



Resilient Cities through Sustainable Urban and Peri-urban Agrifood Systems

Initiative Lead and Co-Lead	Primary CGIAR Action Area	Estimated 2022 - 2024 Budget
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Challenge

By 2050, more than 2 in 3 people on the planet will live in an urban environment, including over 5.5bn in LMICs. The agrifood sector is central to the complex set of challenges arising from this global demographic transition; including: Feeding and nourishing expanding, largely poor, urban populations; reducing risks for human and environmental health from unsustainable food production, inefficient marketing and unhealthy consumption; securing economic opportunities for the urban poor including women and youth; and strengthening the resilience of urban societies in the face of climate change and increasing inequalities. The COVID-19 pandemic further highlighted the urgency of research and innovation support to strengthen food system resilience in urban environments. Securing a future for productive, green and livable cities with healthy populations is a global priority; countries in CGIAR target regions are struggling to keep pace with the implications of rapid urbanization, especially in an agrifood sector slow to respond, and are demanding technically sound, equitable and scalable solutions.

Agrifood systems need to transform to meet these challenges. Within the urban and peri-urban environment, key research and innovation tasks include sustainable intensification of production systems and more equitable and efficient marketing systems for nutritious foods including vegetables, livestock products and fish; reducing the ecosystem footprint of these systems amidst degradation of urban and peri-urban environments through improved technologies and better planning and management practices; improving food environment and consumer choice for healthier diets; and strengthening governance and policies to enable continued innovation and sustainable agrifood sector growth .

Objective

This Initiative will increase the resilience of rapidly expanding cities by strengthening UPU agrifood systems within wider City Regions. Working initially in six countries and then in at least ten by 2030, the Initiative will generate new knowledge, connect technologies to demand, co-develop and disseminate models and adaptive strategies for businesses and guidelines for public sector planning, and engage with governance processes to achieve the following objectives:

1. Sustainable intensification of UPU vegetable, livestock and fish production and reduction of their ecosystem footprint through improved technologies, safety practices and cleaner production sites to increase incomes of at least 2 million small-scale producers by 2030.
2. Vibrant, equitable, safe and sustainable UPU food market systems using improved technologies, business models, and decent work guidelines to generate economic opportunities and employment for at least 4 million women and youth in food production, trade, retail, processing, and service sectors by 2030.
3. Improved environmental and human health in UPU food production, marketing and consumption through improved risk assessment and risk mitigation, improved food safety, and better circular waste management to reduce health risks for at least 10 million people by 2030.
4. Improved food environments, consumer choices and women's empowerment to improve diet quality among at least 10 million low-income UPU consumers (especially women and youth) by 2030.
5. Inclusive governance to enable UPU agrifood sector growth using up-to-date evidence, broadly based accountability, and strong participation by diverse stakeholder groups in planning, implementation and evaluation processes in at least 10 countries by 2030.

Theory of Change

Responding to demand for research and innovation, the Initiative will support a vibrant, largely informal urban and peri-urban (UPU) agrifood sector to help improve production systems for nutritious foods, equity in markets, environmental and human health, resource recovery from waste, food environments and consumer behaviors, and governance and policies. Stakeholders and partners will work with CGIAR scientists to co-develop UPU agrifood system typologies, technology portfolios, adaptive business development strategies, and programming and policy guidelines - pulling together research within and outside CGIAR into an integrated approach targeted at the specific needs and opportunities in UPU environments. The Initiative will synthesize evidence from this research into UPU Agrifood Systems Profiles and engage formal and informal governance mechanisms to co-convene multistakeholder platforms to develop UPU Agrifood Action Plans for sustainable growth based on this evidence. In the first 3-year phase, the Initiative will operate in six countries with rapid urban growth and documented demand for research and innovation. Involving diverse urban stakeholder groups in the research process, the Initiative will enable local authorities, local enterprises, and civil society to apply better technologies, business practices, program approaches and planning guidelines. Beyond 2024, these private and public investments can improve nutrition and health of 10 million low-income UPU consumers and create decent jobs and income opportunities for 2.5 million women and 1.5 million youth. The initiative will partner with well-established global city networks to foster learning and policy dialogue at large scale and support the broader transformation of UPU agrifood systems across the Global South.

We will pursue collaborations with the following proposed initiatives:

RAFS: One Health, Nature-positive Solutions, SAPLING, Resilient Aquatic Foods
 GI: Accelerated Breeding (vegetables), SeEdQUAL (vegetables)
 ST: SHiFT, HER+, Food Markets & Value Chains, National Policies & Strategies
 RII: South Asia, Southeast Asia, West & Central Africa, East & Southern Africa, Latin America & Caribbean

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Highlights

Cities are crucibles of creative informal enterprise among women, men and youth, particularly in the agrifood sector. This Initiative will harness the innovation capacity of the informal sector, incl. through Agrifood Innovation Hubs, and provide research and technology support to create significant and inclusive growth in decent urban employment. <http://bit.ly/3tracWB>

Resilient, food secure cities depend on exchange with rural food production zones and rural society. This Initiative will take a City Region Food Systems research perspective to generate evidence for integrated urban-regional planning and investments that can generate opportunities and secure healthy sustainable diets along the rural-urban continuum. <http://bit.ly/3tracCR>

The future belongs to green and livable cities, and this future becomes more likely through local businesses and public-private partnerships pursuing opportunities for turning waste into value. This Initiative will support access to technologies and design business and financing models for circular water and nutrient reuse systems and cleaner environments. <http://bit.ly/3tracRR>

Food safety is a major concern in high density environments, jeopardizing people's health and nutrition, requiring public investment in control, and limiting market access for producers and traders. By developing and deploying novel approaches to risk mitigation in UPU settings, the Initiative will deliver health, nutrition and economic benefits. <http://bit.ly/3tracFS>

Cities are connected to each other globally including across the Global South; their connectivity offers tremendous opportunities for learning and accelerated progress at scale. This Initiative will engage with city-to-city networks and their development partners to promote inclusive and sustainable agrifood system growth as a pillar of resilient cities globally. <http://bit.ly/3tracNW>

Work Packages

	Scope of Work	3-year Outcomes
Enabling sustainable UPU production of vegetable, livestock and fish	Sustainable intensification of small-scale vegetable, livestock and fish production to increase UPU availability and affordability of these foods whilst reducing ecosystem footprint. Increased use of improved varieties/breeds, quality seed, organic alternatives to agrochemicals, and safe practice guidelines. Supported by improved land and water use planning and monitoring. http://bit.ly/3tracUPA	Small-scale producers in UPU zones access and utilize improved technologies and management toolkits and guidelines for safer, more sustainable and more efficient vegetable, livestock and fish production. Reduced use of agrochemicals and increased availability of diverse, nutritious foods from less polluted UPU environments.
Catalyzing equitable and transformative UPU food markets and supply chains	Select/adapt technologies, develop business models and strengthen capacities of Micro, Small, and Medium Enterprises (MSMEs) in food markets and supply chains to expand decent employment and income opportunities, especially for women and youth. Targeting poor people's diets and reducing food waste, innovations will include storage, processing and retailing strategies.	Local MSMEs in food processing, marketing and agrifood service sectors access and apply adaptive business development strategies, improved technologies, and skills, with strong participation by women and youth. These investments will generate increased employment and incomes, and will help improve availability and affordability of nutritious foods among UPU consumers.
Mitigating UPU agrifood system footprint on human and environmental health	Technological, regulatory, institutional and educational advances to reduce the burden of water- and food borne diseases, manage zoonosis risks and turn urban waste burden into business opportunities for resource and cost recovery for agriculture. The Initiative will foster demand for innovation and connect stakeholders to technology and institutional change options.	Public-private partnerships in UPU settings adopt incentive-based 'Resource Recovery and Reuse' business models to improve waste management and sanitation. National and city governments promote locally relevant and evidence-based risk management strategies for food system-related health risks including water- and food-borne and zoonotic diseases.
Transforming UPU food environments and consumer behavior to improve diet quality and nutrition	Selection, adaption and testing of technological, programming and policy options for improving food environments, food choices and nutrition knowledge in collaboration with consumer initiatives and supply/demand side stakeholders, incl. schools and women's groups. Evidence generated will inform design of country-specific toolkits for UPU food system programming, policies and investments at scale.	Governments and their partners apply evidence-based UPU food environment and consumption strategies and tools, including approaches to increase women's decision-making power and technological and programmatic innovations that improve diet quality and nutritional status. This results in improved access, affordability and consumption of nutritious foods.
Strengthening UPU agrifood governance and innovation hubs	As an integrative and enabling WP: Policy and institutional analysis, adapting metrics and data tools to the vibrant UPU environment, synthesis of evidence across WPs to develop 'UPU Agrifood Systems Profiles' in each country. Co-convening multi-stakeholder UPU and City Region platforms and co-designing Agrifood Innovation Hubs targeted at young entrepreneurs.	Governments and stakeholders from private sector and civil society co-develop UPU Agrifood Action Plans based on evidence from the initiative's research. Improved research and monitoring tools are available for planning and accountability. Agrifood Innovation Hubs will be designed to support young entrepreneurs via entrepreneurial projects generating start-up agrifood enterprises.

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Impact Area Contributions

Nutrition, health & food security	Through increased availability and affordability of - and demand for - vegetables, livestock and fish in UPU markets: 10 million low-income consumers with improved dietary quality. Through improved UPU risk mitigation from public and private sector investments: 10 million people at reduced risk from water- and food borne and zoonotic diseases
Poverty reduction, livelihoods & jobs	Viable MSMEs in the UPU agrifood sector utilizing improved technologies and business plans will result in: 3 million people having increased income 2 million new or upgraded jobs applying decent work guidelines
Gender equality, youth & social inclusion	The Initiative will further strengthen the stake of women and youth in the UPU agrifood sector and prioritize them in technology and business innovations, benefitting: 2.5 million women having increased income in UPU agrifood sector 1.5 million youth entering employment or starting MSMEs supported by Agrifood Innovation Hubs
Climate adaptation & greenhouse gas reduction	The Initiative will generate evidence on climate adaptation needs and mitigation opportunities in the agrifood sector to help cities address their specific climate threats and contribute to global targets, including: 7 million mt CO2 equivalent saved from reduced UPU food waste and losses
Environmental health & biodiversity	Evidence-based planning and investments will prioritize improved environmental health both by reducing the ecosystem footprint of UPU food production and processing, and by creating productive green spaces in cities. This will result in: 7 million ha are under improved productive use, supported by UPU Agrifood Action Plans

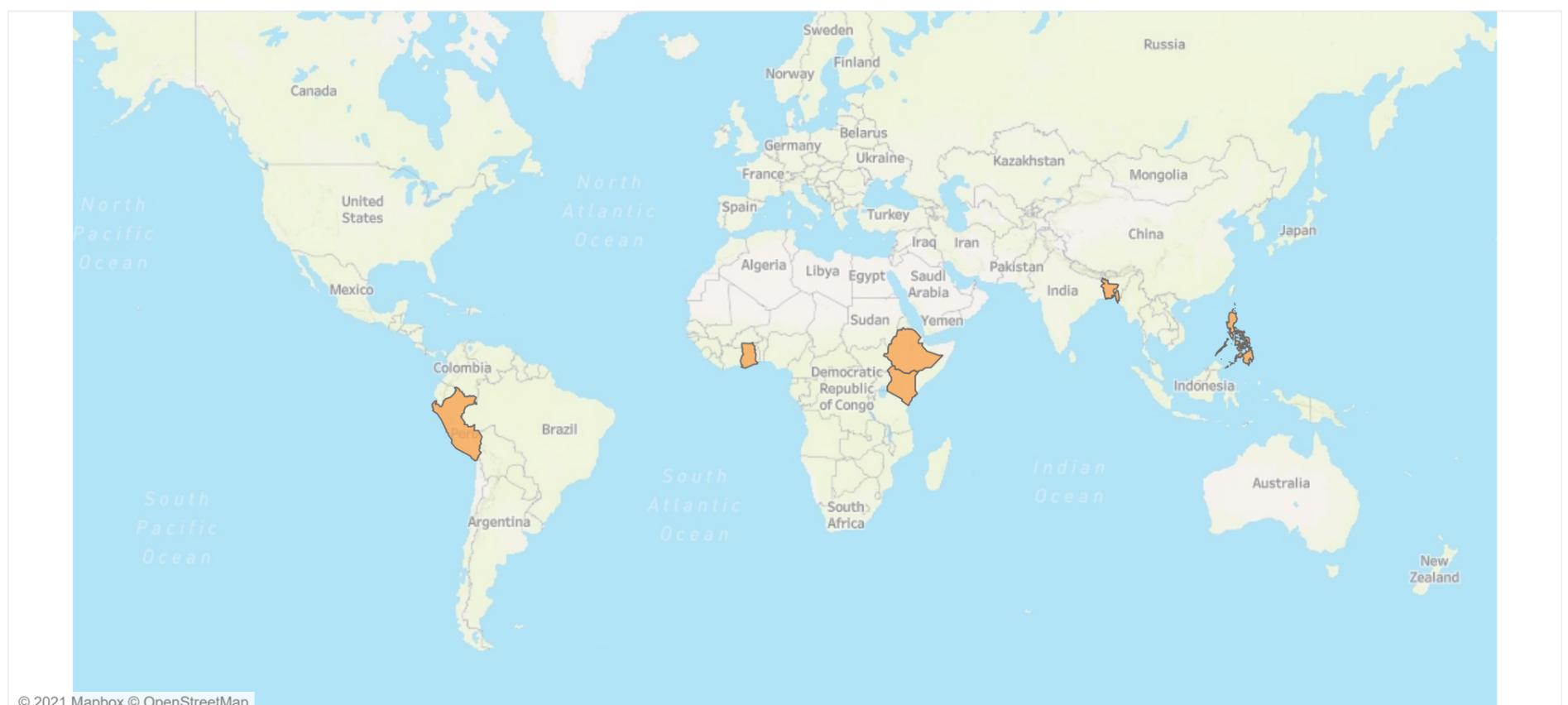
Impact on SDGs



Regions

Global East and Southern Africa (ESA), Latin America and the Caribbean (LAC), South Asia (SA), South East Asia and the Pacific (SEA), West and Central Africa (WCA)

Countries



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Innovations

Toolkits for sustainable intensification of vegetable production in UPU environments, including counter-season production technologies, rapid testing methods for contaminants, seed and seedlings of traditional nutritious vegetables, cost-effective alternatives to agrochemicals, low-cost options for resource-poor households, and guidelines for public policy support and promotional campaigns.

Business models and accompanying technologies for turning urban food waste challenges into incentives for public-private partnerships and investments in resource recovery for the benefit of UPU food systems and the environment; building on results from the Water, Land and Ecosystems (WLE) CRP.

Integrated demand-supply approach to stimulate private and public sector investments in reducing water- and food-borne diseases in UPU environments, leveraging consumer demand to incentivize technology adoption, business development and regulatory and policy support.

Typology profiling tools and toolkits to understand and improve UPU food environments and consumer behavior. This includes novel scalable technologies to improve diets and dietary assessments and evidence-based programs to foster accessibility and affordability of - and consumer demand for - healthy diets.

Agrifood Innovation Hubs that leverage best practices in human-centered design and agile development to build self-sustained ventures addressing food systems challenges. Hubs bundle innovation toolkits that ensure demand-driven design; innovation incubators that validate the solution's desirability, feasibility and viability; and innovation accelerators that build ventures around validated solutions.

Key Partners

Demand	Government	Government Ministries (incl. Health, Environment, Local Government)
	Local Government	Municipalities in six countries
	National NGO	Consumer advocacy and rights groups
		Informal urban labor organizations
Private Sector in Aid Recipient Country	Local agrifood enterprises	
Innovation	Academic, Training and Research	Local universities in six countries and international research partners (incl. Institute for Sustainable Futures, UC Davis, U Florida, U London, Wageningen U, ETH Zurich, ZEF Bonn, USAID Innovation Labs for Horticulture and Livestock)
		NARS/NARES in six countries
		World Vegetable Center
	Local Government	Public waste management authorities in participating municipalities
	Private Sector	Innovators in UPU agriculture and food technologies and input supply chains in six countries
Scaling	Multilateral	International city networks and supporting agencies (including RUAF-Global Partnership on Sustainable Urban Agriculture and Food Systems, Milan Urban Food Policy Pact, Hungry Cities Partnership)
		UN agencies and programs, including FAO-Green Cities Initiative, UN Habitat Urban Resilience Hub, UNEP, WHO, UNU
	National NGO	Citizen Innovation Labs, consumer interest groups and civil society groups in six countries
	Other	Development banks (World Bank, Asian Development Bank, African Development Bank) and capital investors

Resilient Cities: Theory of change

