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Ecosystem description of sustainable urban food production

– Hiedanranta district

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This ecosystem description of sustainable urban food production in Hiedanranta was produced for the 6Aika Partnership Model for Sustainable Neighbourhoods (KIEPPI) project in spring 2021. The report describes what urban food production could look like in Hiedanranta, for example, and presents measures to build this ecosystem.

The background information for the ecosystem description included studies and theses prepared in the KIEPPI project and the results of pilots. In addition, urban food production experts from the private and public sectors were interviewed for the description in individual and group interviews.

Introduction ^{1/2}

The global food system is under pressure to change and adapt to environmental constraints. The large ecological footprint of food production should be reduced and, at the same time, climate change is changing production conditions. Finland, too, can prepare for the changes by improving the degree of self-sufficiency and diversifying food production methods.

Urban food production, i.e. the production of food in an urban environment close to the consumer, may be part of the solution in the search for new, sustainable and adaptable ways to produce food. Greenhouses on city blocks, fish tanks in cellars and mushroom plantations in pickup point compartment units bring entrepreneurship, community and the circular economy into the urban space. In order to diversify the market, changes in consumer demand are needed, along with public sector support and guidance.

Source: BIOS: Crucial questions about the food system – how should they be asked?

Introduction 2/2

Why urban food production?

- City residents get fresh, low-emission local food. Locally produced and efficiently grown food does not require long logistics chains.
- Pioneering solutions for food production are developed in cooperation between the public sector and companies. New business opportunities can be developed, tested and scaled up in Hiedanranta and then introduced in other parts of Finland and abroad.
- A sustainable district utilises nutrient and energy cycles. Resource efficiency and urban planning according to the circular economy are concrete actions towards the goal of carbon neutrality in Hiedanranta.

One of the measures of the Carbon Neutral Tampere 2030 Roadmap is sustainable urbanisation in the new Hiedanranta district: *“Sustainable business operations will be enabled. Rules will be defined for co-creation with companies and to support the operating conditions of companies in sustainable business (e.g. urban food production).”*

The report specifies how Hiedanranta can play a pioneering role in integrating food production solutions into sustainable urbanisation. The report helps to think of solutions for implementing food production in Hiedanranta, but the responsibility for development lies with the development company and the city.

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Urban food production ecosystem ^{1/2}

Business ecosystems are economic entities formed by several operators, which are built around a common purpose and together generate value for their customers. The operators in the food production ecosystem may include, for example, producer companies, competitors, partners, organisations providing support services and city residents.

Ecosystems are not permanent structures but change over time with their business environment. The construction of an ecosystem requires determined orchestration, the involvement of active players, and open and flexible cooperation between the participants in the ecosystem.



Urban food production ecosystem 2/2

Unlike traditional business networks, ecosystems share a common vision and value proposition. In Hiedanranta, the vision could be, “The Hiedanranta of the future holds sustainable urban food production which is commercially viable”, and the value proposition of the ecosystem for the residents could be, “Hiedanranta’s food production ecosystem offers city residents the opportunity to participate in the change in the food system and also enjoy new and sustainable culinary experiences.” The value proposition for companies could be, “Hiedanranta gives companies the opportunity to develop, commercialise and offer urban food production solutions as part of an innovative food production ecosystem.”

The next section describes what kind of actors could be involved in Hiedanranta’s food production ecosystem and what the ecosystem as a whole could look like.



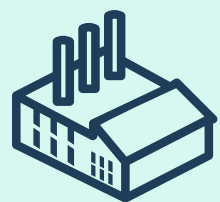
Food production operators in Hiedanranta ^{1/2}



Producers are primary production operators, i.e. food growers. For example, vertical farming, aquaculture and box cultivation are food production methods suitable for urban areas. Technically, urban farming can be carried out on a variety of scales, from small cultivation boxes and indoor farms to larger production facilities. The farms may be owned by, for example, a company, a city or a resident.



City residents are customers of food producers either directly or through processing and distribution. In addition, residents can assist in production by, for example, managing farms as entrepreneurs, owning a farm or participating in community farming. City residents play a wide range of roles in the food production ecosystem.



Processors can process primary production products or food waste from Hiedanranta, for example, into products sold to consumers, restaurants and cafés. In addition, restaurants, cafés and bakeries can utilise local produce in making their own products.



Distributors deliver food to customers or processing through different channels. Locally produced food finds its way to the consumer, for example, through retail shops and pickup points or by home delivery. Restaurants, bakeries and cafés may also sell locally produced food or utilise it in making their own products.

Food production operators in Hiedanranta 2/2



Operators that maintain nutrient cycles are an important part of a sustainable food production ecosystem. For example, the collection and processing of waste food keeps valuable nutrients in circulation, as does the processing of bio-waste and other nutrients produced in the district.



Innovations & technology operators support the development of new, commercial food production solutions in Hiedanranta. Innovations in food production are supported by the active start-up community in Tampere, test kitchen facilities and a hackathon focusing on the processing of waste food.

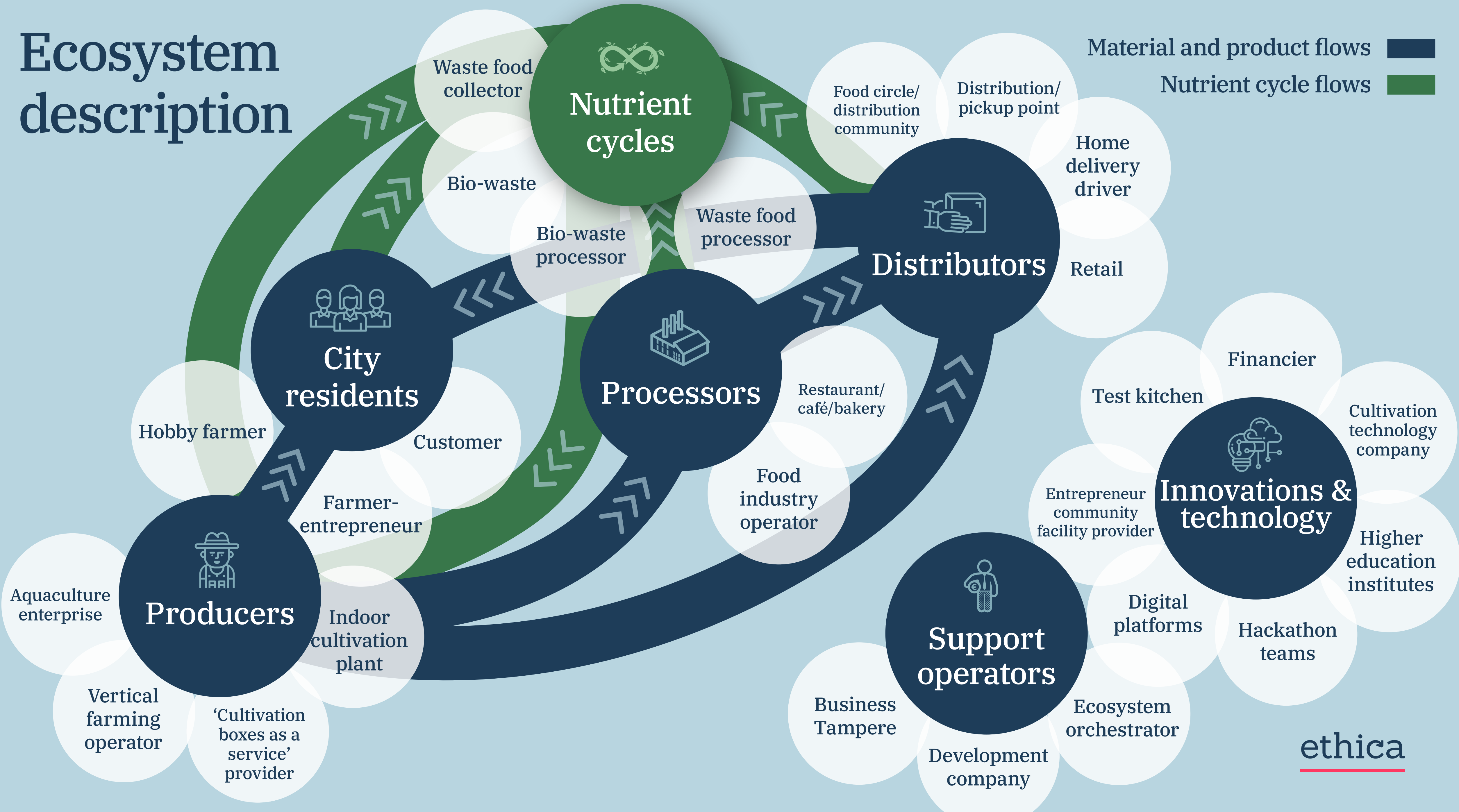


Supporters, such as Hiedanrannan Kehitysy Oy, Business Tampere and the orchestrator assigned to the ecosystem, create the preconditions for the construction and functioning of the ecosystem. Examples of important support measures include taking into account the needs of food production in urban planning, attracting businesses to the region and supporting open cooperation. Companies in the development phase need to be supported by financial backers.

Vision

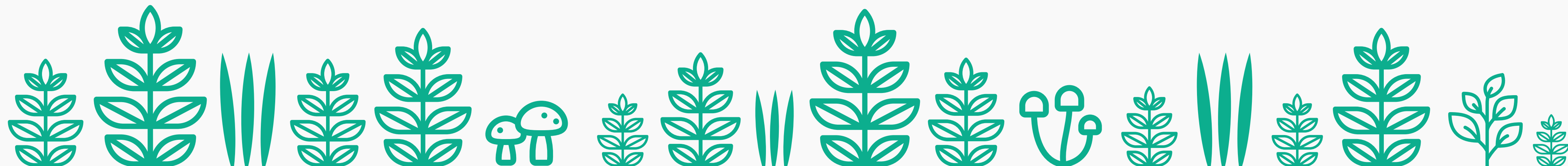
**The Hiedanranta of the future has
sustainable urban food production which
is commercially viable.**

Ecosystem description





What measures are needed to enable the development of the urban food production ecosystem?



Suggested measures ^{1/4}



Leadership

1. Attracting companies that fit into the food production ecosystem to Hiedanranta
2. Assigning responsibility for orchestration to a public actor (e.g. a development company or business department)
3. Confirming the temporary use plan for the next five/ten years



City planning

4. Mapping the space and other needs of companies and taking them into account in the planning of blocks and the district
5. Including urban food production and nutrient cycles in the functional planning of Hiedanranta's blocks



Sharing of information

6. Making food production a visible part of the Hiedanranta brand in communications
7. Giving companies a clear service path
8. Hiedanranta's food production development plan with timetables prepared by the city



Suggested measures 2/4

Leadership

1. Attracting companies that fit into the food production ecosystem to Hiedanranta

The City of Tampere, Hiedanrannan Kehityk Oy and Business Tampere (including Platform 6) are actively developing Hiedanranta's food production in cooperation with various actors, such as higher education institutes, by organising events and programmes for companies in the field and by bringing different actors together, for example, in hackathons or similar events.

2. Assigning responsibility for orchestration to a public actor (e.g. a development company or business department)

It is the responsibility of the orchestrator to create frameworks and rules of play for the Hiedanranta food production ecosystem.

The ecosystem needs an impartial and confidence-inspiring orchestrator that is responsible for attracting businesses to the area and consulting and supporting their needs in order to kick-start the ecosystem. In addition, the orchestrator supports the building of cooperation by bringing the actors together, for example, by organising events and gatherings or setting up a joint discussion platform. In other cities, the role of the ecosystem orchestrator has been assumed by, for example, an economic development agency or a development company.

3. Confirming the temporary use plan for the next five/ten years

The development company and the city will support the existing business in Hiedanranta by drawing up a clear plan and schedule for the temporary use of Hiedanranta for at least the next five years. This will allow companies already operating in Hiedanranta to better plan ahead, and the district may also attract new food production companies.



Suggested measures 3/4

City planning

4. Mapping the space and other needs of companies and taking them into account in the planning of blocks and the district

In order to enable food production in Hiedanranta, we need, for example, spaces suitable for indoor farming and the allocation of places for cultivation boxes. Food production processes and their required space reservations will be taken into account in zoning and planning.

5. Including urban food production and nutrient cycles in the functional planning of Hiedanranta's blocks

Nutrient cycles are linked to city planning, for example, through food production. The themes of urban food production and nutrient cycles will be introduced as part of participatory planning and market dialogues will be organised about them.



Suggested measures 4/4

Sharing of information

6. **Making food production a visible part of the Hiedanranta brand in communications**

The development company will compile information about the food production experiments carried out in Hiedanranta, future measures and needs to build a food production ecosystem. This information will be shared with city residents and companies in the sector, so that active city residents and companies can be involved in the development and implementation.

7. **Giving companies a clear service path**

The city will compile a clear description of what kind of business is desired in Hiedanranta, how to get to Hiedanranta, and what kind of services are available to support business. Hiedanranta's own business liaison will act as a contact and representative for companies in urban development.

8. **Hiedanranta's food production development plan with timetables prepared by the city**

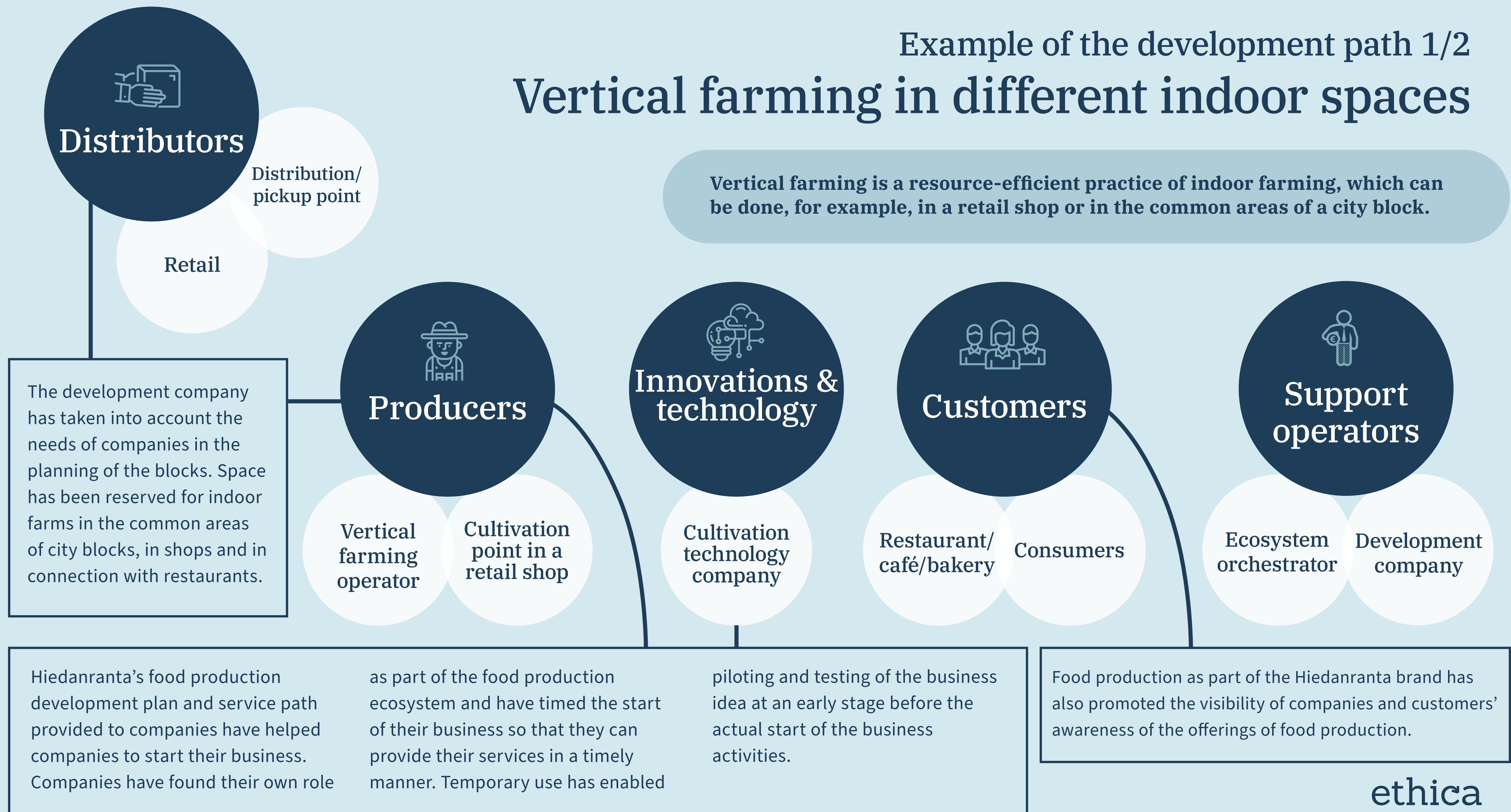
The development plan describes in concrete terms how the urban food production in Hiedanranta should look, what will be done to make it happen and when.



What can food production in Hiedanranta look like in the future, and how have the support measures made it possible?

Vertical farming in different indoor spaces

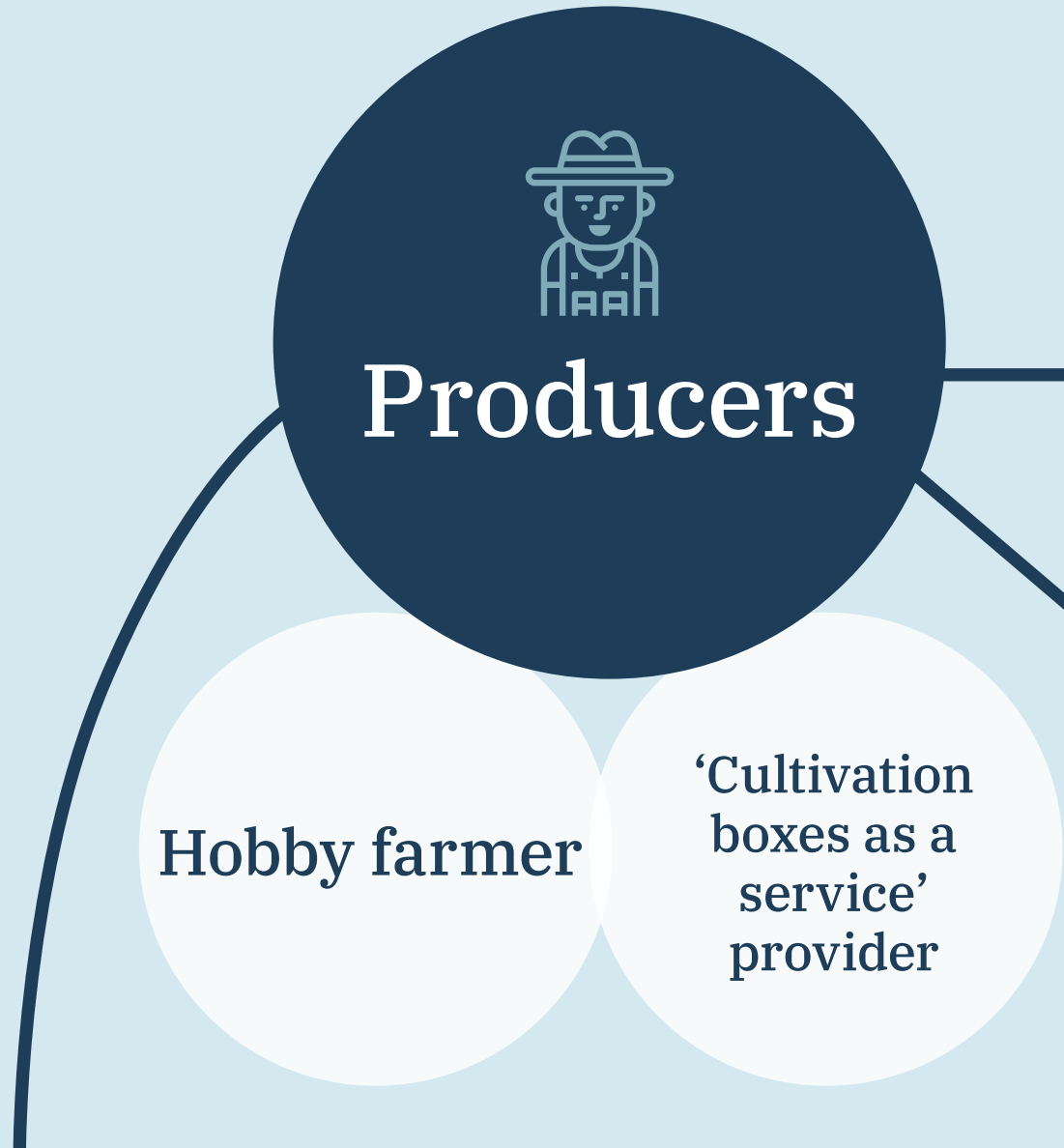
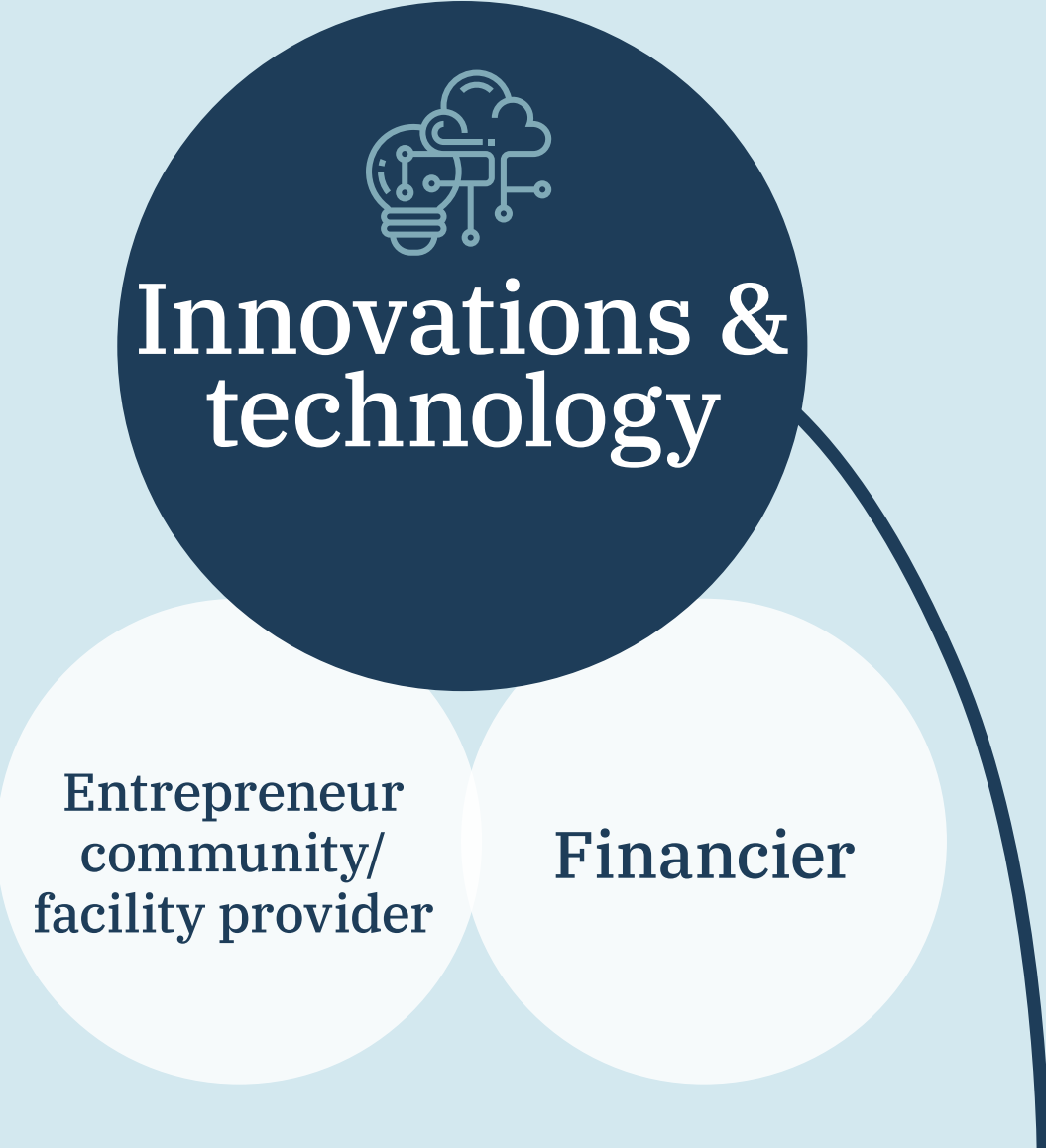
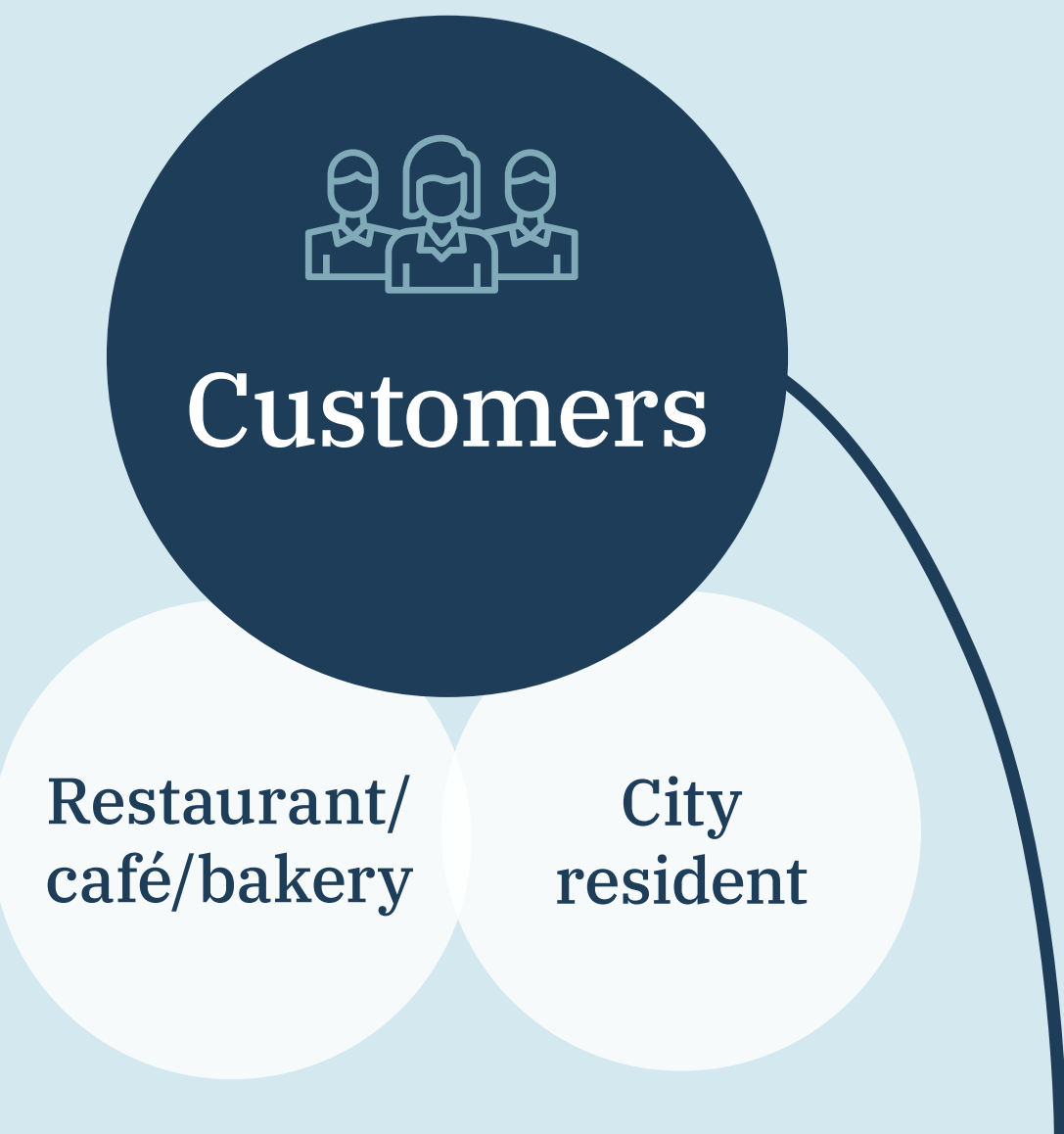
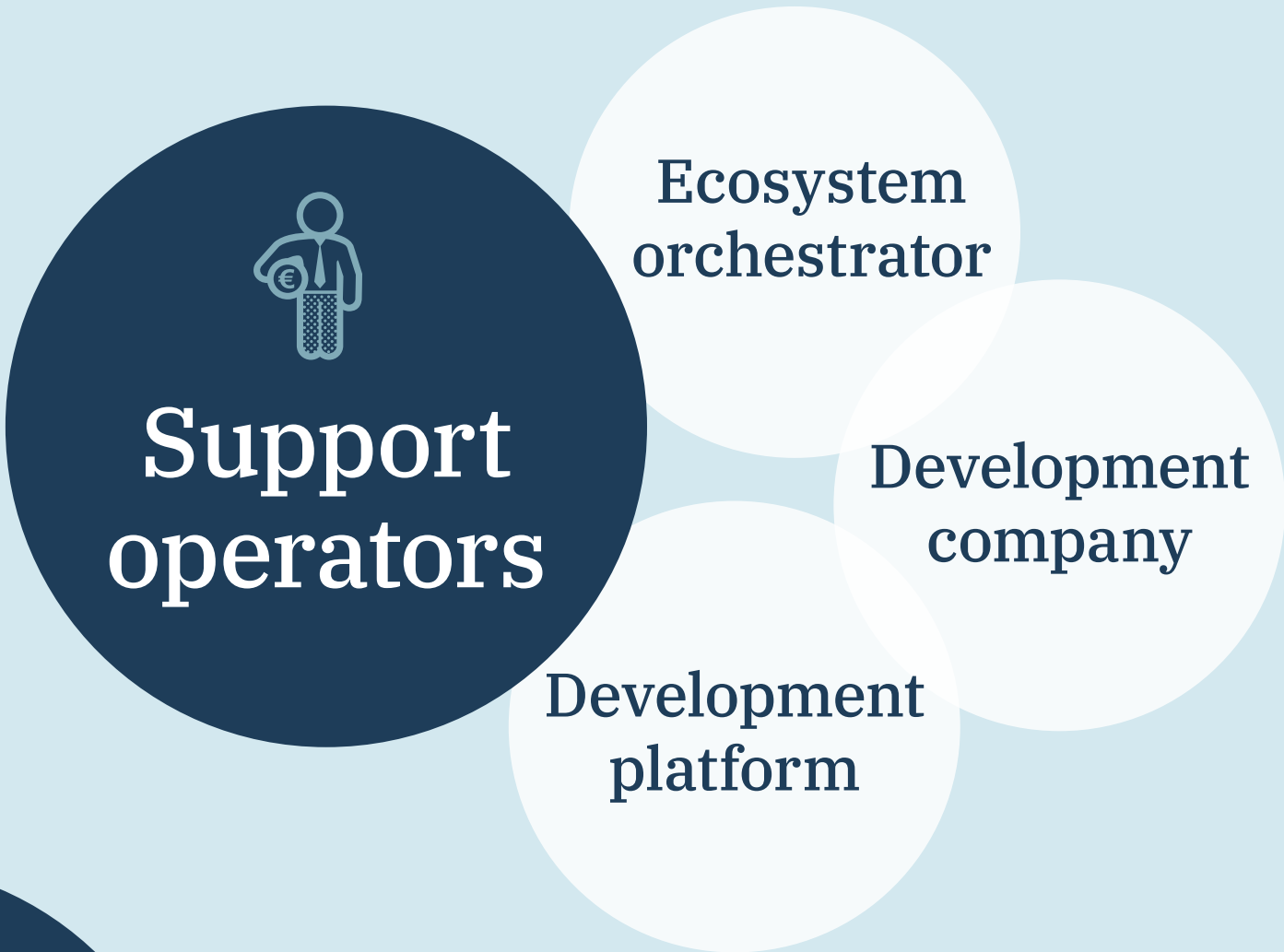
Vertical farming is a resource-efficient practice of indoor farming, which can be done, for example, in a retail shop or in the common areas of a city block.



Example of the development path 2/2

Block-specific cultivation boxes

Cultivation boxes can be placed in various locations in the city, such as the inner courtyards of city blocks or cultivation rooms in blocks of flats. The most enthusiastic residents can take charge of the cultivation themselves, or buy it as a service from companies.



The development company has taken into account the needs of companies in the planning of city blocks. Space has been reserved for cultivation boxes, for example, in the inner courtyards of blocks.

Temporary use has enabled piloting and testing of the business idea at an early stage before the actual start of the business activities.

Food production as part of the Hiedanranta brand has also promoted the visibility of companies and customers’ awareness of the offerings of food production.

Hiedanranta’s strong brand as a hub of urban food production has attracted investors’ interest and helped new companies get funding for their business ideas.

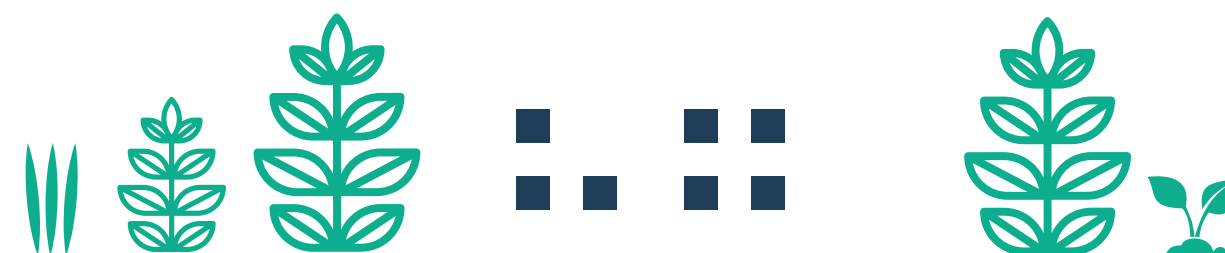
Hiedanranta’s food production development plan has helped companies find a suitable timing for starting their business.

The service path has helped new companies find their place in Hiedanranta as part of the food production ecosystem.

7. Conclusion

Building urban food production in Hiedanranta is an opportunity to develop sustainable business together with companies and create value for city residents. Fresh, sustainable local food and the planning and commercialisation of new food production solutions are part of sustainable urbanisation and the construction of a carbon-negative district.

However, the food production ecosystem will not build itself – it requires leadership and clear planning from the public sector, as well as active implementation together with companies and city residents. If the background work is now done with care, we will see sustainable, commercially viable urban food production in the Hiedanranta of the future.



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