

# URBAN AGRICULTURE

# UA MAGAZINE

40



Pathways towards  
resilient urban food  
systems

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# Innovation and collaboration for the resilience of the food system in Lima: the partnership between CGIAR and Incubagraria

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**A collaboration between the CGIAR Resilient Cities initiative and Incubagraria, the business incubator of the National Agrarian University La Molina of Lima (UNALM), is supporting start-ups to develop and prototype innovative products geared towards tackling food system challenges faced by rapidly growing cities.**

The city of Lima was chosen as one of the five implementing cities of the CGIAR Resilient Cities initiative due to multiple challenges, such as rapid expansion and growth, increasing loss of agricultural land due to urbanisation, limited availability of water (since it is located in a desert), and high rates of urban poverty, malnutrition and anaemia, particularly in children.

Such challenges in emerging cities like Lima mean it is necessary to complement traditional research processes with more innovative approaches, and to collaborate with other stakeholders. Under the component on strengthening research and innovation capacities, the Resilient Cities initiative has been developing activities in

collaboration with Incubagraria. The aim of these activities has been to develop entrepreneurship and innovation programmes aimed at scientists and students, to boost innovation capabilities and promote scientific and technological-based business ideas in the areas of agricultural, food and environmental sciences.

Business incubators are organisations that seek to promote the growth and success of start-ups. Incubators typically offer training programmes, mentoring, support and even financing at a seed capital level for entrepreneurs with innovative business ideas. Since 2014, all licensed universities in Peru have been required to establish their own business incubator.



Opening of "Made in Agraria 2023" pre-incubation programme, May 2023

Incubagraria started in 2017 and is specialised in the incubation of 'bio' businesses – that is, business models that use biodiversity resources and promote both environmental and social sustainability. Due to UNALM's limited public budget, this incubator has successfully sought external financing, from national and international sources, to provide its training services. Additionally, thanks to funds from the Peruvian Ministry of Education, Incubagraria boasts a prototyping laboratory for entrepreneurs to build and test their innovations.

In 2023, the International Potato Center (CIP), part of CGIAR, established an agreement with Incubagraria to strengthen its training programmes on innovation and entrepreneurship, with the objective of promoting

innovative ideas that contribute to the objectives of the Resilient Cities initiative in Lima. Thanks to this partnership, several activities have been implemented in 2023.

By the end of 2023, 235 people will have been trained (of which 123 women), a result achieved thanks to the provision of resources – both human and financial – by both Incubagraria and CIP.

Thanks to the contribution of CIP, the training programmes to enable the best entrepreneurial teams to build their prototypes were expanded, with the addition of a programme focused on food tech. The focus on food tech business models was enabled by the collaboration and support of UNALM's Food Industries faculty.

## Featured Innovations and Startups

Among the innovations resulting from these programmes, the following stand out.

### Three Power Yoghurt

Functional yoghurt with three high sources of protein and iron: spirulina, cushuro (Andean seaweed) and bovine blood. The ingredients are encapsulated and introduced into the yoghurt to allow the correct assimilation of nutrients and probiotics.

The objective of this innovation is to contribute to combating anaemia and malnutrition in children from vulnerable populations in Lima, as well as contributing to brain development, providing better assimilation of nutrients, and enriching the intestinal microbiota.  
*State of innovation: prototype developed to be tested with the target audience.*



Three Power Yogurt prototype. Prototyping programme organised by Incubagraria in alliance with CIP.

### Bioshuro

Biol made from horse manure and cushuro, which provides high-value nutrients to crops and protects them from pests and diseases.

The objective of this innovation is to provide vulnerable populations in Lima with organic liquid fertiliser, at an affordable price and free of

agrochemicals to develop urban agriculture focused on short-term crops, counteracting pests, and diseases.

*State of innovation: prototype, being tested with various crops.*



Nutripizza prototype. Prototyping programme organised by Incubagraria in alliance with CIP.

### Nutripizza

Pizza made from broccoli stem flour, malt bran (by-products of the food industry) and other cereal and legume flours, with high protein and functional content.

The objective of this innovation is to provide healthy fast food for young people and adults who are looking for a healthy alternative to conventional pizzas.

*State of innovation: prototype developed to be tested with the target audience.*



Bioshuro prototype. Prototyping program organised by Incubagraria in alliance with CIP.



Award to the 3 best teams of the programme "Made in Agraria 2023"

### Future expectations

In 2024, the Resilient Cities initiative plans to continue supporting training programmes in entrepreneurship and innovation in collaboration with Incubagraria, and to develop an innovation challenge focused on addressing specific issues that have been identified in Lima.

There are plans to expand the scope of activities under the collaboration with the UNALM, which is currently building a technological and innovation park for agriculture that will host an Innovation Hub for the agricultural, food and environmental sciences. It is expected that the park will foster partnerships between the private sector, related industries, research centres specialised in agriculture, such as CIP, following the logic of the triple helix innovation model (that is, interactions between academia, industry and government to foster economic and social development).

The presence of CGIAR here will be a great opportunity to strengthen applied research and promote the generation of products with commercial value that contribute to the Sustainable Development Goals, especially in the field of agriculture and food security.

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One of Incubagraria's most notable startups is Bioflash, which participated in the incubation programme in 2018 and subsequently won an innovation contest in Mexico.

Bioflash's product is a liquid microbial accelerator that facilitates the decomposition of organic waste and converts it into compost in 30 days. This product quickly degrades forestry and agricultural waste, prepared foods, fats, animal manure and crop remains, converting it into organic compost. It is also used in the purification of wastewater so that it can be used in the agricultural sector. The product is highly efficient: Each litre of Bioflash can treat between 5 to 10 tons of organic waste and between 5 to 8 m<sup>3</sup> of wastewater.

The Bioflash project started in mid-2018 and the product has been on the market for 5 years. Bioflash has obtained various achievements such as: being the winner of the Startup Peru 76 in 2019, where it won seed capital for 55,000 soles (USD 14,000); being recognised among the 500 best green Latin American startups in the 2023 Green Awards; and being the winner of the 2023 Sustainable Agriculture Challenge carried out by the Monterrey Technology Institute in Mexico and the Pacific Alliance, where it won a fund of USD 20,000.

### An interview with Brenda Costas, Manager of Incubagraria

**How do you see the development of innovation processes and startups focused on urban food systems?**

Business incubators have traditionally focused on technological business ideas, information technologies and digital applications. Other types of business ideas have not been considered equally important, including ideas for food, agricultural products, or environmental management. In recent years this has started to change, and bio businesses are increasingly becoming a priority due to the current crises and climate change, and the need to use our natural resources in a more sustainable way.

In the next 30 years, one of the main challenges will be availability of food, as the population worldwide is growing and urbanising fast. In a context of climate change and high competition for resources such as water and land, access to quality food will be critical.

The National Agrarian University La Molina has a fundamental role in addressing this challenge, especially considering that we have Faculties of Food Industries and Agronomy. Therefore, together with other organisations, we must think about the nutritional quality and safety of food and develop agricultural policies that ensure sufficient supply of food for a growing population. Likewise, Incubagraria has positioned itself as an incubator specialised in bio business, with most innovations based on food and bio business models, all developed under the premise of triple impact - environmental, social, and economic.

**How was the experience of working with CIP in 2023? What are the main outcomes from this collaboration?**

We consider that CIP and Incubagraria are two leading entities on the subject, and that we have aligned objectives to generate innovation and ventures with impact and that provide solutions to the main challenges at a national and global level.

This year we have managed to work with future promoters who will make decisions about how to face these challenges in the future - they are students who are trained in our university classrooms. Working with undergraduate students and encouraging them to propose their innovative ideas to face these challenges has been enriching, due to the predisposition, creativity, and awareness that the students have.

In less than a year we have managed to execute an innovation challenge, "Made in Agraria"; a pre-incubation programme, "Food Design"; and a programme for the development of prototypes. Next, we will run an incubation programme. We are really showing that with effort and when the objectives coincide, things can be achieved.

**What opportunities and challenges do you see in agri-food business models in urban sectors?**

Regarding the challenges, I look to the sustainability of agri-food business models. To serve a population in a state of vulnerability, someone must pay for it. Entrepreneurships must be self-sustaining.



Brenda Costas, Manager of Incubagraria



Christian Lopez, Bioflash CEO and founder

In that context, support from the government or international institutions is key. Projects that have environmental and social impact must be supported through government incentives.

**What are your expectations for the future with the collaboration with CIP-CGIAR?**

Continue joining efforts so that, together, agri-food entrepreneurs can scale up. As a future project we have the technology and innovation park for agriculture, which will link the university with the business sector and with all the relevant actors - one of which could be CIP, with whom we have been working for years through a strategic alliance with UNALM.

### Pathways towards resilient urban food systems

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#### UA Magazine

*Urban Agriculture Magazine (UA Magazine)* is produced by the Secretariat of the RUA Global Partnership on Sustainable Urban Agriculture and Food Systems, in collaboration with strategic partners.

*UA Magazine* is a vehicle for sharing information on urban agriculture and urban food systems. It publishes good practices and impact stories.

*UA Magazine* welcomes contributions on new initiatives at individual, neighbourhood, city and national levels. Attention is given to technical, socioeconomic, institutional and policy aspects of sustainable urban and peri-urban food production, marketing, processing and distribution systems. Although articles on any related issue are welcome and considered for publication, each UA Magazine focuses on a selected theme (for previous issues, visit [www.ruaf.org](http://www.ruaf.org)).

#### Editors, No. 40

This issue was compiled by Etienne Claereboudt, CGIAR Resilient Cities initiative co-lead, Dr. Silvia Alonso, Initiative co-lead, Martha Awino, Initiative Senior Communication Specialist, and Jess Halliday of the Secretariat of the RUA Global Partnership.

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# Call for contributions: Urban Agriculture Magazine 41

(Summer 2024)

RUA, in collaboration with the European Forum on Urban Agriculture (EFUA), invites proposals to contribute to the 41th issue of Urban Agriculture Magazine (UAM) on the topic of **Next Practices & Future Policies for Urban Agriculture**.

The EFUA project is entering its final year! This four-year project, funded by the EU Horizon 2020 programme, has been unlocking the potentials of urban agriculture (UA) by mapping best practices and policies, and enabling networks in and outside of Europe. The forthcoming issue of UAM will include a dedicated EFUA section that outlines some of the key lessons, reflections and recommendations that came out of the project. Moreover, EFUA also intends to take a glance into the future, beyond the end of the project. What challenges and opportunities lie ahead of us?

To this end, RUA and EFUA invite contributions from UA practitioners and experts around the globe. We welcome proposals for articles on future pathways for UA development, as well as on promising policy approaches that help valorise the multiple benefits of UA.

Contributions analysing effective support strategies and networks for UA are also welcomed. Please send a short abstract of your proposed contribution (max 500 words) to [j.halliday@ruaf.org](mailto:j.halliday@ruaf.org) and [s.smaal@ares.org](mailto:s.smaal@ares.org) by February 18th.



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