



Case study

Kentucky Horti Center

Executive summary



BRAINWARE FOR GREENHOUSES

KHC CASE STUDY EXECUTIVE SUMMARY
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Preface

This case study is the follow-up for the preliminary study. The preliminary focuses on exploring the Horti Center concept, where the case study is aimed directly at the Kentucky situation. This should give the consortium partners an idea on how a Horti Center can be used in Kentucky, as well as some key indicative numbers behind a Kentucky Horti Center. The case study can be used by the stakeholders as a blueprint and to assist them in shaping the discussion.

HortiTech

HortiTech is a Dutch company, based in the Westland area in the Netherlands, the heart of the Dutch horticultural sector. HortiTech's primary goal is knowledge development and knowledge transfer.

We achieve our goal in various ways:

- Training
 - Online
 - Physical training programs in the Netherlands or on location
- Research & development
 - Setting up and executing researches
 - Creating and testing innovations
- Consultancy
 - Horticenter setup and guidance
 - Cultivation guidance



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Case study: Kentucky Horti Centre (KHC)

The Horti Center concept can be used by various parties as a set of guidelines, which they can use to create their own Horti Center design. From the preliminary topics mentioned in the study, key points can be taken out by those developing parties. In practice, projects that want to develop a Horti Center usually require more guidance, which HortiTech can provide.

NLWorks has asked HortiTech to not only create a general concept for Horti Centers, but to create a case study specifically for the Kentucky Horti Center. This case study is created to assist the consortium and leading parties in their process of developing a Horti Center, fitted to the needs around the Kentucky area. Next to that, the case study will also display an example. Within this example, which is modelled after Demokwekerij Westland and World Horti Center, key features are described in terms of areas usage, revenue streams and governance setup.

A questionnaire has been sent to all key stakeholders to gather input from those stakeholders on various topics. The respondents came from the current Kentucky – Netherlands Ag Tech consortium (see figure 1) and relevant other third parties they nominated to contribute. For an overview of the respondent organizations see appendix 1. Multiple respondents of these organizations gave their input on the questionnaire.



Fig 1: Overview of the partners involved in the Agtech Kentucky-Netherlands Collaboration

This study is developed alongside a study¹ executed by Wageningen University & Research commissioned by NLWorks, which focuses on the broader eco-system development in the Kentucky area. It is highly recommended to read the aforementioned study first, in order to understand to larger framework in which the Kentucky Horti Center has its place².

Core questions

Several key topics need to be discussed between the stakeholders, before any activity for the KHC can be started. These topics are:

- 1) Which stakeholder will be the main driver behind the project?
- 2) Who are the main stakeholders?
 - a) Who will have a driving voice within the KHC development process?
- 3) Who are the secondary stakeholders?
 - a) Who wants to be involved in the process, but does not require a driving voice?
- 4) Who will appoint the local hero?
- 5) Will the local hero/KHC be independent or fall under an organization?
 - a) Which organization?
- 6) What will the setup of the KHC organization be?
 - a) Commercial, governmental; independent, under board supervision?
- 7) How will the cooperation be shaped with local players, such as universities, local governments, community and businesses?

1. Pre-conception / discussion phase

When this phase is completed, the following aspects should be clear for all stakeholders:

- The primary/secondary goal of the KHC.
- The other functions of the KHC.
- The additional elements of the KHC.
- The local hero? (or at least, a fitting role description)
 - o The other management roles.
- What is the governance structure of the KHC?

Various setups of Horti Centers have been created around the world. Some with just one initiator, some with multiple initiators. With regards to creating goals, one of the lessons learned was that prior to starting any actions that require investments (financial or time-wise), goals need to be aligned with all partners. This is even more true when the major stakeholders are all evenly represented (with no stakeholders being the lead-party). A small miscommunication or misunderstanding with regards to the goals in the beginning, can have major implications later on in the process.

The suggested primary goal should be a mixture of both pragmatic and long term goals, in order to ensure each stakeholder agrees with (part of) the goal.

The goal for the fictional KHC is as follows:

‘The Kentucky Horti Center should be the horticultural hub in eastern Kentucky, where industry, (inter)national governments, academia and the local community meets, innovates, develops and educates to create a viable, durable and sustainable horticultural sector.’

Secondary goals should focus on establishing the KHC as a hub in the area, on multiple aspects:

- R&D hub
- Education hub

¹ AgTech Ecosystem Kentucky: Inception study, Ruys, Hennen & Ravensbergen (2021)

² The study can be requested through NLWorks

- Tourism hub / experience center

Value of the KHC

The KHC needs to represent a certain value for its stakeholders and customers to remain interesting. Stakeholders were asked how the KHC could prove their value. A variety of answers were given, which gives more insights into each of the stakeholder group's ideas around the KHC. The answers given vary quite a bit, an overview of the answers which were given multiple times or stood out:

- The value should be commercial (demonstration, creating new projects with other partners, researches)
- Contributing to the overall growth of the horticultural sector in Kentucky
- Become a tourist attraction, increasing traffic to the region
- Eliminating brain drain from Kentucky
- Hotspot for practical academic development (internships, researches, etc.)

Key performance indicators

In order for the KHC to reach its potential value and goals, Key Performance Indicators (KPI's) should be formed. A difference can be made from where the KPI's originate from, either internal or external. Internal KPI's reflect on indicators on which the KHC has direct influence. External KPI's reflect on indicators on which the KHC has little to no influence on.

- 1) Internal KHC KPI's
- 2) External KHC KPI's

Proposed KPI's

To properly judge the success of the KHC, the aforementioned KPI's should be used and taken into account. More KPI's will give an exacter image of the performance than simply picking out 5 KPI's who do not have an immediate connection. Only reporting the number of visitors, but not reporting the quality of visitors, may give stakeholders a wrong image (depending on the stakeholder).

Governance structure

The governance model and entity heavily influence the way the KHC can conduct itself. If the KHC is a non-profit, or needs to be constantly funded with non-commercial means (subsidies), the KHC might not follow market movements as much as when the KHC is a commercial entity. For example, the Demokwekerij Westland (initial Horti Center) was a commercial entity, which forced them to follow market movements. By following the market, the Demokwekerij became quite known both nationally and internationally as being a cutting edge horticultural R&D/demonstration facility. If a commercial company chooses a pathway which is not supported by the market, it will feel the negative results in terms of revenue or reduced visitor numbers. When an entity does not have this financial stress (because it is being funded), unconventional pathways may be chosen which may not be attractive to the customer groups of the stakeholders.

In order for the KHC to become the hub it needs to be, a commercial entity is advised. However, the local situation may not allow such a setup to succeed.

2. Development phase

Within the development phase, the following items are discussed:

- Configuration
- Location
- Revenue stream
- Management team

Configuration

There are two main growth models for the startup configuration:

- 1) Start small with room to grow
 - a. Smaller facility with an expandable empty area right next to it. The facility is equipped with all of the necessary components, but those components are not too over dimensioned.
- 2) Start big
 - a. A large setup, where components built are somewhat over dimensioned, allowing for rapid growth during the starting years.

Ideally the Horti Center would be filled to capacity within 1 to 2 years. By achieving a full capacity, the Horti Center becomes alive, which makes it more capable of achieving its goals.

If the capacity is reached within a few months, the 1) growth model was not the right choice. If the capacity is reached after 5 years, the 2) model was not the right choice.

A major pitfall is selecting a growth model which is too big, which leads to an empty building in the startup years (years 1 to 3). The momentum which is usually created during conception and building will be lost if it turns out that, during the operational phase, the building is only an empty husk with no activities going in inside. On the other hand, selecting a model which is too small with no room for expansion can also prove to be challenging.

For the configuration, the following starting points can be taken into consideration:

- Demonstration
 - o Offices
 - o Event areas
 - o Demonstration areas
 - o Meeting rooms
- Education
 - o Classrooms
 - o Practical rooms
- Research
 - o Research compartments
- Hospitality
 - o Restaurant
 - o Accommodations

To summarize, a combination of the following components with their square meters is suggested:

Component	Type	# per type	Square meters	Total square meters
Offices				300
	Small	5	20	100
	Medium	5	40	200
Event area			150	150
Demonstration areas	Single	15	15	225
	Double	15	30	450
Meeting rooms	Small	4	20	80
	Medium	2	40	80
	Large	2	100	200
Classrooms	Standard	3	100	300
Practical rooms	Greenhouses	2	80	160
Research compartments	Small	6	150	900
	Medium	6	300	1800
	Large	3	500	1500
Restaurant	TBD			
Accommodations	TBD			
Total surface				6445

Location

One of the key decisions to be made early is to decide on the location of the KHC. The location will have a big impact on the performance of the KHC.

The respondents to the questionnaire were divided in their ideas for the ideal location. The divide was clearly seen between placing the KHC near existing production locations (specifically: Morehead) and placing the KHC near cities/existing infrastructure/universities. Ideally, a combination between the former and the latter should be found, but this may not be present locally.

The main driver behind selecting the location will fall on the question who the main target audience is. If the target audience is growers/local horticultural sector, the KHC should be built in the rural areas near the production facilities. If the target area is towards the public/international horticultural sector, the KHC might be better off placed near a city with proper infrastructure.

With regards to the travel time, the respondents were quite clear, between one to three would be ideal. One main issue is noted, that the current travel infrastructure in eastern Kentucky is not (yet) equipped to handle international traffic. At the moment, the only way to reach eastern Kentucky from international airports is to fly to either Lexington or Cincinnati, followed up with a car ride.

Revenue model

The current existing Horti Centers have a commercial purpose. One proposed Horti Center had a mixed model between commercial activities and subsidies from local/national governments.

From experience, creating a commercial business model is possible and may be an optimal operational form. This is due to several facts:

- Commercial models need to follow/lead the market
- Being self-supporting grants a certain independence
- Level of independence may allow for faster reactions towards market movements

From the current operational centers, the following revenue streams have been identified:

Possible primary revenue streams:

- Research execution
- Rental fees (demonstration, offices, event areas, meeting rooms)
- Sponsorship / partnership fees

Possible secondary revenue streams:

- Tours and event facilitation
- Trainings programs
- R&D fees

Less-likely income streams:

- Subsidies
- Consultancy fees
- Production income

Management team

The management team (MT) will become the team that is responsible for the success of the KHC. The stakeholders/shareholders of the KHC will set the mission and goals, but the MT will need to execute this. Failing to find a good MT will most likely lead to a unsuccessful KHC.

The MT will be lead by the operational director, also known as the 'local hero'. The term may be a bit popular, but it is fitting to the weight of the tasks this hero must accomplish.

A local hero is one of the key pillars on which the KHC should be built. Regardless of the entity chosen, 1 person (at the start of the process) or team (later on in the process) will need to take responsibility and claim ownership. Without that ownership claimed, the project becomes rudderless.

Local hero

The following profile is created, inspired by previous similar projects and the input from the respondents:

Local hero	
<u>Function description</u>	
The local hero of the KHC will be responsible for the complete center, from the inception phase up to and beyond the operational phase. The local hero is the driving force behind the KHC and is accountable for its success. The local hero has to have a wide view of all activities going on at the KHC, and must possess (some) knowledge of those activities. Being the face of the KHC means that the local hero must be a good and inspirational speaker and be politically engaged. Forging a good team with the relevant managers will be essential for success.	
<u>Responsibilities</u>	
Leading entire Kentucky Horti Center	
Responsible for short-mid-long term roadmaps Horti Center	
Coherent team manager between all pillars	
General, broad knowledge of all activities in Horti Center	
<u>Key traits</u>	
Approachable	Autonomous
Vast network (industry and politics)	Politically 'savvy'
Inspirational speaker	Generalist
Academic & commercial background	Team player / natural leader
Executive experience (min. 15 years)	Fluent English speaker
Efficient	Resourceful
<u>Daily operational tasks</u>	
Earnings model	Performance of MT
Coaching	Strategy (short, mid, long term)
Negotiations	

From the traits mentioned by both the respondents and HortiTech, a very specific profile has been created. It may prove difficult to fulfil this role through acquisitions. Training someone who has a lot of the desired key traits is possible, if a local hero cannot be found.

Appendix 1: Responding organizations

- HAS University of Applied Sciences
- Light4food
- Signify
- Kentucky Horticulture Council
- Kentucky Tourism, Arts & Heritage Cabinet
- Shaping Our Appalachian Region (SOAR)
- Kentucky Cabinet for Economic Development
- AppHarvest
- FME (Dutch business association for the technological industry)
- Kentucky Science & Technology Foundation
- Netherlands Consulate General Office Chicago
- Commonwealth of Kentucky (Governor's Office)
- Kentucky Energy and Environment Cabinet
- University of Pikeville
- Morehead State University
- Priva
- Wageningen University & Research
- Dutch Greenhouse Delta
- Netherlands Agriculture Council Washington
- Netherlands Ministry of Agriculture, Nature & Food Quality