



**Edible Cities Network – Integrating Edible City Solutions for social, resilient and sustainably productive Cities**

# EdiCitNet

**Deliverable D3.2**

## **Status Report on the Implementation of the Living Labs in the Front-Runner Cities**



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# 1. Executive Summary

Edible Cities Network (EdiCitNet) is a European demonstration program that recognizes the social importance of urban agriculture initiatives for the city.

There are a multitude of initiatives of urban agriculture around the world, but EdiCitNet aims to empower local communities to overcome social problems by their inclusive and participatory dynamics and to create new green businesses and jobs, and thereby local economic growth and social cohesion. The overall objective of EdiCitNet is to launch and develop a sustainable and constantly growing network of cities, empowering their inhabitants by a common methodology:

- to systematically explore the wealth and diversity of existing Edible City Solutions (ECS) and to build and share a common knowledge base,
- to adapt, plan and implement successfully proven ECS in their specific urban context.

The selection of the current EdiCitNet Living Labs (LL) (Andernach, Berlin, Oslo, Rotterdam and Havana) focuses on the most important societal challenges in European cities. In addition, the Living Lab Havana, as a pioneer of self-sustaining ECS, can reflect beneficial experiences and facilitate mutual support and interconnections beyond Europe.

The EdiCitNet Living Labs represent not only different social, economic, and ecological requirements of a varied Europe, but already have a broad basis of Nature Based Solutions (NBS) experience. Every single living lab is convinced by ECS and has invested in its development and programmes for years. The different EdiCitNet living labs are to serve both as knowledge and application base for the following cities, as well as to raise ECS in the front runner cities to a new, solid level.

The EdiCitNet Front-Runner Cities (FRC) do not necessarily follow the attempt of representing geopolitical large-scale zones via punctual case studies, but strictly highlight urgent urban problems like inclusiveness, social cohesion, well-

being, mental and physical health, safety, and criminality.

In their original Implementation Project Plans (IPPs, described in detail in the updated versions of D3.1) each city has formulated their own strategy to foster the urban agriculture initiatives in their cities. These strategies all include a co-creational framework in which all stakeholders concerned can partake in overcoming local challenges. The present document D3.2, contains a “Status report on the implementation of the living labs in the frontrunner cities”. Apart from a detailed description of the implementations in the FRC since 2019 the document also provides insights on the unexpected impacts on the IPPs during the last years and gives an outlook on measures that will ensure the sustainability of the LLs.

**Andernach:** The living lab aims to target the social aspect of the edible city, i.e., environmental education, integration of marginal groups and social cohesion. During the plan development focus shifted to target the heart of the city: its children. Schools, kindergartens, and a Youth Centre were involved in the planning and the implementation of the LL as were the city administration and several NGOs that together form the City Team (CT). Because Andernach could already build on 10 years of experience in planning the edible city in 2019 thirteen activities were planned and executed already. Based on the lessons learnt from the first year the LL focused on biodiversity and the introduction of new crops, edibles, and the enlargement of the scale. Despite disturbances due to the pandemic one of the large changes in 2021 in the LL was and will be the diversification of the Community Garden and extension to other locations in the city. Monitoring is well underway and focusses on participation, independence, visual appearance, soil health and insect diversity.

**Berlin:** The two LL in Berlin joined the project at later stages (2020) and aim to provide best practice examples of how densification can encompass productive green structures in a growing city while stabilizing disadvantaged

neighbourhoods. Social and ecological themes are linked under the motto “help for self-help” and the LL support interculturality, active environmental protection, cultural activities, and knowledge transfer. The Berlin LL is jointly coordinated by the Senate Department for Urban Development and Housing and the NGO Nomadisch Grün gGmbH (PRINZ).

Because 2020 was the first year of implementations in Berlin several workshops were held to plan the LL in detail. Towards autumn and winter, the sites were prepared for the next growing season and festivals served the celebration of newly established sites and the promotion among residents. 2021 has so far seen the construction of a Tiny House, a multifunctional space that can be used flexibly as a shelter or for workshops. In addition, preparations for stable infrastructure for electricity and water, including a greywater treatment plant are under way. Activities in the second site in Berlin only started late 2020 with planning activities that are still ongoing, as are various activities like “Cultural and Culinary Neighbourhood Action Days”. Monitoring in the two LL in Berlin is at an early stage, nevertheless several indicators have been identified, including planted area, participation, adoption rate, quality of collaboration and profitability.

**Oslo:** In Oslo the CT is led by the Department of Environment and Transport of the Agency for Urban Environmental in cooperation with other associations, programmes, and initiatives. The main goal of the LL in Oslo is the piloting of Edible City Solutions (ECSs) providing social and economic values and creating opportunities for citizens and entrepreneurs through knowledge transfer, networking, and infrastructure. In 2019 several co-creation workshops defined a strategy on how to achieve the set goals with the implemented LL and were already followed by first growing pilots. In 2020 the community garden was physically implemented and opened to the public, followed by several community events despite delays due to Covid-19 regulations. In 2020 a follower LL was established and through several co-creation events

developed school garden lessons for kindergartens, primary and secondary schools aimed at connecting local communities. The goal for 2021 is to refine and professionalise the LL and to create a network by spreading the knowledge and initiating further LLs. Oslo has collected data to monitor the social, economic, and environmental indicators.

**Rotterdam:** The Rotterdam LL was launched by the Rotterdam City Council in close collaboration with Groene Groeiplekken, but since the withdrawal of the City Council in late 2020 the association Groen010 has taken over. Unlike the other EdiCitNet LLs, the Living Lab in Rotterdam does not envision the establishment of a physical space for running its activities but focuses on the cooperation between the multiple initiatives in the city, and the relation between (the networks of) these initiatives and the city government. The Co-Creation process is therefore central to the activities in Rotterdam as is the self-research that had already started in the city long before the project. The withdrawal of the City Council has led to some delays in 2020. In 2021 the CT has already held several meetings on the topics of co-creation and self-research all working towards the goal of setting up a city-wide network of (edible) green initiatives. Monitoring mainly focusses on the organisation of processes that will support this goal and thus on the social aspects of collaborations. Certainly, environmental impacts of the network of initiatives and economic models that guarantee its continuity are of interest.

## 2. Introduction

This status report addresses the implementation of the Living Labs (LLs) in the Front-Runner Cities (FRCs), mid-term in the EdiCitNet project<sup>1</sup>. It is based on the situation in the LLs up until June 2021 (M34). It documents the activities in the LLs and Edible City Solutions (ECSs) as well as the co-creation processes so far. The deliverable also deals with the refinement of the LLs, starting from the Implementation Project Plans (IPPs), further improving and fine tuning the ECSs, in line with the iterative character of the LL approach and the objectives for each FRC.

Regarding the overall work in WP3, the graph below shows the main tasks and deliverables in this WP.

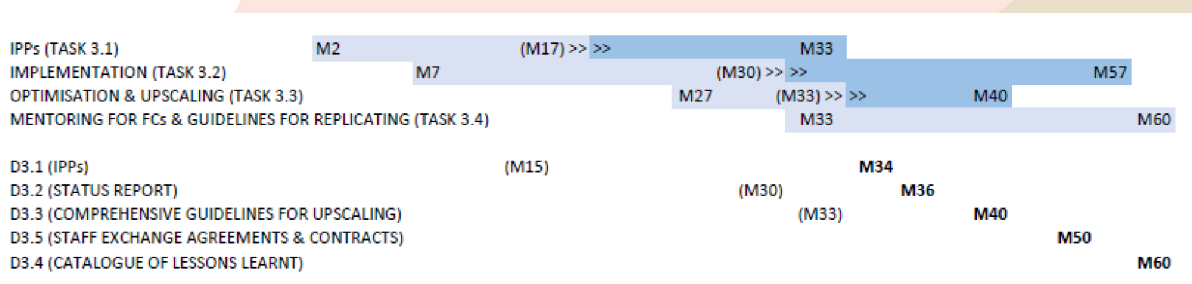


Figure 1: Timeline for WP3 tasks and deliverables

The graph shows how the original timeframes for the various tasks have been changed to accommodate delays in the project due to the Covid-19 pandemic (see below in section 3).

### How this status report was compiled

This status report was drafted in the following way. In December 2020 the main requirements for and the structure of the report were discussed between the WP3 lead and the city

coordinators of the FRCs Andernach, Berlin and Oslo. The two other FRCs and their city coordinators (Rotterdam: Groen010 and Havana: INI-FAT) were involved at a later stage, as their on-/re-boarding process took place in January/February 2021.

In early April 2021, all FRCs (except for Havana) provided information (by means of text parts, graphs, pictures) for the status report (for FRC Berlin project partner PRINZ provided the information). A first consolidated text was discussed with all city coordinators and PRINZ at the end of April 2021, followed by bilateral meetings with the FRCs, resulting in a revised version by early June 2021.

That revised version was sent out for comments to all EdiCitNet consortium partners involved in task 3.2 of WP3, as well as to all other WP leads. After final quality assurance, the draft report was submitted to the project coordinators. In addition, use was made of information available at the project SharePoint facility. This mainly concerned relevant other deliverables in the EdiCitNet project.

### Relation with revised deliverable D3.1 (Implementation Project Plans)

Deliverable 3.1 (D3.1) was first submitted in

<sup>1</sup> The DoA (part A, p. 22-23) states the following on task and deliverable 3.2: "This task aims the concrete implementation of all LLs [...] in EdiCitNet FRC. Based on EN ISO 9001 the EdiCitNet LLs will be carried out under regular Plan Do Check Act (PDCA) cycle. Half year reports will be delivered in order to ensure implementation according to the implementation project plan and will be dynamically adjusted if needed. A two months buffering to D3.1 is foreseen in order to pursuit subcontracting by the cities. Starting point is fixed according to monitoring demands to foresee at least two years for WP5. The implementation will follow the objectives of the FRC, if needed adjusted in the IPP."

November 2019. A revised D3.1 was submitted in December 2020. Parallel to drafting this status report, a further revision has been made to D3.1, to include the updated IPPs of Berlin (LL site Neukölln) and Rotterdam. To prevent redundancy between the two reports, information on the monitoring is provided in this status report. It is advisable to read this status report in conjunction with the latest revision of D3.1.

### Structure of the status report

This status report is structured as follows. Section 3 discusses general issues regarding the implementation of the LLs in the five FRCs. Section 4 forms the core of the report and describes the status for each LL separately. Section 5 looks forward to and focuses on the sustainability of the LLs.

## 3. Unexpected impacts on implementation

Before the status of the implementation of the LLs in the FRCs is discussed in detail, some more general issues, that impacted the implementation, are discussed.

### Covid-19

In April 2020, Berlin, Oslo, Andernach and Rotterdam each notified the project coordinators of potential negative impacts of the Covid-19 pandemic on the implementation of their LLs. Some specific impacts of the Covid-19 pandemic are also discussed in section 4 of this status report. Here the focus is on some common issues.

The Covid-19 pandemic has obviously impacted the implementation processes in the LLs in a negative way. All FRCs were confronted with the following negative impacts:

- Generally, (joint) physical activities in the LLs have been reduced due to governmental restrictions throughout 2020 and partly 2021;
- This has impacted the City Team (CT) meetings, which in most cases had to take place online, and thus the co-creation processes. Online meetings have generally been perceived as being less effective and involving more preparation;
- Covid-19 restrictions also impacted the events that reached out to

neighbourhoods, i.e. resulting in fewer and smaller events;

- Slowed down start for the growing season of 2020 as most Covid-19 restrictions were put in place simultaneously with the start of the season;
- Restrictions on participation for meetings and events will have to be taken into account when interpreting the monitoring data as they may have affected multiple aspects of ECS development, e.g. lower participation, poorer harvest due to restrictions on gardening activities at critical times, poor uptake of citizen science, etc;
- Some food initiatives, for example in Rotterdam, partly depend on sales of their products to restaurants that had to close or could open only in a limited fashion. These initiatives have thus been confronted with revenue losses;
- Uncertainty related to public subsidies and grants which may be reduced in the aftermath and economic backlash of the Covid-19 crisis measures.

On the other hand, the Covid-19 pandemic has led to some positive developments as well, which clearly demonstrate the resilience of the ECS concept:

- The concept of ECSs seems to have gained popularity during the pandemic and generally, the awareness of the importance of



green and local initiatives may have increased, as well as the demand for local food;

- Activities in the ECSs presented a good alternative to indoor work and other more restricted indoor and outdoor activities (such as sports). Gardening activities have been a popular meeting point and people experienced the LLs as important places to go to during the pandemic, when Covid-restrictions allowed. In some cases, the outdoor spaces that ECSs provide, remained the last scarce public spaces where people could do healthy and valuable work and meet other people;
- This has probably led to increased popularity of the participative offers of the ECSs. For example, PRINZ (Berlin) estimates they had about 20% more participants during their open garden days, as well as approximately 30% more activities with or within schools. So, even though activities reaching out to the neighbourhoods have been reduced during periods of strict Covid restrictions, when access became available again, participation rates may have been higher;
- Some local initiatives that have a poverty-reduction purpose, saw a rise in demand for food they give away via foodbanks and welfare-networks. They fulfilled an important role when foodbanks had scarcity in fresh food, especially during the first restrictions in spring 2020.

In short, the Covid-19 pandemic has made adaptations to the envisaged implementation of the LLs necessary, but has - in spite of earlier fears - not led to a full stop or huge delays in the implementation.

### **Withdrawal of Rotterdam city government**

In July 2020, the city government of Rotterdam withdrew from the project, as from September 1, 2020. This decision was based on an overall assessment of their role in the project, the

cooperation with the partners in the project, and the remaining work. They also took into account the review report of EASME from July 2020, and the effects of the Covid-19 crisis. This withdrawal impacted WP3 in two ways.

First, a new city coordinator for the FRC Rotterdam had to be found; to that end Groen010 joined the EdiCitNet consortium, following a GA decision in early December 2020. “On-boarding” of Groen010 took place in January 2021. As the part on FRC Rotterdam in section 4 shows, activities in Rotterdam have been continued by Groen010 from September 2020 onwards; Groen010 has been part of the Rotterdam city team from the start of the project, a fact that enables the mostly uninterrupted continuation of the FRC Rotterdam.

One of the main activities has been to re-assess the main elements of the initial IPP Rotterdam (of 2019). This re-assessment is based on research done by Groen010, in cooperation with EdiCitNet partner WUR, which started already in 2019. More details are provided in section 4 and in (revised) D3.1.

Secondly, as the city government of Rotterdam was also the WP3 lead, a new WP3 lead had to be found as well. OsloMet was asked to take over as WP3 lead, effectively from October 2020.

### **Composition of the group of FRCs**

The original EdiCitNet project plan included four FRCs: Andernach, Heidelberg, Oslo and Rotterdam. Berlin was included as FRC at a later stage (and is both FC and FRC) as Heidelberg dropped out early 2020. After an initial period of temporary withdrawal, Havana joined as a fifth FRC and was “on-boarded” early 2021. This means that the group of FRCs has not been stable throughout the first half of the project and that the level of implementation differs significantly between the FRCs.



## Havana

The scope of the LL in Havana still has to be developed, in a co-creational process as was done in the other FRCs. The subsequent IPP will be adapted to the remaining project lifetime.

The overall objective for the LL Havana is to implement high-tech ECSs complementing already existing and successful low-tech ECSs. Such upgrading is necessary in order to respond to rapidly growing food demand. The implementation of innovating technologies will provide new options for long-term self-sustaining urban food production, based on user-friendly large-scale ECSs, linking-up to the global ECS market, and fostering local entrepreneurship.

The concrete objectives of the LL Havana are:

- Improvement of cooperation within the Havana urban food and agriculture value chain from agricultural space management, substrate production (e.g., lumbriculture), agro-biodiverse seedlings and seed production, organic horticulture and agroforestry, biodiversity-friendly integrated pest management, food distribution, and overall enhanced management of infrastructure and resources;
- Implementation of innovating the use of water-saving technologies and rainwater harvesting;
- Transfer of urban organic horticulture technologies to the global ECS market.

Unfortunately, communication with INIFAT (the city coordinator for Havana) has been difficult, especially due to limited internet access in Havana linked to the Covid-19 pandemic. This status report therefore does not provide any further information on Havana.

## Coordination of the LLs

As explained in D3.1, the LLs in the FRCs are understood as geographically defined spaces where a diverse group of stakeholders,

represented by the CT, develops, tests and optimises ECSs. The nature of the LLs thus implies co-creation by a multitude of stakeholders. However, such co-creation does not emerge spontaneously and requires coordination, which is done by the City Coordinators. The role of the City Coordinator (CC) in the EdiCitNet project has turned out to be very diverse, as the CC:

- keeps close contact with scientists, NGOs, and SMEs within the project;
- supports or organises CT meetings;
- is the intermediate/ mediator/ facilitator between local stakeholders, and the CT;
- is the city administration's internal spokesperson for the project (in the case of Andernach, Berlin and Oslo) or acts as the main point of leverage in trying to influence decision-making processes within the city administration (as in the case of Rotterdam);
- maintains press relations with media;
- keeps the CMT site updated, as well as social media wherever possible (in Berlin, this is done by PRINZ);
- fulfils/leads tasks within multiple WPs;
- composes (input for) deliverables;
- manages and assesses monitoring in the LLs (in Berlin, this is done by PRINZ);
- provides information on EdiCitNet processes and terms to local initiatives and interested parties;
- ensures compliance with and fulfilment of the grant agreement.

The CCs thus have an important key function in the design and implementation of EdiCitNet in the individual cities. However, they do not claim to speak for "the cities". "Edible Cities" are more than just the EdiCitNet CCs. They are a complex interplay of initiatives, businesses, individuals, places, projects, ideas and relationships.

## Monitoring

Monitoring (conducted in WP5) has the aim to

assess the effectiveness of ECS in the FRC LLs, and is characterized by three main elements:

- Monitoring combines economic, environmental and social indicators;
- Monitoring combines quantitative and qualitative data;
- Monitoring can include citizen-science based data collection.

All FRCs, except Havana, have now picked relevant indicators, most of which are different/unique for each FRC. Some FRCs (Andernach, Oslo) are more advanced in implementation of the monitoring than others, as a result of the different development paths of the LLs. More detailed information is therefore provided in section 4.

## 4. Overview of implementation in the LLs

In this chapter the focus is on the four individual FRCs (Andernach, Berlin, Oslo, and Rotterdam). As the LLs in these FRCs differ in nature, the structure of the description differs to some extent between the four FRCs. Common elements are the objectives of the LLs, the activities (2019, 2020, 2021) and the monitoring.

### 4.1 Andernach

#### Essence of the LL Andernach

The “Edible City” of Andernach started as a top-down governed process (origin from the City Administration), which since 2018 is supplemented by EdiCitNet project. The main focus of the LL is to include a multitude of participants, a more bottom-up movement, into establishing ECSs. A long-term vision is to create a “substance flow” of knowledge, seeds and goods in the city, to reach the goals.

#### Achievements

From the beginning of the project, schools and kindergartens were included as strong beneficiaries, but also as multipliers. By forming the CT, Andernach has increased the communication pathways between different stakeholders and opened new channels of lateral discussions. As the project has evolved, the CT also has diversified. The Perspektive gGmbH, as the subcontractor of the LL, supports the project in an impressive way. Tending the community garden is the main task, but the Perspektive gGmbH

also supports activity days within LL, assists when schools are in need of know-how and practical implementation of gardens.

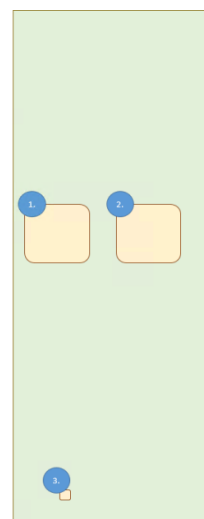
#### Activities in 2019

The CC together with the department of city planning can build on 10 years of experience in planning the edible city of Andernach and the permaculture. During this time, the city has kept a close cooperation with the Perspektive gGmbH. Perspektive gGmbH is a non-profit organization, founded in 1996 by the municipalities of Weißenthurm and Pellenz and the city of Andernach. Its goal is the professional qualification and social integration and support of the long-term unemployed or disabled people in order to bring them back into training and into the labour market.

The experience and ideas from the previous decade were the starting point to initiate ideas relating to the schools and Youth centre. Within the Andernach City Team, they planned activities during the first and second planning workshop. The focus was to bring activities to the LL, located near the Youth centre, and start cooperation between the different pedagogic institutions.

Thirteen activities were planned and performed during the first year (Table 1). In February and December, the subcontractor Perspektive gGmbH conducted construction-related work in

the Living Lab, like ploughing soil. The schools and the Youth Centre participated in the other activities (planting crops) as part of the environmental education program, assisted by the Perspektive gGmbH. Maltaflor (manufacturer of fertilizer) conducted a professional soil quality analysis and provided small mini laboratories for the field, as a part of the summer program for the children to try out. During the autumn holiday program of the Youth centre, the children harvested the potatoes and cooked these For an overview of the development of the LL Community Garden in 2019, see Figure 2. on an open fire, created an insect hotel from an old cabinet and placed this in the LL, carved pumpkins, brew different fruit potions, and apple juice. An overview of the plans for 2019 can be Seen in Table 1.



a) b)  
Figure 2: Half-year development of the Andernach Living Lab Community Garden from 2019, a) January-June, b) July-December. 1, 2: crop field, 3: high bed, 4: insect hotel, T: trees.

Table 1: Activities in the Andernach LL, 2019

Month	General activities	Activities in the LL Community Garden
February		Preparation, ploughing soil
April		Planting potatoes
May		Climate breakfast, soil sampling
June		Planting herbs in high beds, crop damage of potato beetle
July		Soil analysis
August	Fencing the area	Rabbit damage to the crops
September		Pumpkin and potato harvest, creation of insect hotels
October		Apple juice brewing
December		Preparation of crop fields

Organization of the activities was predominantly in the hands of the CC, organizing the events, coordinating the Perspektive gGmbH and the youth centre and school representatives. The Perspektive gGmbH independently managed the gardening tasks (acquiring seedlings, organizing the work force and execution of tasks), keeping close communications with the CC. Lateral interaction and independent organization between the CT members were at this point not yet established.

### Activities in 2020

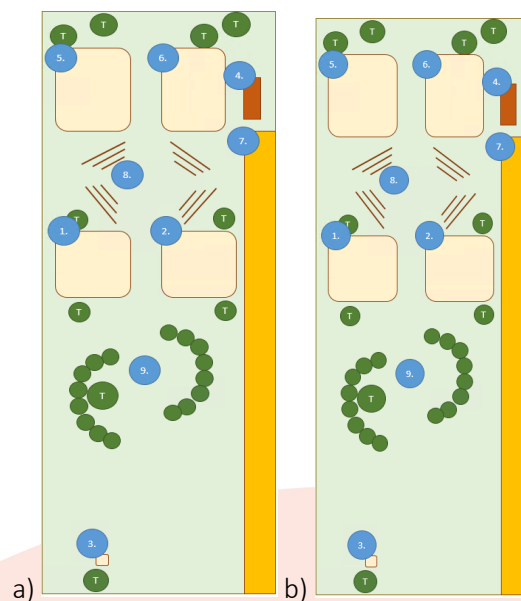
The CC, the Youth Centre, school representatives who participated in the first year, as well as the Perspektive gGmbH were involved in planning the second year LL activities, during the last months of 2019.

The first year had given the CT insights about which activities worked well, and which were interesting to perform a second time, e.g. potato harvest. A hunting session was organized, as a response to the rabbit plague in 2019. In an area of the LL, hunting with falcons is a preferred method to minimize risks for the public.

In the future, if needed, additional hunting sessions will be conducted.

In 2020, the LL focused on biodiversity, introducing many new crops and edibles. In total, 10 different activities took place in the LL, introducing five different crops of larger scale (potato, sun choke, wheat, linen and buckwheat) (Table 2). The activities were designed to engage children (during school or Youth centre activities) in many different ways during the year (spring planting, autumn harvest). The Perspektive gGmbH provided the knowledge and the management skills for the crops, as well as obtained the plant seedlings. An overview of the plans for 2020 can be seen in the table below.

For an overview of the development of the LL Community Garden in 2020, see Figure 3.



a) b)  
Figure 3: Half-year development of the Living Lab Community Garden from 2020, a) January-June, b) July-December. 1, 2: crop field, 3: high bed, 4: insect hotel, T: trees, 5, 6: crop field, 7: sun choke field, 8: trellis of fruit trees, 9: berry shrub formation

Table 2: Activities in the Andernach LL, 2020

Month	General activities	Activities in the LL Community Garden
January-March	Preparation of high beds	Preparation of crop fields
February		Rabbit hunt, planting wheat
March		Planting sun choke, linen, buckwheat
April		Planting potatoes
October		Sun choke harvest during Youth centre holiday program
November	CT planning meeting for 2021	
December		Damage of fruit trees by rabbits, replanting of trees

During the first half of 2020, the Perspektive gGmbH performed the ground-related construction (as in 2019). During the first lockdown (March-May), the planting of wheat, sun choke, linen and buckwheat as well as potatoes was done without involvement of any third party (schools/kindergartens/Youth centre) by the Perspektive gGmbH in coordination with the CC.

The LL in Andernach focuses on the environmental education (schools and Youth centre)

and the involvement of people in difficult job situations. It became evident during the Covid-19 pandemic, that these groups are especially vulnerable. Due to the governmental restrictions during the pandemic, all activities in pedagogic environments were reduced to a minimum and changed from analogue, physical participation to digital education. As Perspektive gGmbH also educates people via the Job centre, it was also affected by the restrictions, i.e. missing a large number of employees.

During the summer months, and summer

holidays, restrictions continued, then to be intensified in autumn. No activities involving schools or Youth centre could be performed during this time. A massive loss of crops was an unfortunate side effect of the reduced activities of the pedagogic institutions.

Shortly before the second lockdown of November, the Youth Centre held their autumn holiday program for a small number of children. Here, the children together with the city guides and pedagogues from the Youth centre harvested a part of the sun choke and cooked these on an open fire, similar to the activity in the autumn of 2019 with potatoes.

#### (Planned) activities in 2021

The influence of the Covid-19 pandemic was still prominent in the first months of 2021. Few members of the CT attended the planning meeting in November 2020. The different target/interest groups met separately with the CC and Perspektive gGmbH in the beginning of 2021 to plan their respective activities.

One of the large changes in the LL was the diversification of the Community Garden and extending the LL to other locations in the city (e.g. Permaculture in the city district of Andernach-

Eich). This includes engaging other target/interest groups, setting other foci (e.g. research of fertilizer efficiency, seed production), and bringing the concept of the LL closer to the educational institutions (e.g. installing high beds on site at the schools/kindergartens).

The schools/kindergartens and Youth centre are still included in activities, concentrating on fewer occasions later in the year (harvest in the LL and permaculture) or locally in their own gardens. This is due to the unclear state of the Covid-19 related lockdown in all educational institutions.

For the management of the Community Garden, the choice of crops was towards less care-intensive species (pumpkin instead of potato), with possibility of large output with little labour. The LL is now planning harvest in the autumn (to give opportunity for action days later in the year for the youth centre holiday program, schools and kindergarten to participate) and creating a bee-friendly habitat before installation of beehives. An overview of the plans for 2021 can be seen in Table 3 (activities in the Andernach ECSs are labelled in bold).

Table 3: (Planned) activities in the Andernach LL, 2021

Month	General activities	Activities in the LL Community Garden
February	Create Insect hotel prototype	<b>Water reuse-system with Nolde &amp; Partner</b> Preparing crop fields, flower strip soil and high beds
March	CT meeting schools/kindergartens (online) Youth Centre tending a field and two high beds Permaculture: create an aquaponic system	Fruit tree planting at six stations around Andernach during Youth Holiday program <b>Installing 2 beehives</b> Installing weather station at the during the Youth Centre holiday program
April	<b>Maltaflor experiment at the permaculture with leek</b> Slowfood planting at high beds at the permaculture	Planting flower strips and pumpkin <b>Slowfood Rhein-Mosel e.V. experiment for seed production of peas</b>
May		Planting flower strips and pumpkin



		Installing weather station during Youth centre holiday program (if not already in March) <b>Installing high beds in 6 schools and kindergartens</b> Pilgrimage initiative: <b>Set up an insect hotel, signs for the St. James route</b> Citizen tending a crop field
June	<b>Action day city wide: Day of the Open Gardens</b>	Meeting of Fair-Trade Initiative Meeting of Schools and Kindergartens
July	<b>Action day city wide: "Andernach schmeckt" (Andernach is tasty)</b>	<b>Slowfood harvest pea seeds LL</b>
September	<b>Action days: Fairtrade week, world clean-up day</b> <b>Permaculture: harvest leek</b>	<b>Harvest pumpkin and sun choke</b>

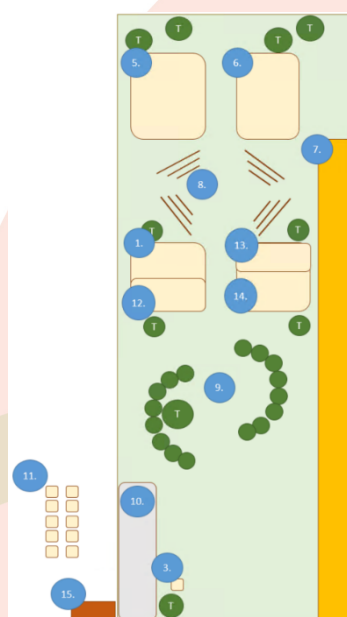


Figure 4: Half-year development of the Living Lab Community Garden from 2021 January-June. 1, crop field, 2: see Nr. 13, 14, 3: high bed, 4: insect hotel, T: trees, 5, 6: crop field, 7: sun choke field, 8: trellis of fruit trees, 9: berry shrub formation, 10: bee-friendly flower strip, 11: high beds for schools and kindergartens, 12: citizen plot, 13: Youth centre plot, 14: Slowfood Rhein-Mosel e.V. pea seed production, 15: Pilgrim-forum Insect hotel.

Figure 4 shows the development of the LL Community Garden, as planned for January-June 2021.

Table 4 gives some more details on the ECSs and Edible City Solution Initiatives (ECSIs) that are part of the Andernach LL.



Table 4: ECSs and ECSIs in the Andernach LL

ECS in the Andernach LL	Description
<i>Wastewater use in the LL</i>	A cooperation between the City Administration department of Environment and Sustainability and SME Nolde & Partner. The plan is to construct a new system to use wastewater as main watering source for the LL. A successful implementation of a wastewater reuse-system at the LL will provide insight how to tackle inner city watering issues.
<i>Aquaponics at the Permaculture</i>	A cooperation between the Perspektive gGmbH and the City Administration.
<i>Beehive at the LL</i>	A cooperation between the NGO Beekeepers' club, the non-profit SME Perspektive gGmbH and the City Administration.
<i>Pea seed production at the LL</i>	A cooperation between the NGO Slowfood Rhein-Mosel e.V. and the non-profit SME Perspektive gGmbH. At the Living Lab, the Perspektive gGmbH will construct the scaffold. In a joint action, the planting of the seeds of the local, endangered, sugar pea "Kesselheimer Zuckerbse" will take place in the late spring. The peas are only for seed production purposes. If the production is successful, this action will be repeated in 2022. Slowfood Rhein-Mosel e.V. will care for the peas and distribute the harvested seeds around the region.
<i>High beds at the Permaculture</i>	A cooperation between the NGO Slowfood Rhein-Mosel e.V. and the non-profit SME Perspektive gGmbH and the local schools and kindergartens in Andernach urban district Eich. At the Permaculture in Eich, Slowfood Rhein-Mosel e.V. has installed high beds can managed individually with plants provided from Slowfood Rhein-Mosel e.V.. Perspektive gGmbH and participants from Slowfood Rhein-Mosel e.V. care for the beds and plants. Schools and kindergartens can care for specific beds or take part in the whole project if they want.
<i>Fertilizer experiment at the Permaculture</i>	A cooperation between the fertilizer producer SME Maltaflor and the non-profit SME Perspektive gGmbH. Situated at the Permaculture, Perspektive gGmbH will plant leek under three different conditions, with fertilizer from Maltaflor, Oscorna-Animalin and without any treatment. The results will profit Maltaflor in their marketing and diversifying their product catalogue. The leek will profit the Perspektive gGmbH in their sales, distribution at the Permaculture site. Schools and kindergartens in Andernach have been invited to take part in the harvest (Action Day) and gather amounts for their own use.
<i>High beds in schools and kindergartens</i>	A selection of 6 schools and kindergartens will be tending high beds at the pedagogic institution. The aim is to give the children an opportunity to learn about gardening in their school/kindergarten environment.
<i>Insect hotel</i>	The volunteer initiative "Pilgrimforum" donated the insect hotel (created in 2021, Nr. 15) and has space for several insects, butterflies,

	bees and birds, hedgehogs. This is one piece of many, which are being created from the initiative, which will find space in the City of Andernach.
<i>Pilgrimage /insect hotel signs</i>	The volunteer initiative “Pilgrimforum” has donated 50 small path signs for the St. James pilgrim route, on the left bank of Andernach. The signs do not only show the way for the hiker and pilgrims, but also function as an insect hotel.
<i>Action days</i>	<ul style="list-style-type: none"> <li>• Day of the open gardens (27.6.2021) event in the City of Andernach. Guided tours of the gardens in the city centre, at the permaculture and at the Community Garden. A collaboration of the Department of Environment and Sustainability with Andernach.net (Marketing and Tourism Dept.).</li> <li>• “Andernach is tasty” “Andernach schmeckt” (4.7.2021) event from Andernach.net (Marketing and Tourism Dept.) in collaboration with City Administration and other partners (in planning; University of Koblenz, Foodsharing Initiative, Youth Centre, Herbal-Expert).</li> <li>• Harvest peas (July/August in the LL) collaboration Slowfood Rhein-Mosel e.V., Perspektive gGmbH, Schools and Kindergartens, limited to the CT members.</li> <li>• World-Clean-up Day (18.9.2021) activities by Waterlove gUG and Youth Centre.</li> <li>• Fairtrade week (25.9-8.10.2021) with interactive exhibition (2.10-19.10.2021) collaboration with City Administration, Fairtrade-Initiative, Youth Centre, Andernach.net (Marketing and Tourism Dept).</li> <li>• Sun choke and pumpkin harvest (September / October in the LL).</li> </ul>

## Monitoring

The monitoring in Andernach LL focuses on (a) participation, (b) independence, (c) visual appearance of the Community Garden, (d) soil health, and (e) insect diversity. The aim is to include these data in the WP2-WP5 toolbox-monitoring database by the end of the project.

Below a short overview is given for these elements of the monitoring.

### *(a) Participation (City Team) (ID 191)*

In the starting year 2019, many parties in Andernach showed interest in the LL activities. Out of many, a core group formed around the schools/kindergartens and the Youth centre. In line with the governing structure of the Edible City of Andernach, the CC took a prominent role

in leading the CT, together with the Perspektive gGmbH.

Figure 5 shows the involvement of the various parties in the LL activities. In 2019, the CC was 100% involved, followed by Perspektive with 93%. Schoolchildren were involved in 50% of the activities. Other participants were the Youth Centre and Maltaflor. In 2020, the CC and Perspektive were again the main participants in the activities. New participants were Hunter and Andernach.net. In the year 2021 the CT increased to 16 members. The range of the participation in activities has increased, including children in 31%, Perspektive gGmbH in 55% and other parties in 17% of the activities, respectively. The CT increased to 16 members. The range of the participation in activities has

increased, including children in 31%, Perspektive gGmbH in 55% and other parties in 17% of

the activities, respectively.

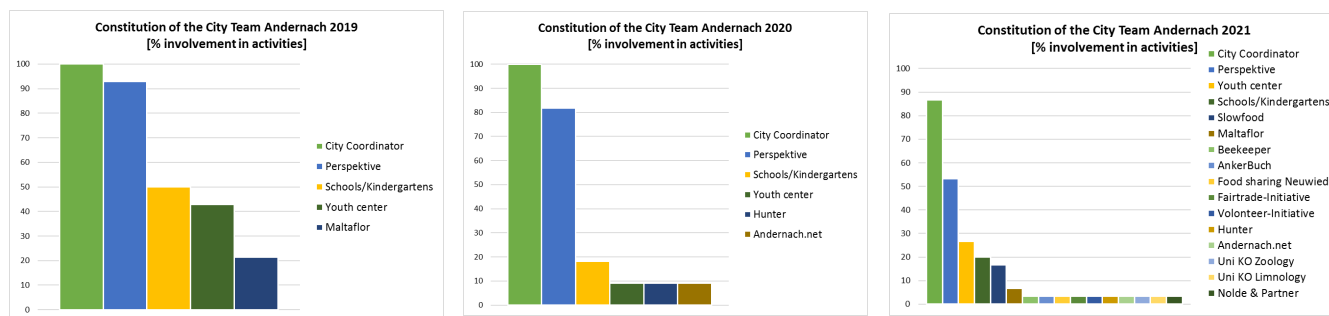


Figure 5: Constitution of the City Team Andernach 2019-2021 (status May 2021) [% involvement of activities].

### Independence (ID184)

The indicator Independence (ID 184) is derived by analysing the constitution of the CT. From these data, it is evident, that the CT depends strongly on the involvement of the CC and the Perspektive gGmbH, ergo the independence of the ECS and the LL is low. The tendency however for 2021, by involving more target groups, is towards a more independent CT team and organization of tasks in the LL. 1)

### Visualization of the Community Garden development

Monitoring the development of the LL Community Garden is also done by via photo documentation. Photo monitoring includes 6 positions situated around the LL Community Garden, from different angles. The plan is to collect photos several times a year (March, June and September). Monitoring so far has been performed by the CT. Future plans are to include other CT members to take pictures and post these on CMT and social media.



Figure 6: Visualization of the Community Garden development through pictures from position "YC Front 2" 1) March 2019, 2) June 2019,



3) March 2021.

### (b) Insect diversity (ID 137)

Between April-July 2020, a standardized beetle-monitoring scheme was performed in the LL Community Garden<sup>2</sup>. 10 pitfall traps (controlled with a 2-week interval), and 4 yellow-coloured traps (for a period of 4 days on 4 occasions), were installed (Figure 7). All insects were collected and preserved in concentrated sodium 2) chloride. The species identification was performed at the University of Koblenz. In total, more than 100 different beetle species were found at the LL, out of which several were stenotopic, meaning that they have a restricted geographic distribution and cannot tolerate large environmental changes.



Figure 7: Beetle pit traps (top and second picture) and species found (bottom left picture) and colour trap (bottom right picture) in the LL

## 4.2 Berlin

### Community Garden 2020.

In addition, several species were found from warmer habitats, possible indicators of climate change. The unusual finding of *Ophonus brevicollis* (3<sup>rd</sup> recorded sighting in Germany), shows how important research on such habitats as the LL is. The placement of the monitoring in such a public place also brings the science to the people, and has great educational benefits both in terms of showing science in action and teaching about the biodiversity in the garden. Ms. Bayramov performed the monitoring, as a part of her studies of Bachelor of Education, Bachelor thesis at the University of Koblenz (Department of Zoology, Supervision Prof. Dr. Thomas Wagner).

In 2021, Ms. Hofmann and Prof. Dr. Thomas Wagner will continue the monitoring in the LL, expanding this to the outskirts of the LL surrounding area, near the Youth centre. 10 pitfall traps were installed on the 12<sup>th</sup> of March, for a period of 14 weeks. A popular science publication is in progress to inform visitors about the monitoring and the findings. If possible, the monitoring will expand to an additional site on the permaculture of the city of Andernach.

### (c) Soil health (ID 237)

Maltaflor conducted soil sampling and financed the laboratory analysis of nutrients (Mg, K<sub>2</sub>O, P<sub>2</sub>O<sub>5</sub>, C<sub>org</sub> and pH). The results showed loamy sand and sandy loam, slightly acidic soil. The nutrient composition was determined to have high levels of phosphorous and very high levels of potassium and magnesium. The organic content is intermediate. These results indicate a fertile soil with favourable growing conditions for many different crops.

### Essence of the LLs Berlin

Berlin became a FRC at a later stage (in 2020, to replace Heidelberg) than the other FRCs in the

<sup>2</sup> Following ABRAHAM, R. (1991): Fang und Präparation wirbelloser Tiere. Gustav Fischer Verlag, Stuttgart & New York.



project. The FRC Berlin has two LLs: LL Marzahn-Hellersdorf/Gutsgarten and LL Neukölln/Jacobi Cemetery. The latter LL was established recently, in October 2020. This status report therefore focuses on the implementation activities in Berlin as from 2020.

The goal of the Berlin LLs is to provide best practice examples of how densification can encompass productive green structures in a growing city while stabilizing disadvantaged neighbourhoods. The existing community gardens at the sites of the two LLs will be further expanded and serve as an anchor point for the neighbourhood. In addition, they serve as a starting point for development impulses to reach the surrounding redevelopment areas and neighbouring socially disadvantaged areas. They stand for integration, civic engagement, nature experience and resilient urban development.

Social and ecological themes are to be linked, creating spaces for improvisation and new ideas, in order to create a field for experimentation in an open and at the same time protected space. This is to create and establish a place in the urban space where people can exchange ideas and learn from and with each other. The work at the Berlin LLs is based on the motto "help for self-help". Urban gardens are places in the city where interculturality, active environmental protection, educational knowledge transfer and cultural activities can take place and where everyone has the opportunity to positively influence the immediate environment.

### **Activities LL Marzahn-Hellersdorf/Gutsgarten in 2020**

The first CT meeting (kick-off) for the LL Marzahn-Hellersdorf/Gutsgarten took place on June 19, 2020. There was a guided tour through the garden, a presentation on the project history, the project itself and its goals, followed by a round of introductions and a questions and discussion session.

From June 2020 to August 2020 three workshops were held relating to the development of the ECSs in the LL Marzahn-Hellersdorf/Gutsgarten. In an interdisciplinary, democratic process, with representatives from the administration, social institutions from the neighbourhood management, housing associations and the Gutsgarten CT, ECSs for the Gutsgarten were developed. From August to November 2020 the implementation plans for the ECS were summarized and included in revised D3.1 in the form of an Implementation Project Plan (IPP).

On 8 October 2020, the autumn festival was held at the old site for the last time before the estate garden moved to its new location. EdiCitNet was present with a stand and visitors could inform themselves about the project and the planned activities. As part of the ECS "Gutsgarten im Wandel" (Gutsgarten in Transition), the move of the estate garden to the new site on the edge of the Hellersdorf estate was planned and finally completed in November 2020. All raised beds, the composting toilet and the construction trailer have found their new place, the sea containers were placed in their requested and approved place with the help of a crane, perennials and woody plants were replanted and a lot of waste was disposed of. The community garden also had to be closed at the end of the year due to Covid-19.

In order to prepare for the new site, as well as the coming growing season, a future workshop, the "Concert of wishes", was held in December 2020. This concert had two objectives. First, the move to the new site could be communicated to the public. Secondly, the wishes of the estate garden group as well as the neighbourhood for the estate garden were collected. The "Concert of wishes" took place with snacks and drinks and a survey on site. For better visibility and to develop a base in the neighbourhood a shop window exhibition with a digital voting module

was used in the Hellersdorfer Promenade – a nearby pedestrian zone.

In autumn 2020, the Prinzessinnengarten team developed a plant list for the ECS "edible landscaping" that meets criteria for edible landscaping as well as focuses on native, robust wild perennials that are insect friendly. This was coordinated with GESOBAU and the planning office for the Hellersdorf estate and handed over. Subsequently, there were efforts to formulate next steps and identify financial resources to cover the potentially higher costs of the edible plantings. There were discussions with the landscape architects responsible for the Hellersdorf estate and the Senate.



Figure 8: New site, Hellersdorf ©Nomadisch Grün/Prinzessinnengarten

#### **(Planned) activities LL Marzahn-Hellersdorf/Gutsgarten in 2021**

In the winter 2020/21, more concrete planning was done on possible products as part of the ECS "product development". The difficulty for the estate garden is to not compromise the educational function of the garden by growing large quantities of herbs that can be sold. In order not to interfere with the educational function of the estate garden it was decided to concentrate on the cultivation of mint and savoury and cooperate closely with LL Neukölln/Jacobi Cemetery to produce mint tea and savoury syrup. A showcase is planned for the estate

garden to offer products to visitors on site, as a farm shop would not be profitable.

The Tiny House was also built in January and February 2021 as part of the ECS "Gutsgarten im Wandel" ('Estate garden in transition') (Figure 9). Due to the relocation of the Prinzessinnengarten from Moritzplatz to St Jacobi Cemetery, the material was already intended for the Gutsgarten and stored there. The workshops on the ECS investigation resulted in the plan to construct a multifunctional space. This was met by the construction of the Tiny House; the room can be used flexibly and is intended to offer the estate garden group and its visitors a sheltered place protected from wind and weather and a space for workshops and other activities.

The construction of the Tiny House had to be brought forward because weather conditions were detrimental to outdoor storage of the material. The multifunctional space is to be further extended by the construction of a terrace between the containers.



Figure 9: Construction of the Tiny House at the Hellersdorf estate as part of the ECS 'Estate garden in transition' (Feb. 2021) ©Nomadisch Grün/Prinzessinnengarten

In February and March 2021, the programme for the 2021 season was planned: activities, festivals and gardening days. Here the suggestions from the "Concert of wishes" serve as a planning aid. In particular, the inauguration festival



of the new estate garden at the start of the 2021 season should appeal to both new and old-established neighbours. Of course, the actual implementation of the inauguration festival and other activities will depend on how the Corona pandemic develops. In the winter of 2020/21, more concrete work was also done on the planning of possible products in the ECS "Product Development".



Figure 10: Impression from the CT meeting on 23.04.2021 at the LL Marzahn-Hellersdorf ©Nomadisch Grün/Prinzessinnengarten

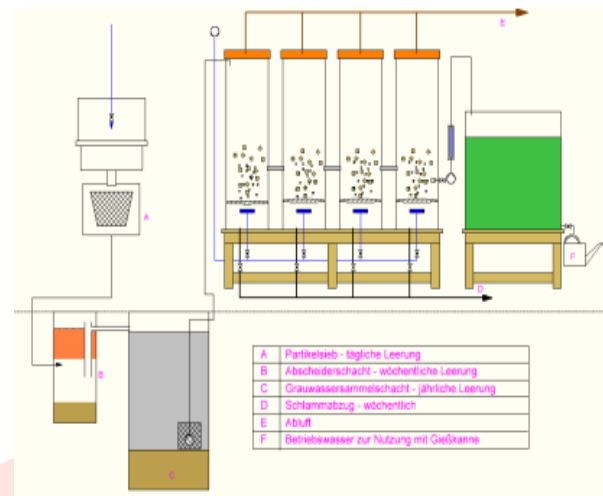
The further expansion of the containers into a functioning kitchen and workshop are also planned to be implemented in 2021.

In April and May 2021, the planning and preparation of a stable infrastructure for electricity and water on the site continued. For this purpose, a meeting was held with the representatives of the allotment gardens and GESOBAU. In addition to the planning of water, electricity and sewage, various participatory developments have produced a "design catalogue" of materials and colour tones for garden elements in the garden, which will be submitted to the Office of Historic Preservation for evaluation.

Part of the infrastructure will be a greywater treatment plant. With the help of EdiCitNet partner Nolde + Partner, the design for this plant is now already in place (Figure 11).

Figure 11: Design for the grey water treatment installation at LL Marzahn-Hellersdorf ©Nolde & Partner innovative Wasserkonzepte

The grey water is collected from the kitchen



sink and led through a sieve into an upstream separating shaft, which retains fats. Alternatively, a barrel installed above ground is also conceivable. The grey water, which is then largely freed from particles and floating matter, is fed to a collection shaft with a drainless pit volume of approx. 500 liters, via which it is pumped into the actual treatment unit. The treated and disinfected water can then be fed into a collection tank. This water is then available for garden irrigation and can be applied with watering cans or a submerged pump.

Within the framework of possibilities offered by the Covid-19 regulations, a face-to-face CT meeting was held on April 23, 2021, at LL Marzahn-Hellersdorf. The main goal of the meeting was to inform the CT about the work status and to discuss work planning for 2021 and beyond. The participants were informed about the status, tasks and opportunities of the various ECSs: what happened so far, what is still happening, what are the framework conditions, the prerequisites and risks, what are the main tasks and who will participate? This was done by means of posters addressing these questions, for each ECS. At the end of the meeting, mint plants for ECS 3 'Product development' were planted

together.



Figure 12: Impression from the CT meeting on 23.04.2021 at the LL Marzahn-Hellersdorf @Nomadisch Grün/Prinzessinnengarten

The program planning for open events in the season 2021 was obviously hindered by Covid-19, as it was necessary to wait for the situation to improve to plan activities. Nevertheless, the garden was opened for gardening days to start all necessary gardening activities that are important in spring. These take place regularly on Thursday afternoons and Saturday mornings and are coordinated and accompanied by the PRINZ team. Also, a plenary meeting with the PRINZ team and the Gutsgarten group took place in April to enable a good coordination of all participants for the start of the gardening season 2021.

In the light of the move, an inauguration celebration for the new location was combined with the Fête de la Musique (a big music festival all over Berlin), which took place on June 21, 2021,

at Gutsgarten. Further planned events for 2021 include weekly gardening days every Thursday and Saturday, summer and autumn festival (dates not yet fixed), workshops on the construction of the grey water purification plant and on fruit tree care/pruning, and the Festival for Culture on the Outskirts of the City that will take place on August 7, 2021.

Figure 12: Impression from the CT meeting on 23.04.2021 at the LL Marzahn-Hellersdorf @Nomadisch Grün/Prinzessinnengarten

#### Co-creation at LL Marzahn-Hellersdorf/Gutsgarten



Above, the meetings and events were described that are crucial to the co-creation process. Such meetings are a very good way to communicate directly and effectively between all participants. Here an overview is given of the actors (co-creators) involved in the LL Marzahn-Hellersdorf/Gutsgarten (Table 5).

Table 5: Co-creators LL Marzahn-Hellersdorf

GESOBAU	Social housing company; owner of the land
Denkmalschutz	historical preservation
Senatsverwaltung für Stadtentwicklung und Wohnen, Berlin	Berlin city government
Bezirksverwaltung Marzahn-Hellersdorf	City district government

Erwin Nolde	EdiCitNet partner Nolde + partner (grey water treatment)
Schrebergartenverein	Association at city district level (Dachverband des Bezirks), coordination of allotment gardens
HU Berlin	EdiCitNet coordinator, Co-creation expert
Alice-Salomon-Hochschule	University of applied sciences for social work
Gardeners from Gutsgarten	Two gardeners are elected to represent the gardeners in the CT
Stadtentwicklungsamt Mahrzahn-Hellersdorf	City district development office
Tiele-Winckler Haus	Private organisation for social work
Grüne Liga	„Green league“, Network organisation for community gardens
JUCA	Landscape architects

### Activities LL Neukölln | Jacobi Friedhof

The CT of LL Neukölln was founded at the "kick-off event" on 26 October 2020. There was a guided tour of the New St. Jacobi Cemetery (Nomadic Green gGmbH), and information was provided on the the EdiCitNet project history and the status quo, followed by a round of introduction of all participants.

In two subsequent digital workshops, first focus topics, then ideas for ECSs and activities were developed. Currently, PRINZ is developing textual elaborations on the ECS "Product Development" (together with LL Hellersdorf/Gutsgarten), ECS "Neighborhood Action Days", ECS "Research Center New City Nature" and ECS "Cemetery Conversion and Mourning Culture". The ECS drafts are to be coordinated with the CT Neukölln from March 2021 and subsequently included in the implementation of the IPP for Berlin. The fourth CT meeting took place (on site) on June 26, 2021. Also, here the participants were informed about the status, tasks and opportunities of the various ECS: what happened so far, what is still happening, what are the framework conditions,

the prerequisites and risks, what are the main tasks and who will participate? This was done by means of posters addressing these questions, for each ECS.

The planned activities so far are within the ECS "Cultural and Culinary Neighborhood Action Days"; these events will be held on eight different Saturdays. For the planned bread days, the pizza oven was expanded and completed. For the supervision of the bread days during the action days, a shift plan is created in the team and a workshop format for participation has been developed.

For a cultural program parallel to these action days a rough concept is under development. A workshop program on the topic of trees is also in the planning stage.

For the ECS "Product development", a HACCP (Hazard Analysis and Critical Control Points) was written to map production processes for tea and syrup. In addition, the farm store was expanded in order to be able to sell the products there. For tea production, mint plants were ordered and planted together with participants

on the action day in April; they will of course continue to be tended by the Jacobi Garden team in order to achieve a first harvest in the summer. Spaces and possibilities for drying have been elicited on the site, different options need to be prepared and tested, including, for example, the construction of a drying rack and ordering drying nets.

For the ECS “Research Center New City Nature” a small shop on Hermannstraße next to the community garden is currently being refurbished. In order to be able to carry out exemplary actions and programme content (from about July 2021).

In and during the implementation of the Living Lab, a number of **overarching challenges** or issues emerge:

- When the community garden started, the district nature conservation office had various reservations about the new uses and design changes in the cemetery. Due to the declining use of the cemetery and the accompanying general extensification of use and management, habitats for plants and animals have been created in recent decades, the endangerment of which is feared as a result of the community garden use. Here, the tasks lay and lie in particular in exchanging information with the officers of the nature conservation office about the inventory and developing common objectives.
- **Integration School Site:** A community school with over 900 places is to be built in the western area of the cemetery. An initial agreement has already been made with HOWOGE regarding access on foot and by bicycle, also via the cemetery/community garden. In addition, efforts are being made to convince HOWOGE and the state of Berlin/district to take the special site conditions into account when building and operating the school, and to develop the mission

statement and the range of services offered by the future school on the basis of the existing garden project.

- Integration of the community garden use into the development plan procedures: In the case of determinations for a green space use as well as the environmental education center, it is necessary to research and coordinate how the special use of the community garden, including necessary ancillary facilities and businesses such as workshops, gastronomy, etc., can be secured under planning law.
- Foreseeable changes in the development plan process: As of February 2021, according to the Senate Department for Urban Development and Housing/Department II C, there is currently "no planning requirement" for those cemetery areas where with a development plan ("B-Plan") coming into effect reverence periods ("Pietätsfristen") of more than seven years would exist, so that for large parts of the Jacobi cemetery probably no amended planning law can be secured in the short term. In addition, faunistic mapping has shown that at least the rear, western area of the cemetery belongs to the territory of protected long-eared owls. Since coordination with the upper nature conservation authority is required here, a very long planning period can be assumed and a failure to establish a development plan and thus the new school and housing construction is also possible against this background. For the permanent and sustainable operation of the community garden, regulations must be agreed under these circumstances that enable economically secure management as an alternative to securing planning law.

Table 6 lists the participants involved in the co-creation process at LL Neukölln.



Table 6: Co-creators LL Neukölln

Evangelischer Friedhofsverband Berlin Stadtmitte	Owner of the land
Senatsverwaltung für Stadtentwicklung und Wohnen, Berlin	Berlin city government
Bezirksverwaltung Neukölln	City district government
Berliner Landesarbeitsgemeinschaft Naturschutz	Environmental agency
HU Berlin	EdiCitNet coordinator
Schillament	Participatory laboratory at city quarter level
Community gardens Jacobi Friedhof	
STATTBÄU Berlin	Social entrepreneurs/city developers
Howoge AG	City housing corporation
Team Dis+Ko	Architecture collective
Grün macht Schule	Cooperation project founded by the Berlin Senate, aiming at promoting school yards
Nachbarschaftsheim Neukölln e.V.	Organisation for social/cultural activities
Kulturnetzwerk Neukölln e.V.	Organisation for social/cultural activities

### Monitoring

EdiCitNet partner PRINZ is in charge of the monitoring for the LLs Berlin. PRINZ has been in close contact with the leaders of WP5 in its efforts to develop an approach to monitoring that is meaningful but also manageable and practical. Especially when monitoring collaborative processes and participation among people in a community garden setting, monitoring needs to be (1) unobtrusive and expeditious and (2) easy to perform by people of different skill levels, if good and relatively complete data are to be obtained.

One or more indicators have been selected for each ECS. This includes indicators such as "planted area", "participation", "adoption rate", "quality of collaboration", and "profitability". In some cases, the data collection process has begun, in others monitoring procedures and tools

are still to be refined. Data entry forms for some indicators are under development. These forms have been developed collaboratively with PRINZ and were then shared, modified and agreed upon with WP5, but some elements are still missing. These include customer surveys and evaluation forms for assessing the quality of collaboration among various actors.

Regarding the customer surveys, the focus is on three potential motivations for people to participate in events:

- Knowledge exchange ("I want to learn something (new)/deepen knowledge");
- Participation ("I want to become active and help to influence my environment");
- Social ("I feel like exchanging ideas with other people/getting to know new people").

In order to capture the "outreach" of the LLs,

the place of residence of the participants is included. Also, the regularity, increase or decrease of participation will be documented. Questionnaires for participants are supplemented by counting the number of people participating in events. At this time, it is difficult to operate as planned regarding monitoring of participation in events, because of Covid-19 restrictions. The participants who come to the few events that can be organized, are highly restricted by the circumstances around Covid-19, i.e. only people who feel comfortable under the conditions participate, resulting in a certain influence to the monitoring in relation to a non-pandemic situation. Not only is the actual recording of participation made difficult, but the effects of Covid-19 far outweigh any effects of measures taken in the LL, which is what we wanted to monitor. Quantifying the impacts of the ECSs will therefore likely be delayed in relation to original plans.

Regarding the collaboration aspect, the focus is on the collaboration with social housing company GESOBAU AG, which is the main engine of conversion on the spot as well the main administrative institution involved in the Living Lab Gut Hellersdorf. Here the monitoring targets the type and quality of the cooperation between top-down oriented organizations such as GESOBAU, and PRINZ as a bottom-up actor (ECSs 1 & 2 Networking). This will happen in a qualitative interview, which will be conducted two to three times during the collaboration.

In the Berlin LLs no use is made of citizen scientists as the (social) structures in the LLs are very complex. To train new people in these structures or to make them familiar with these structures is considered to be a disproportionate additional effort. PRINZ is happy to conduct the data collection itself, as it has a large team with the necessary overview and experience in empirical research.

### 4.3 Oslo

#### Essence of the LL Oslo

The LL in Oslo, run as Linderud community garden, aims at piloting ECSs, which provide social and economic value and create opportunities for citizens and entrepreneurs through knowledge transfer, networking and infrastructure. A main sub-goal is to build on the work of Oslo's Urban Renewal Program (URP) and use synergies emerging from Oslo's strong involvement into a green transformation. Participation, ownership and identity of the LL amongst local citizens has therefore been a priority.

#### Activities in 2019

The main goal for 2019 was to create a CT, arrange two co-creation workshops to define the LL and adapt the goals for the new situation as well as to find a suitable area for implementing the LL.

The LL Oslo started in February 2019 when the CC and RMIT visited several ECSs in Oslo, who could be interested CT members and potential locations for the LL. In April a first information meeting was held to form the CT, agree on a location and outline the LL. The first co-creation workshop followed on June 24th to refine the setting and the goals for the LL, and a second co-creation workshop was held on November 27th to define the strategy for achieving these goals. Throughout 2019 several CT meetings took place to form the CT, define their tasks and outline the LL. An inactive local farm, Linderud farm, became the main location for the LL, and a second farm, Tveten farm, followed the main LL and CT as support and learning partner. In July and August, local community members started their first growing pilots while organising open meetings to engage more people to form a Community Supported Agriculture (CSA) group. A market day was held in September with stalls operated by local groups and businesses, amongst others the Nature upper secondary school and the CSA. In October, CT members engaged on a study visit to Sweden,



visiting urban farms in Gothenburg and Malmö, to gain inspiration for the LL, and in particular the development of the business aspect of urban farming models. Additionally, Linderud farm became a delivery point for REKO<sup>3</sup>, with the farm itself becoming one of the sellers of their own apple juice in October 2019.

### Activities in 2020

After intense planning the previous autumn and winter, the main goal for 2020 was to establish the community garden physically and to get as many people as possible, in particular the neighbourhood, involved in planning, participating and using the garden to create ownership over the LL. The CT decided to call the LL the Linderud Community-garden (Linderud Nærmiljøhage), which encompasses all activities and groups on the field.

In January, the CSA was formally founded as a cooperative, a board was formed, and a gardener employed. Students from the Nature upper secondary school started sowing the seeds for the wildflower meadow.

February 2020 marked the official opening of the LL with a community engagement kick-off event on the topic of composting bioplastic. 36 people from the local community attended the event, with a large group present from the local "District mothers' association".

Mid-March corona related restrictions were put in place in Oslo, and planned community engagement events were changed to allow people to visit the farm on their own initiative through organising a scavenger hunt for the neighbourhood and a drawing competition for kids. Additionally, the Linderud CSA self-organised groups to look after the seedlings, clean the storage

place and arrange individual planting events. April and May were another milestone for the LL. The field was drained of excess water, new drainage pipes were dug in, watering stations were installed, soil and compost was delivered and spread over the field and the barbed wire surrounding parts of the farm was replaced with a gate providing easy access for the local community.

June marked the opening of the Linderud Community-garden, celebrated with a kick-off outdoor meeting with all active stakeholders to introduce their ECS to each other and create a network amongst all participants. The Community Garden made an area of 500 m<sup>2</sup> available for people or organisations who want to develop a business within urban agriculture or who want to grow edibles for a volunteer organisation or neighbourhood events. This idea was inspired by the study visit to Sweden in 2019 and the Stadsbruk methodology<sup>4</sup> applied there. Out of those who applied for the area 5 ECSs received an area, called testbed, to grow their business ideas. These were the entrepreneur and flower business Markblomst, the social entrepreneur Cultural Incubator, the District mothers who grew herbs from their different cultural background, and the social entrepreneur InkaChef who led a group of youth to grow herbs and flowers to be used as ingredients in salads and for sauces, and for cakes and drinks sold at local events and markets.

From June to October several community events were held, including two participatory workshops run by Nabolagshager where the neighbourhood was invited to help plan and build a social meeting place; a summer party; open farm days and a market day where the ECSs had the opportunity to sell their produce.

<sup>3</sup> REKO-ring is a local group of consumers and food producers who shop in a simple model, without middlemen. Products are ordered directly from the producer through a closed Facebook group and delivered at an agreed time and place. REKO (the model of which stems from Finland) stands for «Rejäl Konsumtion», in Norwegian «Rettferdig forbruk», and translates into "fair consumption".

<sup>4</sup> <https://www.stadsbruk.com/about>.

These open community events, mostly funded through local grant schemes, have been important to reach out to and engage local community members who did not have a prior connection to the Community garden. The green entrepreneur Gruten held several workshops to build mushroom beds and teach about the production of Oyster mushrooms. 30 youth from the local area received summer jobs at the Community-garden and helped the ECSs to build their gardening beds, prepare the communal social meeting space, help conduct participatory planning workshops, and organize and work at open community events, to create a welcoming atmosphere for locals to participate.

The youth also worked with us to create a temporary social meeting space out of straw bales. Using straw bales as seating and tables served as a way to enable ECS participants and locals to envision how the space could be used and transformed in the future, while being flexible and temporary, so that locals could feel ownership over the transformation. These were used during placemaking events, and the data from participants was collected and used by the entrepreneur Circular Ways to create a vision of what could be built in the space in the future. Covid-19 restrictions tightened and loosened throughout the year and the LL had to constantly adapt and restrict the number of participants for all events held in 2020. However, the LL managed to adapt with smaller events, online meetings and outdoor activities that allowed social distancing rules to continue a successful season.,

From late autumn 2020 until summer 2021 all events had to be held digitally. November marked the official end of the first season in the community garden with an evaluation meeting held digitally with all ECSs and stakeholders who took part in 2020. Additionally, the planning and further development for the Community-garden for 2021 started. The CT decided to add

a new social garden area to the LL, a gardening space for groups without a regular schedule, volunteers, non-businesses and drop-ins. The social garden will be followed up by the Museum in Akershus through weekly open days to ensure inclusiveness of interested people and people from the local community who are not associated with ongoing activities. The open days should also help to provide better information and contact points for those gardening and those interested.

Additionally, the Community-garden will continue, further develop and upscale the testbeds piloted during the season in 2020, and further connect to the Stadsbruk incubator program to professionalize the testbed system. The incubator program is a mentor program for new farm entrepreneurs in their first season, taught by Stadsbruk and in Oslo is organised by the County governor in Oslo and Viken, Oslo municipality and Nabolagshager.

### **(Planned) activities in 2021**

The main goal for 2021 is to refine the LL, to help initiatives to professionalize, spread knowledge and create a network. One important part will be the upscaling of the LL and single ECSs. Additionally, the work with engaging the local community continues.

Starting in December 2020 the Community-garden announced 4 testbeds à 250 m<sup>2</sup> and 10 testbeds à 40m<sup>2</sup>. People who applied for a testbed in the LL could also apply for joining the incubator program. The program ran from February until April with 6 digital lectures, which covered topics of crop planning, business planning, regional rules and regulations, sales strategies and efficient farming models. In total 11 people have received a testbed, 9 ECSs received a bed of 40-80 m<sup>2</sup> and 3 ECSs received a bed of 250 m<sup>2</sup> for 2021, which cover social entrepreneurs, farming entrepreneurs, experienced people and newcomers, see Figure 15a.

In February a path for easier access to the field was made. Additionally, a new gate towards the west side of the garden replaced a barbed wire fence, not only giving the neighbours on the west side of the field easier access to the garden, but also connecting the Community-garden with a pedestrian and cycle path next to the farm. This made the farm more accessible to the community, a walk can from now on lead through the farm instead of around, bringing more people to the Community-garden.

Due to strict Covid-19 restrictions in 2021, all planned outdoor events from March to May had to be either changed to digital events, one-on-one meetings or cancelled. Therefore, the planned kick-off meeting with all active parties had to be run digitally, new groups could get access to their area at the LL through individual meetings instead of a big opening event and the planned market day had to be cancelled. Also, the open farm days on Wednesdays had to be postponed to late spring.

In May a biologist from the consultancy company Biofokus started mapping the biological diversity at the farm. Several insect traps are set up and observations will take place throughout 2021. Results from the mapping will be used for the nature management plans for the farm to increase its biological diversity.

From May to September the community garden

will be further developed as an attractive meeting place where people meet through different activities and where knowledge will be shared across participants. The meeting place will be developed through benches and tables based on the participatory design from 2020. Simultaneously, an outdoor community kitchen will be established to create a farm-to-fork connection. The focus lies on inclusiveness and participatory methods to create community ownership of the garden. Special measures will be taken to include vulnerable groups, such as people with disabilities through a collaboration with the Special class from Bjerke secondary school.

A nature path will be established (Figure 15b) to extend the Community -garden to the surrounding neighbourhood through planting of edible plants and bushes along the fence, putting up bird boxes, insect hotels and pollinator friendly plants along the path. Additionally, we will have a strong focus on communication and dissemination through setting up signs along the Nature path and in the Community -garden informing about the different activities. We aim to spread awareness and knowledge about the cultural history, cultivation and biological diversity. The Nature path and the meeting place will be created by youth in summer jobs, local school children and people in work training, e.g. Jobben Oslo, to create ownership of the area and strengthen the local identity.





Figure 15: Overview of the LL situation. a) 1. Linderud CSA 2. wildflower meadow. 3. Nature upper secondary school kitchen garden. 4.-7. 250m2 Testbeds: Markblomst, Samlepunkt, Unikum, and garden space for schools and local actors. 8.-13. 80m2 Testbeds: Culture Incubator, Onkel Troll, Pust, Sip, Jobben Oslo, INK. 14. Gruten As. 15. Soppløsninger. 16. Universally designed garden boxes, in cooperation with the Special class from Bjerke secondary school. 17. Social garden space. 18. Compost area. 19. Rain bed. 20. 150 meters of fruit trees and berry bushes along the fence. 21. Lengthened the path and established a new gate towards the neighbouring valley. 22. Beginning of restoration and feasibility studies for the former gardener's residence and historic greenhouse.

b) Upscaling of the LL to integrate and include the local neighbourhood through a Nature path. With the Community garden as a starting point, we are creating a Nature path, where knowledge about local nature and culture is disseminated. Linderud farm will become a connection point to the surrounding area by making a passage through the farm and adding visible connections to neighbouring schools, shopping centres and residential areas. Children and young people from Linderud school, Bjerke upper secondary school and people in work training are active in the design and construction of the Nature path.



### Co-creation

The Oslo LL involves the following co-creators as shown in Table 7. Some have been involved in both 2019, 2020 and 2021, others in either

2020 or 2021. See also Figure 15a for details and positioning of the active parties in the LL.

Table 7: Overview over co-creators in the LL Oslo and description of their involvement

Co-creators on the field	Description of involvement	Year
Linderud Community Supported Agriculture (CSA) (Linderud and delsgård)	The first active group in the Living Lab was the community supported agriculture (CSA), which was started by engaged local community members, the Museum in Akershus and the city district in summer 2019. In January 2020 the CSA was formally founded as Linderud CSA cooperative, with 60 shares for the local community. The shares consist of single shares, family shares, subsidised shares for low-income families and shares for the District mothers' network. The CSA has an area of approximately 2000 m <sup>2</sup> . In 2021 the CSA, through their gardener, participated in the incubator program for sustainable food production to gain a deeper knowledge about market garden principles and sustainability.	2019, 2020, 2021
University of Oslo/Natural History Museum (Naturhistorisk Museum)	Through a cooperation between the Natural History Museum and the Nature upper secondary school, students learn how to establish a wildflower meadow, made with locally collected seeds. The wildflower meadow is established through different methods, to teach and compare the effectiveness of the various approaches - 1. planting seeds in autumn and spring, 2. laying out hay from a "mother meadow" collected at different times of the year to include a variety of flowering and seeding wildflowers, 3. planting out propagated seedlings. The wildflower meadow is approximately 400 m <sup>2</sup> . The Natural History Museum is further involved in dissemination on topics such as insects and pollination through courses, open days and videos.	2020, 2021
Nature upper secondary school (Natur videregående skole)	The Nature upper secondary school is a nature management school in Oslo for getting study competence or a trade certificate, for example as a gardener. Students from the school are responsible for maintaining the wildflower meadow, support the gardener at Linderud farm with various tasks and carry out their exams for gardening education at the farm. Since 2021 the school has taken over responsibility for an education farm in the Living Lab of approximately 500 m <sup>2</sup> to offer their students gardening training in marked garden principles. Students regularly join the LL at open day events as well as market days to sell their crops and share their knowledge with others.	2020, 2021

The Salvation Army - Jobben Oslo	The Salvation Army of Norway's programme 'Jobben Oslo' is a work training program for people over 18 years old with a history of drug abuse. Since 2020 Jobben Oslo helps maintain the outdoor area of Linderud farm and helps setting up the growing area in the Living Lab, on 3-5 days per week. In addition, the group has its own testbed in the Living Lab to grow flowers and herbs for developing commercial products. In 2021 the group participated in the incubator program for sustainable food production to gain a deeper knowledge about establishing an urban gardening business. They will also be responsible for building insect hotels and bird boxes, which will be placed along the Nature path.	2020, 2021
Markblomst	Markblomst is an entrepreneur producing local and sustainable flower bouquets in Oslo, providing workshops and 'U-pick' in the flower garden, fresh bouquet orders and flower arrangements for weddings, and regularly joins open days, market days and sells through the Linderud farm Museum shop. Markblomst grows on a testbed for entrepreneurs of 250 m <sup>2</sup> and joined the incubator program for sustainable food production in 2021. In 2021 the owner of Markblomst also became a work leader for youth in summer jobs at the LL and for the Museum in Akershus.	2020, 2021
Cultural Incubator	Cultural Incubator is a social entrepreneur that provides language training to those who need to improve their Norwegian skills through gardening activities. Cultural Incubator grows on a testbed of 40 m <sup>2</sup> and joined the incubator program for sustainable food production in 2021.	2020, 2021
Onkel Troll	Onkel Troll is an Oslo based SME that forages local mushrooms and wild plants for developing a variety of commercial products. Onkel Troll grows on a testbed for entrepreneurs of 40 m <sup>2</sup> to further expand their product range. The entrepreneurs joined the incubator program for sustainable food production in 2021.	2020, 2021
Kompass & co	Kompass & co is a social entrepreneur using food waste to create new meals and employ youth. Youth from Kompass & co worked together with the LL youth summer job programme in 2020, both setting up garden beds and preparing the social meeting space, as well as preparing food for events.	2020
Relove	Relove is a volunteer group who organises repair workshops. The group arranged 4 workshops during July and August 2020 to engage the local community.	2020

Circular Ways	Circular Ways is a social entrepreneur working with circular solutions and reusing materials for building installation, as well as providing work training for youth. The entrepreneur helped plan the social meeting place through participatory workshops and placemaking events. They further developed furniture suitable for the Community garden and held building workshops with the youth to build a mobile outdoor kitchen and sales stall.	2020
Unikum	Unikum is a work training for people outside society, and joined the Community garden through a testbed for entrepreneurs of 250 m <sup>2</sup> , where they want to establish a market garden as part of their work training program. Unikum joined the incubator program for sustainable food production in 2021.	2021
Samlepunkt	The social entrepreneur Samlepunkt, is a collaboration between the entrepreneurs Herbanists and Villbrygg and volunteers who aim at growing herbs for commercial production while providing a meeting place for women from different social and cultural backgrounds. Samlepunkt grows on a testbed for entrepreneurs of 250 m <sup>2</sup> and joined the incubator program for sustainable food production in 2021.	2021
Sip	Sip is a newly established local entrepreneur who grows ingredients for non-alcoholic drinks and classy homemade cocktails with Nordic flavours. Sip grows on a testbed of 40 m <sup>2</sup> and joined the incubator program for sustainable food production in 2021.	2021
Pust	Pust (Breath) is a volunteer group who aims to establish an urban farming business through producing herbs, vegetables and edible flowers for sale. Pust has a focus on experiences for the senses and pollinating insects and is further involved in facilitating growing experiences for people with disabilities. Pust grows on a testbed of 40 m <sup>2</sup> and joined the incubator program for sustainable food production in 2021.	2020, 2021
INK and InkaChef	INK is an intercultural meeting space and youth job skills training. INK has a testbed for entrepreneurs of 40 m <sup>2</sup> where they produce ingredients for the INK local community kitchen project. The INK local community kitchen aims at community building through sharing food and leading a circular food system together. INK works together with InkaChef food catering and food truck to also produce local and sustainable food in synergy with nature, and to create job opportunities for local youth. INK joined the incubator program for sustainable food production in 2021.	2020, 2021

Gruten AS	The local entrepreneur Gruten creates products out of coffee waste, in particular Oyster mushrooms, and works to build knowledge about coffee grounds as a resource for new products. At Linderud Community garden Gruten are focused on testing spent substrate from mushroom production as a suitable medium for building mushroom beds and as a fertilizer for soil and plants. Gruten has held 3 workshops in 2020 and 2 workshops in 2021 to engage the local community and participants in the LL and share their knowledge about mushroom production in the garden.	2020, 2021
Soppløsninger	Soppløsninger (Mushroom Solutions) is a local entrepreneur who is researching and experimenting with sustainable practices of growing mushrooms on logs by sourcing "waste" logs that are by-product of other activities.	2021
District mothers' network (Bydelismødre)	Bydelismødre (District mothers' network) is a voluntary group of local women, primarily with ethnic minority background, who, after a training in topics such as parenting, work and health, become visible bridges between their local community, in particularly vulnerable community members, and public institutions. The District mothers' network has been actively involved in the Linderud CSA and INK community kitchen as well as several activities and events arranged by the Community garden and thereby connecting their community to the LL. They also take part in open farm and market days.	2019, 2020, 2021
Linderud school	Linderud primary school is the direct neighbour of Linderud farm, a local school for children from 1st to 7th grade. In 2020 children were involved in planting sunflowers in the community garden and 2021 they will be responsible for following up bumblebee boxes the LL received from NIBIO as part of a national citizen science bumble bee mapping project. The school will be part of the Nature path planned for 2021.	2020, 2021
Bjerke upper secondary school	Bjerke upper secondary school is also a direct neighbour of Linderud farm and is a local school for children from 11. -13. grade. The school has been involved in the summer job program the Community garden ran in 2020 with several youth from the school joining the program. The school will be part of the Nature path planned for 2021, as well as in the planning of a universal design of gardening space for people with disabilities.	2020, 2021



Youth engaged through the summer job youth program	The Community garden provided several local young people with summer and part time jobs in 2020. The program is funded through different grants and subsidy schemes such as the city district's program YoungBjerke which prepares kids in 8th and 9th grade with a job training workshop, the district's summer job program open for all youth, Gjensidige financial foundation and the municipality's own grant for green initiatives. Youth between 16 and 26 years have received sommer jobs in the Community garden varying from 16 to 80 working hours each. They engaged in setting up the Community garden, preparing beds, growing activities, planning and building a temporary social area and mobile furniture, planning activities and events to engage the community, selling products during open events and setting up signs for better communication. In 2021 they will further engage in planning and making the Nature path and to a greater extent following up monitoring activities in the LL.	2020, 2021
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### Short overview of results as of April 2021

- The local city district via the Urban Renewal Program (URP) signed a contract with the Agency for Urban Environment and the Museum in Akershus to collaborate on integrating the Linderud farm into the neighbourhood, and connect to overall plans for the development of the city district, until 2023 and beyond.
- Initial funding by EdiCitNet to finance a part-time position to follow up the initiatives in the LL has led to spiralling effects for several part-time and full-time positions that have been made available. See more details under section c) in Monitoring.
- **Initial funding by EdiCitNet** to start the LL has further led to **greater financial support from external resources** through subsidy schemes<sup>5</sup>:
  - in 2018/2019 the Agency for Urban Environment supported the initiation of the community garden and the CSA with 300.000 NOK (approx. 30.000 €)
  - in 2019 the city district via URP supported the groundwork and salary for staff at the Museum in Akershus to follow up the activities in the LL with 250.000 NOK (approx. 25.000 €)
  - in 2020 the Norwegian Environment Agency via the County Governor of Oslo and Viken supported the establishment of a wildflower meadow with 40.000 NOK (approx. 4.000 €)
  - in 2020 the city district via URP supported the facilitation of youth jobs for the Oslo Living Lab group from Nabolagshager with 40.000 NOK (approx. 4.000 €)
  - in 2020 the city district supported the groundwork for establishing the LL with 200.000 NOK (approx. 20.000 €)
  - in 2020 the foundation Gjensidigestiftelsen supported the facilitation of summer jobs for youth with 190.000 NOK. (approx. 19.000 €)

<sup>5</sup> The Museum in Akershus together with the City Team applied for external funding from local grant schemes through regular application processes. Numbers given are estimates.

- in 2021 the foundation Gjen-sidigestiftelsen supported the facilitation of summer jobs for youth with 300.000 NOK (approx. 30.000 €)
  - in 2021 the foundation Gjen-sidigestiftelsen supported the establishment of a Nature Path and a social meeting place with 800.000 NOK (approx. 80.000 €)
- Another synergy created is a collaboration with the County Governor for Oslo and Viken and Stadsbruk methodology offered by Botildenborg/Sweden. The testbed setup piloted in the LL in 2020 was upscaled by connecting to the incubator program for sustainable food production providing people who received a testbed with additional training for starting their urban farming business. Besides training and infrastructure, participants in the incubator program also gained access to a wider Nordic network of new and advanced urban growers with similar situations to learn and support each other.
- Several vulnerable groups and minority groups have been actively engaged in the LL. These are the District Mothers' network, the Salvation Army program - Jobben Oslo and local youth.
- Several opportunities for market channels and sales have been created: In autumn 2019 a Reko delivery point was established at the Linderud farm. Additionally, the Museum in Akershus has become a registered seller at Reko, selling apple juice produced at the farm. Furthermore, two market days have been held at Linderud farm since autumn 2019 with the Nature upper secondary school, Markblomst, the District Mothers' network, the Linderud CSA and Linderud farm being present as sellers. Additionally, Markblomst has sold their products in the Linderud farm shop in 2020. Linderud farm has welcomed several ECSs

from the LL to sell their products there in 2021.

### Monitoring

Oslo has collected data to measure the social, economic and environmental indicators from 2019 (pre-LL activities), 2020 (year 1 in the LL), and partly 2021 (year 2 in the LL). While some indicators have been recorded consistently throughout the entire period, such as soil variables and participation, other indicators have started later due to changing conditions and ongoing re-evaluation of the indicator set. Observation, questionnaires, photos and interviews have been used to collect the data. Citizen science has not played a major role in data collection until now but is highly desirable and planned to be implemented in 2021. The following nine indicators are monitored in the Living Lab:

#### a) Participation (ID 191)

Participation is followed up on two levels: 1) the overview and composition of involved parties in the LL, and 2) the number of people participating in open events or following the development. Figure 16 gives an overview of the changing composition of the City Team, meaning all actively involved parties in the LL, since project start. Data was collected in April and November each year. Although the composition may differ during different times of the year, with some parties being active only seasonally, the data collection twice a year reflects a general trend of the composition. Figure 16 shows the growing City Team over the years, with a particular rise of participants from the local community and urban agriculture entrepreneurs.

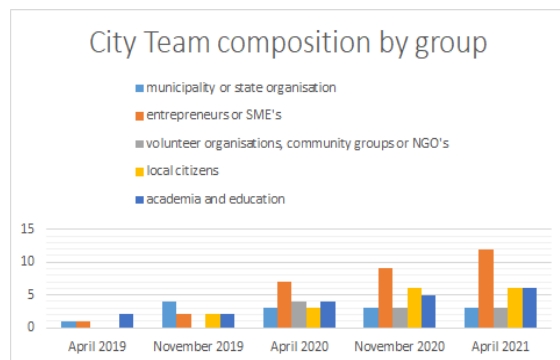


Figure 16: Overview over actively involved groups in the Living Lab in Oslo

The number of participants was initially measured through counting participation at open events, such as summer parties and market days, however, Covid-19 related restrictions to the number of attendees at public events prevented the collection of any useful data on attendance during 2020 and 2021. Therefore, the outreach to the wider public has been followed up through social media analysis. Facebook has been the major channel to reach interested people, share events, news and educational material.

As of May 10, 2021, the Facebook profile for the Linderud community garden has 491 followers (Figure 17), reaching an estimate of 33.300 people through page content and about 31.200 people through events, with 1.200 engagements to the events posted (Figure 18).



Figure 17: Overview of the followers gained on Facebook from the period 04.03.2020 to 10.05.2021.

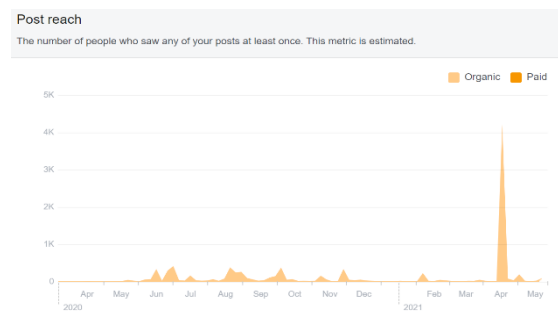


Figure 18: Overview over number of people reached through the Linderud Community garden Facebook page in the period 04.03.2020 to 10.05.2021.

#### b) Soil health (ID 327)

A soil sample analysis was conducted before starting growing activities in December 2018. The soil at the LL was considered silty clay, with little mould content and slightly acidic. The nutrient composition was determined to have medium levels of phosphorous and potassium. The Norwegian Agricultural Advisory Service concluded after inspection in November 2018 that the area has insufficient drainage, and due to soil type and little organic material was considered unsuitable for viable vegetable production.

After renewing the drainage pipes, adding soil and compost and a full season of growing activities a second soil test was taken in October 2020. This test still showed a slightly acidic soil, which is considered a good biological environment, but phosphorus levels, together with several micronutrients, were considered too low, while the magnesium:potassium ratio and the magnesium:calcium ratio were considered too high (towards magnesium).

Recommendations were given to improve soil quality, which will be implemented during 2021. The soil sample analysis will be repeated in 2021.

c) Jobs created linked to LL (ID 3) and (d)

### Training and education (ID 117)

Implementing the LL in Oslo has led to 2 part-time positions in 2019, 56 part-time positions in 2020 and 57 part-time positions as well as 2 full-time positions in 2021 (Figure 19). The part-time positions under 50% are linked to the summer jobs for youth paid for through different programs from the municipality and local grant schemes, a trainee program for young people under 30 years old and work training programs paid for through the Norwegian Labour and Welfare Administration.

The part-time positions over 50% as well as the full-time positions are a gardener position linked to the CSA and the Linderud farm paid for by the respective organisations, and two project management positions to organise the activities and parties involved in the LL paid for through EdiCitNet, the Urban Renewal Programme, the Museum in Akershus and local grant schemes.

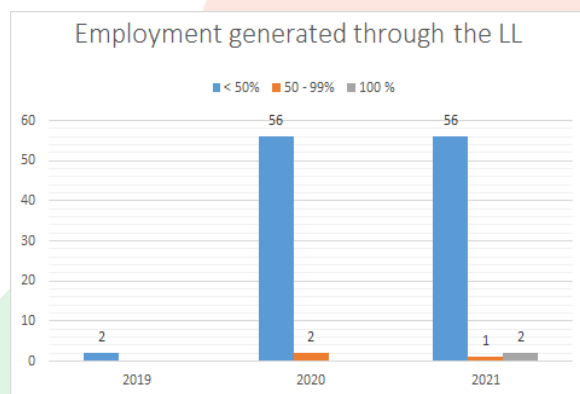


Figure 19: Overview of the employment generated through the LL, part time positions in 2021 are planned positions.

### e) Neighbourhood and local identity (ID 104) and (f) ownership and agency (ID103)

Students from the Norwegian University of Life Science helped to define social indicators using a participatory method called Splot<sup>6</sup>. The students conducted the research in September and October 2020. The study found that all

participants valued the social aspect of the Community garden, with youth valuing the opportunity to have a place to be and meet people outside their peer group, and with adults underlining the connections that have been made with people from their neighbourhood across ages, gender and ethnicity as well as the stronger feeling of identity to their neighbourhood. Additionally, the Community garden was perceived as peaceful and calm, meaningful and creative, and positive in terms of the participants' perception of the local area, memories and experiences. A repetition of the study is planned for 2021.

Similar results have been collected through the evaluation meeting held in November 2020. To the question "Why have you joined the Community garden?" the most common answer was "social", followed by "inclusion" and "urban agriculture" (Figure 20). Similarly, to the question "What are your best experiences in the Community garden in 2020?" the most common answer was "collaboration", followed by "social", "experience", "positivity", "progress", "job satisfaction", "knowledge" and "engagement" (Figure 21).

<sup>6</sup> SPLIT is an acronym which stands for Space, People, Learning, Observation, and Track. The tool was developed by OsloMet, which helps participants to explore their sense of belonging to a place through a simple drawing technique. At the same time the tool provides the link between personal feelings and experiences and more structural factors and challenges in society.





*Figures 20 & 21: Summary from the evaluation meeting gardening season 2020. Figure 20 "In one word: Why have you joined the Community garden? What do you wish to achieve?", Figure 21 "In one word: What are your best experiences in the Community garden in 2020?"*

g) Networking / network created (ID 184)

During the evaluation meeting held in November 2020 a social network analysis<sup>7</sup> was conducted with 11 participants. Participants were asked to write down connections they have made in the LL during 2020, and mark them as

either loose, regular, strong or desired connections or ties. We are particularly interested in whether the LL has created more ‘weak ties,’ since these have been hypothesized in the literature to enable more successful entrepreneurship (Hauser et al., 2007)<sup>8</sup>. We are also interested in identifying the knowledge or information brokers within the network, as well as more isolated members and bottlenecks, so that we can create more opportunities for these members to join the network through identifying entry connections. The data collected in 2020 therefore serves as a baseline analysis, from which the data collected in 2021 and 2022 can be compared and analysed.

#### h) Visualization of the LL development through pictures

Data collection was also done through pictures to document the rapid changes since starting activities. Figure 22 shows the changing LL from an aerial view using historical maps and aerial pictures to show the connection between the LL and the surrounding area as well as to document planning and physical changes. Figure 23 shows the general development and milestones in implementing the LL at Linderud farm documented through pictures taken throughout 2020.

<sup>7</sup> “A social network analysis is the mapping and measuring of relationships and flows between people, groups, organisations, computers or other information/knowledge processing entities” (Valdis Krebs, 2002).

<sup>8</sup> Christoph Hauser, Gottfried Tappeiner & Janette Walde (2007) The Learning Region: The Impact of Social Capital and Weak Ties on Innovation, *Regional Studies*, 41:1, 75-88, DOI: 10.1080/00343400600928368



Figure 22: a) Groruddalen valley and Linderud farm in 1956 showing the extent of the farmland. b) Groruddalen and Linderud farm in 2013. Linderud farm remains a green oasis surrounded by urban fabric with roads and high-rise apartments. c) Linderud farm remained an active farm until the 1960s. Aerial photo from 1956: farming grains. d) Since the 1960s the land has been fallowed, occasionally used for horse grazing. e) Traces of the previous, now damaged drainage system. f) Planning of a new drainage system in winter 2019/20. A local surface water management solution directing the water in an open ditch to a pond was considered, however the solution was too expensive and space consuming. In April/May 2020, new drainage pipes were dug throughout the field and the water was led to a basin in the neighbouring “Sausedalen”. g) In May 2020, 150 meters of water piping was dug under the ground with six water outlets. A gate was opened in the fence between the gardener's residence and the field. h) June 2020, 60 CSA members began cultivation, testbeds were handed out to local entrepreneurs and volunteer groups. i) September 2020, Cultivation in several areas of the field. Soil that was not cultivated was covered with cardboard or plastic or sown with green manure. Youth in summer jobs made a temporary meeting place with hay bales in the middle of the field (unfortunately the wildflower meadow at the top of the field is not shown in this picture).





Figure 23: a) Winter 2019/2020, visibly wet and water-logged areas on the field before the new drainage system was installed. b) May 2020, 465 meters of drainage pipes were laid down. c) May 2020 a new gate between the former Gardener's residence and the field was installed for easier access to the field. d) Ploughing the field of approx. 8000 m<sup>2</sup> end of May 2020. e) Delivery of compost, organic fertilizer, and mulch for bed preparation in June 2020. f) Start of cultivation June 2020. g) Start of test beds for entrepreneurs and volunteer groups June 2020. h) Kick-off meeting with representatives from all involved parties, June 2020. i) Workshop with entrepreneur Gruten to create a mushroom bed June 2020. j) Nature upper secondary school/Natural History Museum meadow project, June 2020. k) Youth in summer jobs making signs, July 2020. l) Youth summer jobs creating the social meeting space, July 2020. m) Summer party on the field, August 2020. n) Youth selling food made with local ingredients, August 2020. o) Good harvest in the CSA, September 2020.

#### i) Animal biodiversity (pollinators) (ID 137)

In May 2021 the LL engaged a consultancy company to map the biodiversity at the Linderud farm. A biologist will set up insect traps to map the diversity of insects present at the farm. We also have a focus on pollinating insects and built an insect hotel as part of the Nature path, and together with NIBIO set up bumblebee boxes

and bat boxes to map the species at the farm. The boxes are followed up by the local schools and reported to NIBIO to feed the data into a wider national citizen-science study. Animal (and plant) species have also been recorded at the Linderud farm by a few engaged citizen scientists in an existing national database for species data (Artskart).

For 2021 plans are in place to repeat all data collection methods that were employed in 2020, including the evaluation meeting held at the end of the season. In addition to that, talks with WP2 are ongoing to adapt the use of the toolbox to collect data. The use of citizen science shall receive a bigger role in 2021, with the youths in summer jobs conducting data collection where possible.

#### 4.4 Rotterdam

##### Essence of the LL Rotterdam

In Rotterdam there are around 200 green (food) initiatives<sup>9</sup>. The main objective of the LL in Rotterdam is to further develop the organization power of the evolving network of these green (food) initiatives. The LL has started by conducting a co-creative bottom-up 'self-research' by the network itself. The self-research concludes by formulating several cooperative action perspectives. Each perspective will be implemented by a workgroup of initiators. The action-perspectives will enhance the organizational power of the network and thereby contribute to the empowerment and continuity of green (food) initiatives in Rotterdam. The fact that the LL Rotterdam is now coordinated by an association of initiatives, rather than by an administrative body, is an important step in that direction.

The nature of the Rotterdam LL therefore differs from the nature of the three other LLs (Andernach, Berlin, Oslo) that were described in the previous parts of this section, as it focuses much more on the cooperation between the multiple initiatives in the city, and the relation between (the networks of) these initiatives and the city government.

##### Achievements

Since the publication of the first version of the IPP of the LL Rotterdam (Deliverable 3.1, version November 2019), the following progress has been made:

- Two group-sessions of green (food) initiators were held as part of the self-research, in order to explore factors that influence the continuity of green (food) initiatives;
- 17 dialogues between two initiators (34 in total) were held as part of the self-research, in cooperation with Wageningen University. Two by two the initiators shared ideas about factors of continuity and about further developing the network of green (food) initiatives;
- A first self-research report has been published in which the group-sessions and dialogues have been discussed and analyzed. The report formulates several cooperative action perspectives for the network in order to further strengthen its organizational power and to enhance the empowerment and continuity of green (food) initiatives in Rotterdam;
- Reactions on the report by initiators and participants of the self-research have been assembled.
- The coordination of the Living Lab in Rotterdam has been taken over from the municipality by the association of green (food) initiatives Groen010:
  - The internal organization of Groen010 has been adapted to taking on this responsibility, including a doubling of its board by more representatives of green (food) initiatives;

<sup>9</sup> In Rotterdam, some initiatives work together from an urban agricultural ("food") perspective. Other initiatives work together as green initiatives. Often, they share a strong common core, but perceive themselves as either urban agricultural (or: food) initiatives or green initiatives. It is still part of an open dialogue whether to use the term food initiatives or green initiatives, which is why here the term green (food) initiatives is used for all initiatives in the network.



- A project organization has been developed for taking over the coordination of the LL.

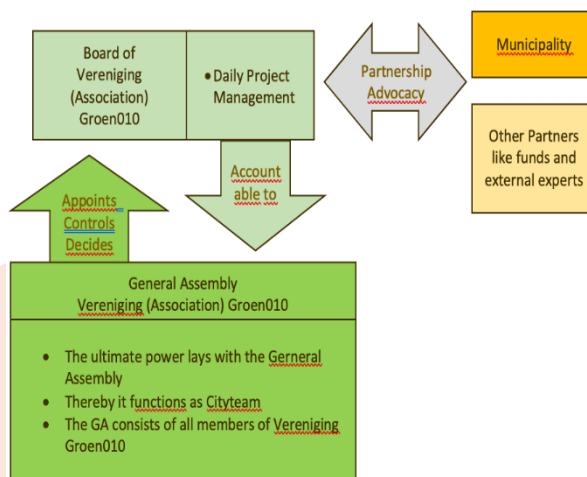
### The co-creation process

In the case of Rotterdam, the definition of the overall and specific objectives of the LL has been very central to the co-creation process. However, this process has been hindered by some factors. First, there have been repeated changes in the city government staff involved in the EdiCitNet project, and as of September 2020 the city government withdrew from the project. Secondly, the co-creation process has been perceived as being too much top-down by many actors involved, and as being too much a matter of negotiations. Thirdly, to coordinate the co-creative process on behalf of the city government, two different third parties were brought in (first Velt Academie and later Drift). These parties, especially Drift, brought their own perspective and interests to the process.

With the withdrawal of the city government the co-creation process will be different. Groen010 is now responsible for the coordination of the Living Lab. Groen010 is a democratic association (Figure 24). The ultimate decision-making power lies with the general assembly

(algemene ledenvergadering). The general assembly appoints the board of the association, controls it and makes the ultimate decisions. The board has the function of daily management and represents the association.

Figure 24: The “governance” structure of Groen010



Groen010 was founded in 2017 to unite (representatives of) green initiatives in Rotterdam. By design its members consist of initiators of green (food) initiatives. At this moment its only members are the six representatives that also took part in the CT before the withdrawal of the city government (Table 8), but the association is open for all initiators.



Figure 25: Foundation meeting of Groen010 (September 2017): initiatives and politicians gathered at Vredestuin.

Table 8: Board Groen010 / Project Management LL Rotterdam

Name	Representing	Description
Caroline Zeevat	Caroline Zeevat / Stadslandbouw Schiebroek	Caroline is an independent gardener and consultant. She was a.o. coach and coordinator of SL Schiebroek: 42 food gardens throughout the neighbourhood in cooperation with housing corporation Vestia.
Nienke Bouwhuis	Krachtgroen/De Groene Connectie	Krachtgroen is a consultant that aims to connect the social and the (urban) green. De Groene Connectie (Green Connection) brings green and health initiatives together in and around the neighbourhood Delfshaven like: Essenburgpark, de Speeldernis, de Spoor-tuin, het Dakpark and de Voedseltuिन
Paul de Graaf	Coöperatie Ondergrond	Ondergrond is a not-for-profit cooperative of independent (food forestry) professionals that initiates, realizes and maintains a network of Food Forests throughout and around Rotterdam. It aims to organize society more like a food forest, through research, education and consultancy. Paul is one the



		founders of Edible Rotterdam (2007-2017) and of the urban agriculture festival ERgroeit (2013-2018)
Max de Corte	Moestuinman/Coöperatie Ondergrond	See above
Mireille van den Berg	Talentfabriek010 / Natuurtal-ent	Natuurtalent is an area of 2.5 hectares where Talentfabriek010 has created a flower pick- ing garden, a herb garden, berry and nut or- chards and a very diverse green educational and recreational area for the residents of the neighbourhood. There is collaboration with various green entrepreneurs including Rechtstreeks and the CSA market garden De Stadsboerin
Rutger Henneman	GroenGoed	GroenGoed combines growing food on eight gardens throughout Rotterdam Centre and Noord with welfare and poverty reduction



Figure 26: Projects by Groen010 members

Below, both the overall objective and the specific objectives of the Rotterdam LL are assessed, in light of the fact that Groen010 has taken over as CC from the city government of Rotterdam. This re-assessment is based on research carried out by Groen010 and WUR,

starting in 2019 and continued up till today as an ongoing process. This research is first described.

### Self-research

The self-research started before the IPP Rotterdam was developed. It was initiated by the green (food) initiatives in Rotterdam themselves in the beginning of 2019. In April 2019 it was approved by the city government to be part of the EdiCitNet LL activities. It was implemented by the initiatives as subcontractor of the city government. The main research question was: *What do initiators think about how green (food) initiatives should work together in order to bring about change that leads to enhanced 'power to continue' (in Dutch: bestendigheid<sup>10</sup>)?*

Inspired by action-research, the research was designed as a bottom-up research in which the object of research (the initiators) is at the same time the subject of the research. In this way there is no exploitative or power-relation between subject and object and the research becomes action-oriented. The expected research result was to formulate a set of action-perspectives or pathways for the network of green (food) initiatives in Rotterdam.

These action-research principles were translated in the research design in several design-choices. First, the design included the opportunity for participants to react on the design itself, on the main questions and problem statement, on the methodology, the analysis and conclusions. All these aspects were the product of an ongoing and open dialogue. Second, in order to break through the usual subject-object structure, no use was made of interviews, but dialogues were used, each time between two initiators ("tweegesprekken"). A researcher from WUR attended these dialogues in order to make sure all questions were covered, and the

dialogues were recorded and transcribed. All participants and initiators in the research team received an equal hourly wage.

The research started off with two group sessions with food/green initiators. These were held on 20 November 2019. These group sessions also functioned as the second EdiCitNet workshop, on the co-creative design phase of the Living Lab. The results of the group discussions were used as material in the self-research report. The dialogues (each time by two initiators) were conducted in the period of December 2019 – February 2020. A second round of dialogues was held in April/May 2020. The dialogues were recorded and transcribed by WUR. Rutger Henneman (Groen010) wrote the first analysis and conclusions, in a first draft research report. This draft was published on 3 February 2021 (on [www.groen010.net](http://www.groen010.net)), in Dutch ("Naar een Rotterdams Netwerk van Groene (Voedsel)Initiatieven"); it will be translated into English at a later stage.

At this moment, reactions to the report are received and collected, in line with the dialogue-structure. Everything in the report is open to discussion by the participants themselves.

Table 9 lists the participants, involved in the self-research and in the next bottom-up decision-making steps, showing a diverse and very broad involvement of the green (food) initiatives in Rotterdam in this process.

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<sup>10</sup> Sustainability (of initiatives).



Table 9: Participants in the self-research and further decision-making process

Name	Organisation
Aetzel Griffioen	Rotterdam Vakmanstad
Bob ter Haar	Edible Eur
Caroline de Vlaam	Compostgilde
Caroline Zeevat	Stadslandbouw Schiebroek-zuid
Charlotte van der Heijden	Cool Down City
Daniel Opbroek	GroenGoed
Erik Sterk	Voedseltuin
Frank van Steenberg	General expert (researcher Drift, also involved in Carnissetuin)
Frenk Walkenbach	Wollefoppengroen
Gerrit Roukens	Planet Care
Gino Groenewegen	Drrroomland
Hetty de Bruyn	Dakpark
Ingrid Akkermans	Rotterdamse Munt
Jacqueline Stammeijer	Wollefoppengroen en Co
Jeroen Klein Lankhorst	Buurtmoestuin Feijenoord
Karin Padmos	Hof van Noord
Lieke Fortuin	Botanische Tuin Afrikaanderwijk
Lorene Bourguignon	Smoes
Manon Nagelkerke	Dakpark
Marga Vintges	Hefpark
Marja Versteeg	Stadskwekerij de Kas
Marlen Arkesteijn	Tuinderij de Stadsboerin
Martin Oosthoek	Landschapsbeheer/Stadsherder
Max de Corte	Coöperatie Ondergrond
Melo Feldkamp	De Stad Uit
Meriam Beek	Natuurlijk Spangen
Mireille van den Berg	Natuurtalent
Nienke Bouwhuis	Krachtgroen/Groene Connectie
Paul de Graaf	Coöperatie Ondergrond
Paul Wiese	Wijk tuin de Esch
Rachelle Eerhart	General expert (formerly: IVN and Rechtstreeks)
Rutger Henneman	GroenGoed
Sanne Luijben	Petrituin
Wouter Bauman	Dakakker

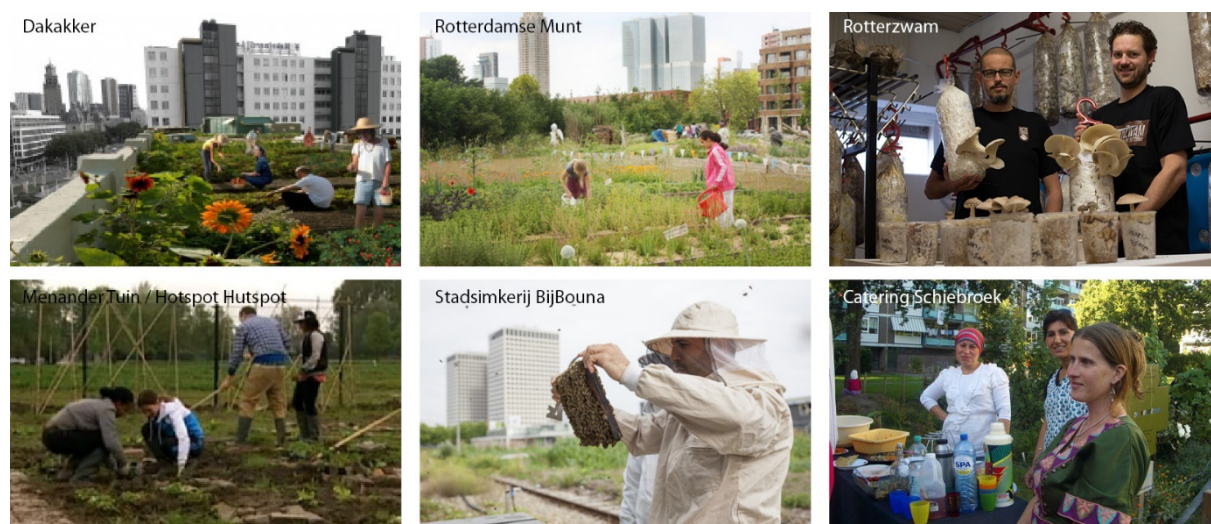


Figure 27: Examples of initiatives in Rotterdam

The next step is to organize and plan a group meeting with all participant-initiators of the research and to decide which of the action-perspectives will actually be implemented. This meeting needs to be designed in such a way that decision-making will take place in a bottom-up and democratic way.

The result of the research is a set of action-perspectives. The main ones, i.e. the ones that on the basis of the findings of this research have a relative broad support base within the network of green (food) initiatives, are the following:

1. Lobby/interest advocacy. Lobby in the broadest sense and more specifically with regard to municipal funding;
2. Sharing knowledge among the participants and the green initiatives in the city, by several means;
3. Visibility: develop one or more ways to enhance the visibility of the value or 'message' of green (food) initiatives and the visibility of their products and services;

4. Develop one or more ways to share 'things' (like materials, seeds and plants, machines and tools);
5. Develop an umbrella form of cooperation, coordination or organization of the whole network of green (food) initiatives.

Next to these main action perspectives, many individuals mentioned other possible action-perspectives that at this moment do not have a large support base. This however can change, because the research is an open dialogue. Participants can influence each other, and the support base for action pathways can change.

These five action-perspectives or pathways form the basis of the IPP Rotterdam. A more detailed overview of how these action-perspectives relate to the LL objectives as formulated in the EdiCitNet DoA, can be found in revised Deliverable D3.1.

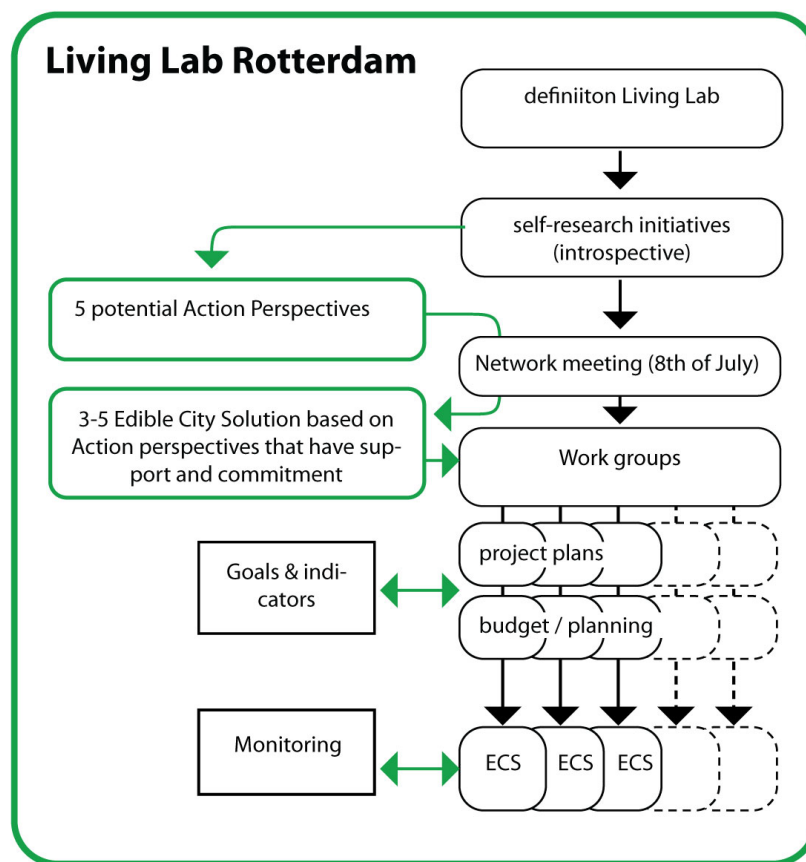


Figure 28: Diagram of the next steps in the definition of the Rotterdam LL

### Activities in 2020

Besides the activities described as part of the self-research, the activities in 2020 mainly revolved around the withdrawal of the city government of Rotterdam from the EdiCitNet

project. In the period September-December 2020 several meetings were held by the CT to discuss the withdrawal and the question how to continue participation in the project. Additionally, meetings were held to discuss the organization of Groen010.



Figure 29: Examples of recent activities by initiatives in Rotterdam



### **(Planned) activities in 2021**

The activities that are part of the self-research and co-creation process for 2021 have been discussed above.

The CT has held 6 meetings in January-March 2021, one together with Natuurmonumenten (a national NGO, the oldest NGO in the field of nature conservation in Netherlands). The CT also participated in the EdiCitNet CT meet CT meetings in January, February and March.

In March 2021, Groene010 had a visioning session to decide on how to structure their role in the LL project, with organisation expert Karin Vosters.



*Figure 30: Visioning session on the organizational structure of Groene010 (March 2021)*

### **Monitoring**

In the light of the goals of the Rotterdam LL, i.e. to set up a citywide network of (edible) green initiatives to ensure the continuity of (edible) green initiatives in the city, the monitoring will focus mostly on the process of organisation and the actions that follow from this process, and thus on the social aspect of collaboration. The environmental impact of the initiatives and the ECSs they employ is considered given, but tools to monitor this over the long term and to communicate these impacts are identified as an action perspective to increase continuity. The

same can be said of the economic models that initiatives employ; in the past years, initiatives have developed different ways of coping financially that are relevant to their continuity. Working together might have economic benefits and can thus contribute to the main goal of continuity and collaboration.

The self-research report documents the current ideas within the community of initiatives. This serves as a baseline measurement of the attitudes and opinions of the initiatives on continuity and collaboration and the people behind them. As the LL Rotterdam, unlike the other LLs in the EdiCitNet project, aims at enhancing the organizational power of the network of a multitude of initiatives, the monitoring will not focus on concrete place-based solutions (such as beds, activities, et cetera). In cooperation with WP5, it has been decided that the monitoring will focus on the action perspectives. These action perspectives can also be regarded “ECSs”, in the sense that each action perspective supports individual edible green initiatives by organising them, resulting in an overall better ‘performance’ of these initiatives as nature-based solutions.

As explained above, a first version of the action perspectives has been included in the conclusions of the self-research report. These will be discussed with the initiatives in a participative and interactive network meeting (planned for July 8, 2021). When the action perspectives are thus further defined and decided upon, the monitoring goals, indicators and methods will be further developed and discussed between WP3 and WP5.



## 5. Looking forward: The sustainability of the LLs

The current task in WP3 is Task 3.3, which aims at upscaling of LLs. To that end, a preparatory note has been written, clarifying the concept of upscaling and so-called upscaling pathways. Meetings were held with the consultants involved in Task 3.3 and with the FRCs. Deliverable 3.3 will deal with upscaling.

Looking forward, this section addresses the longer-term sustainability of the LLs. For each FRC the institutional embeddedness is discussed as well as pathways to sustainability.

### 5.1 Andernach

#### **Institutional embeddedness of the Andernach LL**

The EdiCitNet project in Andernach is managed by the Andernach city administration. The administration initiated the Edible City of Andernach project, which turned green spaces in the city centre into edible gardens open to citizens and tourists ca. ten years ago. The Edible City of Andernach project is still going on but EdiCitNet is working on exploring opportunities for expanding and diversifying it, so that ECSs could better contribute to the implementation of the city's Green Strategy, which was developed in 2019 as an intersectoral collaboration framework that aims to connect and expand initiatives aimed at urban greening, climate change adaptation and biodiversity conservation through a better engagement of citizens and civil society groups, among others.

The EdiCitNet CC is based at the Department of Environment and Sustainability but the CT itself includes representatives from the Social Department and different educational institutions, NGOs and SMEs. The CT functions as a Steering Group. As such, it serves as an advisory and organizational board, launched by the Lord Mayor to deal with the cross-sectional task of expanding, diversifying and enhancing the societal and environmental value of edible city solutions in

the city. As an official advisory body, the CT reports to the city council. This provides a direct line of communication to senior policy makers that could help to mobilize support for addressing challenges and ensuring the sustainability of the EdiCitNet City Team and project.

The land plot, on which the Andernach LL is based, is also owned by the city, thus it is strongly embedded in the municipality and its future use is closely linked to the municipal development plans. Ensuring the long-term right to use the plot as an edible city garden, thus depends largely on the capacity of the Andernach LL to demonstrate the societal and environmental value it can generate for the city and its ability to continue to cover the operational costs for running the site.

#### **Pathways to sustainability of the Andernach LL**

The Andernach LL, as those in other cities, constitutes a means for experimentation with different strategies for the engagement of different societal groups in the establishment and maintenance of ECSs. In this regard, what is considered important is to explore and demonstrate the potential and establish the basis for the evolution of ECSs in the city into more inclusive and socially and environmentally beneficial initiatives. Ensuring the sustainability of the Andernach LL will thus focus on:

- Exploring different ways for sustaining the physical garden and structures that will be established by the project, but also
- Identifying and enabling other opportunities for community engagement and collaboration across different groups in the city with an interest in edible city solutions.

Achieving the former will require that, on the one hand, the LL plans are not derailed by challenges posted by the Covid-19 crisis and other risks related to their implementation, and on the other, that the costs and benefits generated by the project, including its societal and

environmental values, are carefully documented, so as to provide a basis for the city administration and city council to decide on the continued support of the project in the long-term.

As noted above, the administration is committed to the project concept and has already demonstrated its support by altering the public transport plans, to introduce a new bus stop 400 meters from the LL plot starting in 2021, thus facilitating access to it. In the context of changing economic realities and political priorities, however, demonstrating and communicating effectively the benefits of the project would be essential for ensuring continued political support. This should be accompanied by a process of gradual change of the “ownership” of the project which currently lies heavily in the hands of the city administration. In this regard, the establishment of sub-groups within the CT to be led by different agencies willing to take the lead on managing the different ECS within the LL may open up new avenues for ensuring their sustainability.

At the same time, Action Days and City Team reflection sessions will be employed to stimulate the exploration of alternative opportunities. The establishment of closer connections between the Andernach City Team and other similar groups in the broader region, alongside with an increased exchange of experiences across EdiCitNet cities, with similar challenges and interests is also expected to help to uncover novel opportunities for turning Andernach into a more socially inclusive, greener, and resilient city through edible city solutions.

Other important actions will concern the enhanced inclusion of research institutions and consultants (predominantly in the surrounding areas), that can use the LL as a platform for their research. Currently, Andernach is collaborating with the University of Koblenz for monitoring the beetle diversity, and with Nolde & Partner

in Berlin for renewing the watering system, to make use of recycled wastewater. Another point of attention will be adaptation of the zoning plan of the LL, to be able to install more permanent buildings if needed.

### 5.2 Berlin

#### **Institutional embeddedness of the Berlin LL**

The Berlin LL is jointly coordinated by the Senate Department for Urban Development and Housing (Department for the urban renewal programme “Social Cohesion” until 2019 “Social City”) and Nomadisch Grün gGmbH (PRINZ), a non-for-profit organization dedicated to promoting socially and ecologically minded urban development through the establishment and management of community gardens. This unique partnership is supported by a multi-disciplinary CT, which includes different working groups with representatives from local government administrations, community groups and SMEs that work together in designing and implementing LL activities at the two districts involved, namely Hellersdorf and Neukölln, which are representative of socially disadvantaged neighbourhoods in East and West Berlin and fall within the premise of the Social Cohesion Program.

The LL activities build on existing organizational structures and initiatives established by PRINZ at the two sites prior to the start of EdiCitNet. Thus, they are firmly embedded in and supported by local community groups. Activities, however, are designed to go beyond existing practices and sites to for example demonstrate how productive urban landscapes could be integrated into new urban developments and in the transformation of marginal lands into productive ones, so as to achieve improved quality of life and social justice alongside with growing densification and growth. Thus, they are closely in line with Berlin’s long-term development priorities (Berlin’s Strategy for 2030) and are highly relevant for the work of the Social

Cohesion program of the Senate Department for Urban Development and Housing. Therefore, the Department is closely involved in coordinating the LL activities.

Given the above, the Berlin LL is well-positioned to ensure the sustainability of the individual ECSs within it but also the continuity and uptake of the approaches pilot-tested through it.

### Pathways to sustainability of the Berlin LL

Like in other FRCs, ensuring the sustainability of the Berlin Living Lab is seen as a multi-level and multi-faceted process aimed at:

- Ensuring the continued functioning of the physical and social structures that will be established at the two LL locations after the end of the project.
- Integrating the knowledge and successful models that will be generated by the LL into the planning instruments and tools of the programme Social Cohesion with view of enabling their up-scaling and replication in other socially disadvantaged neighbourhoods and across the broader city.

With respect to the former objective, several pathways for ensuring the sustainability of the LL at the two districts are currently being explored. They include:

- Ensuring long-term access to land:
  - At the Neukölln site, the category of “urban garden” is currently being integrated into the development plan, thus ensuring the long-term conversion of a part of what is currently cemetery land into a community garden area. Furthermore, the current law concerning the use of cemetery land prohibits other uses of the land for 30 years after it stops being used as a burial ground. The cemetery, on whose grounds the LL in Neukölln is established stopped accepting new burials just recently;

- At Hellersdorf, the City Team is in discussion with GESOBAU AG, the housing company responsible for the massive housing development at the site, in order to integrate urban gardens as a formal category in their housing development plan as a means for ensuring long-term use rights of the planned edible spaces in the housing complex. The local district authorities and the Senate Department for Urban Development and Housing are supporting the discussion which is constrained by the advanced stages of the housing development plan.
- Ensuring the financial sustainability of the living lab:
  - Existing financial models for community garden development and maintenance that have been successfully employed by PRINZ in its past work will continue to be employed as a means of meeting the relevant operational costs of coordinating and maintaining the community gardens and the associated activities;
  - In addition, new streams for income generating activities that could contribute to expanding the range of activities undertaken at the LL will be explored. An important aspect of this is the development and dissemination of a branded product based on herbs harvested at the two LL sites. It is also expected that the maintenance of the edible green infrastructure that will be integrated in the new housing development complex, will be supported by the local housing company or, because it is a municipal housing association, by the city of Berlin.

- Ensuring continued community engagement and support:
  - Regular community gardening open days and decision-making sessions, school children activities, trainings and community workshops, among others will continue to be developed and enhanced as a way of ensuring continued community engagement in the Living Lab.

### 5.3 Oslo

#### **Institutional embeddedness of the Oslo LL**

The EdiCitNet CC in Oslo is based at the Department of Environment and Transport of the Agency for Urban Environmental (AUE). AUE led the development and is currently coordinating the implementation of the Oslo strategy on urban agriculture called “Sprouting Oslo,” which was approved in 2019. Currently, four persons at the Department of Environment and Transport of the Agency for Urban Environmental work to support the implementation of the strategy with a focus on: a) mapping available spaces for urban agriculture in the city; b) strategy and policy development; c) management of a seed grants program providing EUR 200,000 annually to innovative ECS initiatives in the city, and d) project development and implementation. The EdiCitNet CC in Oslo is a part of that team and works closely with the other staff members supporting the implementation of the Oslo urban agricultural strategy. This creates a direct connection between the Oslo LL and the broader strategy implementation processes, that has helped to ensure that the LL builds upon existing processes and knowledge and provides a testbed for experimentation that advances them. The Oslo CT also includes a member of the Urban Renewal Program, which facilitates the development of the LL as an integral element of the neighbourhood, where it is based. The LL itself is implemented by Linderud Nærmiljøhage, an association of different projects, initiatives and ECSs that are working

jointly at community garden situated on a historical farm, owned by a private foundation and run by a museum (MiA - Museums in Akershus). The museum is committed to turning the farm into a central element of the urban renewal program’s efforts to build a local community and identity and the participating ECSs are actively engaged in the process.

#### **Pathways to sustainability of the Oslo LL**

Ensuring the sustainability of the Oslo Living Lab is seen as a multi-level and multi-faceted process that will include activities aimed at:

- Supporting the evolution and transformation of the individual ECSs that are in the process of being established in the framework of the Oslo LL into self-sustainable initiatives;
- Ensuring the knowledge generated through the project informs and stimulates the development of a next generation of urban garden initiatives that are more inclusive, more financially sustainable and better integrated in their neighbourhoods, among others.

Building a sense of belonging to a community that wants to continue to work together and to sustain the work initiated by the project, ensuring local ownership from the start but also facilitating long-term land use right, access to local markets, and building the capacities and networks of those involved are some of the approaches for building the sustainability of the LL and the individual ECS within it that are already being explored. Possible pathways for learning from the experiences of the project, such as sharing of experiences across neighbourhoods, facilitating access to new locations for similar initiatives in other parts of town, integrating lessons learnt from the project e.g. in the criteria used for awarding seed grants and in other relevant sectoral programs and strategic plans will also be explored in a more targeted manner as evidence of the effectiveness and impacts of the tested approaches begins to emerge.



## 5.4 Rotterdam

### **Institutional embeddedness of the Rotterdam LL**

The Rotterdam LL was launched by the Rotterdam City Council in close collaboration with Groene Groeiplekken ('Green Growing Spaces'), a network of seven grassroots ECS initiatives working together to promote education, professionalization and employment in the field of ECS. Following the withdrawal of the Rotterdam City Council from the EdiCitNet Project in September 2020, Groen010, an association of six green (food) initiatives followed up on the Living Lab initiated by the City Council and in June 2021 officially joined the EdiCitNet project as the Rotterdam Living Lab Coordinator.

Groen010, established in 2017, is a formal association that includes members of Groene Groeiplekken but also a wider range of green initiatives that are not directly working on urban food-related issues. It aims to follow up on the wish of Groene Groeiplekken and the original city team to involve a wider group of initiatives in an umbrella organization that fosters collaboration across and unites green grassroots voices in the city. The current board members of Groen010 were members of the original EdiCitNet CT in Rotterdam. As such, they were key contributors to the Living Lab co-creation process which they informed through a targeted study involving 34 green (food) initiatives in the City. Groen010 was also an initiator of the Rotterdam Green Broker motion that led to the establishment of a special position of a contact person for green initiatives within the city administration. It is already in close contact with the new Green Broker at the city administration who is expected to facilitate communication with relevant municipal departments necessary to enable the work of EdiCitNet LL in Rotterdam.

As LL coordinator, Groen010 is currently in the process of reviewing the composition of the Rotterdam City Team that was established by the Rotterdam City Council. It is planning to do so in consultation with the wider network of 34 green (food) initiatives in the city, which were involved in the co-creation process and that are expected to form part of a wider umbrella network under the auspices of the Rotterdam EdiCitNet LL. The LL is thus strongly rooted in existing networks of green (food) initiatives in the city and has an established connection and a history of collaboration with the City Council. Expanding and strengthening that connection further is an important goal of Groen010 and the Rotterdam LL.

### **Pathways to sustainability of the Rotterdam Living Lab:**

Unlike the other EdiCitNet LLs, the Living Lab in Rotterdam does not envision the establishment of a physical space for running its activities. Rather it is focused on the development and formalization of a network that provides support to and enables green (food) initiatives in the city to learn from each other, evolve and find ways of establishing and sustaining themselves as professional organizations that are recognized for the value they bring to the city through their work. As such, the different lines of work of the LL that have been identified, e.g. lobbying, sharing of knowledge and other "things" (materials, seeds, tools, etc.), visibility, and network development, de facto constitute also critical pathways for ensuring the sustainability of the Rotterdam LL. The appropriate institutional and governance structure and legal form of the network and possibilities for ensuring its financing sustainability in the longer term have already begun to be discussed, e.g. in the self-research study conducted by Groen010, but will be considered and explored further in course of implementation and agreed upon at a later stage in the framework of the network development line of activities envisioned as part of the LL. Given past experiences with ebbs and flows in

the edible Rotterdam movement, ensuring the sustainability of the envisioned network cannot be taken for granted. Like in other FRCs, it would depend both on building the internal legitimacy and perceived value of the services that will be provided by the network and on effectively engaging with relevant external opportunities and risks. In this regard, developing a

system for continuous monitoring of both internal and external factors of change would be important for enabling timely and adaptive responses to emerging opportunities and risks. The EdiCitNet network will also help to promote the knowledge and services offered by the Rotterdam LL in a wider context, thus opening up additional opportunities in the future.

## Glossary

Abbreviation	Description
BCT	Business Consultant Team
CC	City Coordinator
CMT	Community Management Tool
CSA	Community Supported Agriculture
CT	City Team
EdiCitNet	Edible City Network
ECS	Edible City Solutions
ECSI	Edible City Solution Initiative
FC	Follower City
FRC	Front-Runner City
HACCP	Hazard Analysis and Critical Control Points
IPP	Implementation Project Plan
GO	Governmental Organization
NGO	Non-governmental organization
NBS	Nature-Based-Solutions
URP	Urban Renewal Program

## About the EdiCitNet project

**EdiCitNet** is demonstrating innovative Nature-Based Solutions (NBS). **Edible City Solutions** are going one step further: We include the whole chain of urban food production, distribution and utilisation for **inclusive urban regeneration** and address societal challenges such as mass urbanisation, social inequality and climate change and resource protection in cities. The key components (1) **City Teams**, (2) **Living Labs**, (3) **Masterplans** and the (4) **Edible Cities Network** with *Toolbox* and *Marketplace* form the basic structure of EdiCitNet.





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