Edible Cities Network

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

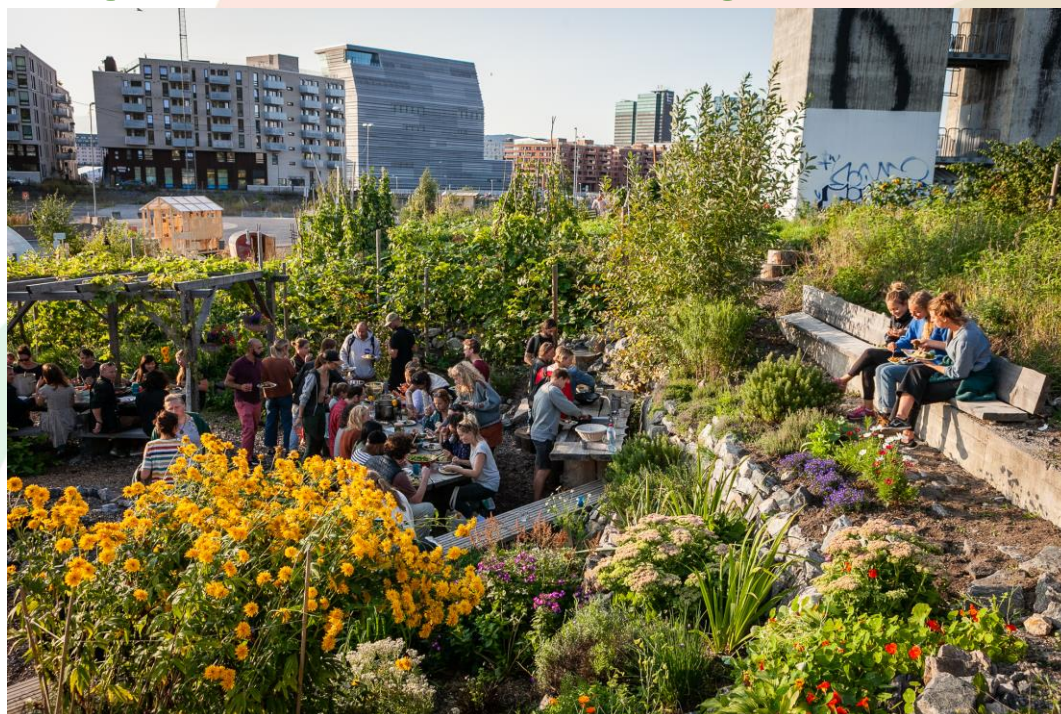# EdiCitNet

Deliverable D3.1

Implementation Project Plans

Photo: Iselin Kristiansen

About this document:

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1. Executive Summary

Andernach, Oslo and Berlin are participating as Front Runner City (FRC) in the EU Innovation Action Edible Cities Network (EdiCitNet). They are each testing Edible Cities Solutions (ECS) in so-called Living Labs (LL). The present Implementation Project Plan (IPP) is a detailed yet adaptive plan to describe the framework and goals of the LL and the intended implementation of the ECS. The IPP was developed in a co-creation process with support of an expert and monitoring board of local stakeholders - the so-called city team. The IPP thus reflects the views, plans, needs and challenges of the respective FRC.

The IPP is based on the version submitted in November 2019, led by then WP3 (Work Package) lead Rotterdam.

In particular, this revised document contains:

- information about the background, strategic considerations and an introduction of the FRCs with their respective LL sites;
- desired futures and visions of the LL at the end of the project;
- description of the ECS and their implementation;
- a strategy for the monitoring;
- and a risk management plan.

The revised IPP represents the current state of thinking and planning. The progress of the respective LL differs in each FRC. The IPP will be updated and continued as required.

2. Introduction

2.1 Structure and revision of the Implementation Project Plan

The Implementation Project Plan (IPP), a detailed yet adaptive plan to describe the implementation of Edible City Solutions (ECS) in co-developed Living Labs (LL), was developed in a co-creation process together with the city teams and relevant stakeholders of each Front Runner City (FRC). Two workshops in each FRC helped design their respective LL, adjust their LL goals and optimise their workshop design through collective learning.

The IPP is based on the version submitted in November 2019, led by then WP3 (Work Package) leader, Rotterdam, with support from the Amsterdam Institute for Metropolitan Solutions (AMS Institute). The AMS Institute was involved because there was and still is no partner with extensive experience with LL in the consortium. Additionally, the revised IPP adapted the Transition Pathway Methodology (TPM, more information see Appendix), employed in WP4 to guide Follower Cities (FC). The TPM provides a clear structure of the IPP as well as for the FC masterplans. The application of this structure ensures that the FC benefit from the LL processes developed in the FRC by WP3. If similar challenges arise in the FC or similar ECS are being considered, an easy transfer can be arranged.

The revised IPP represents the current state of thinking and planning, updated with findings from the workshops as well as developments and insights from the period after. In particular, the revised document contains information about the background, strategic considerations and an introduction of the FRCs with their respective LL sites (chapter 3), desired futures and visions of the FRCs and their city teams for the LL (Chapter 4), a description of the ECS and their implementation (Chapter 5), a monitoring strategy (Chapter 6), a risk management plan (Chapter 7), and the addition of the new FRC Berlin as well as the withdrawal of the FRC Rotterdam. Information about the LL Rotterdam can be found in Appendix

1.

The status of planning and implementation of the respective LL differs in each FRC due to changes in the city administration and LL coordination (Andernach, August 2020), withdrawal of FRC (Rotterdam, September 2020), joining later as a FRC (Berlin, April 2020) and major restrictions imposed by the Covid 19 pandemic impacting events, meetings and practical work. Beyond that, a LL is always work in progress and is characterised by learning by doing. Hence, the IPP offers as much detail as currently possible for each city and will be updated and continued as required.

During the revision, advice and support was provided by the leads of WP4 and WP5.

2.2 The Role of Front Runner Cities in EdiCitNet and definition of Living Labs

EdiCitNet is a European Innovation Action that recognizes the social importance of urban agriculture initiatives for the city.

There are a multitude of initiatives of urban agriculture around the world. EdiCitNet aims to empower local communities to overcome social problems through inclusive and participatory methods and through creating new green businesses and jobs, and thereby generating local economic growth and fostering 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. The methodology includes:

- to systematically explore the wealth and diversity of existing ECSs and to build and share a common knowledge base;
- to adapt, plan and implement successfully proven ECSs in their specific urban context.

The overall aim of WP3 in EdiCitNet is the co-

development and co-implementation of LLs that support innovative ECSs in the FRCs Andernach, Oslo and Berlin[1]. This knowledge will be transferred to the FCs.

The European Network of Living Labs (ENOLL) defines LLs as "user-centered, open innovation ecosystems based on a systematic user co-creation approach (...), integrating research and innovation processes in real life communities and settings" (ENOLL, 2013)[2]. The Joint Programming Initiative Urban Europe, which is the main funding agency for LL related projects in European cities, introduced the term "Urban Living Lab" and defines it as "a forum for innovation, applied to the development of new products, systems, services, and processes, employing working methods to integrate people into the entire development process as users and co-creators, to explore, examine, experiment, test and evaluate new ideas, scenarios, processes, systems, concepts and creative solutions in complex and real contexts" (Broms Seving 2018)[3]. However, the AMS Institute argues that these definitions are too abstract for practitioners and has found that in practice LL are often associated with a specific geographic area in which stakeholders focus on various problems and experiments aiming to form a "breeding ground for innovation, rather than

directly developing innovations" (Steen & Bueren 2017)[4].

The LLs in the FRCs are understood as geographically defined spaces where a diverse group of stakeholders, represented by the city team, develop, test and optimise ECSs, and where success and failures are documented through lessons learnt reflections. The aim is to provide a broad platform to operate, to co-create, to innovate, to respect the freedom development of maintaining the open-space and to gain knowledge that can be shared across a network of cities to implement and further develop successful ECSs. The LLs should be planned carefully. Too strict guidelines could limit the space for co-creation and hinder the free development of the ECSs. The process-oriented character of the LL is underlined.

2.3 Development methods

Using participatory methods (world cafés and role plays), the FRCs carried out a set of two iterative ECS co-design workshops each (Figure 1). The workshops were organised by the LL coordinators and their city teams in order to a) identify barriers for the ECSs, b) adjust the goals and scope of the planned LL, and c) identify relevant drivers in society and administration.

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[1] The FRC Rotterdam has left the project before revising this document. Thus, the status of the IPP Rotterdam from November 2019 can be found in the Appendix.
At the time of writing this report the City of Havana had not joined the project. The city will be added to the FRCs as soon as the amendment is passed and remaining tasks have been executed. This IPP will

then be adjusted accordingly.
[2] https://enoll.org/about-us/what-are-living-labs/
[3] https://jpi-urbaneurope.eu/app/uplo-ads/2018/01/Urban-Living-Labs-info-sheet-201027.pdf
[4] https://www.researchgate.net/publica-tion/318109901_Ur-ban_Living_Labs_A_Living_Lab_Way_of_Working

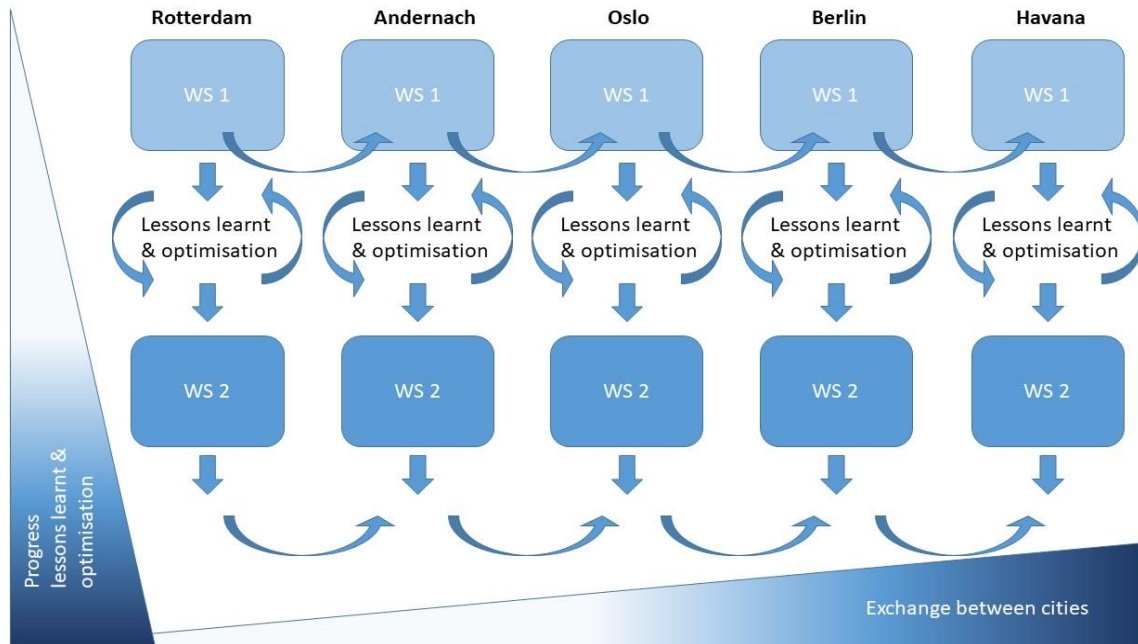*Fig. 1: Scheme of iterative process to set up implementation project plans (workshop cycles).*

The results of the workshops were assessed and evaluated immediately after the meetings and were formulated as an optimised procedure plan for the subsequent workshops in other FRCs. This has been done after each workshop to quickly insert lessons learned and updated procedure plans were provided for the following workshops.

3. Framework of the Living Labs

The selection of the three EdiCitNet FRCs (Andernach, Oslo and Berlin) represents different social, economic and ecological backgrounds within Europe. They also represent a broad basis of Nature Based Solution (NBS) experiences. Each FRC is convinced about ECSs, and has invested for years in their development and programmes to support them. The different LLs serve as a knowledge base for the FCs, as well as best practice examples.

In this chapter the FRCs' interest in starting a LL and its subsequent connection to existing urban strategies will be presented, and the FRCs with their respective LL sites will be introduced. It also paints a picture of the social challenges that the LL intend to address. Each FRC has formulated their own strategy in order to foster urban agriculture initiatives in their local context. These strategies all include a co-creational framework in which all stakeholders concerned can partake to find solutions to local challenges.

This chapter is equivalent to the first TPM step "System development" (from WP4) and therefore presents a qualitative system model that explains the urban context and the current situation for mainstreaming ECSs.

3.1 Andernach

3.1.1 Living Lab Andernach: Purpose, background and strategic considerations

Purpose
As the EdiCitNet project was launched, the following overall objective for Andernach was defined:
Inclusion of most vulnerable groups of society: marked by life humans, children and refugees.

The considerations of Andernach for the LL is to expand the pre-existing concept of the Edible City, and further include vulnerable target groups and invite the public to engage more intensively in the maintenance and structure of developing ECSs all

year round. The design of the LL is a cooperation between the creative potential of the pedagogic school personnel and pupils, marginal groups and the already involved parties from the ECSs in the City Centre.

Background
Back in 2010, the city administration of Andernach launched the concept of the Edible City and the first Edible City Solutions (ECSs) in the city centre. Green spaces were converted to open access areas with plots for growing vegetables and fruits. The goal of the city was to open up previously restricted areas to the public and establish multi-functional spaces. In these newly opened areas, people were invited to learn about food diversity, to freely harvest crops and to interact with one another. Another important key element of the project was to integrate marginal groups, e.g. long-term unemployed people, who were appointed to maintain and tend to the gardens. Within a few years, the Edible City Andernach established an international reputation and attracted tourists and interested parties from all over the world.

Strategic considerations
As the City of Andernach already had established ECSs in the City Centre for a period of 8 years, the new project "EdiCitNet" allowed the city to implement new strategies and involve new target groups. The location of the experimental LL (see specific information below) outside of the city centre introduced a new physical dimension to the ECSs. The plan was to try out new ECSs in a space of 8000m².

The organizational structure of the LL was designed to maintain the original idea of involving marginal groups, but to expand this aspect to other groups, e.g. senior citizens. Furthermore, for marginal groups, the LL was proposed as an area to make first contacts with ECSs and expand and share their knowledge and establish connections within the community. An additional

goal was environmental education for children. The LL functions as a learning platform for kindergartens and schools, profiting from both the educational as well as the nutritious aspect of the LL. The City administration is currently funding the project "Edible City" in the City Centre and also the initial efforts in the LL and the ECS. However, the goal is to promote the LL and ECSs to the target groups, to facilitate that by the end of the project different interest groups will take over the ECSs.

3.1.2 Introduction Andernach & Living Lab Site

ANDERNACH (30,000 inhabitants) is situated at the Rhine River in the Rhineland-Palatinate State in Germany, an area of volcanic activity and a 2000 year old city history. Koblenz, the closest larger city with over 100,000 inhabitants is 20 km away, 13 minutes by train. Since 2010 the city of Andernach has focused on transforming the city centre towards more interactive green areas, as an Edible City. The strong tourism attraction of the city, e.g. the world's largest cold water geysir, has concurrently promoted the concept of the Edible City around the world. The "Feel free to Pick!"-concept of the Edible City has found broad acceptance among city inhabitants and tourists. The city profits economically from the large tourism interest, and also from the conversion of regular flower beds (intensive care) to edible plant beds.

In the city centre, several different ECSs can be found in the otherwise narrow and paved pedestrian zone. There are several high beds with various edible plants and a large pumpkin plot in the shape of a construction wagon right in front of the city administration. The city moat was converted from a grassy area to a diverse gardening landscape with different crops; wine, hops, cabbage, salad and banana- and apple trees. Grapevine is grown close to the train and bus stations (among other locations). On various small patches flower meadows have been planted, to increase insect diversity.

The choice of the location of the LL in Andernach was part of the process for the application to join the project EdiCitNet. This part of the project implementation was in the hands of the City Administration. The city had already converted various areas in the city centre to green ECSs. The space in the city outskirts provided a large area with connection to a youth centre, a potential member of the city team.

The following regulations had to be considered before the area could be converted and integrated into the EdiCitNet project:

1) Size: Selection of areas within the city boundaries of a certain size (>2000 m²).
2) Availability: Selection of areas which would be available for conversion to a LL in the near future.
3) Ownership: Clarify land ownership (city, private citizens or church).
4) Neighbourhood: Number of schools or pedagogic institutions in the vicinity.
5) Water protection areas: Ensure the management of the LL is in accordance with water protection regulations.
6) Installation of any kind of buildings (also temporary): For example, any installation of buildings has to be in accordance to safety regulations (e.g. TÜV Rheinland for the security of children and handrails).

Due to the narrow land zoning area in the city centre and the restricted use of the Rhine River floodplains, the LL was established in a recreational area on the outskirts of the city centre (Figure 2). A previously large grass patch between the Youth Centre and the Football stadium was chosen. With the amount of space, the LL was constructed as a large-scale agricultural site of 8000 m², with the possibility to create various smaller individual spaces for each target group. The LL is located 2.5 km from the city centre, i.e. within walking distance. Currently the connection within the city by public transport is limited, the closest bus stop and the main train station 1 km and 1.8 km, respectively, distant from the LL. There are several sports facilities (indoor climbing, tennis, football, remote controlled model track, skateboard park, riding club), a children's amusement park, the public

bath and the city youth centre in close vicinity, thus the location has the potential to draw attention from many different target groups (Figure 3). A drawback of the area is the location within the catchment of a water protection area, which forbids installation of any kind of compost management.

Fig. 2: Aerial view of Andernach (1: city centre with already installed ECS; 2: Living Lab area)
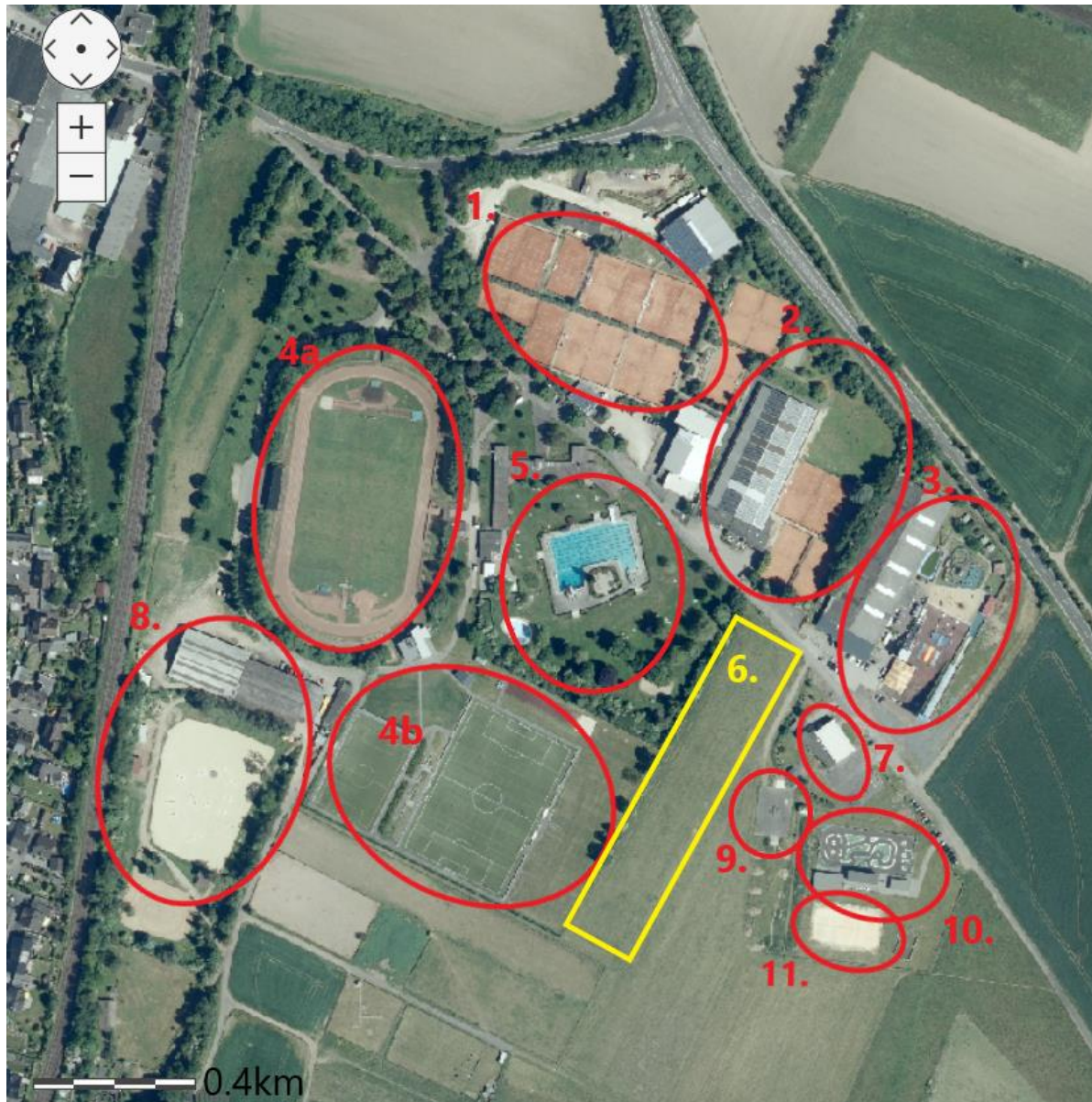
Fig. 3: Aerial view of the Living Lab (Nr. 6) and surrounding areas: Nr. 1: Tennis courts; 2: Indoor climbing; 3: Children's amusement park; 4a-b: Football stadium; 5: Public bath; 7: Youth centre; 8: Riding Club; 9: Skateboard park; 10: Remote controlled model racing track; 11. Beach volleyball court.

3.2 Oslo

3.2.1 Living Lab Oslo: Purpose, background and strategic considerations

EdiCitNet is an opportunity for Oslo to expand its efforts to become a showcase for innovative solutions within urban agriculture, to create and share knowledge and to facilitate collaboration across sectors, and thus support green and social entrepreneurs to create sustainable operating models.

In recent years, grass root initiatives, organizations and social entrepreneurs in Oslo have built up considerable competence within urban agriculture. Knowledge, inspiration and ideas are communicated and shared through different arenas, including visitor farms, community supported agriculture, allotment gardens, community gardens and courses. Since 2017 the city administration has run a subsidy scheme awarding up to 200,000 Euros annually to urban agriculture initiatives. Additionally, the municipality has funded innovative ECSs, such as hydroponics, aquaponics, rooftop gardens, container gardens as well as municipal bodies

demonstrating the use of ECSs to solve municipal tasks such as health care for the elderly, environmental education in schools and kindergartens, integration and language training, and work training for youth. In November 2019 the city council adopted its own strategy on urban agriculture called "Sprouting Oslo", and therewith made a political as well as financial commitment to prioritise urban agriculture until the year 2030. The strategy has five key objectives: green city development, local food production, sprouting meeting places, green education, and innovation through collaboration.

However, experience gained from projects supported by the municipality's subsidy scheme show that most initiatives struggle with economic sustainability, access to land and necessary infrastructure, long-term integration in municipal institutions, and for most parts are highly dependent on both, long-term financial support and motivated, often resource-rich people to run the initiative.[5]

When the EdiCitNet project was launched the overall objective for the Oslo LL was defined as providing equitability by enhancing opportunities in participation, sales and market channels, with a main focus on creating economically sustainable models, achieving social cohesion and providing market channels. A sub-goal was to build on the work of Oslo's Urban Renewal Program (URP) and concentrate on empowerment of local citizens. As the objectives were defined prior to the project start, the city team had the chance to revise those goals in the two co-creation workshops to adapt them to a consensus-based working language (the original wording was perceived as too complicated and difficult to comprehend by practitioners), put in a local context, prioritise their importance, include socio-political changes and align with the city's long-term strategic goals

for greater synergies. As a result, the LL aims at piloting ECSs that showcase their social and economic values and run experiments that create opportunities for citizens and entrepreneurs, facilitate knowledge transfer to empower local citizens and utilize existing but undervalued resources. Some of the first tasks for the LL are to reach out to marginalized community members to take part in ECSs and to find collaborations for financial support in order to ensure long-term operation.

3.2.2 Introduction Oslo & Living Lab Site

OSLO (693,000 inhabitants) is considered one of the greenest cities in the world. 300 km² out of Oslo municipality's 454 km² total area are protected forests. Together with the surrounding fjord the city's natural boundaries result in a city development "from within". In combination with an expected growth in population of 17% by 2040[6] urban development is increasingly focused on redeveloping industrial areas and using already existing areas for further housing development. This lack of space for building, combined with high demand, puts pressure on existing green spaces. Nevertheless, Oslo is dedicated to a green city development and has been awarded the title of European Green Capital 2019 due to its ambitious environmental and climate goals.

The socioeconomic background of Oslo's population is to a large degree segregated with a 'wealthier' west and a 'poorer' east. Ten city districts with the lowest income per household are situated in the east, including Grorud, Stovner, Alna, Bjerke and Søndre Nordstrand[7]. As an attempt to minimize this divide and to provide equal opportunities for everyone, Oslo has started several URP in the districts of Alna, Bjerke, Grorud and Stovner (since 2007), Gamle Oslo (since 2013)

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[5] https://www.oslo.kommune.no/get-file.php/13370468-1591077746/Tjenes-ter%20og%20tilbud/Natur%2C%20kul-tur%20og%20fritid/Urbant%20landbruk/Ut-forsk%20det%20spirende%20Oslo/Erfarin-

ger%20fra%20kommunale%20forbindeprosjek-ter.pdf
[6] https://www.oslo.kommune.no/statistikk/befolk-ning/befolkningsframskrivinger/
[7] https://www.oslo.kommune.no/statistikk/inntekt-levekar-og-sosiale-forhold/levekar/

and Søndre Nordstrand (since 2018)[8].

Before implementing the LL the municipality contacted existing urban agriculture initiatives and practitioners and held an open information meeting to find interested stakeholders for building the city team and defining the LL. It became clear very soon that the LL concept was too abstract for the interested stakeholders to work with, thus a geographical area was needed to make the concept feasible.

The physical area chosen for the LL is a farm in the East of Oslo. The area, which is marked by numerous complex social and health problems linked to inequalities, social exclusion, dependencies on social welfare, poverty and degraded urban environments, has been part of an URP since 2007. Since 2017 the URP has a particular focus on community development. The connection to the URP was one of the sub-goals in

the LL.

The LL is organised as a community garden, called Linderud Nærmiljøhage, representing several projects, initiatives and ECSs. The community garden itself is about 8000m^2 and is situated on a historic farm, owned by a private foundation and run by a museum (MiA - Museum i Akershus). Before EdiCitNet was introduced to the farm, the museum already had an ongoing collaboration with the municipality to integrate the farm into the URP's efforts to develop community and build identity through the rich cultural and historical value the farm represents in the area. Through EdiCitNet this collaboration has been prolonged and efforts to include citizens to actively take part in building their community have been expanded. The focus has shifted to the use of urban agriculture as the core tool for achieving social cohesion, and entrepreneurship has become a vital component.
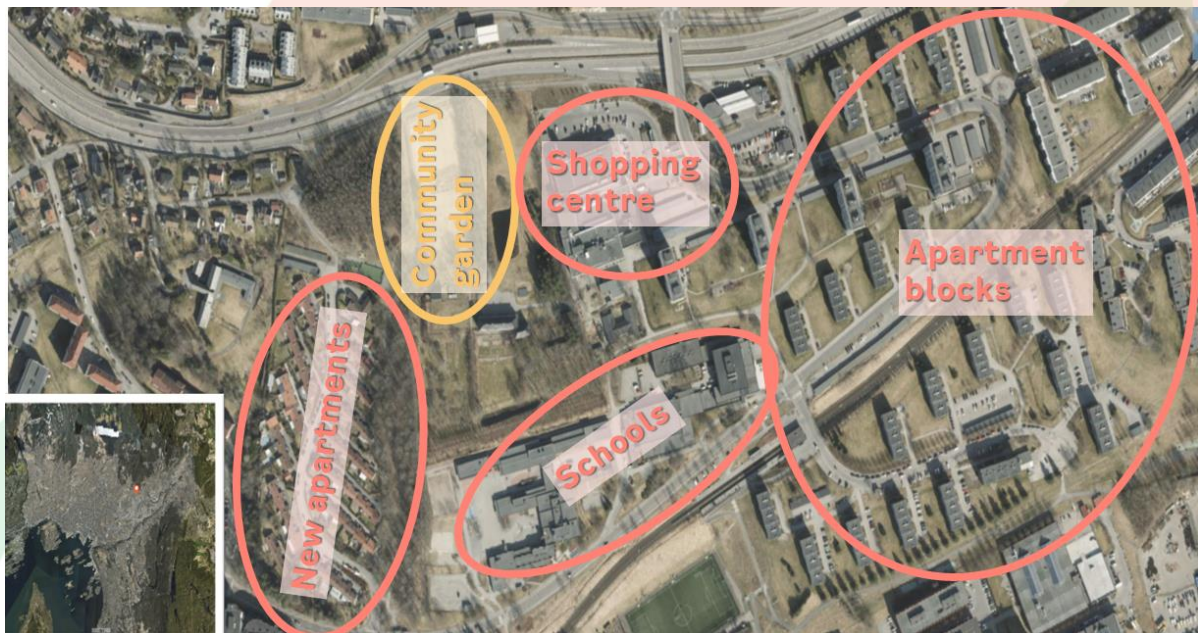
Fig. 4: Aerial view of the LL site in Oslo, Linderud community garden

The community garden has a unique position, with key institutions such as the local primary and secondary school, a kindergarten and a shopping center as its closest neighbours. The garden is also in close proximity to public transport and highway access, high rise apartment blocks and new

settlements providing a green lung in between built-up areas.

In addition to the main LL site at Linderud a second farm in the East side of Oslo was included to serve as an additional LL site. Here a

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[8] https://www.oslo.kommune.no/byutvikling/om-radepolitikken-i-oslo/

Community Supported Agriculture (CSA) initiative is testing out how they can connect to local schools to include them in their initiative, providing a much-needed arena for school garden teaching, connecting to the local community, and at the same time expanding their sources for income to make their initiative economically sustainable. Originally this farm was envisioned to become a separate LL, but due to limited resources it will be run as an experiment instead that can be replicated in the Linderud community garden or elsewhere. In addition, the second farm has been a great source of knowledge exchange and support to the ECSs at Linderud.

3.3 Berlin

3.3.1 Living Lab Berlin: Purpose, background and strategic considerations

Berlin sees participation in EdiCitNet as an FRC as an opportunity to make community gardens visible as an instrument of a social neighbourhood development and further develop them within the LL. This approach is designed to meet two trends in Berlin's urban development as a growing metropolis:

In Berlin, as in many other growing cities, socio-spatial differences between neighbourhoods in terms of the social, health and educational situation of the residents, the state of urban development and economic power are clearly visible. Since 1999 Berlin has been counteracting a socio-spatial division of the city with the urban renewal funding programme "Social Cohesion" by supporting socially disadvantaged neighbourhoods. Therefore, EdiCitNet with its social focus is affiliated the Social Cohesion programme (Neighbourhood Management). The goal of the programme is to stabilise neighbourhoods and strengthen their social cohesion. Within the funding programme Social Cohesion (Neighbourhood Management), community garden projects proved to be successful in terms of strengthening the surrounding neighbourhoods and should be further developed within the LL.

Furthermore, Berlin with its character as multi-ethnic and multi-functional city is a magnet for people and businesses, a city that is growing and changing. Shaping the future of Berlin as a growing green metropolis is a task that touches social, economic and environmental issues at the same time. Due to (re-)densification trends, the loss of semi-public green areas and an increasing pressure on public green spaces can be observed. As a consequence, the simultaneous growth of urban and green infrastructure is an important guideline for urban development in Berlin in general and for the development and renewal of abandoned areas in particular. The LL Berlin should provide an example of this. Two areas were selected for this purpose: a former cemetery and a former agricultural enterprise. In each of these areas, there is already an existing community garden of the EdiCitNet partner PRINZ, to which the ECSs will be linked.

The aim of the LL in Berlin is to provide best-practice examples of how intelligent neighbourhood development through the integration of community gardens can at the same time cautiously continue to develop the city while strengthening socially disadvantaged neighbourhoods.

3.3.2 Introduction Berlin & Living Lab Sites

BERLIN is the capital city of Germany and with its 3.75 million inhabitants also the largest city in the country. Berlin's population will grow by 4.7 percent by 2030 (forecast for Berlin and the districts 2018 - 2030). In order to grow simultaneously, the principle of simultaneous green and structural development in the city applies. Structurally, a focus is on securing equal living conditions in Berlin by supporting socially disadvantaged neighbourhoods.

The existing 2,500 public parks and green spaces, 16,000 hectares of forest, 430,000 street trees (Charta Berliner Stadtgrün) form the backbone of the urban green infrastructure. In addition, Berlin has over 200 community gardens. With the establishment of the Prinzessinnengärten (2009)

on Moritzplatz in the city district of Kreuzberg and the Allmende-Kontor at the former Tempelhof Airport (2011), the latest wave of bottom-up urban development became visible in Berlin. The productive and "wild" green in urban space re-enters the city.

Urban community gardens try to solve both social and ecological challenges. They are spaces for improvisation and innovation. They offer citizens a wide range of options, such as engaging with nature and growing vegetables close to home. The great social potential of the community gardens was recognized, which is why more than 30 gardens (partly funded by the program Social Cohesion) have already been created in the Neighbourhood Management areas.

Berlin and PRINZ plan two locations for the implementation of the LL Berlin: the community garden "Gutsgarten Hellersdorf" and the community garden at the New St. Jacobi Cemetery Neukölln. Both gardens are located in neighbourhoods that tend to be socially disadvantaged and they reflect the typical urban structure of the neighbourhoods from the Social Cohesion Programme.
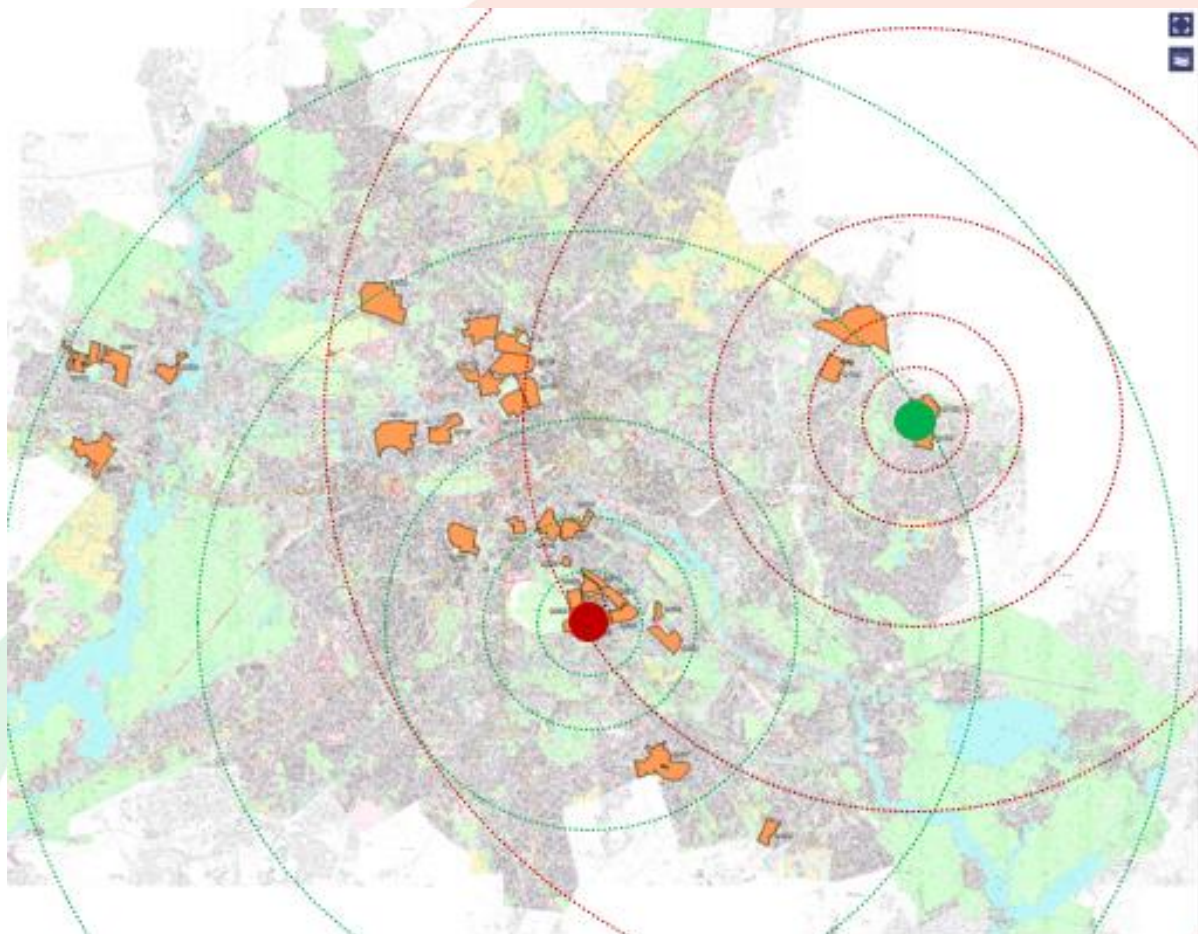
Fig. 5: Location of the two Living Lab sites Neukölln (red) and Hellersdorf (green) within the city of Berlin

The **Gutsgarten Hellersdorf** is a community garden on the historic Hellersdorf estate, which is located in the former village centre of Hellersdorf. Today it is located in the middle of one of the largest prefabricated housing estates in Europe -

Marzahn-Hellersdorf. The Hellersdorf estate and its immediate surroundings are currently undergoing massive urban development and demographic change. The construction of 1500 new flats in the immediate vicinity is planned and

the historical, listed estate is to be renovated and redesigned, by GESOBAU AG, a municipal housing association. The first flats will be finished in 2021, and completion of the whole development of the area is planned for 2023.

In cooperation with the district administration of Marzahn-Hellersdorf, PRINZ began in 2015 to work with residents to turn a part of the estate into a lively place and link it with the surrounding neighbourhood. At that time, the development prospects for the historic Hellersdorf estate, a listed urban estate with a total area of around 2.8 ha, were still unclear. The garden project was therefore initially set up for 10 years and has since functioned as a so-called public opportunity space where the neighbourhood meets. All those involved are establishing a sustainable lifestyle and create a non-monetary space for art, culture, science and much more.

The site was first used and planted at the end of 2016. Since then, a place has been created that is constantly changing and is designed together with the residents. The neighbourhood and interested people can find a gardening, community, artistic and environmental education activities.

In addition, the Gutsgarten Hellersdorf reflects the structural, social and economic change on the estate and in the surrounding area. As a participatory place, it gives people the opportunity to give impulses for the sustainable and citizen-oriented design of their neighbourhood. In 2018, for example, the Gutsgarten organised a poster workshop.

Gardeners and other interested parties designed posters, which illustrated their future wishes and ideas for the Hellersdorf estate. Some of these posters were later included in the public relations work of Gesobau, the housing association in charge of developing the area.

Various projects and collaborations have been developed in the Gutsgarten Hellersdorf, including projects with refugee shelters and other social institutions. In addition, there are various holiday programmes for children, workshops on gardening and on other social topics (e.g. non-violent communication), and many other activities.

There are two open gardening days a week and a garden plenum every two weeks. Everyone is welcome to participate in the participatory processes, to join in, to garden and to learn. In the course of time, a permanent group of about 20 people, especially from the neighbourhood, has been formed and stabilised. The location has made a name for itself in the neighbourhood as a place to go and stay.

Because of the construction work on the estate, the Gutsgarten Hellersdorf is going to change its location by the end of 2020. Commercial uses and residential areas are planned for the estate. The new garden location is adjacent to the historic manor house with the manor garden. With approx. 900 m², the area is considerably smaller than the old location. As the area has not yet been designed, the transfer will involve a great deal of work.
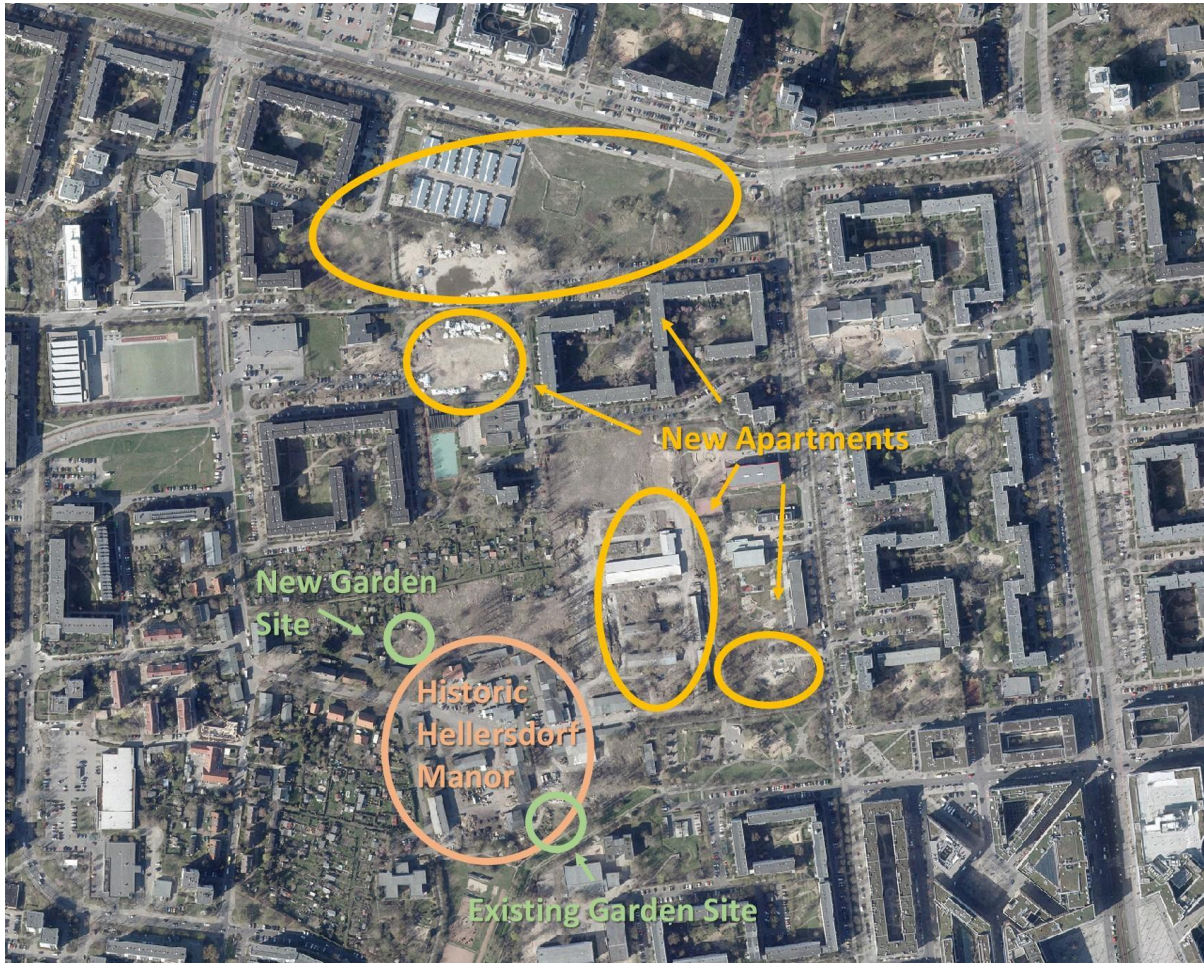
Fig. 6: Aerial view of the Living Lab site Gutsgarten Hellersdorf (source: Geoportal Berlin / Digitale farbige Orthophotos 2019 (DOP20RGB), edited)

The **community garden at the New St. Jacobi Cemetery** was initiated in 2018. Supported by BENE (Berlin founding Programme for Sustainable Development), the project "Green Uses in Cemeteries" enabled the first use of an area of around 2.5 ha of the 7.5 ha cemetery by PRINZ until August 2019. Since then, gardening and measures for environmental education and nature experience have been planned and implemented successively, carefully and in close cooperation with local residents. The community garden operates on the basis of a usage agreement between PRINZ and the cemetery management company.

The Neue St. Jacobi Friedhof is located at Hermannstraße 99-105 of the Berlin district Neukölln. Around 23,000 people of various origins live in the neighbourhood. It is characterised by dense residential development from the last turn of the century, the proximity to Tempelhofer Feld (former airfield, today a large public open space) and the busy Hermannstraße.

In winter 2019/2020 PRINZ moved its garden location to the cemetery. Numerous interested people come to the cemetery regularly or for individual events, work in the garden, or use the place for neighbourly exchange. Among other things the site includes raised beds, a vegetable field, a café and a small plant shop in the entrance area. Moreover, the state of maintenance of the cemetery has increased significantly. The additional use of the cemetery is accompanied by a stronger revival and thus a greater social control, which leads to an improved feeling of security for many grave visitors.

As in many other places, less and less space is needed for cemetery purposes at the cemeteries along Hermannstraße. The reason for this is a trend towards burials in urns instead of coffins. In order to preserve the cemetery culture in the

remaining cemetery areas in Neukölln and to enable sustainable management, the cemetery operator, the Evangelischer Friedhofsverband Berlin Stadtmitte, has closed the entire New St. Jacobi Cemetery for further burials in 2019. Depending on the expiry of the legal deadlines for cemeteries, new uses are going to be implemented stepwise.

In cooperation with the Neukölln district administration, a framework concept for the cemetery was developed.
The following subsequent uses are planned:

- Construction of a new school and housing by a municipal housing company on around 3.0 hectares in the western part of the cemetery
- Construction of an environmental centre and new buildings for commercial and residential purposes on approx. 0.5 ha near Hermannstraße
- Successive expansion of the garden project with a simultaneous decline in cemetery use to around 4 ha in the central cemetery area
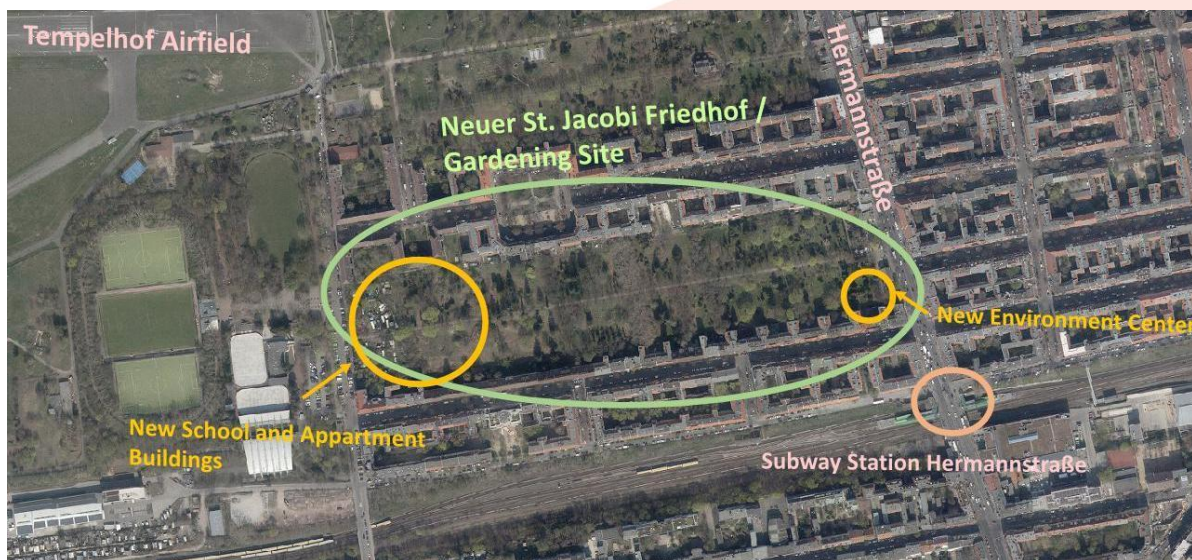

Fig. 7: Aerial view of the Living Lab site community garden at the New St. Jacobi Cemetery (source: Geoportal Berlin / Digitale farbige Orthophotos 2019 (DOP20RGB), edited)

4. Living Labs 2023

In this section, the desired future of the LL (Step 2 "Scenario Development" in the TPM) will be described in a "best case scenario" as a goal. The prerequisite for this is a successfully implemented IPP and installation of ECS and achievement of the overall objectives. The Grant Agreement offers the possibility to adjust the objectives in the IPP, which the FRC have done in close cooperation with their city teams through their co-creation processes and subsequently developed a common vision.

4.1 Andernach

In the last decade, the City of Andernach has shown great commitment towards a green and edible city by the conversion of green areas to ECSs. Initiatives to improve the city greening were often separate efforts from either civil citizens, politicians or City Administration employees. As a consequence of the dry and warm summers in 2018 and 2019, the city introduced the "green strategy" (*Grünstrategie*). This strategy was created 1) to tackle environmental effects on the city greening (e.g. drought and water scarcity), 2) to bundle and integrate previously separate initiatives and 3) to broaden the environmental efforts, by merging climate management and biodiversity in a broader planning perspective. In this interdisciplinary management strategy, the City Administration combines the department of urban planning, the department of engineering and construction and the department of the environment and sustainability with the department of social affairs to jointly steer towards a greener city. Furthermore, Andernach aims to enforce the funding of different environmentally friendly projects, from internal

city funds but also from third-party resources (climate related funding, construction grants etc.).

With the overall objective to include vulnerable target groups, EdiCitNet defined further the following objectives for the City of Andernach:

- to prolong the cooperation with "Perspektive gGmbH".
- to create open access peri urban permaculture area.
- to acquire funding possibilities at national and international scale.
- to upscale communication measures of Edible City Andernach.

4.2 Oslo

Oslo's participation in EdiCitNet, and the implementation of a LL, is part of working towards the overall vision to make the city smarter, greener, more inclusive and creative for all citizens – a city that innovates with the citizens' interest and well-being at the core.[9] The LL should be in line with the strategy on urban agriculture "Sprouting Oslo", which foresees to facilitate collaboration across municipal, state, voluntary, private actors and green social entrepreneurs in urban agriculture, and use urban agricultural activities as an arena for work practice and to increase quality of life for the city's residents in their neighbourhoods.[10] In addition to that, the LL should also be in line with the main goal of the URP, section community development, which aims at strengthening the quality of life in the local area, which will contribute to inclusive communities where more people are actively participating.[11]

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[9] https://www.oslo.kommune.no/politics-and-administration/smart-oslo/smart-oslo-strategy/

[10] https://www.oslo.kommune.no/get-file.php/13365754-1586326513/Tjenester%20og%20tilbud/Politikk%20og%20administrasjon/Milj%C3%B8%20og%20klima/Styrende%20dokumenter/Spirende%20Oslo%20-%20strategi%20for%20urbant%20landbruk.pdf

[11] https://www.oslo.kommune.no/get-file.php/13316265-1551699110/Tjenester%20og%20tilbud/Politikk%20og%20administrasjon/Byutvikling/Omr%C3%A5desatsingene%20i%20Oslo/Delprogram%20n%C3%A6rmilj%C3%B8/Handlingsprogram%20n%C3%A6rmilj%C3%B8%202019.pdf

The city team has developed a vision for the LL, run as Linderud community garden, that sees urban agriculture as a resource in the neighborhood by giving citizens the opportunity to participate in society, create social meeting places, promote entrepreneurship and facilitate access to land, knowledge and market channels. The project will showcase a clear social profile, with a focus on creating good meeting places and using urban agriculture as an economic resource, both for those who live in the Linderud area and for the entire city's population. The vision and goals match the revised objectives described in EdiCitNet and the long-term goals of the city:

Linderud community garden is an inclusive and social meeting place with urban cultivation as the focus. By cultivating the land, resources are created in the form of food, activities and networks for the local population. A green lung and low-threshold offer is created, especially for those who live close in the surrounding block buildings, but also for the entire city's population. The community garden is a place for knowledge exchange and learning, collaboration across actors and sectors, a place for innovation and entrepreneurship.

In particular, Linderud community garden
- is a social and inclusive meeting place for the area's diverse population
- practically conveys the area's rich cultural and agricultural history
- has strengthened the citizens identity and belonging to the area by creating increased commitment and ownership to the community garden and the farm
- has successfully created and shared knowledge which leads to increased participation and entrepreneurship in ECSs

- has facilitated access to resources such as knowledge and sales channels
- has utilised urban agriculture as an economic resource for the local community

The LL serves to answer some of the most pressing challenges for urban agriculture initiatives in Oslo[12], with the main focus on sustainability of ECSs, and is a best-practice example for other initiatives in the city and elsewhere in Norway.

4.3 Berlin

The Berlin Strategy[13] describes an overall vision of the future of Berlin that illustrates the city in the year 2030. Economic strength, quality of life and social justice – these will be the watchwords of Berlin in 2030. Berlin 2030 will be an established leader in economic innovations, science, employment, training and qualifications. It will be a centre of creativity and enthusiasm for art, culture, tourism and sport, a diverse urban metropolis, easy to live in and with plenty of green spaces. It will be successful and sustainable in terms of climate and energy, city-friendly and future-proof in terms of mobility, its inhabitants caring and committed to living together in a modern and socially responsible society. The legendary 'Berlin mix' will provide the foundations for a strong city, which has learned to shape growth fairly, responsibly and together. The LL Berlin should be in line with and contribute to this urban development strategy.

The aim is to give best practice examples of how densification can include productive green structures in a growing city and stabilise disadvantaged neighbourhoods at the same time. Through the LL, the existing community gardens at both locations were developed into an anchor point in their neighbourhoods. They stand for integration, civic involvement, experiencing

https://www.oslo.kommune.no/byutvikling/delprogram-narmiljo/#gref
[12] https://www.oslo.kommune.no/get-file.php/13370468-1591077746/Tjenester%20og%20tilbud/Natur%2C%20kultur%20og%20fritid/Urbant%20landbruk/Ut-

forsk%20det%20spirende%20Oslo/Erfaringer%20fra%20kommunale%20forbindeprosjekter.pdf
[13] https://www.stadtentwicklung.berlin.de/planen/stadtentwicklungskonzept/de/berlinstrategie/index.shtml

nature and bottom-up urban development and are starting points for development impulses to the surrounding conversion areas and neighbouring socially disadvantaged districts.

The development of the LL was based on an integrative, systemic approach that directly involves the residents and designers of "edible solutions". The joint further development of the community gardens was accompanied by a co-creation process characterised by cooperation. The LL gives an example of civil involvement leading to empowering the neighbourhood, which have a long-term impact.

The LL is not only a best-practice example for the cities participating in EdiCitNet, but also for other community gardens in Berlin, which are supported by the Social Cohesion Programme.

In addition, the following points were also pursued:

- Further development of existing accessible green and open spaces
- Contribution to an economic design of community gardens
- Integration of social aspects such as education, integration, networking, health, nutrition and governance

In that sense co-developing abandoned spaces into vital neighbourhood hot spots should be seen as a model for economic, ecological and social sustainability in urban development.

In addition, the partner PRINZ has the following vision for their community gardens:
Urban community gardens combine social and ecological themes. They are spaces for improvisation and new ideas. They offer city dwellers a wide range of possibilities, such as interacting with nature and growing vegetables close to where they live.

The practical experience gained by those involved in the participatory and local cultivation of crops promotes the appreciation of food and creates a true-to-life link to food production as a direct livelihood. Community gardens thus provide the basis for a respectful use of natural resources and the possibility to scale local processes to a global perspective.

Regular low-threshold educational offers related to gardening and ecology offer opportunities for self-effective engagement with the environment. Due to their accessibility, community gardens are places where people exchange and spend time, where knowledge is imparted and where participatory processes take place. They can serve as a field of experimentation in which one's own ideas can be implemented in an open and at the same time protected space, where it is possible to learn from mistakes and develop lifelike solution strategies. This creates the possibility to test innovations on a local level as well as to scale up to further contexts through the structural openness and diversity of the places.

The potential of community gardens to actively shape the immediate living environment and to be able to bring their own experiences into the community creates places where those involved can experience self-efficacy and find support, and where synergies can be created among the community's diverse resources. The examination of different perspectives and represented lifeworlds also creates an awareness of the plurality of society.

Thus urban gardens are places in the city where interculturalism, active environmental protection, garden pedagogical knowledge transfer and even cultural activities can take place and where everyone has the opportunity to positively influence the immediate environment.

5. Implementation Pathway

In this chapter, the pathway from the "Status Quo" (Chapter 3) towards the desired future (Chapter 4) will be elaborated. With reference to the TPM step 3, concrete strategies for the establishment of favoured ECSs for each of the FRCs' LLs under a specific scenario condition have been developed. The foundation for this is a chart-profile for each ECS. The ECSs will be described in detail with respective target groups and their interconnectivity in the LL. Following the previously described "best case" scenario, the implementation pathway will project ideas under optimal circumstances. In the section of the co-creative implementation of ECSs, it will become clear how the design and concept of the ECSs are worked out in exchange processes within the city teams.

The philosophy of the LLs is to provide a "breeding ground for innovation", to be under constant development and to react to arising opportunities. The LL is a platform that creates supporting conditions for multiple initiatives that could lead to achieving the overarching goals. However, it is an enormous challenge to create such a flexible and open space and simultaneously set up and follow a strict plan of pre-defined goals, fixed structures, timelines and measuring requirements. It is particularly challenging to define activities and ECSs with detailed timeframes and budget allocations in an early stage. Experiences from the entire process will be summarised in Del. 3.4 "Catalogue of Lessons learnt"

Therefore, the following compilation and description of the ECSs provides a framework for reflection. On the one hand, it forms the basis for a learning-by-doing implementation process. On the other hand, spaces of possibility remain to discard ideas and absorb new ones. In this respect, reference should also be made to Chapter 7 Risk Management Plan.

5.1 Andernach

5.1.1 Short profile: ECSs in Living Lab Andernach

The following ECSs are products from the co-creational workshops of the Andernach city team. The content of each ECS evolves during the project period; however, the plan suggested here follows the "best-case scenario" of implementing them. Furthermore, the ECSs are flexible regarding the content of the edible greening, and in the hand of the respective involved parties. New inputs and changes in the LL and the single ECSs are discussed during the annual meetings of the city team. A list of the ECSs can be found in the following, containing information on the content of each ECS, starting date, objectives and target groups along with connections to other ECSs and work packages.

The first three ECSs (crop beds or high beds) are similar in their structure, but with different target groups (schools, senior citizens, citizens). To implement these, several steps are needed: e.g. the construction of the bed, choice of crop (e.g. potatoes and pumpkin for crop beds, herbs and salads for high beds), interactive sowing sessions, tending to the crop during the growing season and the interactive harvesting of the crops.

The fourth ECS is an indirect contributor to the other ECSs as well as an educational solution. The flower meadow functions as a diversity multiplier for insects and attracts these to the LL. This also contributes to the visual appeal of the LL. The flower meadow is expected to be an important educational link between edible products and wider environmental concerns, illustrating how food production ultimately is dependent on biodiversity and healthy soil.

The fifth ECS is the "Action Days" which represents an activity which interconnects several of the other ECSs, if desired by the stakeholders. The number, content and dimension of the events will influence the time needed for planning and

organising. Crucial for the success of an Action Day is the beforehand communication within the city team and the dissemination inside and outside the city team.

1. Crop bed or high bed	
Description/activities	Planting, tending, harvesting a crop bed or a high bed. ● the experts on gardening perform the construction of the planting bed (on their own or in combination with ECS No. 5 Action Day). ● school representatives/senior citizens/ citizens, experts on soil fertility and gardening experts deliberate about the desired crop and the time frame of sowing and harvesting. ○ The time frame is highly depending on the selected crop but in general, the vegetation period stretches from March until October. ● all actions should be communicated within the city team and disseminated among the members and outside the city team (e.g. social media, Community Management Platform (CMT), newspapers and radio). ● acquiring the plant material is a task for the gardening experts. ● installing of the beds will be performed by the gardening experts (on their own or in combination with ECS No. 5 Action Day). ● cooperative sowing between stakeholders. As the sowing is an essential part of the interaction of the stakeholders and gardening experts, this should be combined with ECS No. 5 Action Day. ● the harvest should be coordinated among the stakeholders to find appropriate days to gain public interest (e.g. youth centre holiday programmes). ● record feedback from stakeholders about experiences with the crop bed, crops harvested, and educational value of ECS, including documentation with photos (degree and type of participation to be planned by city team).
Starting date	March 2019
LL objectives	Education, participation
Target group	School pupils
Stakeholders	Kindergartens, schools, youth centre, experts on gardening and soil fertility (Perspektive gGmbH, Maltaflor)
Connection to the other ECSs	Management independent from other ECS, Diversity increase for the whole LL area Provide harvest and crops for Action Days (ECS No. 5)

2. Crop bed or high bed	
Description/activities	Planting, tending, harvesting a crop bed or a high bed. ● the experts on gardening perform the construction of the planting bed (on their own or in combination with ECS No. 5 Action Day). ● Senior citizens/refugees, experts on soil fertility and gardening experts deliberate about the desired crop and the time frame of sowing and harvesting. ○ the time frame is highly dependent on the selected crop but in general, the vegetation period stretches from March until October. ● all actions should be communicated within the city team and disseminated among the members and outside the city team (e.g. social media, CMT, newspapers and radio). ● acquiring the plant material is a task for the gardening experts. ● installing of the beds will be performed by the gardening experts (on their own or in combination with ECS No. 5 Action Day). ● cooperative sowing between stakeholders. As the sowing is an essential part of the interaction of the stakeholders and gardening experts, this should be combined with ECS No. 5 Action Day. ● the harvest should be coordinated between the stakeholders to find appropriate days to gain public interest. ● record feedback from stakeholders about experiences with the crop bed, crops harvested, and recreational value of ECS, including documentation with photos (degree and type of participation to be planned by city team).
Starting date	March 2020
LL objectives	Recreation, participation
Target group	Senior citizens / Refugees
Stakeholders	Senior citizens, refugees, experts on gardening and soil fertility (Perspektive gGmbH, Maltaflor)
Connection to the other ECS	Management independent from other ECS, Diversity increase for the whole LL area Provide harvest and crops for Action Days (ECS No. 5) Provide knowledge on gardening to other Target Groups

3. Crop bed or high bed	
Description/activities	Planting, tending, harvesting a crop bed or a high bed. ● participants and/or the experts on gardening perform the construction of the planting bed (on their own or in combination with ECS No. 5 Action Day). ● participants and/or experts on soil fertility and gardening experts deliberate about the desired crop and the time frame of sowing and harvesting. ○ the time frame is highly dependent on the selected crop but in general, the vegetation period stretches from March until October. ● all actions should be communicated within the city team and disseminated among the members and outside the city team (e.g. social media, CMT, newspapers and radio). ● acquiring the plant material is a task for the participants. ● the beds will be installed by the participants and/or the gardening experts (on their own or in combination with ECS No. 5 Action Day). ● cooperative sowing between stakeholders if wanted. ● the harvest should be coordinated between the stakeholders. ● record feedback from stakeholders about experiences with the crop bed, crops harvested, and recreational value of ECS, including documentation with photos (degree and type of participation to be planned by city team).
Starting date	March 2020
LL objectives	Recreation, participation
Target group	Citizens, queuing for a garden allotment
Stakeholders	Senior citizens, retirement communities, experts on gardening and soil fertility (Perspektive gGmbH, Maltaflor)
Connection to the other ECS	Management independent from other ECS, Diversity increase for the whole LL area Provide knowledge on gardening to other Target Groups Provide knowledge on gardening that can be used and spread when the citizens get access to their own garden allotment.

4. Flower meadow	

Description/activities	Planting, weeding of a decorative flower meadow, attractive for insects.
	● the experts on gardening prepare the soil in spring (February / March) (on their own or in combination with ECS 5 Action Day)
	● school representatives, experts on soil fertility and gardening experts deliberate about the desired flowers and the time frame of sowing.
	   ○ the time frame is highly dependent on the selected flowers.
	   ○ in general, two separate sowing occasions (in the period April to May) are profitable, as this prolongs the flowering period.
	● all actions should be communicated within the city team and disseminated among the members and outside the city team (e.g. social media, CMT, newspapers and radio).
	● acquiring the plant material is a task for the gardening experts.
	● the sowing is a cooperative action between the stakeholders, favourably combined with ECS 5 Action Day.
	● recording plants and insects as a participatory activity on Action Days, to be planned and coordinated by the city team with advice from biodiversity experts.

Starting date	March 2020
LL objectives	Education, participation
Target group	School pupils
Stakeholders	Schools, youth centre, experts on gardening and soil fertility (Perspektive gGmbH, Maltaflor)
Connection to the other ECS	Diversity increase for the whole LL area Management independent from other ECS, Can be a part of Action Days (ECS No. 5)

5. Action Days	
Description/activities	Interactive, inclusive events in the LL and in single ECS ● city team deliberates about Action Days in the time before the vegetation period and selects dates suitable for respective target groups (e.g. youth centre holiday programmes and citywide action days as "Andernach schmeckt!" *"Andernach is tasty!"*). ● each stakeholder with a prominent involvement of the Action Day is responsible to communicate their needs and their input to plan the event.

	- announcements of the Action Days should be disseminated on all channels available (social media, tourist information, newspaper, radio, CMT etc.). - if there is a need for utensils (benches, tools, etc.) for the event, the stakeholders will communicate this and share the load to acquire these. - Participatory monitoring activities will be planned by the city team and stakeholder representative(s), with advice from experts.
Starting date	Summer 2019
LL objective	Integration, participation, education and recreation
Target group	The Public, any participant from the city team, Schools, Retirement Communities
Stakeholders	city team members
Connection to the other ECS	The Action Day can be an interactive day where specific steps of each ECS can be integrated (e.g. harvest of crops from school crop bed)

5.1.2 Transition approach and co-creative implementation management structure

The iteration of the city team meetings and constant update of the ECS and their progress drives the transition from the status quo to the desired future of the LL.

Establishing the city team:

The LL in Andernach started out with finding new contacts outside the already existing network of the Edible City, and connecting these parties. The initial workshop gathered interested participants from schools and kindergartens, politicians and the Perspektive gGmbH company to form the steering group. One of the primary aims of the workshop was to make the members familiar with EdiCitNet and the idea of a LL. Trust has to be established, to gain common confidence to build the project together. Once this step was reached, more detailed plans could be made (e.g. how to structure the LL).

The institutional status of the city team corresponds to that of a steering group. Steering groups are a common tool of the city administration of Andernach. Steering groups are defined as advisory and organizational boards for coping with cross-office tasks of the city through cooperation with other sector authorities and external partners. A steering group is launched by the lord mayor who also identifies the group leader/chair. Representatives of the steering group can report about their work to the city council. Steering groups can implement sub-groups (working groups) on certain sub-tasks (e.g. single ECS, the Rhineland-Palatinate-Day in 2020, or the steering group of the Fair-Trade-Development in Andernach. The organisation of the EdiCitNet steering group as well as the subgroups in the years 2019-2020 are shown in Figure 8.
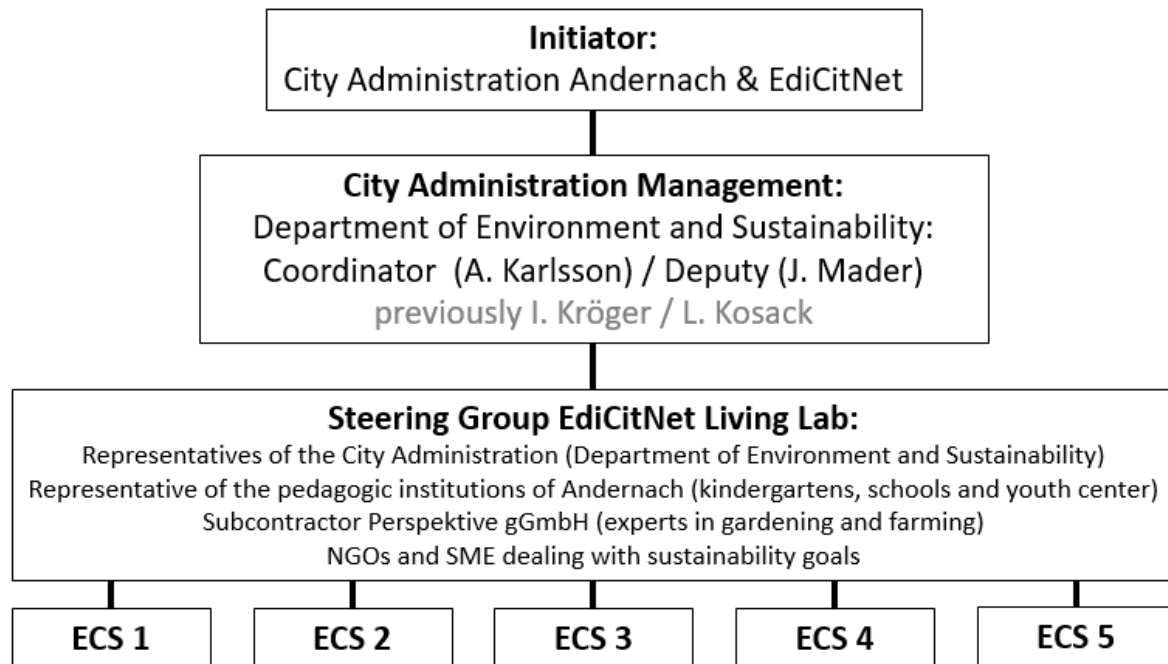
Fig. 8: Organisational structure of the City team according to the steering-group structure of Andernach.

Choice of ECSs:

The choice of ECSs is a direct result of the co-creational process within the city team meeting. Here, the members worked out a plan to structure the LL in Andernach as a large agricultural plot with 3 foci: 1) an interactive area for people to join and work together, 2) a central area with one type of crops, and 3) a more remote area with different types of trees and shrubs. It became evident that establishing definite ECS at this point in time was a difficult task, as the concept of ECS was new to many participants.

Breaking ground for the Living Lab:

It became clear that the construction of the LL would be a large task to tackle, which also would mean a large workload and investment in material. Only two city team members could contribute to the construction of the LL, namely Maltaflor (providing fertilizer for the stale ground) and Perspektive gGmbH were able to provide gardening know-how and restructure the grassland into a crop field. For this, the Perspektive gGmbH had to be financially compensated, laying ground (8000m²) and fencing the area.

Time frame of action:

The plan to start the ground-breaking activities was set to spring 2019. Within the first year, the plan was to establish the first ECS (planting the shrubs and trees, creating the potato and pumpkin plots with combined Action Days). The plans were made according to the description of the ECS and the planning for the following year conducted as an iteration of the first meeting.

Challenges:

There are also challenges in the LL which have to be considered to ensure the success of the LL. The previous history in the Edible City of Andernach, with inclusion of people in long-term unemployment, has triggered different issues. There is a fear of stigmatization of this marginal group, saying *"The maintenance of the Edible City in Andernach city centre is associated with unemployed people".* This might lead to a reduced acceptance of the general public to engage with the project, afraid to be associated with this group. Furthermore, the care for the Edible City has been managed by the City Administration without any public involvement except for harvesting. To change this perspective that *"Participation within the Edible City is reduced to weeding and watering"* is a challenging task. The

City has to be careful and inform about the broad focus of EdiCitNet to include other aspects of ECSs: address various interests of citizens and educate about sustainability. Additionally, the City can increase the educational and pedagogic skills in the Edible City by including these organizations. An additional challenge is the distance between the city centre and the LL. The City Administration has altered the public transport plans, to introduce a new bus stop 400 meters from the LL starting in 2021. This is an important step to increase the connectivity between ECSs.

5.2 Oslo

5.2.1 Short profile: ECS Living Lab Oslo

In hindsight activities and ECS have formed during the first year of running the LL. This is due to exposure, more people joining as the LL became more known, as well as others being inspired by the first initiatives or new connections being made during the process. To uphold this spontaneous character and give rise to unexpected outcomes, developments and innovation, the city team made the conscious choice to be open for new initiatives to join the LL at any time and regardless their immediate "fit" to the LL objectives. The following list is therefore not exhaustive and continuously evolving. In addition, several initiatives are under planning and evolving, which are not mentioned in this IPP. The status report Del 3.2 will describe the ECSs in greater detail.

1. Linderud community garden / Linderud Nærmiljøhage	
Description/activities	The Linderud community garden, Linderud Nærmiljøhage, is the umbrella of the LL. All ECSs in the LL are run under the Linderud community garden. At the same time the community garden has a responsibility for developing the communal area as a social meeting place for the local neighbourhood, and for arranging community events and activities to strengthen the community feeling and build a feeling of ownership to the area. Therefore, the community garden is seen as an ECS including the following activities: ● Providing summer jobs for local youth at the farm ● Developing an arena for practical work training for the Salvation Army ● Invite to community events for families and local citizens (open farm days, competition runs, tours through the community garden, summer parties, working bees) ● Plan and build the communal area in collaboration with local citizen ● Explore possibilities for food preparation through connections to existing local communal kitchens
Starting date	January 2020
LL objectives	Participation, Empowerment, Social cohesion, Inclusion, Community development, Collaboration, Knowledge transfer, Work training
Target group	Local citizens, local youth
Stakeholders	MiA, Oslo kommune, URP, Nabolagshager, Bjerke skole, Linderud kjøpesenter, Linderud CSA, Frelsesarmeens Jobben, Oslo LL, amongst others
Connection to the other	"Umbrella" for all other ECSs in the LL

2.	Linderud CSA / Linderud andelsgård	

Description/activities	Community Supported Agriculture (CSA): shared risk, shared harvest. Foundation of Linderud CSA/ Linderud andelsgård with the capacity for 60 members each year and sponsored membership for low-income households as well as organisations with a social goal for example Bydelsmødre("City district's mothers")-network.
Starting date	Planning phase July 2019, operating phase January 2020
LL objectives	Participation, Empowerment, Knowledge transfer, Distribution network
Target group	Local citizens, socially disadvantaged citizens, social initiatives
Stakeholders	Local citizens, Bydelsmødre, Økologisk Norge, Tveten CSA/ Tveten andelsgård, Oslo kommune, URP, MiA
Connection to the other ECSs	All, particularly Gruten through course, sales and other forms of knowledge exchange, community areas, events, marked days

3.	Testbeds at Linderud community garden	

Description/activities	Testbeds is a collection of different ECSs, which receive a physical growing space between 10 - 250 m^2 alongside a network, entrepreneurial skills, growing skills and infrastructure to test out their business idea. Both business-oriented ideas as well as socially oriented ideas are welcome to apply for a testbed. However, testbeds are not available for private use, users must either have the intention to start a business or to generate benefit for the local community. First cycle 2020: Piloting the testbed. Strong focus on openness, both business as well as social oriented entrepreneurs were welcome to apply for a testbed. The following applicants have received a testbed: a) Markblomst b) Cultural Incubator c) Bydelsmødre d) Ungdommer i sommerjobb e) Onkel Troll Second cycle 2021: (Under development, status October 2020) With support of Stadsbruk Europe the testbeds will be developed further into an incubator program for market garden growers where participants will go through a recruitment process to receive one of four available testbeds à 250 m^2. Testbed users will receive training in business development, marketing and sales as well as support to set up their farm, patch or indoor growing area, and growing advice. Testbeds, including incubator training, are available for one year (unless decided otherwise), before the users will be able to move to a bigger growing area to expand their ECS.

	a)Testbed-user 1 b)Testbed-user 2 c)Testbed-user 3 d)Testbed-user 4 In addition to that 9 testbeds à 30 m^2 will be made available for ECS with mainly social character, or initiatives which do not want to upscale yet. Those testbed-users will be able to follow parts of the incubator training.
Starting date	First cycle: April 2020 - October 2020 Second cycle: December 2020 - October 2021 Third cycle: November 2021 - October 2022 Fourth cycle: November 2022 - September 2023
LL objectives	Entrepreneurship, Empowerment, Knowledge transfer, Participation
Target group	First cycle 2020: Citizens or organisations interested in starting a business in urban agriculture or using urban agriculture to improve social conditions for the neighbourhood, for example inclusion, social cohesion, participation, public health Second cycle 2021: Main focus on citizens or organisations interested in starting a business in urban agriculture and exploring possibilities how social initiatives can benefit from the program.
Stakeholders	Local citizens, Stadsbruk Europe, Oslo kommune, Nabolagshager, LL, MiA, County Governor of Oslo and Viken
Connection to the other ECS	All, particular market days, REKO, ECSs interested in business development, social initiative which are interested in sustainable business

4. Soil improvement	
Description/activities	Soil factory: a) Gruten AS testing soil improvement methods by using spent substrate from their mushroom production. Strong focus on circular economy products. b) courses in outdoor mushroom production with spent substrate c) regenerative agriculture methods to improve soil quality, soil testing
Starting date	a) April 2020 b) June 2020 c) October 2020
LL objectives	Knowledge transfer, Entrepreneurship, Collaboration
Target group	Participants in the LL, local citizens
Stakeholders	Linderud CSA, Participants in the LL, Oslo kommune, MiA, Vital Analyse, NLR
Connection to the other ECSs	All, particularly Linderud CSA

5. Nature management secondary school /Natur vgs	
Description/activities	a) Establishing a wild flower meadow with locally collected seeds and testing of three different methods for establishing the meadow. Collaboration between the Natur vgs. and Naturhistorisk museum (Natural History Museum). The demand for local meadow seeds is big and there is the possibility to expand the project from its biodiversity character to include the selling of meadow seeds. b) Running an educational farm for students from the Nature management school with the possibility to be a source of knowledge for other stakeholders and ECSs in the LL, and possibly in the incubator program.
Starting date	a) January 2020 b) March 2021
LL objectives	Collaboration, Entrepreneurship, Biodiversity, Knowledge transfer
Target group	Students from Natur vgs.
Stakeholders	Natur vgs., Naturhistorisk Museum, MiA,
Connection to the other ECSs	all, particularly testbeds and incubator program.

6. Market days	
Description/activities	Making existing market channels available for local ECSs. This counts as one of the efforts to use existing resources at the LL site. a) Market days initiated by Linderud farm twice a year, participation of local growers and LL participants to sell their products. b) Establish a delivery point for REKO-ring producers and consumers, and register ECSs to monthly REKO events to sell their products directly to local customers. Since October 2019 MiA/Linderud gård is a registered seller at REKO.
Starting date	a) 2017 b) October
LL objectives	Empowerment, Distribution network/ Sales channels
Target group	ECS in the LL, local citizens, local food producers
Stakeholders	ECS in LL, MiA, REKO
Connection to the other ECSs	all

7. Tveten CSA / Tveten andelsgård	
Description/activities	Tveten CSA trying to diversify/expand sources of income and at the same time connect to the local community, in particular community members which are difficult to get interested in these forms of ECS, through selling shares to local schools and in return providing schools with an alternative form of school gardens and gardening classes.
Starting date	January 2020
LL objectives	Social cohesion, Sales channels
Target group	Local citizens, kindergartens, primary schools, secondary schools
Stakeholders	CSA Tveten, CSA Linderud, Oslo municipality
Connection to the other ECSs	CSA Linderud, Linderud community garden

5.2.2 Transition approach and co-creative implementation management structure

The LL was initiated by the municipality through inviting relevant stakeholders to an open information meeting and forming an interdisciplinary city team. This team then further formed a rough idea for the LL and identified further key stakeholders, which were invited to a co-creation workshop with the aim to collectively identify the goals and strategy for the LL. The city team and the LL were formed simultaneously shaping each other during this process with initial city team members dropping out and new members joining.

To form the initial team the Oslo administration used a guideline provided by WP1 in D1.1, which foresees to include stakeholders representing a mix of municipality, volunteer and private actors. After the LL started to form more closely, the city team was split into a steering group responsible for making major decisions, assuring alignment with the EdiCitNet goals, calling for meetings, collecting research data and giving advice with their expertise when needed; and an operative team responsible for running the ECSs. This divide was needed to make the groups feasible. The steering group meets approximately four times a year or more often with singled out members to discuss important issues that need input. The complete city team meets twice a year for an opening meeting in spring and an evaluation meeting in autumn. The evaluation meeting serves to reflect on the past season, discuss experiences and track the project progress and alignment with the goals and vision, and if necessary provides the opportunity to adapt the LL and the planned activities. The opening meeting in the beginning of the seasons is a recount of the IPP and possibly adaptations for the coming season.
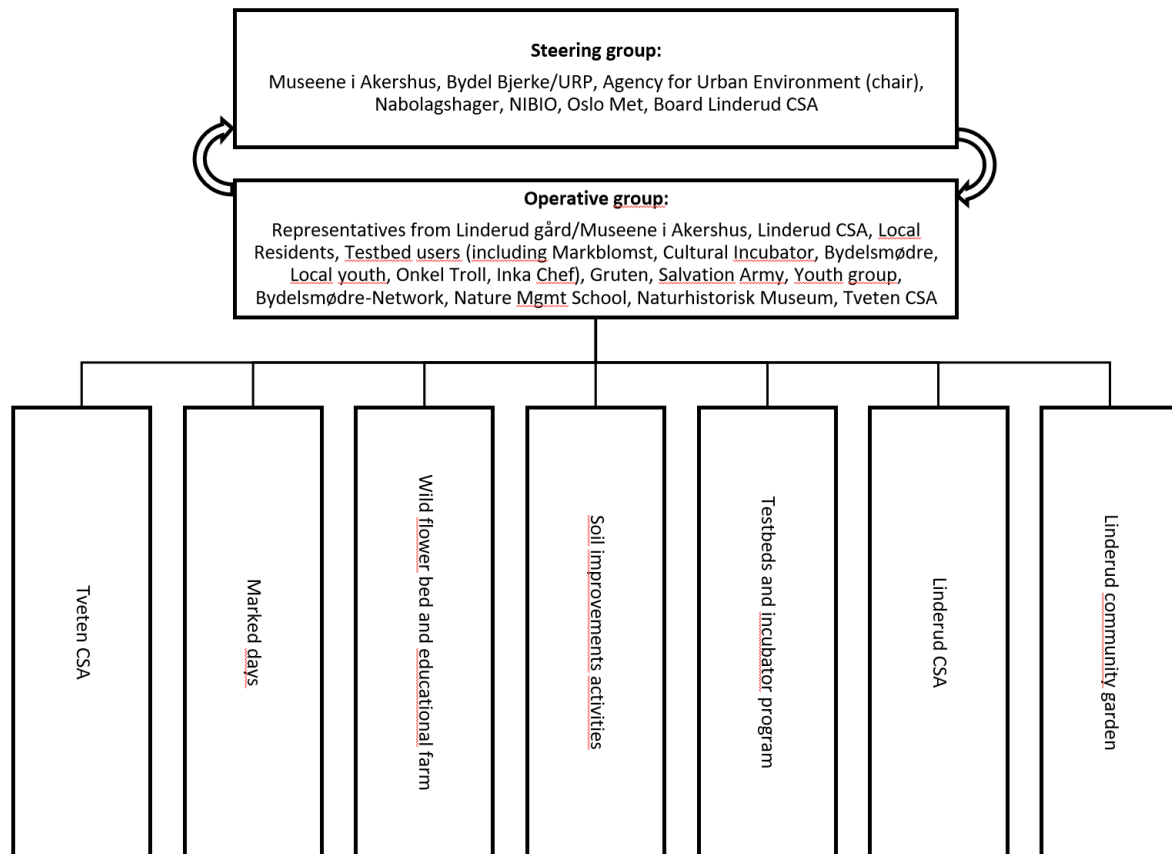
Steering group:
Museene i Akershus, Bydel Bjerke/URP, Agency for Urban Environment (chair), Nabolagshager, NIBIO, Oslo Met, Board Linderud CSA

Operative group:
Representatives from Linderud gård/Museene i Akershus, Linderud CSA, Local Residents, Testbed users (including Markblomst, Cultural Incubator, Bydelsmødre, Local youth, Onkel Troll, Inka Chef), Gruten, Salvation Army, Youth group, Bydelsmødre-Network, Nature Mgmt School, Naturhistorisk Museum, Tveten CSA

- Tveten CSA
- Marked days
- Wild flower bed and educational farm
- Soil improvements activities
- Testbeds and incubator program
- Linderud CSA
- Linderud community garden

Fig. 9: Organisational structure of the Oslo city team. Credits: Agency for Urban Environment, Stephanie Degenhardt
The steering group meets 4 times a year, often monthly. Responsible for communication, fulfilling tasks and deliverables in EdiCitNet, financial decisions, grant applications. The operative group is actively working on the field. They are responsible for implementing actions, testing ECSs in the LL, giving feedback on what is needed or should be done in the LL. Both groups are not set and members change their role as needed.

The municipality is responsible for coordinating the LL in Oslo, securing its alignments with the strategic and project goals and finding synergies with other projects and municipal work to support the LL. The municipality is also responsible for disseminating the outcomes and results of the LL and for integrating them in future work.

The operation of the LL is funded through EdiCitNet, with additional financial support of the Agency for Urban Environment, the district of Bjerke and the URP, as well as external funding through for example Gjensidigestiftelsen, a funding foundation of a private financial and insurance company. The start of new ECSs, in particular projects that require vast amounts of soil, field preparation and watering infrastructure,

almost always require initial financial investments. Furthermore, paid staff to follow up the initiatives are necessary. Oslo municipality has recognised the necessary investments and has therefore supported several projects to start up. However, it is expected that initiatives find ways to cover their costs in the long run. Therefore, the LL actively seeks to collaborate with stakeholders to create financial security and funding from external sources.

5.3 Berlin

5.3.1 Short profile: 3 ECS Living Lab Berlin
The LL Berlin aims to further develop the existing garden projects in Hellersdorf and Neukölln, involving the socially disadvantaged

neighbourhoods and taking into account the respective challenges of land conversion and planned municipal housing construction on both sites.

Due to administrative reasons the initial focus of the LL Berlin was on the site "Gutsgarten Hellersdorf".

For the Hellersdorf location, a city team was formed at short notice, which co-created three ECSs. The three ECSs are "Edible Landscaping", "Gutsgarten Hellersdorf in Transition" and "Product development".

The city team Building for the Neukölln location is currently taking place. The two remaining ECSs are planned on this location. The IPP will be updated accordingly.

1. Edible Landscaping (site Gutsgarten Hellersdorf)

On the areas adjoining the historic Hellersdorf estate in the north, Gesobau, the responsible housing association, is building approximately

1500 new flats as well as a refugee accommodation. The historical estate is to remain an industrial estate, but its character is to change towards offering more possibilities for the expected new neighbourhood.

The extensive, partly overgrown green of the estate will give way to orderly town square-like structures.

In this development, the people engaged in the estate garden sees themselves in the role of remaining a place for good and communicative neighbourhood, both for those who already live and work in the area surrounding the garden and for those who may be new to it. The idea of "Edible Landscaping" emerged during the workshops mainly from this integrative thought. The aim is to create a visible effect from the community garden into the new neighbourhood and at the same time to set the themes of neighbourhood, community, ecology, food production and sustainability for which the garden already stands.

1. Edible Landscaping (site Gutsgarten Hellersdorf)	
Description/activities	The Gutsgarten Hellersdorf is located in the centre of a large development area with residential and commercial use. The concept of "edible landscaping" should be integrated into the design of the new public spaces. The aim is to implement as many edible and site-appropriate plants as possible.
Starting date / planned schedule	4th quarter 2020: Start of planning, preparation of a planting list 1st quarter 2021-4th quarter 2021: Integration of own ideas into the residential surrounding planning of Gesobau 2nd quarter 2021: Establishment of a regular open format on edible landscaping 3rd quarter 2021: Commencement of courses on care and usage knowledge 2nd quarter 2022: planting of the first plants. 3rd quarter 2022- project hopefully becomes self-sustaining: Planting of further plants as well as participatory maintenance and use of these
LL objectives	1. Expansion of cultivated area, securing green space for urban food production (desired minimum 900m^2) 2. Increasing opportunities for citizen participation, learning and expression 3. Setting impulses for sustainable development in a neighbourhood in transition 4. Achieving collaboration with housing development corporation

Target group	Primarily neighbourhood and those who are interested in moving in.
Stakeholders	The project partner Prinzessinnengarten (PRINZ) will serve as an interface between the planning and construction processes of Gesobau and the wishes and skills of the volunteers. Depending on the volume of "Edible Landscaping" implemented and in view of the long planning phase to be expected, the Princess Garden will try to ensure appropriate planting and care but also appreciation of this work.
Connection to the other ECS	Gutsgarten Hellersdorf in Transition

The objectives and activities for the "Edible Landscaping" project must be thought of in three phases along the Gesobau district development: during the planning phase, during construction activities and after completion of the latter.

Planning phase (probably 2020-2022): The aim is to integrate edible or, where this is not possible, other ecologically valuable plants into the design of the public space. This should visibly shape the image of the future estate and thus leave space for additional objectives: the expansion of opportunities for participation and the setting of additional impulses for the sustainable further development of the Hellersdorf estate. The focus will be on the street trees, town square trees, hedges and infiltration ditches. Any additional elements that may be added later, such as raised beds, do not need to be taken into account during the planning stage. A further aim before planting is to convince people of the concept, and to make them aware of the possibilities of edible landscaping and of the necessities of care.

The activities during the planning phase are therefore

1. Developing a planting list and anchoring as many edible plants as possible in the design of the public spaces
2. Refining the planting concepts and adapting them to the specific local conditions (residential, commercial, town square, historical garden etc.)
3. Imparting care and usage knowledge through courses and events
4. Involving interested parties in the planning process through a regular open format

5. Joint public relations work with Gesobau to generate attention

Construction phase (expected 2020-2024): As the construction starts, first test plantings will be made and tested where possible. The aim here is on the one hand to use these first elements of "Edible Landscaping" to gain insights for further development, but also to design concrete places for participation and develop the formats of use. The activities during the construction phase are:

1. Participatory establishment of the first plantations.
2. Continue the planning work with interested parties and Gesobau in order to improve the facilities and maintain participation.
3. Implementation of workshop formats for the care and use of the plantations (e.g. tree pruning, preserving, fermentation etc.)

The long-term perspective after completion of the work is most likely after the end of the EdiCitNet project. However, the aim is to integrate as much edible material as possible into the implementation of the public space planning and to develop accompanying formats that ensure constant use and maintenance. In particular, use should bring new and old neighbours together and create an additional quality for all. Conceivable, for example, are joint street or harvest festivals or products that are sold in a kind of farm shop.

General conditions, requirements and risks

In the context of the upcoming planning processes and construction activities around the Hellersdorf

estate, the topic of "Edible Landscaping" is a potential design and trademark which -- although not directly initiated by the planners and construction companies -- could be developed by Gesobau within the framework of the EdiCitNet project. The prerequisite for financing this is the recognition of edible plants as a compensatory and replacement measure by the Marzahn-Hellersdorf district administration. In addition, the topic of "Edible Landscaping" must be integrated very quickly into the already advanced planning processes. This requires close cooperation between the LL, the client and her planners, and the district administration for urban planning, environmental protection and garden monument conservation.

The main risk of this ECS is probably that the concept is not sufficiently taken into account due to a lack of integration in the planning processes, thus not finding the necessary resources for implementation. This would reduce the motivation of the residents to participate in this ECS. Therefore the participation of Gesobau and the subcontracted planners is crucial.

2. Gutsgarten Hellersdorf in Transition (Hellersdorf site)

The Gutsgarten Hellersdorf is about to move to a new location on the estate, which is adjacent to the old location and smaller than the old site. Currently the move is scheduled for 2021 – depending on the approval of the construction site and the situation caused by COVID 19. The "old" area is visible and easily accessible. It is characterised by many different spaces, an open area and old wild roses, elderberry and blackberry bushes. The new site is in the direct vicinity of an allotment garden. The area is fenced in and is not obviously accessible, so most people simply pass by. There is less plant stock and wild growth. It is important that the new garden, despite its proximity to the allotment gardens, should not be perceived as an allotment garden.

Due to the uncertain move and COVID 19 in 2020 the manor garden group worked relatively independent, or isolated. Only a few public events and celebrations could take place, which definitely slowed down the growth of the garden and the number of participants.

The move to the new location is a chance for a new start and a change of the Gutsgarten Hellersdorf. Resources are needed for this, similar to the establishment of a new community garden.

2. Gutsgarten Hellersdorf in Transition	
Description/activities	Relocation of the Gutsgarten Hellersdorf. Co-Created and participatory design of the new location, among other things by building a kitchen and a multifunctional room. Implementing workshops and other activities. Developing the Gutsgarten Hellersdorf into a lively centre of for the old and new neighbourhood.
Starting date / planned schedule	4th quarter 2020 - 1.Qu. 2021: The move is done 1st quarter 2021: The garden is newly furnished, also with garden kitchen, workshop and store 2nd quarter 2021: Inauguration party, start of the regular gardening days, coordination of events and requests, start of planning of the multifunctional location, detailed planning of the workshop and kitchen 2nd – 3rd quarter 2021: extension of the garden kitchen and workshop 4th quarter 2021- 1st quarter 2022: Detailed planning of multifunctional site 2nd quarter – 3rd quarter 2022: Construction and furnishing of multifunctional site from 2nd quarter 2021: regular gardening days (twice a week), open garden meeting (every 2 weeks), establishment of the manor garden as an

	open place for events, workshops, guided tours, exhibitions,... Coordination of the different event formats and requests, use of the open infrastructure (kitchen and workshop) and creation of a supporting programme for the neighbourhood to use it, expansion and promotion of cooperation with social institutions in the neighbourhood
LL objectives	1. Re-design of the garden at new location integrating new infrastructure elements, i.e., shop building, kitchen (by Dec. 2021) and multipurpose building (by Dec. 2022 2. Multiplying community benefits from main garden to surrounding neighbourhood (center -> periphery) 3. Developing programming at new location utilizing new infrastructure elements. 4. Maintain and ideally increase levels of community participation in the garden especially during the anticipated large-scale construction on the adjacent Gut Hellersdorf
Target group	All residents: new and old as well as social institutions from the neighbourhood.
Stakeholders	The Princess Garden is responsible for the coordination and organisation of the activities, implementation of the activities with manor garden groups and interested neighbours. Support is provided by Gesobau and the district / administration.
Connection to the other ECS	The garden serves as a hub for the participatory planning and development of ECS elsewhere in the neighbourhood, and as a central place for knowledge transfer and capacity building. In terms of the ECS product development, knowledge transfer and resource exchange are an important potential. The Gutsgarten Hellersdorf serves as an interface for participatory exchange with the second site at Jacobi Friedhof Neukölln.

In the Implementation Workshops, the importance of a speedy move and the establishment of a functioning garden including the necessary infrastructure on the new site was emphasised. These activities focus on three important new building elements that are to be installed and furnished. These are (1) an open kitchen, (2) an open workshop and (3) a multifunctional room. The kitchen and workshop are to be housed in overseas containers, the multifunctional space could be accommodated in a format yet to be determined, e.g. in a small wooden building ("Tiny House"), which is also newly acquired and for which a building permit has already been applied for.

Objective 1. A re-design of the garden at the new location including the integration of three new building elements: workshop, kitchen (until Dec.

2021) and multifunctional room (until Dec. 2022). One activity in the Gutsgarten Hellersdorf garden is the design and development of the open kitchen and the workshop. Each community garden needs some basic tools and a kitchen to process the vegetables that are harvested in the garden. The kitchen and the workshop should be open to everyone and be available to all who plan and carry out projects in the garden. Two overseas containers are to be built as a basis for the workshop and kitchen. This should be built as early as possible in the project to create a basis for all other activities (from 2021).

In addition, a multifunctional room, possibly in the form of a building, is going to be created. It should be usable for various events and formats such as discussion events, concerts, workshops. At the same time it should be available for everyday use, e.g. group meetings. The multifunctional space

needs at least a rain shelter, facilities, lighting technology, seating and, in order to create a quality of stay, additional seating in the garden as well as a sandbox for children and shady areas. Planning the multifunctional venue requires thorough preparation. The winter season 2021/22 is planned for this, so that construction can begin in 2nd quarter 2022. Furthermore, a functioning workshop is a prerequisite for this. The Gutsgarten Hellersdorf with all its plants has to be redesigned and furnished; the raised beds have to be realigned and planted, ground beds for shrubs and perennials have to be created, a horticultural infrastructure, such as compost and storage has to be organised and set up for the coming garden season. This should already be considered and implemented in the 1st quarter of 2021, so that the Gutsgarten Hellersdorf with its heart - the common gardening - can start the coming season.

Objective 2. Multiplication of community benefits from the main garden to the surrounding neighbourhood (centre → periphery)
A community garden is an important infrastructure with impacts beyond the boundaries of the garden. Knowledge, creativity, networking, skills and infrastructure located in the garden can have a greater effect; for example through partnerships, cooperation, workshops, etc. This outward multiplication is particularly important because the garden area on the estate itself is relatively small (900m²) given that 1500 flats are to be built in the surrounding area.

Objective 3. Programme development on the new site, particularly using the new infrastructure (kitchen, workshop, multifunctional room).
From 2021 the new Gutsgarten Hellersdorf can be revitalised and designed. Various cultural events will help to establish a network around the garden. Possible events could include parties, open air cinema, guided tours (through the garden and across the estate), readings, exhibitions and gardening workshops. The regular gardening days (twice a week) and the open garden meeting every fortnight are fixed

components to ensure reliable responsiveness and will be offered from 2nd quartal 2021. All other formats are to be established and expanded step by step over the course of the EdiCitNet project.

Objective 4. Maintain and ideally increase the level of community participation in the garden, particularly during the anticipated large-scale construction on the neighbouring Hellersdorf estate.
The Gutsgarten Hellersdorf gardening group shall grow and further consolidate itself. The garden should be well-established and well frequented. Joint gardening, participative learning, cooking, building, eating and celebrating should be possible and everyone should be welcome. The Gutsgarten Hellersdorf should make itself well-known in the neighbourhood. In this way the garden can act as an interface between the old residents and the new neighbourhood and contribute to the development of a participative learning place. A network needs to be formed and maintained. This requires not only a continuous and reliable local contact person but also a permanent contact person who coordinates enquiries and promotes networking, and who serves appropriate public relations formats such as social media and website, but also publications and interviews. Coaching in the form of awareness-raising formats through external support could also be a measure for group consolidation and prevention of internal conflicts.

General conditions, requirements and risks
An important prerequisite after the move is the creation of infrastructure for electricity and water supply.
There should also be a lot of public relations work and it should be ensured that people find the new Gutsgarten Hellersdorf easily accessible although it is rather hidden.
Furthermore, group conflicts could increase, especially due to the many changes. To prevent this the group should be stabilised through coaching / professional team building, regular open meetings and joint activities.

3. Product development (Hellersdorf and Neukölln sites)

3. Product development (Hellersdorf and Neukölln sites)	
Description/activities	The aim is to develop a product made mainly from herbs and optionally from berries and/or honey, which will be marketed under an independent brand (logo). The various herbs can be grown, harvested and, if necessary, processed in the Hellersdorf estate garden and at the Neukölln Jacobi cemetery. Berries and honey could also be grown and harvested on both sites.
Starting date / planned schedule	1st quarter 2021: ● Formation/ foundation of a product development company for continuous cooperation, also kitchen team PRINZ ● Hygienic training ● Obtain necessary authorisations ● Expert advice on product development / brand development ● Collection of first product ideas, focus on herbs and their processing, test a few "simple" products for the first year 2nd- 3rd quarter 2021: ● Cultivation of herbs and their maintenance/propagation, expansion of the cultivation areas in cooperation with the garden groups of the sites ● Investigation of possible processing rooms / possibilities / needs assessment ● Identify sales opportunities ● Expand the farm shop on the Jacobi site to achieve a better presentation of the products for consumers 4th quarter 2021: Testing / production of first products and first marketing trials 4th quarter 2021- 1st quarter 2022: ● Further training of the AG products, evaluation 2021, research for extension of the product range ● Further training in hygiene law and advice from experts 2nd quarter – 4th quarter 2022: ● Refining the product development "herbs", expansion of the product range ● Brand establishment ● Cultivation and care of the herbs, based on the experience of the first year ● Try out further sales opportunities, e.g. cooperation with organic shops or restaurants, online marketing
LL objectives	1. Development of at least one product that can be produced simply and in sufficient quantity using the garden's resources. 2. Development of a brand that serves to connect the two garden sites (Berlin's East & West) and increases awareness for organic and sustainable products 3. Estimate, test and work towards economic viability of product(s)

Target group	Consumers all over Berlin.
Stakeholders	PRINZ takes over the coordination in cooperation with the ECS Edible Landscaping. A working group is responsible for product development and a trained core team for processing the food into products. Cultivation of the plants for product manufacturing can be carried out in close cooperation with the gardening groups at the respective locations. The EdiCitNet BCT (WP 6) can play an important advisory role in the development, implementation and evaluation of the ECS. Enthusiasm for the development of an urban agricultural product to be marketed is often high at the beginning, but lack of resources, low seed capital and lack of knowledge are the challenges. Consultation with the EdiCitNet BCT could help to fill these gaps and define risk reduction measures.
Connection to the other ECS	ECS Edible Landscaping ECS Gutsgarten Hellersdorf in Transition

Objective 1. Develop at least one product which can be produced easily and in sufficient quantity by means of the garden

Resources that the gardens could provide in sufficient quantities are potentially herbs, and possibly also berries and honey. Various products can be made from herbs, e.g. herbal salt, oil or vinegar, but also dried herbs for tea, as kitchen herbs or for alcoholic drinks (schnapps, liqueurs, beer). It may be worth considering whether it would be better to specialise in one product or a few herbs, or whether a wide range should be offered. Activities in this area are the selection, cultivation, and care of herbs (in some cases as early as 2021), followed by harvesting, drying, packaging, labelling and marketing. The cultivation of herbs is conceivable both in the Gutsgarten Hellersdorf and on the Jacobi cemetery. As the area under cultivation in the Gutsgarten Hellersdorf is rather small it could be designed "only" for promotional/educational cultivation, with little actual production. In this case, cooperation with organic farms and nurseries in the wider metropolitan region should be considered.

On the Jacobi cemetery, herb cultivation with a focus on tea and kitchen herbs already exists and could be expanded. In addition to the products mentioned above, it is possible to professionalise the sale of vegetables from the field and to offer edible flowers. The kitchen could develop refined products, e.g. pesto, syrup (savory) or similar.

To produce honey in the estate garden a cooperation with a beekeeper could be established. Together both sites would provide the basic requirements and premises, e.g. workshop for frame construction, room for centrifuging and bottling honey (advice on hygiene regulations), multifunctional location for beekeeping courses (possible synergies with the ECS Gutsgarten Hellersdorf in Transition). In Neukölln the already existing cooperation with beekeepers could be strengthened (currently the beekeepers Heinz and Mellifera). Bee courses and training could continue to be offered and a 'bee pasture' could be established. Similar projects could be developed in the Gutsgarten Hellersdorf, with the creation of a bee pasture, and workshops on beekeeping and insect-friendly gardens could be offered. When selecting plants, the focus should be placed on herbs but berries should be considered, too. To relieve the product development working group, it is conceivable to outsource the product "honey" through a close cooperation with beekeepers.

Optional berry products could be schnapps, liqueur, jams and pickled berries. More research is needed to find out more about this. In the case of berry products, a focus on the processing of wild berries and fruit seems feasible. But also

cultivated berries would be conceivable if the area under cultivation could be expanded within the framework of ECS 1 "Edible Landscaping".

Old varieties (e.g. Speierling) are particularly interesting for cultivation. Activities in this area would include not only the search for suitable premises, but also learning old techniques and gaining knowledge about old varieties. As it is not certain that there would be enough harvest in the 3rd year, there could also be cooperation with other agricultural initiatives (e.g. the beekeepers see above). The project would therefore focus more on the cultivation of berry plants and the identification of possible products and processing procedures than on the actual production, as the harvesting of the corresponding quantities would take place subsequent to the project period.

At the St. Jacobi cemetery site, there is already a large area of land under cultivation, experience and know-how is present. A farm shop is also established already and the first approaches for product development, especially with herbs (e.g. tea and syrup) are being made. A hygienically approved kitchen is already in operation and a cooking team interested in product development has been established. Workshops within the framework of the ECS can be used to examine more closely which products are useful.

Objective 2: Develop a brand that links the two garden locations (in the east and west of Berlin) and raises awareness of sustainable and organic products.

The new brand aims to create an identification of the garden locations with the products and to reach a wider public. At the same time, a link to and between the St. Jacobi cemetery and the Gutsgarten Hellersdorf is created. The merger of the ECSs for the two locations will pool resources and improve marketing opportunities.

The aim is to develop a brand with which both locations can identify. The interface Prinzessinnengarten Kollektiv is intended to provide an exchange and connection between the two garden sites, including between the "East" and "West".

Particularly at the Hellersdorf location, the

products and the brand should also develop and strengthen a common understanding of sustainability and "organic".

Ideally the development of a brand and corresponding products should also lead to a sustainable economic strengthening of the non-profit company Nomadisch Grün (PRINZ) beyond the end of the project, which can then be the basis for expanding the product range, e.g. from berries.

Distribution via farm shops on the garden sites and/or smaller market events in the immediate vicinity are being considered.

Objective 3: Assess, test and, where possible, promote the economic viability of the product

A further aim is to create economic added value. In this context, it is important to think along with and document precise cost control from the very beginning, in order to determine which products are profitable. The application of the Triple-Layered Business Model Canvas (3BMC) -- as envisaged in WP 6 -- can open up alternative perspectives with regard to the economic viability of the ECS by taking into account ecological and social added value, in addition to the economic added value.

The development of the brand and products is to be carried out by the core group of PRINZ and/or by the ECS task forces for Product Development with advice from the EdiCitNet BCT (WP 6). This process will only be able to take place to a limited extent together with the neighbourhood as an open format, among other things because hygiene regulations must be observed. Workshops or similar other formats can be used to involve a broader public.

General conditions, requirements and risks

A prerequisite for product manufacture is the formation of a continuous core team that is trained and educated in hygiene.

The feasibility of production in terms of available space and suitable premises must be examined. It is also important to estimate costs and calculate prices realistically. Marketing strategies are an important issue: where and how can sales be made? Should sales be restricted to the farm

shop, or should self-organised markets, online sale or cooperation agreements with restaurants be considered as well?

Risks are the lack of sales markets (especially in Hellersdorf), too little cultivable land (especially Hellersdorf) and no access to hygienically acceptable rooms for processing and storing food.

A risk for the production-based cultivation of herbs is the consumption of land and the "impoverishment" of the biodiversity of community gardens. Both gardens are designed as places of learning and education and a wide range of crops in cultivation is more desirable than one or two large scale crops. A closer connection with the ECS Edible Landscaping could find ways to expand the cultivation, especially for berries and herbs.

5.3.2 Co-creative implementation management structure

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). Both together form the coordination team.

All activities in the LL are carried out in close collaboration between the coordination team and the city teams Hellersdorf and Neukölln.

The LL is supported by the local neighbourhood management teams (QM), which are members of the city teams.

Task forces can be formed for the five ECSs, consisting of members of the city teams, but also open to other experts and interested parties.

PRINZ runs the community gardens together with the Princess Garden Collective and coordinates their activities with the neighbourhood and other interest groups. PRINZ carries out all activities on site together with the garden groups.

On behalf of PRINZ, STATTBAU GmbH is supporting the coordination and implementation of the LL.

Because UBER is the HUB of the FRC Berlin, UBER is accompanying the process and the partners.

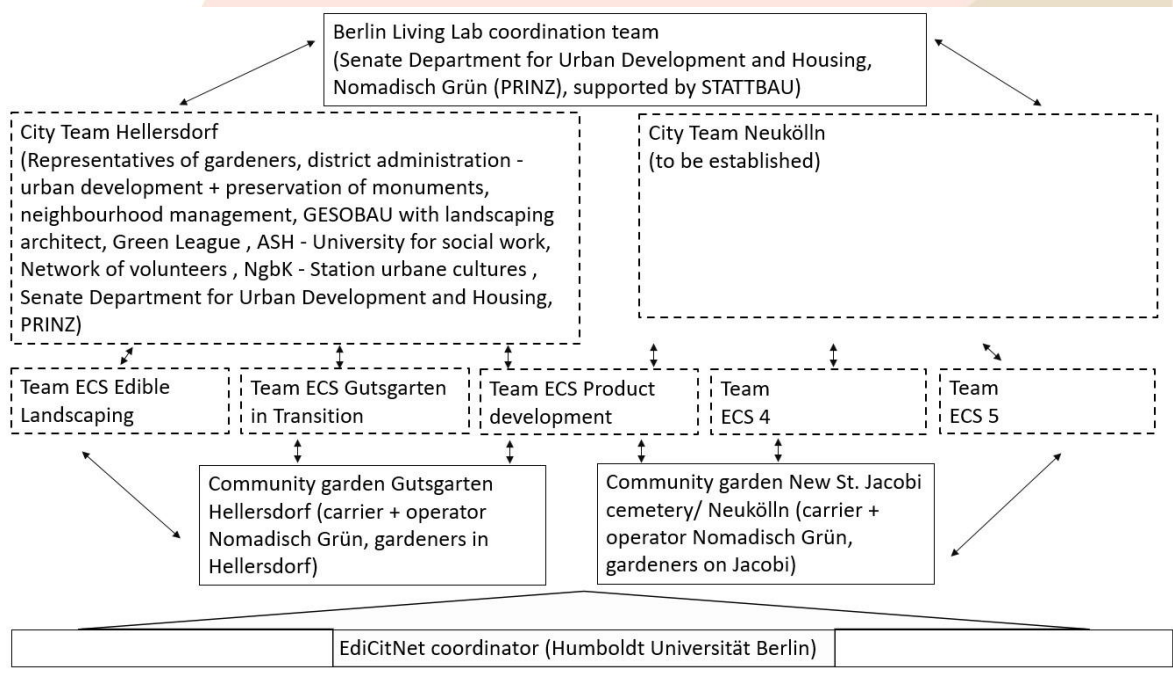Fig. 10: Organisation of the Berlin Living Lab

The two city teams of the LL Berlin do not have any institutional status. They are interdisciplinary working groups in which the contributions of all participants are equally important, whether from the administration, from landowners or local initiatives.

Members of the city team Hellersdorf at the time of the ECS conception are active gardeners and

employees of PRINZ and of the Senate Department for Urban Development and Housing, representatives of the neighbourhood management, the district administration (Departments: urban development, preservation of monuments), the housing association Gesobau with commissioned landscape architect, the Green League (which is in charge of the project "Integrated Gardens" in the district of Marzahn-Hellersdorf), the Alice-Salomon University of Applied Sciences (University for Social Work), the network of volunteers and NgbK/ Station urbane cultures (a discursive event and exhibition space and a place for joint work by artists and residents).

Decisions are made through consensus or majority vote, supported by the entire city team.

The city teams jointly design the ECSs and actively operate or support their implementation. This is done by each city team member through informing about the LL in his or her area of interest and/or responsibility and / or through taking on tasks in working groups for the implementation of the ECS.

The city teams meet four times a year. Sub-groups may meet more often depending on the task. All members of the city teams are regularly informed about the progress of the ECSs. All activities will be announced on the CMT page of the LL.

The first members of the city teams will be selected and invited by the Coordination Team according to the goals of the LL. However, the city teams are open to other interested parties during the entire project period.

6. Strategy for monitoring and evaluation

6.1 Impact assessment of ECSs

The status of planning and implementing the respective LL as well as of the monitoring considerations differ among the FRCs due to changes in the city coordination, withdrawal of a FRC or joining later as a FRC. In addition, the time and resources needed to initiate the LL and get involved in the scientific monitoring have been underestimated (e.g. to set up secure storage systems and routines, define responsibilities for the collected data within the consortium, secure routines and allowances under national data collection rules, define indicators and data collection methods as well as resources, to support the data collection). The FRCs are aware of the importance of monitoring for the whole project. In order to structure the monitoring precisely tailored to each LL, a monitoring plan is being developed. During a period of two years social, economic and environmental impacts of the ECSs (e.g. participation, market sales and output of ECS; see also expansive list in Del 5.1) will be monitored. Setting up monitoring for each ECS is a collaborative effort between WP3 and WP5. The Del 5.1 contains sets of indicators that could be suitable for monitoring the individual ECSs.

As the co-creative process is a key pillar in the management of the LL, the monitoring indicators will be further discussed by the City Coordinators and research scientists involved in WP5, as well as people responsible for the ECSs and the members of the city teams. This will ensure acceptance within the city teams and strengthen collaboration between science and citizens, and hopefully encourage the latter to engage in citizen-science. This process also ensures that the indicators focus on what is valuable to know for the initiatives and the cities. The start of the monitoring is dependent on the nature and status of the ECS and its specific objectives.

Oslo has collaborated with students from the Norwegian University of Life Science to co-create impact indicators in a series of workshops with participants of the LL. These indicators will be used to monitor the social impact of the LL and its ECSs. Additionally, Andernach and Oslo have taken first steps to monitor the participation in the LL through registrations, counting and observations as well as sampling environmental conditions such as soil quality through external laboratory tests, and insect counts in Andernach during the years 2019 and 2020.

It is important to choose suitable and meaningful indicators which are feasible to measure. It will be crucial to guide the persons who will execute or coordinate the monitoring (e.g. city team members, university students, WP5 members) and restrict the monitoring to a small number of questions or details, in order to keep the participants motivated. The methods for data collection have not been defined yet, but it is desirable to combine quantitative and qualitative data in order to receive the most meaningful results. Through careful involvement of stakeholders, we want to identify citizen science methods that are considered fun, social and rewarding rather than bothersome. The aim is to engage citizens and raise awareness, not to burden them. Reflecting upon and documenting the strengths and weaknesses of different monitoring methods will be an important outcome that other ECS can learn from. Del 5.2 "Guideline for participatory impact monitoring (citizen science)" will apply.

It will be challenging 1) to connect the goals and indicators (what is the subject of measuring, the goals of the LL or the performance of the ECS?), 2) to assign data collection and to appoint responsibilities for data management, and 3) that different stages of implementation of an ECS may need different indicators. These questions must be clarified in the further process together with WP5.

WP2 have proposed an integrative approach for LL monitoring. The main goal is to have all data automatically stored in the EdiCitNet database

and have all procedures unified in one online platform: the web-based toolbox. Currently, WP2, 3 and 5 are closely collaborating to further develop this proposal.

6.2 Monitoring Co-creation

It is of overriding interest for the participating FRCs to not only monitor the impact of the ECSs, but also to evaluate the LL process itself because it is of great social value. Thus an additional monitoring of processes around the ECSs and LLs (e.g. city team collective feedback, network growth), has been discussed amongst the FRCs. The FRCs will apply the methodology of a social network mapping scheme[14] to visualize changes within the LL, with particular focus on relationships between members, strength of the relationship and input and output within the LL.

Additionally, the FRCs have agreed to hold annual city team Evaluation meetings every autumn to review the past season and gather feedback from the members about success and shortcomings of ECSs and performed actions. Oslo was the first city to arrange such a meeting in November 2020. Furthermore, the City Coordinators will compile spontaneous feedback from citizens (LL participants, audience etc.) which may provide information that is not captured by the selected indicators, but could be useful feedback that other LL or ECS can learn from. These efforts will form the basis for the process organization for the following year, as well as find room in the Del 3.2 "Status report on the implementation of the LL in the front runner cities" and Del 3.4 "Catalogue of Lessons Learnt".
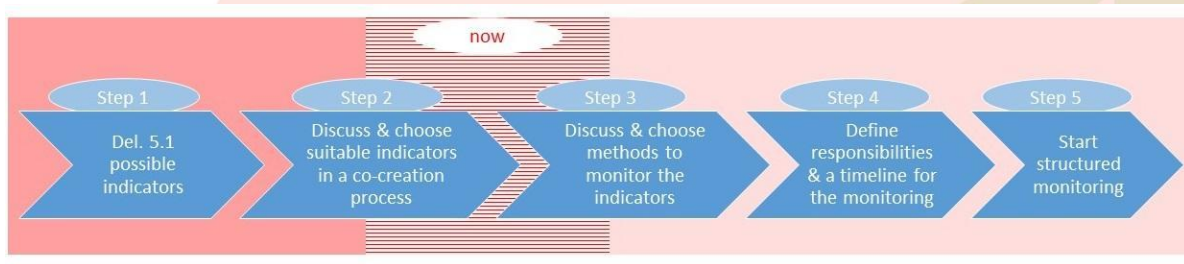
6.3 The way ahead

Fig. 11: The monitoring process.

Going forward, the city teams, City Coordinators and research scientists in WP 5 will create a plan including milestones for the monitoring. During this process, the monitoring indicators and methods for impact assessment of ECSs, will be defined in detail along with the methods for

reflecting upon and evaluating the processes and network. During the implementation of the ECSs, first experiences will be monitored and evaluated. The Plan-do-check-act (PDCA) cycle will be a helpful tool to iterate evaluation and actions within the LLs, as part of the co-creational process.

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[14] "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), https://doi.org/10.1002/ajcp.12052 and https://doi.org/10.1016/j.scs.2016.06.017

7. Risk management plan

Risks have been determined for the ECSs and the LLs. The respective risk impact and probability, conjoint as the estimation of the total risk, as well as countermeasures are listed in Table below. In general, most risks can be mitigated by restructuring an ECS within the city team by co-creational management. However, some risks are related to environmental and external impacts, which are difficult to control.

Incident	Risk impact	Probability	Total risk	Mitigation
City team rejects ECS / goals	high	high	high	Adjust in IPP through co-creational process
City team does not identify with the LL objectives or has difficulties translating them to feasible tasks	high	high	high	Adjust objectives in IPP through co-creational process
Termination of city team Stakeholder	high	high	high	Find replacement for the stakeholder or adjust IPP
Termination of ECS	high	medium	high	Adjust IPP in co-creational process / assign new responsible person to adopt ECS / adjust monitoring Invite new ECS
ECS fails to achieve goal	medium	medium	medium	Evaluate cause, appoint counter measures, review the activities annually, adapt goals to changed situation, spread lessons learnt so other cities can avoid similar situations
Missing expertise of how to run a LL	medium	medium	medium	Extend city team network, external experts Reach out to WP1 to get help
Loss of crop	medium	medium	medium	Evaluate cause, appoint counter measures, use the opportunity to educate about the risks inherent in food systems (lessons learnt for following seasons and other ECS)
Damage of crops/ECS due to environmental influence	medium	high	high	Evaluate cause, appoint counter measures, educate about the risks inherent in food systems, especially considering climate change (lessons learnt for following seasons and other ECS)

Loss of diversity when monocultures arise through the production of market-based quantities	high	high	high	Introduce small scale ECSs with opportunity to remain small, without pressure to enter market
Upscaling of ECS physical dimension fails	high	high	high	Evaluate reason • If upscaling fails due to personal or financial shortage, ECS may not be suitable for upscaling • If upscaling fails due to no interest in upscaling consider replication strategies
Fail to balance a top down research structure with a bottom-up development of the ECS and participants in the LL	high	high	high	Redefine research goals according to feedback from the city team, focus on the main core of maintaining ECS Ask responsible persons for each ECS to define their needs
Consortium partners demand a large amount of data and cooperation from the ECS. They try to steer the ECS in certain directions.	high	high	high	Each LL and ECS is the result of a local co-creation process. They form the core of the Innovation Action. All other WPs are service providers for the LL. Their work must benefit the LL. Initiate meetings with other WPs of the project to ask how they can support WP3
Establishing the LL and ECSs takes longer than accounted for in DoA	high	high	high	Work with a preliminary LL and adapt, include already existing ECSs, lower the barrier for ECSs to join
Late start of monitoring	high	high	high	Evaluate reason • Late establishment of ECSs: concentrate on measuring the impact of the LL and the process of implementing the LL and ECSs • Lack of resources in municipality: consortium needs to support data collection and storage, monitoring plans must be downscaled to match

				resources ● Lack of/late agreement on data management within the consortium: cities start collecting data as much as possible without including the consortium until a plan has been agreed on
The LLs do not cover the monitoring bandwidth required in the Grant Agreement.	high	high	high	The ECSs and their monitoring is the result of the co-creation process and must be feasible for and relevant to the LL. In the following Deliverables in WP3, regular and open reports on the processes are made to the consortium and to the EU. Focus on how we can document the value of bottom-up processes and later monitor ECS impact with the indicators identified by WP5
The LLs focus mainly on social aspects of ECS.	medium	medium	medium	EdiCitNet and its sister projects under the same call have a special responsibility for social aspects among all NBS projects. Moreover, social benefits have economic and ecological value as well. With the help of all WPs this value should be made visible.
No adequately implementable method can be found to measure the interesting indicators. The FRCs do not have the expertise to collect data.	medium	medium	medium	Methods for data collection shall be agreed on with regard to the people responsible for data collection. Feasible solutions are sought in WP5.

8. Outlook and deliverables ahead

This IPP for the LL is the basis for the work of WP3 until the end of the project.

The participating FRCs of course aim to establish sustainable solutions that will continue to exist beyond the end of the project. However, developing this long-term perspective is a challenge. Therefore this aspect is taken into account from the very beginning and sharpened further as the implementation proceeds. The EU funding was needed to initiate the EdiCitNet Innovation Action as a whole and to give impulses to start up LLs. Towards the end of the project period, the aim is to give a projection of the financial independence and the longevity of each ECS. In Andernach for example, the City Administration has the experience of managing ECSs in the City centre, and has supported these with funding for a decade. The prolongation of the LL and its ECSs is part of the "Green Strategy", hoping to engage the cooperation partners in the city team for long-term commitments and funding.

The next deliverable will be the "Status Report on the implementation of the LL in the FRC" (D3.2, February 2021) and will document activities in the LLs and ECSs as well as the co-creation processes so far. The deliverable also deals with the refinement of the LL, namely starting from the IPP further improving and fine tuning the ECS in line with the iterative character of the LL approach and the objectives.

Right after Del. 3.2, Del. 3.3 "Comprehensive Guidelines for Up-Scaling" (D3.3, May 2021) will address the processes how to upscale the ECSs. Due to the later start in Berlin, the change in the city coordination in Andernach and the open and therefore time-consuming LL approach in Oslo, it is assumed that the implementation of all the ECSs in the LLs will not yet be completed by May 2021. Therefore D3.3 will perhaps have a partly hypothetical character.

The experiences of installing and implementing a LL will be compiled in "The catalogue of lessons learnt" (D3.4, October 2021). Here, successful implementation of ECS and general barriers will be summarized. This will be an aid for FCs and other cities, to find useful advice based on positive and negative experiences.

Furthermore, UBER will as part of WP7 and WP8 organize the transdisciplinary management approach of "visit the Lab". This event aims to fascinate relevant stakeholders and drivers and invite them to the LL, and it is interlinked with the upcoming deliverables D3.4 and D3.5 "Staff exchange agreement and contracts" (March 2022).

Glossary

Abbreviation	Description
BCT	Business Consulting Team: A team of Business Consultants that foster innovative ECS to enhance and support market uptake as well as upscaling and replication world-wide
CMT	Community Management Platform from the company SymPlace
CSA	Community Supported Agriculture
Del.	Deliverable
EdiCitNet	Edible Cities Network
ECS	Edible City Solutions: ECS consist of a wide array of food related initiatives revolving around local urban edible goods and services, from their production, processing to consumption and alternative uses. (e.g. community gardens, edible green roofs, local markets, artisanal bakeries).
FC	Follower City
FRC	Front Runner City
IPP	Implementation Project Plan
LL	Living Lab
MiA	Museene i Akershus / Museums in Akershus, Norway
NBS	Nature Based Solutions
NGO	Non Governmental Organization
NLR	Norsk Landbruksrådgiving / Norwegian Agricultural Extension Service
PDCA	"Plan Do Check Act" cycle
PRINZ	Nomadisch Grün gGmbH (EdiCitNet Partner)
QM	Local neighbourhood management teams in Berlin founded by the urban renewal programme "social cohesion"
REKO	"Rejäl konsumtion", meaning fair consumption. It is a Finnish trade model, created by Thomas Snellman.
TP	Transition Pathway
TPM	Transition Pathway Methodology
URP	Urban Renewal Program
WP	Work package

Appendix 1: Rotterdam

The following text about FRC Rotterdam is taken from the 2019 version of the IPP. The City of Rotterdam withdrew from the EdiCitNet project in September 2020. The status of the LL is currently unclear.

Background of the Living Lab in Rotterdam

Rotterdam counts over 200 green initiatives within the city's boundaries, ranging from community gardens, educational gardens, and allotments, as well as various commercial start-ups with a social mission. Some of these initiatives work together or arranged under (small) umbrella organizations, but many are standalones. It is difficult for the city to deal with a lot of small organizations scattered all over the city, of different sizes, with different goals, target groups and that have various degrees of professionalisation.

The main strength of these initiatives is their social and creative revenue, that needs to be fostered. At the same time, they face different challenges. Often the initiative depends on one person; when that person drops out, the initiative collapses. The city tends to support new and innovative initiatives, but after a few years, it withdraws its support, expecting the initiative to be independent (start-up subsidies dry up, or an ECS-initiative is no longer eligible to apply for one).

The position of the municipality is convoluted: there is no clear policy for green initiatives, no central point of contact, no transparency in criteria for (financial) support, and civil servants dealing with green initiatives are scattered over different clusters and departments. All in all, the relationships between the city and the green initiatives as well as knowledge about ECSs are very fragmented.

The main issues for Rotterdam thus evolve around legitimacy, administrative support, possible rewards for adding value, professionality, self-sufficiency, and organization.

Strategic considerations

Rotterdam aims to integrate the results from Edi-CitNet into city policies, to safeguard continuity of green initiatives in the city. Since the city is exploring ways of engaging with its citizens, the private sector and social entrepreneurs, the Urban LL as a policy tool is one of the options the city is keen to explore. Issues related to this exploration are:

- How does an organisation and its people learn from a LL (internal dissemination)?
- On a governance level, how does one incorporate the lessons learned within an Urban LL into the numerous policy objectives (i.e. how do the various parts of the municipality learn from such a creative space)?
- How can we learn from the experimental setting of the LL for other challenges and themes?

Thus, the EdiCitNet Urban LL in Rotterdam is not only a learning experience on how to incorporate and co-create with ECS/NBS in the city's decision-making processes but it's also a welcoming opportunity to further develop the concept of an Urban LL and the city's changing facilitating role and its focus on more co-creational processes.

Why a living lab?

The ECS playing field in Rotterdam is convoluted. On the one hand there is a large municipal organisation with different perspectives on how to work with ECS, and on the other a rich ECS-field with many different views, desires and needs.

Instead of the old ways of doing business, the concept of a LL provides a framework in which other ways of working together can be explored. It also provides a safe space, at a small scale, in which experiments can be conducted. The concept of a LL can furthermore provide formal framing of actions that would normally be at risk of disappearing in a larger context. By grouping the relevant ideas into this LL, the output could possibly have a larger effect on settled ways of working at the level of all involved stakeholders (municipality,

ECSs).

Introduction to Rotterdam

ROTTERDAM (631.000 inhabitants; 1.2 million in agglomeration) is a parade example of a multicul-tural city in Europe with all the risks and chances that such diversity presents.

The Dutch agriculture and food sector is the 2nd largest exporter in the world and the 1st in Eu-rope, accounting for 9 % of the national GDP and having one of the smallest carbon footprints (2014). This efficient, effective and large-scale production has taken place at the gate of the city of Rotterdam for decades. Nevertheless within the city walls at a micro-scale, there is a green mo-vement and initiatives going on like in many other cities worldwide.

Rotterdam has experience with NBSs. The exper-tise of the city administration on urban master plans concerning urban resilience and their mem-bership in the '100 resilient cities' network legiti-mates Rotterdam's role as a FRC. The city counts more than 200 nature-based ECS initiatives, mainly grass-root. Most ECS initiatives work with volunteers and lack professional back-up and con-tinuity in knowledge transfer. All of them depend on (private) funds. When granted funds, they lack time, capacity or expertise to monitor and thereby demonstrate funders the social benefits of their initiatives. In addition, some initiatives may share the ambition of picking up commercial activities. Rotterdam aims at facilitating with the valorisa-tion of their ECSs. EdiCitNet will guide these frag-mented and often vulnerable ECSs to a stable net-work of ECSs in the LL Rotterdam.

Objectives

Rotterdam's main objective for the LL is: "Making green initiatives in the city self-supporting." More specific objectives for Rotterdam's LL are:

- form associations, cooperatives and other legal bodies for ECS initiatives;
- centralize responsibility at municipal scale;
- optimize processes and interaction between the city and associations;
- facilitate green and edible initiatives by providing initial funding; setting up a net-work; decreasing procedures, rules and legal barriers; offering land; professiona-lising initiatives;
- sharing knowledge about local business opportunities and financing models.

When defining the LL in Rotterdam, this definition of a platform LL is more suitable:

- The LL and its goals are not specific to a certain geographical area, but consider the whole of Rotterdam as its experimen-tal zone;
- The LL sets out primarily organisational goals, which can be considered abstract in nature (no tillage, for example)
- The LL sets out various goals, which do not focus on a particular form of innova-tion.

The Rotterdam LL has three main goals at various levels of intervention: 1) Network of ECSs, 2) Busi-ness development and models, 3) Facilitation of ECSs by municipality. The table below lays out the relevant stakeholders and sub goals that relate to the Description of Action.

	Goal	Stakeholders	Sub-goal in Description of Action
1	Network of ECSs	City team, policy makers, researchers	• Form associations, cooperatives and other legal bodies for ECS initiatives; • Facilitate green and edible initiatives by providing initial funding; setting up a network; decreasing procedures, rules and legal barriers; offering land; professionalising initiatives
2	Business development and models	City team, policy makers, researchers, other platforms/ knowledge partners	• Knowledge sharing on local business opportunities and financing models.
3	Facilitation of ECSs by the municipality	Policy makers (Green broker, Policy team / Kiem team), all ECSs in Rotterdam	• Centralize responsibility at the municipal level; • Optimize processes and interaction between the city and associations.

Design of the Living Lab

The design of the Living Lab can be divided into an ideological outline, i.e. mission statement (theoretical conditions) and practical conditions of the collaboration. These were discussed and developed in the run-up, during and after the first city workshop.

Living Lab design: Theoretical conditions

Theoretical conditions of the Living Lab	
General goals of the Living lab	- The effectiveness of the LL should be central, which means the LL contributes to the continuity of edible green space in Rotterdam, and the survival of urban green initiatives beyond the start-up phase. - The LL will have a practical added value for edible green space initiatives that participate in the lab. - The LL directly contributes to innovation in the role of the municipality with regard to edible green spaces in the city. - The approach and methods used in the LL can be implemented internationally as a strategy in the Edible Cities Network.
Approach of the Living Lab	- The LL is an open network of green initiatives, the municipality and third parties (e.g. knowledge institutes, Non-Governmental Organisations/NGOs). This means that the scope, agenda and reach (which initiatives participate) are not fixed or pre-determined, but will develop throughout the lifetime of the LL. - Every piece of edible urban space and every initiative can be perceived from the onset of the LL as an 'experiment', in order to support it and learn from it (as a network). - After the initial 2-year run of the LL, the lab might start its own, new experiments that follow from the lessons learnt so far in the LL.
Strategic methodology	- Assessment of action taken depends on the challenge defined by the City team (or Policy team / Kiem team). - The agenda-setting is cyclical, with phases such as 'understanding', 'agenda setting' and 'activating' follow each other, and there is a central role for 'reflecting' throughout the LL process. - This cycle is an iterative process in which one can move in different ways, depending on the outcomes of the previous phase/session, and the needs of the LL in that moment. - Agenda setting: solving concrete, practical and institutional questions (sessions in which expectations from practice are central). These are further developed in sub-project teams. - Activate: focusing on (existing) experiments, develop new forms of collaboration between municipality and green initiatives, 'first aid care' and education for initiative. Tools that can be used are workshops, research, and network events.

Co-Creation

The city works on creating reliable contemporary services for and with the city's inhabitants: they are involved both as customers, as participants and as partners. Whereas until maybe a decade ago, the city would provide public services and public spaces, responsibilities are increasingly perceived as shared between public and private

(including residents') parties. Nowadays, participation is the norm in spatial planning, ranging from consulting residents or entrepreneurs to true co-creation.

In order to successfully co-create, parties must have common ambitions and goals (Figure 12). Rotterdam's goals towards which NBSs and local

green initiatives can contribute include: enhancing social inclusion/participation, adapting to climate change, improving citizens' health, cost reduction of maintenance of public spaces, greening the city, improving spatial quality, increasing rain water retainment, empowering minorities, improving the endurance of green initiatives, promoting employment, etc.

In this way, the advantages of co-creation in the development and maintenance of green spaces, and more specifically ECSs, becomes clear: local initiatives contribute importantly to the city's ambitions and goals. On a more practical level, co-creation requires that the city is organized in a way that it communicates coherently with the green initiatives it co-creates with. At present, this is not the case and it is one of the challenges to be met in EdiCitNet: to improve our internal network to better serve and cooperate with green initiatives.

At the same time, dealing with over 200 separate initiatives scattered all over the city, with varying degrees of size, professionality, strength of network within the neighbourhoods they operate in, and financial vulnerability, is difficult for the city. This requires that the green initiatives become better organized, more professional and less dependent on municipal subsidies. The city tends to support new initiatives but expects them to be self-supporting after the initial years; if that is not the case, the initiative will end and all efforts were in vain.

Therefore, it is in the interest of all co-creating partners, to work together to improve internal structures and processes so that green initiatives can become more sustainable and resilient, and will contribute to the quality of the city and its residents in the long term. This pluralistic playing field has been taken into account when the conditions of the LL were defined.
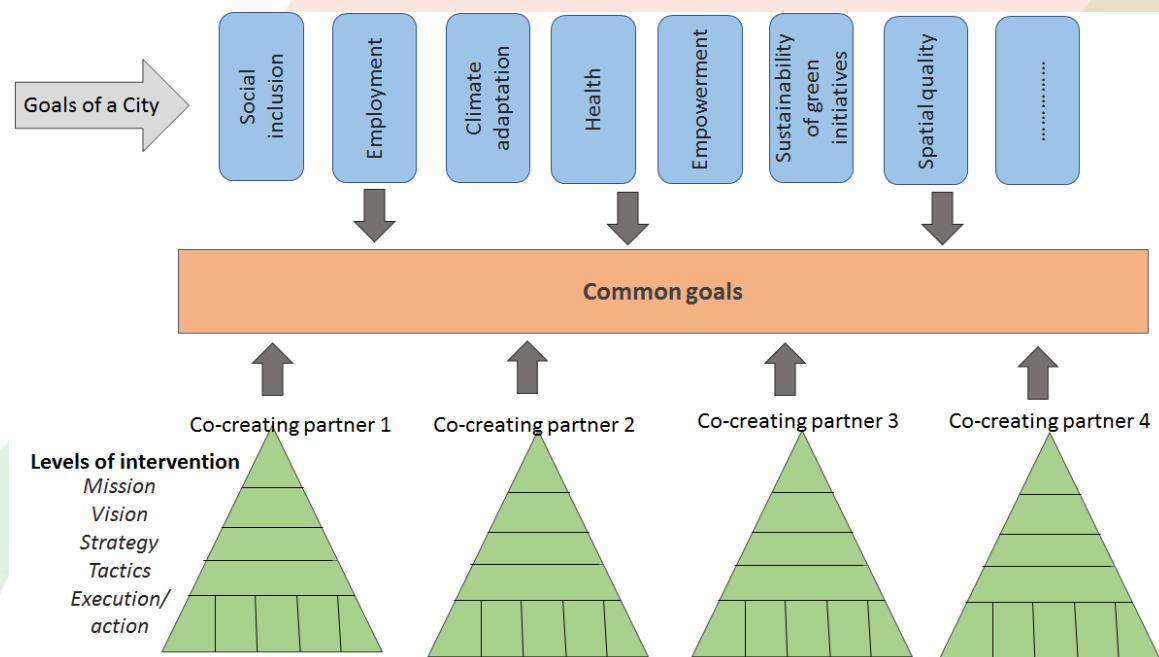

Fig. 12: For successful co-creation, all involved parties must agree on common goals.

Platform approach
The platform LL in Rotterdam is made out of:
- The city team plus sub-project teams tasked with specific goals;

- The Policy team / Kiem team;
- The EdiCitNet Project team (linking other EdiCitNet-partners).

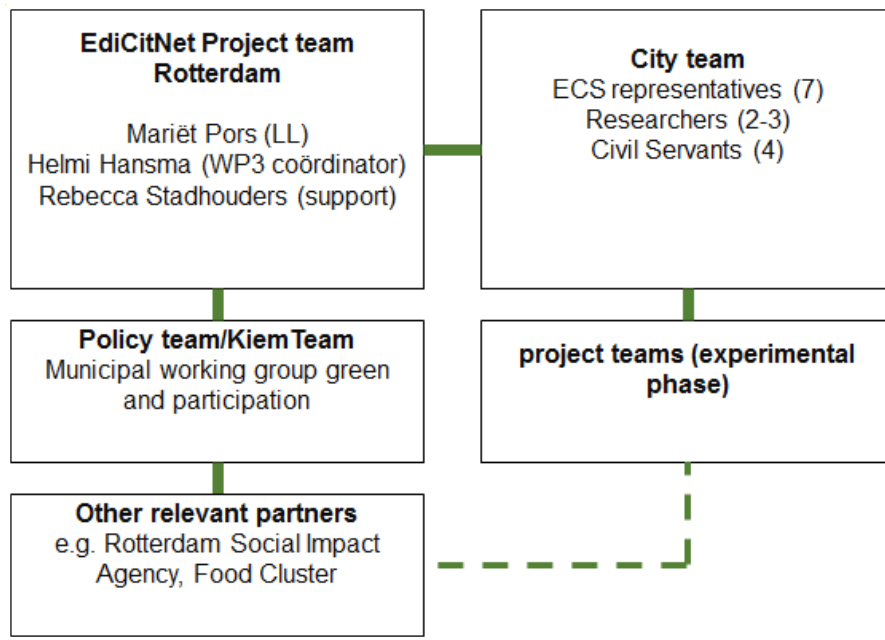The lay-out of this framework is described in figure 13.

Fig. 13: Living lab management in Rotterdam

The co-creational process is defined by the outcomes of the 2nd workshop and further deliberations on these outcomes by the City team and the Policy team / Kiem team. Sub-teams will be created that will focus on the various goals of the LL. The outcomes from these project teams form the basis for the experiments (figure 14)
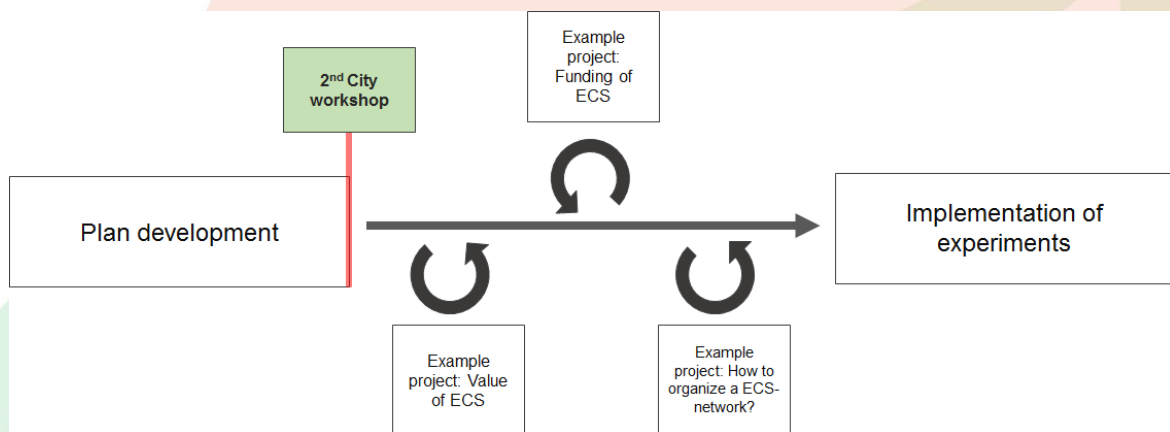

Fig. 14: Outcomes of 2nd city workshop form the basis of further plan development towards defining the experimental phase

Appendix 2: Transition Pathway Methodology (TPM)

Towards sustainable integration of ECSs into urban planning (BOKU)

To ensure that the FCs will benefit from the activities in the FRCs, EdiCitNet will guarantee the integration of ECSs in FCs long-term urban planning. With the support of research partners each FC will collaboratively create a masterplan that shows how ECSs can be used to tackle their specific societal challenges. Each masterplan takes the form of a transition pathway (TP), which consists of three major steps:

1. System development: This phase serves for identifying the overall conditions to establish ECSs in FCs from a systemic perspective including e.g. the need for specific measures, business models, juridical framework etc. The outputs are system models for each FC containing sets of 20 to 40 interconnected most important influential factors for the establishment of ECSs to tackle the FC specific societal challenges.

2. Scenario development: Creation of different scenarios that document the overall conditions under which certain ECSs from FRCs can be adapted and coped with, e.g. in terms of finances, societal acceptance, and juridical aspects, implemented and upscaled in FCs to tackle their specific societal challenges. The scenarios are based on the system models. Key factors from the system models will be selected and their changes through ECS establishment will be assessed.

3. Transfer development: In this phase concrete strategies will be developed for the establishment of favoured ECSs under a specific scenario condition. The foundation for this is a list of activities to reach desired values of selected key factors; strategies will include spatial opportunity maps and a detailed description of the measures to reach certain key factor values. Evaluation of this strategies using SWOT analysis.
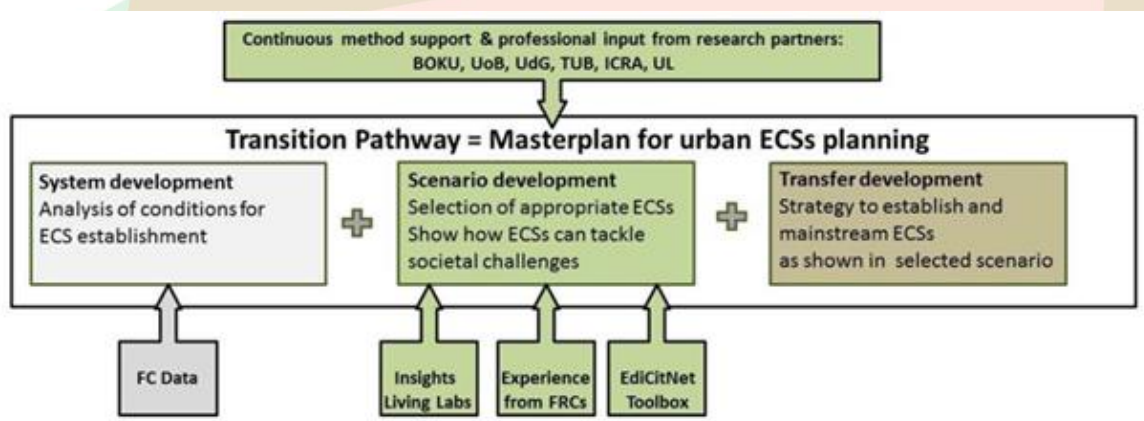

Fig. 15: Transition Pathway Methodology

A complete transition pathway consists of the outputs of all three phases: a system model of the current situation, a desired future scenario based on this model, and a concrete strategy how to transfer from the current situation to the scenario:
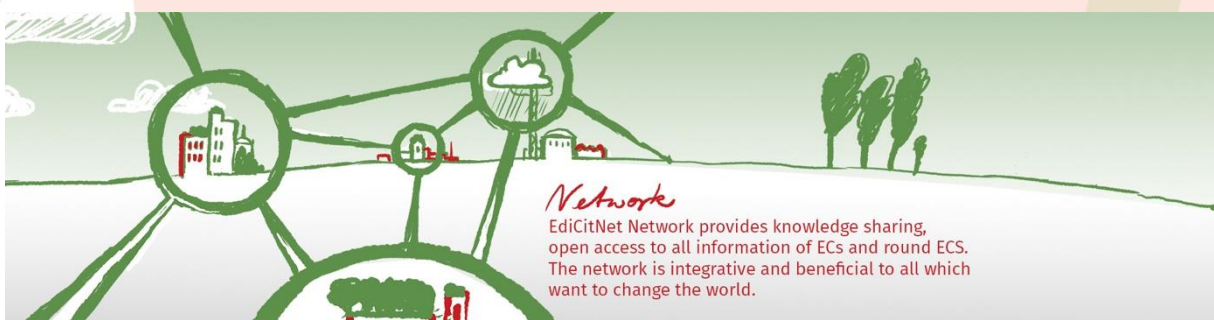
Each TP will be created in a participatory way including members of the EdiCitNet city teams, research partners and a wider group of stakeholders (members of NGOs, GOs, businesses, and citizens). Each phase consists of an extensive research phase that will be supported by the EdiCitNet Toolbox (WP2) and participatory workshops with the stakeholders. Once finalized, the TP co-designed and co-developed with the Local Cities Networks group will be officially endorsed either by the administration's executive(s) or the city council, depending on local customs and respective degrees of decision-making authority.

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.

City Teams are the backbone of the project. They are steering groups in each city which ensure participation of citizens, SMEs, NGOs, and other relevant organisations.

Living Labs are temporal spaces. Cities give strategies and processes for anchoring ECS in cities a try in protected rooms for enhancing social cohesion and better living conditions.

Masterplans are a systemic approach for planning urban infrastructure. Masterplans foresee a collaborative planning to make a city attractive for all citizens.

Network EdiCitNet Network provides knowledge sharing, open access to all information of ECs and round ECS. The network is integrative and beneficial to all which want to change the world.

Thank you!

🌐 **www: edicitnet.com**

🐦 **Twitter: @edicitnet**

📷 **Insta: edicitnet**

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Edible Cities Network

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