around 260 m²) and seems to be a success (even if it was closed and disassembled in January 2018). In the case of UF, with less than 1 000 m² dedicated to vegetable production (and 300 m² for events/visits), it can be considered as small, by comparison with conventional farmers.

As UF were planning to get half of their income from the production, yields are a key factor and production techniques need to be absolutely perfect. But with many innovations in the same place, it can be difficult to target high productive yields, such as conventional growers which are using hydroponic techniques (yields for trusses of tomatoes sometimes closer to 60 kg/m²/y). In the UF 'project, yields for tomatoes were **average** with 20-25 kg/m²/y.

Many technical constraints can be pointed out :

- **The aquaponic system** : it needs a specific and high skill operator (rare on the job market),
- **The specific vegetable production** : they choose a non-traditional soilless technique (multi-layer roots plastic membrane instead of coco fiber or rockwool substrates which are used and controlled by conventional farmers).
- **The energy consumption** : when a RTG is not connected with the structure below, it tends to use more energy than conventional on ground greenhouses, probably due to the different wind regime. Moreover, the small size of the project does not allow economy of scale in order to heat the greenhouse (gas) and light plants (electricity). To compare with another RTG project, the integration with the building is not complete in terms of energy exchange and CO₂ exchange.

Even if the roof's location has no impacts on yields, it can be pointed out as a technical constraint very important to take into account in a rooftop greenhouse project: higher investment, difficult accessibility, bearing (project size and material), numerous regulations (fire,...).

Notwithstanding, UF took into account these problems by collaborating with two experts in aquaponics and proved the cultivation systems before launching UF in The Hague.

The multiplicity of technical challenges, added with the complexity of the urban context, can surely represent one of the major reasons of the bankruptcy. At this point it is justified to discuss technical choices. By choosing original agricultural techniques instead of traditional ones, Urban Farmers wanted to demonstrate that sustainability and circular economy (through aquaponic) can be a new way for traditional growers.



GROOF ADVICES

- Make sure that the techniques you would like to use have already proven their performances including from an economic point of view.
- Double check that the production surface is big enough considering incompressible investment and production costs whatever the surface.
- Energy consumption is a major issue and it needs to be designed and anticipated; finding synergies with the building/structure underneath is vital to reduce costs.







THIRDLY, THE DISAGREEMENT BETWEEN SHAREHOLDERS & STAKEHOLDERS.

At first UF build a team that looked like a winning one: an expert in aquaponic, a business developer, and an operation manager. But already before the construction was completed, disagreements caused problems in the UF team. And within a couple of months after opening, almost everyone from the initial team had left the company except one of the founders. Roman Gaus, co-founder of urban farmer, claimed⁴ these leaving were mainly good leavers, « *it was a challenge but nothing life threatening* ».

Furthermore, the Head Quarter (HQ) « Urban Farmers AG » in Switzerland went bankrupt few months before UF The Hague. As the HQ was also shareholder of UF, it has played also a role in weakening the company.

« *The activities of the company have been losing revenue since the beginning. The costs were high and the turnover lagged. The stakeholders subsequently could not agree about the course and strategy to follow* », the curator wrote in the bankruptcy report.



GROOF ADVICES

- Make sure that the business partners have the same vision from the beginning and check regularly that vision.
- Specific knowledge can be gathered in one collaborator, ensure that a transmission is made before the leaving of the latter.

⁴ Roman Gaus, "when things go wrong", LinkedIn

FINALLY, THE ECONOMIC CONSEQUENCES OF ALL THESE ELEMENTS COMBINED.

Economically speaking, the « public bankruptcy report⁵ » shows the following.

YEAR	TURNOVER	BENEFITS ([-] LOSS) OF THE PERIOD
2018	121 000 €	- 306 800 €
2017	290 900 €	- 693 000 €
2016	98 200 €	- 324 100 €
2015	0	- 88 958 €



⁵ Openbaar faillissementsverslag rechtspersoon (ex art. 73A Fw.) https://insolventies.rechtspraak.nl/Services/VerslagenService/getPdf/09_dha_18_225_F_V_04

⁶ Figures of 2018 are showing the period going from 10/01/2018 to 30/06/2018

We can notice that as the turnover was growing, the loss was getting bigger.

According to Andreas Graber (co-founder of Urban-Farmers), the UF farm targeted the following proportions.

- **Income:** « 1 for fish, 1 for events and 2 for plants ».
- **Turnover:** annual target of 500 k€.

In term of workforce, UF had six full-time employees and three trainees. This might have been too much for the workload which weakened the economic viability. If not, it is quite interesting to know that the sector of RTG shows a good potential of employment, if it becomes economically viable. According to Andreas Graber, too many workers were employed relating to general management

and events. Nevertheless, there were enough workers related to production and sales.

Andreas Graber highlighted that lack of focus on sales : « *If you have a profit margin of 20%, you have to sell 80% of your production to reach break-even. All the more this gets hard if you deal with fresh produce, instead of tomato that you can store for two weeks. For all future urban farmers it will be the hardest challenge to make sure you can always sell at least 90% of your production* ».

Energy exchange with the building below, might have had a positive economic consequence. This assumption is one of the study subjects of GROOF.





GROOF CONCLUSION

On a business level, one should always take into account and keep in mind the environment in which the project is evolving and make sure that the products and services are in coherence with the needs of the customers.

Moreover, regarding the internal management and communication between the different shareholders, it is paramount to have a strong long-term vision and avoid changing your strategy frequently which could be fatal for the company. It is best to precisely define the strategy before the launch rather than after.

Also, production techniques have to be managed properly and efficiently, in order to reach the targeted production.

Urban agriculture is a superb demonstration tool of agriculture as it reveals rural activities to urban citizens. But there is an existing risk of linking the "failure" of UF' company with the failure of an original and sustainable agriculture. Indeed, urban farming on RTG has to learn from failures and continue to build pioneering projects in urban agriculture. Business models need to be challenged, especially when dealing with multifunctionalities which allow unconventional income such as monetisation of ecosystemic services as the Brooklyn Grange project. This income could be a way of overcoming investment efforts without the need to rely only on economies of scales.

APPENDICES

GROOF

APPENDIX 1

The GROOF project is an innovative cross- sectoral approach to reduce CO2 emissions in the construction and agricultural sectors by combining energy sharing and local food production.

3 MAIN STEPS

The identification of barriers and opportunities in order to provide the best suitable guidance to the future project carriers located in North West Europe.

In parallel of that, GROOF Partners will do a state of the art analysis in collaboration with local entities to determine the regulatory context, the building context and the urban farming context in FR, BE, LU, DE, NL, IR, CH and UK.

The development of the pilots in France, Belgium, Germany and Luxembourg.

Looking for rooftop greenhouse project carriers located in North West Europe. The applications will be collected in 2019 through an open call for project.

GROOF project aims at disseminate and demonstrate an alternative way to participate in the CO2 emissions reduction with compliance to the European directives.

FOR TODAY AND TOMORROW

So this international project has 3 main objectives to maximise its impact over time:

TODAY

Implement 4 demonstrators called "Pilots" in France, Belgium, Germany and Luxembourg with the purpose of demonstrating the technical feasibility and the profitability.

TOMORROW

Support rooftop greenhouse project carriers in NWE by providing them with a feasibility study free of charge.

MAKE THE EFFORT SUSTAINABLE

Identify barriers but also opportunities at legal, financial and technical level for implementing a greenhouse with a CO2 emission reduction purpose on North-West Europe rooftops.

The experience gathered during the project will be shared in guidelines disseminated at the end of the project.



SMART CITY INSTITUTE

APPENDIX 2

The Smart City Institute is an academic institute dedicated to the thematic of Smart Cities. It is based on an original partnership between private companies (Proximus, Schröder, Strategy&, Total and Vinci Energies), a University (ULiège) and its Management School (HEC Liège) and Wallonia.

THE MISSION OF THE SMART CITY INSTITUTE

“to contribute to the general development of Smart Cities by training future managers, developing research, entrepreneurship and innovation as well as facilitating sustainable value creation between actors of smart ecosystems thanks to networking and thanks to an access to multidisciplinary skills and to the most innovative technologies”

This academic institute consists of :

- Professors, scientific researchers and projects managers ;
- Public and private partners:
 - As a digital partner, thanks to the solutions that the company develops and offers, **Proximus** particularly supports innovation and entrepreneurship;
 - **Schröder** is fully committed to developing innovative technologies that help cities to meet the challenges of tomorrow. Therefore, it works alongside cities, research centers and technology start-ups to develop solutions which meet the needs of future generations;
 - **Strategy&** (part of PwC) provides expertise in strategic consulting and Smart Cities;
 - As part of its “Committed to Better Energy” ambition and as a major player in the electricity, gas and fuel cards markets, **TOTAL** joins the Smart City Institute to jointly seek solutions related to the challenges of intelligent management of energy, but also of mobility.
 - **Vinci Energies** contributes to the development of the institute by sharing its expertise in numerous areas for Smart Cities (transport, energy and communication networks, Smart Grids, etc.)
 - **Wallonia** supports the institute and more specifically the plan Digital Wallonia.
- The Institute is also one of the stakeholders in the **Wal-e-Cities** project (European funding FEDER) to support the development of Smart Cities initiatives throughout the country.
- The Institute is also working on the “**GROOF**” project (European INTERREG-NWE funding), an innovative project aimed at reducing CO² emissions through the installation of a roof greenhouse system.
- Experts in the development of the “Smart Cities” (experts in technology, real estate, infrastructures, financial services, energy, project management).

To tackle its mission, the Smart City Institute is developing three complementary activities (three pillars of the SCI): research, teaching and supporting entrepreneurship. These activities are supported by transversal activities of awareness.

From its beginning, a real national and international perspective will be given to the activities led by the Smart City Institute. Finally, even if it is true that the issues and challenges of Smart Cities need to be analysed under the angle of various disciplines, management is clearly a crucial axis which has been little investigated, as proposed by Smart City Institute.



RESEARCH CENTER IN URBAN AGRICULTURE

APPENDIX 3

The Research Center in Urban Agriculture is a university research center dedicated to the different themes related to urban agriculture: production, social, environmental and economic.



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Publication gratuite - Ne peut être vendue ou utilisée à des fins commerciales.