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The Urban Lab of Europe !

The Urban Soil 4 Food project Journal N° 2

Project led by the City of Maribor



**CIRCULAR
ECONOMY**



The Urban Soil 4 Food project

The **URBAN SOIL 4 FOOD** project will test a model of urban soil-based economy circle in order to increase local food self-sufficiency and to minimize the city's environmental footprint. The aim is to use cities' internal waste – particularly excavated materials from construction sector – as input material to produce recycled, standardized and certified soil for meeting cities' needs, and notably to be reintroduced to the ground in order to improve soil quality and increase food production. A pilot system for urban soil production including wastes from different sectors will be tested, and urban community gardens will be developed using the standardized soil produced. In parallel, food distribution will be structured around the creation of an urban food chain and local urban food labels, and an Agri Living Lab will be set up where different experiments relating to social innovation, urban environment and agriculture will take place.

Partnership:

- City of Maribor
- Institute for Innovation and Entrepreneurship
- E-institute for comprehensive development solutions
- AKTIVIRAJ SE Development of social projects and promotion of active life association
- Snaga
- Wcycle Institute Maribor
- Deltaplan
- Slovenian National Building and Civil Engineering Institute (ZAG)

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1. Executive Summary

It has been a busy winter and with spring approaching, Maribor is ready to open up for the next stage of the Urban Soil 4 Food project!

Citizens are about to access the new blooming community gardens, questionnaire and interviews have been carried out with local farmers to setup the platform and the procurement for the soil production facility is nearly ready.

The community gardens have been prepared during the winter and urban farmers will soon be able to take over the plots. The local team has been involved in preparing the plans for the gardens, thanks to valuable input from other local projects, and creating the local partnerships to run the activities on site. Even before starting the official campaigning for the allocation of the plot, many potential users have expressed their interest!

To improve the local food distribution chain, partners are developing an online platform and app that can support farmers and consumers to get into contact. The initial phase for this is to map existing farmers, their products and needs, in order to then match it with those of potential procurers. With the beta version of the platform under construction, farmers are starting to recognise the potential that this service can offer in terms of new business and optimisation of their efforts.

One of the largest investments within the project is the creation of a soil production facility, with innovative technology, that can turn urban waste into fertile soil. With citizens often not wanting waste treatment facilities close to their homes, despite this one being not polluting, and with innovative solutions requiring extra efforts in the setup of the procurement, it has been a demanding but successful challenge for partners to get things rolling!

2. Account on progress made by the project in the last six months

The last six months have been full of developments and changes, which have turned out to be positive for the city and the project itself. Firstly, there were local elections and the new elected mayor has officially expressed support towards the ongoing projects and activities related to circular economy in Maribor, which is an essential

2.1 Urban gardens

The new urban gardens of Maribor are ready for opening to public!

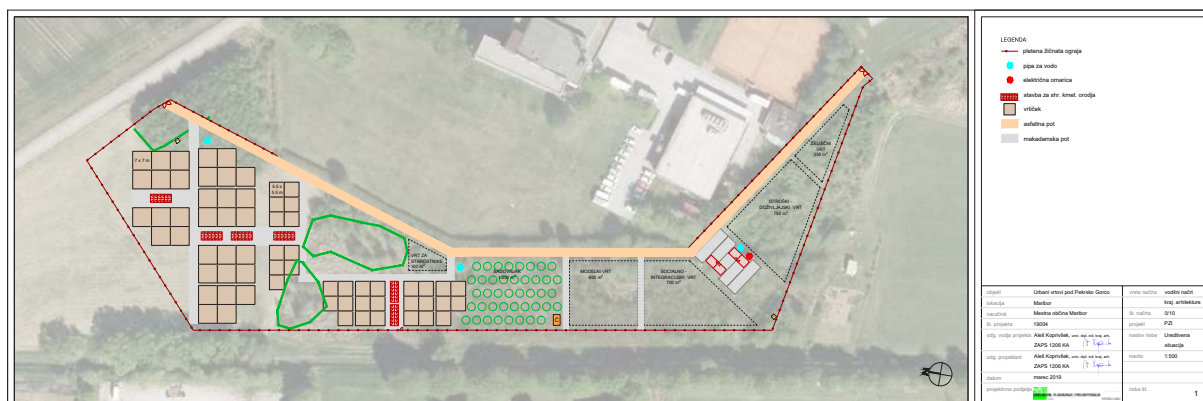
After preparing the plot and designing the gardening functioning, the location will be opening at the end of May. Meanwhile much work is being done to setup the last details. For example Aktiviraj.Se is preparing model gardens and greening activities.

One of the biggest and most imminent activities is now related to the selection of the users, for which an open call will be published in early April for citizens to apply to. It is already proven that there is more interest in the gardens than the

commitment. Furthermore, the project is now in the second year, therefore setting up the implementation phase, which requires adaptations along the way, this being the gardens and the web-platform but especially the soil production facility.

available plots, reason why the team is now developing a set of criteria for the selection of the users. The open call will be presented through a public workshop and promotion on different media, most likely resulting in a very wide public interest.

Another very important activity taking place is the design of the gardens and the development of the public tender for the fence, the garden houses and the digging for the water. This is a particularly pressing issue as the final design has just been approved and the administration is setting up the tender process. The garden houses will be used for the tools and for the water tank,



Garden draft plan. Source Urban Soil 4 Food project

and will need to be custom made. The water will need to be digged all the way to the plots in order to ensure four water spots, as currently there is only one on the garden's border.

The community gardens comprise a number of diverse features. There will be a Children experiential garden, developed in collaboration with a Waldorf kindergarten. There will be an orchard, planted in autumn as this is the best moment for trees, which will be used for meadow flowers during summer, where beekeepers will leave the hives. There will be a social integration garden, and an ecological model garden for the seed library, in connection with another project. And there will be obviously the individual 74 garden plots, all ranging between 30m² or 50m² depending on the experience and interest of the users. After only two newspaper articles already 120 people expressed their interest in the gardens, even before the official launch of the public call. The criteria for the selection of users are the means of transport to reach the gardens, being more sustainable means preferred, having a mix of less and more experienced gardeners as well as elderly people and the other half retired ones. As part of their contracts with the urban garden, the users commit to taking part to the trainings and workshops.

The garden experience is not confined within the perimeter of the plots, in fact two vertical gardens will be setup in different locations, these being an elderly people's home and a kindergarten. The one in the elderly people's home is already setup and offers an opportunity to experiment how people make use of it.

The workshop sessions have already started, as a collaboration mainly between Aktiviraj.Se and WCycle Institute. The program will be developed in detail according to the needs and requests of the users, yet amongst the identified topics are ecological gardening, permaculture, no digging, biodynamics, etc.

The first workshop was developed to create general awareness on urban gardening and prepare the audience for the allotments. Therefore the targeted audience was a general public interested in gardens as well as schools, as 4 high schools of those with environmental curricula have been directly involved, and finally elderly people in nursing homes, with many still being active indwelling to garden as part of their daily activities.

Plan for the management of the gardens is based looking at the model of the gardens setup for the EU capital of culture in 2012. For this reason, the US4F garden is developing a plan for when the



Garden views. Source Eutropian

municipality will not be financially supporting the project, so people involved in the plots have to be clear about what their obligations are, especially for what concerns the common parts, such as the orchards and the educational activities.

There is an ambition to create a network of existing gardens to help people know about available plots but also exchange knowledge on gardening, seeds, equipment and so on.

Also for this, an important work has also been done in terms of communication, as a partnership was struck with the local TV and Radio Company which have their headquarters just next to the garden. This will allow ensuring a good coverage of the whole process as well as smaller experiments, like the filming of the garden construction from the roof of the TV station

2.2 Web platform

The Institute of Innovation and Entrepreneurship is setting up a web platform to address food cycles in Maribor.

The main problem is that Slovenia is less than 40% food self-sufficient, therefore there is the ambition for US4F and other projects and initiatives to impact on increasing the local production. In fact, Slovenia produces milk (120%) but not enough vegetables (25-30%).

Over the first year of the project, the main activity has been to carry out the questionnaire with local producers, in order to better assess the number and capacities available. The questionnaires were structured around a number of items:

- Production
- Seasonal offer
- Accessibility and opening hours

building, which has a good point of view on the plots. Furthermore, branding activities are also being carried out, like bags and similar gadgets for the gardeners.

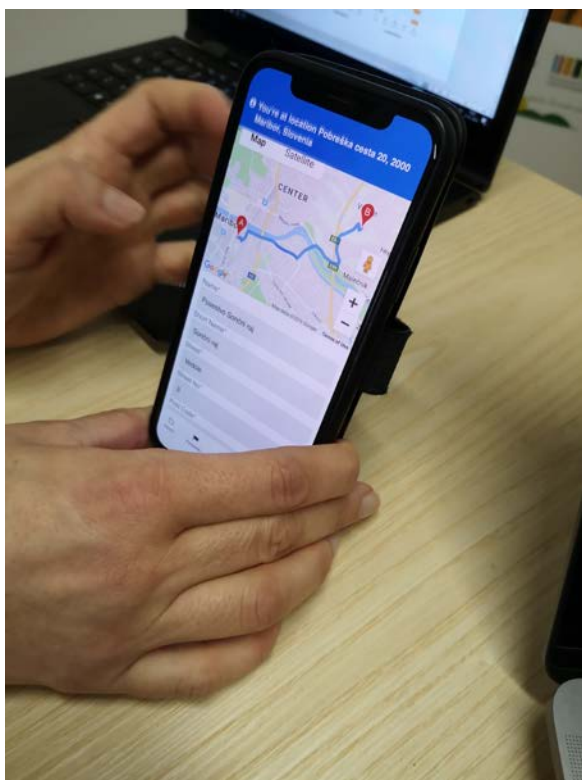
Amongst the biggest challenges foreseen is the timing, as not all variables are completely dependent on the project partners. For instance, whilst the public procurement has set timing dependent on the public administration, the bureaucratic procedures to allow the water to be brought on location are dependent on other authorities. Any significant delay in the delivery could impact on the opening of the gardens in May. Despite this not being a direct risk at the moment, it needs to be supervised.

A long-term challenge of the gardens is instead related to its financial sustainability after the end of the project.

- Contact
- Offer in other language
- Registered business
- Type of produce

To elaborate the content, in the last six months they held over 60 meetings, 20 with support institutions such as the Ministry of Agriculture, and many meetings with local NGOs.

As a result, there have been interviews to 18 ecological producers and 83 others, with a main focus on food. At this stage, a lot of information has been gathered on the type of produce but not precisely on the quantities, which will have to be a further step. In fact, farmers also don't trust to give information on quantities of their produce as they don't know exactly what could be done with the information. The local food would serve to provide canteens in schools and elderly homes,



Prototype. Source Eutropian

therefore intersecting the supply of the public sector. What emerges in fact is that 10% of the interviewed farmers are already supplying the public sector filling the gaps, not as main producers, whilst the remaining 90% works with privates.

In terms of sales to the public, most people would go to buy directly from farmers but only 5% use Solidarity Purchase Groups. To finalise questionnaires, it will be necessary to go back to fieldwork as no information arrived via email from farmers. Whilst Farmers' Associations are not really helping the process and the information collection, the Ministry is proving to be of great support.

2.3 Soil production facility

The third element on which the Urban Soil 4 Food project has been focusing on over the past months is the setup of a pilot plant for the soil production. This will be one of the main

The US4F is developing an app that will be used by B2B, therefore mainly farmers and public sector and later also the tourism sector. The App for Public Administration will serve as a means of information to prepare the public tenders, as currently each school runs its own tender, so it's important to give them accurate information and possibly create the basis for setting up a green public procurement criteria. Currently public contracts are for 5 years, which is not ideal for business plans, so there should be extension for food up to 10 years. For this, there must be an identification of the available quantities and needs of the Public Administration. Because each institution procures individually, the quantities are small so farmers could manage to deliver it. Furthermore, a network of local farmers, which is one of the ambitions of this process, could directly bid for contracts with the public sector.

Currently a lot of effort is going towards the development of the App and website of the platform, inserting the data coming from the questionnaires. The App will allow to choose from producers and based on the required product. The App and the website will be ready in 6 months, have a 3-month pilot and be officially launched in November 2019.

It is also important to connect such activities to awareness creation, especially with children and their families, involving schools but also elderly people's homes. In fact, if children are involved in the awareness activities, the parents will eventually make pressure on the schools to procure local food products. It's a multi-perspective process!

investments of the project. The pilot plant itself will be an experiment, as it will manage smaller quantities than the ones currently available on the market, as the ambition for the future is to



Lettuce growing on different kind of soils produced from urban waste. Source ZAG

replicate a modular model with small plants across the other cities, rather than expanding to a large one. The plant will be treated by three elements: the dry fermentation element, pyrolysis element for production of bio-char (charcoal) and aerobic composting element; additionally a mixer and a chemical filter. Particular attention is posed on the issue of smells, in order for the plant to be suitable also in urban populated areas. Finally, the extra energy produced will be used within the plant process as well as for heating in greenhouses.

The experimented soil will be produced in larger quantities thanks to Snaga, the public waste management company of the City of Maribor. Snaga every year manages approximately 13.000 tons of organic waste coming from separate collected bio-degradable waste, green space maintenance, kitchen waste and wood. Furthermore, the City produces approximately 100.000 tons of unhazardous waste coming from construction and non-polluted industry. All this could be used for making soil, as the project is

experimenting in smaller quantities, with approximately 800-1.000 tons of biological waste.

The produced soil can have a variety of applications. In agriculture soil is necessary because of its nutrients, vital for plants that will produce food consumption. Similarly, in gardening plants require nutrients from the soil. For green walls and roofs, soil might not have stringent requirements as plants are often grown for decorative purposes but increasingly also edible plants are being planted, therefore nutrient requirements apply for a light soil, possibly with low clay quantity. Finally, the soil can also be used for construction (e.g. embankments), but in this case it would not need as much nutrients as for gardening, therefore the soil mixture will be adjusted. Ultimately, this produced soil will be branded, in order to create more awareness with citizens about the benefits of their local high quality recycled soil instead of the supermarkets' packed soils with unknown origin and quality. As the project is currently very involved in the setup of the community gardens,

a series of promotional actions have been thought of, such as where people could bring their organic waste and exchange it for a bag of soil.

Over the past months, there have been meetings with the private landowner, as the first identified location on public land was eventually excluded as local inhabitants refused to have a waste facility close to their homes, even if it was ensured there would be no bad smells and other discomforts. On the contrary, the new location is more appropriate. Situated in a nearby municipality, the zoning plan already foresees the instalment of a waste facility plant and open

consultations were already carried out back in 2012. The former location would have been in the municipality of Maribor on public land, but the previous tensions with inhabitants due to the high concentration of existing urban infrastructure in the area, a water cleaning facility, a highway and an electricity centre, created new conflicts over the instalments of the new facility. Currently, Snaga has been greatly involved in the setup of public procurement process, which has been extremely demanding and time consuming but also useful, as it allowed improving the project requirements.

3. Analysis of the project challenges

The table provides an overview of the challenges of the Urban Soil 4 Food project, focusing on the current development that local partners are carrying out. At this stage no major challenges

have been identified in the implementation. The status of the identified items is similar to the one of the former Journal 1 simply because the project is still in its beginning.

MAPPING URBAN SOIL 4 FOOD AGAINST THE ESTABLISHED UIA CHALLENGES

Challenge	Level	Observations
1. Leadership for implementation	Low	The project is well coordinated by the City of Maribor and up until this initial phase all partners have been able to cooperate. Obviously, being the consortium rather large, special attention will always have to be paid.
2. Public procurement	Low	For the moment the public tender for the technology to be implemented within the waste facility has not created any challenges. Snaga is currently working on the public procurement for all the parts of the innovative pilot plant for the Urban soil 4 food project. In relation to the web-platform development, a possible difficulty might be connected to the public procurement for food in the region to be provided to public canteens but examples are available around Europe to solve this possible problem.
3. Integrated cross-departmental working	Low	For the moment being the different departments and in-house companies appear to be cooperating well even thanks to the involvement to the WCYCLE institute which is composed by the different companies.
4. Adopting a participative approach	Medium	The effective participation will not be a problem for the community gardens, but it has proven to be a challenge in the case of the pilot plant, being this something the public struggles to relate with and local communities usually don't want close to home. For this reason, the project has had to find a new piece of land, private this time, which has also impacted on the project budget.
5. Monitoring and evaluation	Medium	Because there are many innovative elements within the project that still don't have a monitoring system, as in the case of the soil production or the pilot plant, special attention will have to be paid by technical partners to create a suitable mechanism.

Challenge	Level	Observations
6. Financial Sustainability	Medium	Certain elements, especially related to the waste management will most likely not have difficulties in developing a financial model, but this is not the case for softer measures, such as the trainings within the community gardens, that need to create a more autonomous model.
7. Communicating with target beneficiaries	Low	Circular Economy is an emerging topic that the wide public is not necessarily familiar with yet, reason why public events are not necessarily attractive to many people. More effective appears to be the creation of events and debates around the practical implementation, as in the case of the community gardens. For this reason, the partners are paying special attention to the development of an engaging communication strategy.
8. Upscaling	High	The project is strongly embedded within the Maribor context and strong experience, which would not be easily replicated in other contexts, especially if adequate financial resources for implementation are not allocated. For this reason the connection of the Maribor experience with the Action planning of the EU Urban Agenda Partnership on Circular Economy can be extremely beneficial.

4. Take-aways

The last six months of Urban Soil 4 Food was an opportunity to prepare for the upcoming implementation of the key features of the innovative project.

As described in the detailed sections, the project has not gone without challenges and adaptations to externalities, so some of the key learnings are:

Participation: the gardens and the selection of the plot for the facility show us how essential it is to engage all relevant stakeholders within decision-making processes. The cases also highlight how certain topics are easier to engage people with, such as with gardens, than others, as in the case of waste facilities, therefore showing the need to develop an ad hoc strategy on each specific case.

Time planning: the experience of the gardens and the questionnaires with the farmers show the importance of planning time by taking duly

into account the interests and timeframe of other stakeholders in the process. In fact, for the connection of the water in the gardens other public authorities responsible are involved and their timing is not necessarily fitting the project's expectations. Similarly, farmers involved in the survey have shown how their time is very precious and they are willing to commit only when they see the direct benefit.

Public procurement: the procurement process for the garden equipment and even more so for the innovative soil production from waste facility, it is essential to setup a clear guidance for the requirements and needs. Despite being often a very time consuming procedure, the procurement can be an opportunity to push innovation and improve original plans, based on cutting edge technology or services offered on the market.

5. Coming next!

During the upcoming months, the Urban Soil 4 Food project will be entering the implementing phase, after a very detailed preparation. In the upcoming journal, it will be possible to see the innovative potential of this project in its blossoming stage.

There will be the opening of the community gardens with its community taking care of the plots, running workshops and preparing the common spaces. There will be the launch of the prototype website and app for the food distribution services, involving the public administration and the farmers in better matching offer and demand. Finally, there will be the assignment of the soil production facility, as through the public procurement process it will be possible to identify the company(ies) delivering the technology and creating the capacity building to produce soil from waste.

Stay tuned, there is plenty more to come!

Report by Daniela Patti, Urban Soil 4 Food expert, Eutropian

Based on interviews with stakeholders in January and March 2019.

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- Igor Kos – Wcycle Institute
- Branko Kosi and Petra Hercog – Snaga d.o.o.

Report approval by Brina Lazar, Urban Soil 4 Food Project Manager

Urban Innovative Actions (UIA) is an Initiative of the European Union that provides urban areas throughout Europe with resources to test new and unproven solutions to address urban challenges. Based on article 8 of ERDF, the Initiative has a total ERDF budget of EUR 372 million for 2014-2020.

UIA projects will produce a wealth of knowledge stemming from the implementation of the innovative solutions for sustainable urban development that are of interest for city practitioners and stakeholders across the EU. This journal is a paper written by a UIA Expert that captures and disseminates the lessons learnt from the project implementation and the good practices identified. The journals will be structured around the main challenges of implementation identified and faced at local level by UIA projects. They will be published on a regular basis on the UIA website.



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