

## **OPENAGRI**

### Zoom-in

March 2018

# Experimentation Laboratory in Urban Agriculture







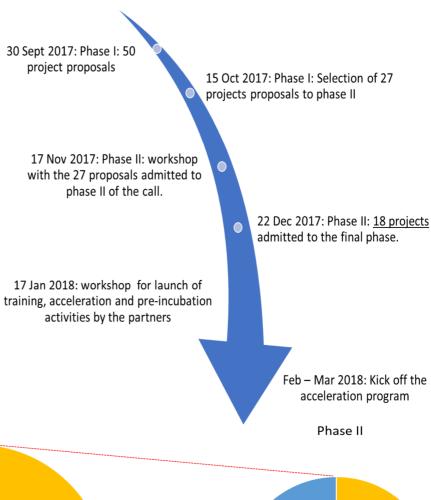
The Experimentation Laboratory (Lab) explores innovative techniques in urban agriculture (from production to logistic, from Internet of Food to sharing economy) and engage a series of partners on making the best use of public owned 33 hectares plot of land surrounding the south Milan Parco Sud boundaries. The Lab is primarily set to promote innovative techniques and approaches in peri-urban agriculture, educational and training initiatives and awareness campaigns, with the goal to create new job opportunities and to revitalise a fringe area of the City.

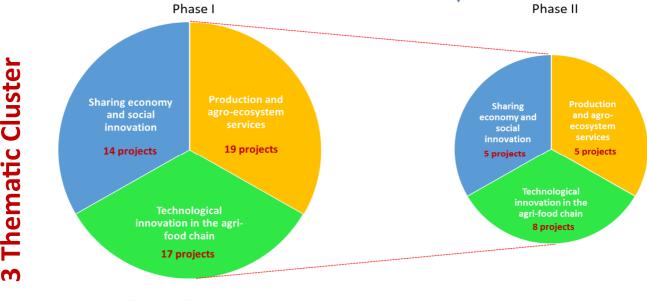
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The process to find innovative projects, agriculture entrepreneurs, companies and/or sartups and other organized parties to the Lab was launched in August 2017. A two-stage public open call (Phase I and Phase II) was launched for projects that understands agriculture as a sustainable/ biological system as a motor of ecosystem services, which generate new knowledge and skills, and which thereby act as an impetus for innovation and are functional and/or integrated within the value chain and agri -food system (production, processing, distribution, consumption, waste management) in a circularity.



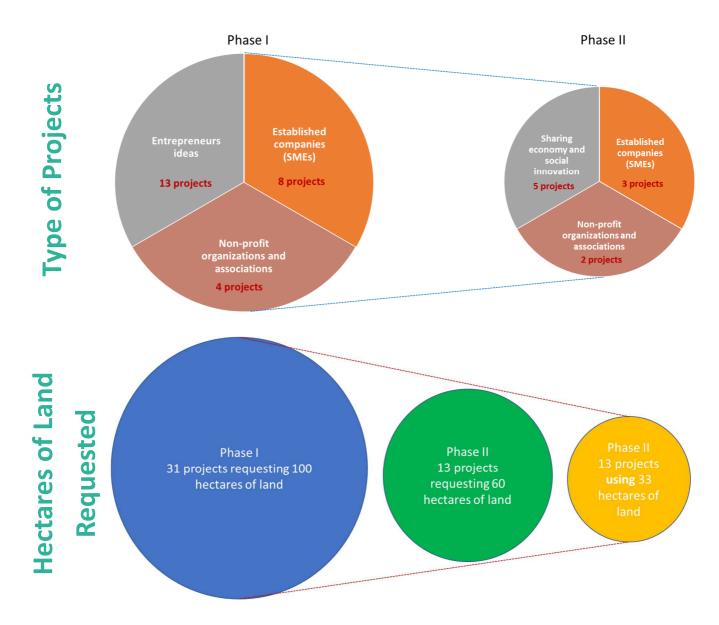








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Analysing the selected innovative projects and grouping them accordingly to thematic clusters, type of project and land needs, the OpenAgri team is aware that the main challenge for the Lab is to promote projects integration, in a vertical and horizontal line.

The vertical integration has been implemented with the focus to make the projects more place-based, linking them to the territory of Corvetto-Porto di Mare-Chiaravalle but also to Milan area and Lombardy Region.

The horizontal integration has been implemented at different scales: by one side linking them to a wide and active innovation system of Milan city and by finding and stimulating synergies between the projects. Most of them shows interdependencies on the agri-food supply chain and this open's a wide range of innovation activities that can be developed.

Taking this in consideration, the acceleration program has been co-designed with the selected projects in terms of pre-incubation activities, advanced training, mentorship and strategic networking, depending on topics and degree of maturity of each project.



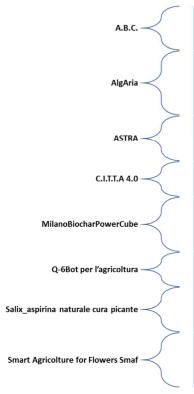






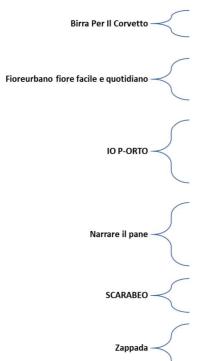
#### The OpenAgri projects selected for the Experimental Laboratory

#### **Technological Innovation Projects**



- Proposes an environmentally sustainable snail farm. The snails are fed with a plant diet and this would give the possibility to reuse
  the waste from the nearby Ortomercato di Milano in a circular economy perspective. Many ethnic groups living in Italy already use
  this source of protein for their livelihood, and in the economic field the projects are sustainable because it does not require huge
  investments that would be covered by the financial resources of the members.
- In partnership with the Department of Environmental Sciences and Politics of the University of Milan (dESP), has developed an
  innovative plant to produce microalgae, recovering heat from biological processes of recovery of agro-forest waste, green waste and
  the wet fraction waste from kitchens: henceforth 'organic waste'. Spirulina is defined by FAO as the food of the future, which
  recognizes its highly nutritional value and specifies its advantages: 60% of proteins with all essential amino acids and all the macroclasses of nutritional elements such as Vitamins from A to E to K and its 93 mineral salts plus antioxidants and the omega-3
  precursor
- The project is proposed by the innovative startup company DIAHELIX S.R.L., which intends to position itself as a promoter of technological innovation in the field of remotely piloted aeronautical transport and technological innovation. The primary objective is to design and build Remote Aircraft Systems (S.A.P.R.) for the transport and automation of some production processes and within the IoT.
- "CITY. 4.0. intends to focus on two areas of reference, the ancient and the smart, conjugated in a single technological transfer center:
   Valorisation of the ancient Lombard varieties and local characteristics and 2. Experimentation, technology transfer and dissemination of innovative, eco-sustainable solutions and smart neighborhood gardening.
- At the heart of the proposal is the installation of the BiokW "PowerCube" to produce renewable energy (pyrogasification of urban pruning and agricultural results to produce BioSyngas (fuel from which to draw energy to heat and/or cool, but also produce electricity) and Biochar (charcoal of multiple uses, including agricultural/nursery) optimizing the cycle of carbon and biomass, enhancing the waste of agricultural and forest products of all the lots of participants in this project, the South Agricultural Park, the public green of the Municipality and contextually seizing CO2 and working in synergy with innovative plants and processes.
- The Q6 BOT project for helicopters aims at combining the most modern cultivation techniques and robotic automation with snail breeding (helicopters) to obtain: Less stressed animals; Better meat quality; Containment of production declines; Increase of yields to ha; More happy breeders; Reduction of human labor.
- Willow cultivation to generate natural hormones useful for rooting / stimulating the growth of plants and seeds, to reduce transplant stress, to increase plant defense capacity, to reclaim polluted soil or regenerate nutrient-poor soils, as a remedy natural (anti-inflammatory, antinevralgic, antifebrile, etc.) until its use to create authentic living works of urban furniture (live willow structures) through intertwined plants.
- propose a multifunctional and precision agriculture project, which involves the cultivation of alimurgiche, edible and aromatic
  flowers, using smart agriculture solutions to optimize water consumption. The collected products will be sold fresh or dried to
  restaurants, bars, neighborhood markets or citizens. All products will be accompanied by descriptive cards, which illustrate their
  properties and their organoleptic characteristics. This information will be easily available through the appropriate QR CODE, which
  you can enter for example in the menus of restaurants.

#### **Agro-system production and services Projects**



- The goal is to create a brewery in the spaces of Cascina Nosedo. Our agricultural brewery will offer local products, and could
  make people belonging to vulnerable groups work, offering a protected, pleasant and accessible space for all age groups. In
  this way the Nosedo farmhouse could become a meeting point for the district.
- The business idea wants to offer seasonal quality and season tickets possibly purchased from local producers. We would like to create original decks to be delivered by sustainable means at home or in the office, on a weekly / fortnightly or monthly basis. We think that buying a bunch of flowers should not be considered a luxury for big occasions, and we want to make it an easy, habitual and not particularly expensive gesture. We are aiming for a subscription-based business model through ecommerce based on an ongoing and qualified relationship with the customer
- The project proposes a path of job placement of migrant people, to be involved in the following activities. THE WORLD GARDEN Cultivation of vegetable fields with species from other countries, 3,000 square meters required (see experience with the simploke community in the framework of the Cariplo project "Agricol-lura new lands to manage the future"). URBAN GARDENS To create urban gardens on a surface of 1,500 square meters made simply by tracing the parcels with blocks of tufa, the presence of water inlets and fence with a thorny hedge or with fruit trees. Realization with the intervention of migrants and orthistors. PICK YOUR OWN Implementation of collection camps according to the pick your own model managed by migrants, request 12.000 sqm with attached small sales point. SALE and transport of flowers and vegetables produced thanks to an apecar around the city, managed by migrants, and others.
- The retro innovation at the service of the city "is a project of innovation of the bread supply chain in the local area. It is an agricultural spin-off of the Panificio Davide Longoni company that for years has activated a privileged relationship with the territory of Chiaravalle. The project establishes the cultivation of ancient cereals already started by the Bakery Davide Longoni in the Vettabbia Park, integrating the existing cultivation with a further 7 hectares in rotation and activating a program of activities dedicated to the narration of the "bread of the past". The project closes the chain between cultivation, processing, sales and narration, making the citizens protagonists of the transformation of the territory of the Vettabbia Park. The project focuses on the active participation of citizens, with a focus on the target families, through some participatory actions.
- The main objective of the project is the multiplication of quality seeds with a biological system, focused on the production
  and distribution of varieties suitable for low-input systems (eg organic farming) and the maintenance and recovery of
  conservation varieties, indigenous, ancient and traditional. (eg rusticity, resistance, short cycle) from organic or integrated
  agriculture, facilitating their use by companies.
- The project aims at the cultivation of biological populations of cereals fallen into disuse following the Green Revolution (2ha), together with the cultivation of Hemp from fiber and oil (2ha) with a purifying effect of the soil. The project will also include educational activities carried out by the association with the creation of a vegetable garden (1ha) involving citizens and schools, aimed at guided tours, courses and the inclusion of fragile individuals. The project includes the construction of a thin flowered meadow (1ha) of native varieties, for the enhancement of the landscape and biodiversity and of Paulownia spp (2ha).







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#### **Social Innovation and Sharing Economy Projects**



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- The proposals include the direct cultivation of ancient fruits and vegetables at zero km using cutting-edge techniques of conservation, biological and integrated pest management. To make everything more accessible to the population, the products will be delivered to your home and everything can be ordered directly from the web and from an app. The project intends to start: The use of greenhouses and fields for the cultivation of fruit and vegetables with very low impact cultivation methods; The use of a system of vehicles with electric locomotion for deliveries; The management of orders and deliveries through an application for smartphones and tablets able to create a short supply chain. The restoration of crop waste produced and recovery of waste from the various Milanese markets to produce compost; The recovery of the boxes from the Milanese markets, to be used as packaging of the products with the empty returnable formula. The creation of a reservoir that draws from the water table with phytodepuration through aquatic plants; The insertion of fish species in the reservoir to create a system of aquaculture to be used as fertigation.
- · The project aims at the start to work and social integration of people affected by autism, overcoming the care approach and aiming at the generation of qualified resources and at the same time contributing to the construction of autonomy and empowerment of these subjects. Through the cooperation with the other admitted projects, it will be possible to create a farm centered on the integration of the subjects with autism in the society. The company will produce for the processing and sale of agricultural products and autistic children will be the operators who at various levels and with the coordination of other people will support their operation. The presence of such a reality could be an element of attraction for schools and activities of a social nature, to enhance the theme of the employment of people with disabilities. The integration of the agricultural activity with the surrounding environment and of the autistic workers with the inhabitants of the city will be values for the city of Milan and will generate other similar initiatives. For families, a reality in support of these people could be a comfort for the "after us" assessments, which are a constant concern of those with a joint disability.
- The project proposes the creation of a light structure for demonstrative / didactic purposes of how it is possible today to work around the idea of Environmental Ecological Networks with a view to Circularity and Energy Independence. The "dome", composed of 12 spaces / segments dedicated to different varieties of spices, fruits, vegetables, it will be used by young people from ALI Lavoro e vita beyond autism (another selected project) and flowers (which can be used experimentally by FioreUrbano). The dome will be the driving force of Workshops, Lectures, Events related to the themes of Eco-Sustainability
- The project lays the foundations for the creation of a permanent regenerative inclusion area (AIPR) or a place where agriculture harmonises human activities with the natural processes of the surrounding environment. The project proposes to experiment on site an agroforestry system in "alley cropping", which consists of perennial plants cultivated on arboreal and shrub bands that coexist synergistically with plants with shorter seasonal cycles, generally grown in the intermezzo of the

Many of the projects have R&D and business connections in multiple areas. The Experimentation Laboratory acts as a mediator within the selected projects, enhancing communication and business cooperation between innovation actors and it organises its work within three areas of activity:



UIA INNOVA

Tackling challenges - The Lab is a vehicle to put farmers' R&D and business needs on research and policy agendas. The Lab collects needs from practice, facilitating knowledge sharing and searching for innovative solutions to address key

Connecting people - Innovation starts with bringing people together to generate inspiration. The Lab aims to link innovative projects, helping solving practical problems or testing innovative ideas with OpenAgri network of partners.

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challenges.

Milano

The Experimentation Laboratory in Urban Agriculture is the heart of OpenAgri project, in which infrastructures and services are jointly and dynamically discovered by providers and users alike, and to create open communities of farmers, advisors, researchers, businesses, and others, building new collaborations and networks so cities can understand innovation, innovators can understand cities, citizens can become effectively engaged and users can become content providers, service producers and deliverers.

As such, the open innovation hub envisaged by OpenAgri should become a specific urban setting, or an "innovation playground", which combines innovation and social and commercial activities, to enable open innovation and showcase the benefits that may be reaped by localities through growing smarter and in a more sustainable manner.

More about the Experimentation Laboratory in Urban Agriculture will be released in the forthcoming publications.

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.

**Author: Miguel Sousa** 

**UIA Expert** 

Miguel.sousa@inovamais.pt

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**Urban Innovative Actions** 

Les Arcuriales 45D rue de Tournai F - 59000 Lille

+33 (0)3 61 76 59 34 info@uia-initiative.eu www.uia-initiative.eu

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