



# Circular Quezon City

Bringing the circular economy to Quezon City's Food System

September 2022



## About this publication

In today's world, the vast majority of economies are linear. Linear economies follow a “take, make, waste” model: resources are extracted from the environment (take), used as inputs for infrastructure, buildings and production (make), then discarded after their use period (waste). Linear economies are linked to a range of negative impacts in cities, including rising carbon emissions, biodiversity loss and waste management challenges. In contrast, a more circular economy goes hand in hand with resilience, climate action and biodiversity conservation, while also offering cities the tools to support social equity, local job creation, public health and community wealth.

Transitioning from a linear to a circular economy requires creativity, flexibility and cross-sectoral collaboration on the part of governments, businesses and communities. Knowing where to start — and how to move forward — often poses challenges for cities embarking on their circular economy transitions.

As part of the Circle Lab for Cities Program, Circle Economy, ICLEI – Local Governments for Sustainability, the Ellen MacArthur Foundation and Metabolic are leveraging their combined expertise to offer tools and methodologies to guide the circular transition of cities worldwide. This publication captures the learnings of Quezon City using these tools.

## Meeting Quezon City

Quezon City (QC) is situated in the northeast area of Metro Manila. It is bounded on the north by Caloocan City and San Jose del Monte City in Bulacan Province, on the east by San Mateo and Marikina, on the south by Pasig and Mandaluyong, San Juan and Manila, and on the west by Valenzuela, Caloocan, and Manila. Its north-eastern and eastern boundaries are defined by the Novaliches Watershed and the Marikina River. QC is the main gateway, linking Metro Manila to all Northern and Southern Luzon expressways. It is easily accessible from the major highways, thoroughfares, and mass transit systems.

With an area of 16,112.58 hectares (based on the 1995 GIS graphical plot), it is the largest among the sixteen cities and one municipality in the region and is almost one-fourth the size of Metro Manila with a population of around 2,960,048 (2020 Census of Population and Housing, Philippines Statistics Authority).

The city's economy continues to be dominated by small to medium-scale business establishments engaged mostly in the distribution of finished products and in the provision of basic services.

### ***Quezon City's sustainability challenges***

The Philippines is considered one of the most vulnerable countries in light of climate change and its associated disaster and climate risks. Having a medium risk of climate disasters, Quezon City intends to maximize synergies between climate mitigation and adaptation actions.



Demonstrating rapid urban growth, Quezon City endeavours to move towards a carbon-neutral and climate-resilient development pathway, striving to promote sustainable solutions in addressing development pressures and creating healthier, greener spaces for its citizens.

While climate change is a universal and far-reaching global issue that affects all nations, some sectors and communities are more gravely impacted due to their economic standing, gender, income, and age, among other various socioeconomic factors. As climate change is tied up to all facets of development, it can also widen the gap of existing social inequalities. Given this challenge, Quezon City is promoting inclusivity and equity by integrating social, economic, and spatial elements in the Enhanced Local Climate Change Action Plan 2012-2050. The plan emphasizes the potential to deliver transformative outcomes that will not only promote meaningful benefits throughout the population but will also change, improve, or even disrupt unequal and unfair socioeconomic conditions, especially for the most vulnerable sectors and communities.

### ***Quezon City's existing sustainability commitments and targets***

Quezon City is committed to achieving a sustainable urban future that is compatible with the objectives of the Paris Agreement, the United Nations' Sustainable Development Goals, and a green and just recovery in light of the COVID-19 pandemic. A strategic framework and roadmap were set to build climate resilience, pursue carbon neutrality, advance green economic development, and provide a liveable community for all.

By championing climate leadership, Quezon City aspires to become the leading city in advancing inclusive, ambitious, evidence-based, and transformative climate actions in the Philippines. The City's climate change mitigation goal is to reduce GHG emissions by 30% in 2030, compared to the projected BAU scenario, and commit to pursuing net-zero emissions by 2050. This climate change adaptation goal underlines the need for progressive action to build on and strengthen the resilience of ecosystems and communities against risks and threats from the changing climate.

To support these targets, the City identified twelve strategies aligned with the seven priority pillars of the National Climate Change Action Plan of the Philippines. The strategies developed include striving towards a circular economy, and prioritizing organic, paper, and plastic waste management. Five priority climate actions were also developed under this strategy, which include (1) improving resource circulation of organic waste, (2) implementing a Green Public Procurement Program and single-use plastic ban, (3) upgrading wastewater treatment systems and facilities, (4) strengthening recycling through awareness-raising and incentive schemes, and (5) promoting circular business models leading to upcycling of materials such as textile wastes, preloved clothing, and other discarded products.

In terms of food systems, Quezon City committed to the aspirations and objectives of the C40 Good Food Declaration in October 2019. With this commitment, the City is expected to: (1) Align food procurement to the Planetary Health Diet, ideally sourced from organic agriculture; (2) Support an overall increase of healthy plant-based food consumption by shifting away from unsustainable, unhealthy diets; (3) Reduce food loss and waste by 50% from a 2015 baseline; (4) Address food insecurity by encouraging citizens to cultivate their own food; and (5) Develop a joint strategy for implementing good food measures and achieve it through inclusive and equitable stakeholder participation and incorporating these strategies into the City's Climate Action Plan.



# Quezon City's existing circular practices

A circular city is one that promotes a just transition from a linear to a circular economy across the urban space, through multiple city functions and departments and in collaboration with residents, businesses, and the research community. In practice, this means shifting away from the linear economy's "take, make, waste" model and moving to an economic system where the value and utility of infrastructure, products, components, materials, and nutrients are maintained for as long as possible. In a circular city, material loops are closed, meaning, existing materials are repeatedly cycled instead of becoming waste; resource extraction is also minimized.

## Circular City Actions Framework

The Circular City Actions Framework can be used by local governments and city-based circular economy practitioners at any stage of their city's circular economy transition to advance systemic approaches toward a more sustainable and circular economy. The framework is structured into five complementary R strategies:



**Rethink:** Redesign systems to lay the foundation for circular activities and enable the transition to a circular economy



**Regenerate:** Harmonize with nature by promoting infrastructure, production systems and sourcing that allows natural ecosystems to thrive



**Reduce:** Do better with less by using and supporting infrastructure, processes and products that are designed to minimize material, water and energy use and waste generation from production to end of use



**Reuse:** Use longer and more often by extending and intensifying use of existing resources, products, spaces and infrastructure



**Recover:** Eliminate waste by maximizing the recovery of resources at the end of the use phase so that they can be reintroduced into production processes.



## **Rethink**

### **Green Public Procurement Program**

Quezon City is aiming to provide an enabling environment for the promotion of environment-friendly goods, services and infrastructures which promote sustainable consumption and production, as well as a circular economy through the City's Green Public Procurement Program.

City Ordinance No. SP-3107, S-2021 titled "An Ordinance Mandating the Inclusion of Environmental Criteria in the Technical Specifications for the Procurement of Goods, Services and Infrastructure in Quezon City, Otherwise Known as the Quezon City Green Public Procurement Ordinance of 2021" was enacted by the Quezon City Council. The City is also a member of the Global Lead City Network on Sustainable Procurement.

### **Healthy Public Food Procurement Policy**

Executive Order No. 16, S - 2021 or the Healthy Public Food Procurement Policy of Quezon City was signed and issued last July 23, 2021. The policy contains nutrition standards to be followed by the City Government and sets the roles of each Department involved. The policy also promotes a healthy food system where healthy food and ingredients can be sourced from the City's Urban Farms. Further, the directive also targets all entities involved in the procurement process or supplying of food for the local government, including food suppliers.

### **Sustainable Hotels**

To promote sustainable tourism, Quezon City is planning to implement the Sustainable Hotels program in partnership with the Philippine Center for Environmental Protection and Sustainable Development, Inc. (PCEPSDI) through the Transforming Tourism Value Chains (TVC) project.

It aims to encourage the hotel and tourism industry to implement sustainable practices to reduce electricity and water consumption, food waste, and the use of single-use plastic and disposable materials. This will be an opportunity to increase their operation's efficiency and reduce costs while also supporting the City in its goal to reduce greenhouse gas emissions by 30% in 2030.

### **Green Building Ordinance**

The Green Building Ordinance of 2009 is an ordinance "requiring the design, construction of retrofitting of building, other structures and movable properties to meet minimum standards of a green infrastructure, providing incentives therefore and for other purposes". It encourages manufacturers to be mindful of the basic principles of conservation, environmental protection, and planning patterns that consider the natural environment. In sum, to use eco-friendly systems and technologies that reduce greenhouse gases and hazardous emissions from building and other structures. And further, to promote and protect the interrelation of natural ecosystems and development.

Mandatory green building features are the following: (i) Construction of activity control pollution prevention system, (ii) Energy efficiency plan, (iii) Water use reduction system involving water efficient fixtures, (iv) Waste management plan, (v) Indoor environment quality, and (vi) Sewage treatment plant.



## **Regenerate**

### **Joy of Urban Farming**

This is a flagship program of the City that started in 2010 to mitigate hunger by encouraging the citizens to produce and grow nutritional vegetables for self-consumption. This can also serve as a form of livelihood for them when sold.

Around 166 urban farms have been established across the City along with seven large community model farms, maximizing partnerships with various sectors including the church, civic organizations, national government agencies, academic institutions, and local community groups.

### **GrowQC: Food Security Program**

GrowQC is a flexible program that facilitates the promotion of sustainable food systems and collaboration of relevant stakeholders towards nutritious, accessible, and available food for all. The GrowQC Food Security 7-Point Action Plan was created to boost the City's decade-long urban farming program through a robust urban agriculture expansion and enhancement of food systems. It helps mitigate the prevailing problems of both hidden (micronutrient deficiency) & real (not able to eat) hunger, low-income livelihoods (unemployment/ underemployment), and health risks (physical and mental health).

## **Reduce**

### **Biodigesters in Urban Farms**

Four (4) biodigesters have been distributed to four community farms in the City namely KruNaLi Farm at Barangay Krus Na Ligas, Sharon Farm at Barangay Nova Proper, New Greenland Farm at Barangay Bagong Silangan, and Sunnyville Farm at Barangay Tandang Sora. These biodigesters can process twenty-five kilograms of organic waste every three days. This process generates methane gas that can be used for cooking, while the sludge and liquid can be used as soil conditioner for farms.

### **Plastic Bags and Single-Use Plastics Ban**

The Quezon City Government enacted landmark ordinances on single use plastics, namely SP-2868, S-2019 or the total ban on the distribution of Plastic Bags, and SP-2876, S-2019 or the prohibition on the distribution and/or use of single use plastic and disposable materials including cutleries for dine in purposes in all hotels and restaurants.

The aim of the Ordinances is to modify the consumption patterns of consumers and the "throw-away attitude", as well as help in the initiatives of the City to ensure environmental sustainability, particularly by the reduction of plastic waste.

### **Sustainable Diner Project**



The City is part of the Sustainable Diner project of the WWF-Philippines which engages the government, food service businesses, and consumers in promoting sustainable dining practices to lessen food wastage and contribute to the improvement of the implementation of sustainable consumption and production processes in the foodservice sector.

The project also aims to raise awareness of the environmental impacts of food, increase the number of healthy as well as eco-friendly dishes in restaurants, inspire people to grow and produce food, and build a climate-resilient food system for current and future generations.

## **Reuse**

### **Rainwater Harvesting**

Increasing water demand-side management is one of the strategies in the City's Enhanced Local Climate Change Action Plan 2021-2050, where the City aims to lead by example and champion water efficiency in city-owned facilities. Through this, efficient water demand-side management to residential, commercial, and private buildings will be cascaded through the enforcement of policies.

The City is also scaling up the use of rainwater harvesting facilities and high-efficiency water fixtures as a solution to decarbonize the sector in the City. These sustainable features are being incorporated in new building designs for city-owned buildings and facilities.

## **Recover**

### **Trash to Cashback Program**

Quezon City implemented the Trash to Cashback Program to institute mechanisms that advance circular economy objectives while strengthening the implementation of waste segregation at source and its recycling, enhancing the recovery of plastic wastes from the waste stream.

The program, which is being carried out with the support of Basic Environmental Systems and Technologies, Inc. (BEST), introduces incentives to the general public by providing cashback from recyclables that can be traded (i.e. plastic, paper, metals, etc.) for Environmental Points credited in their account. The points can then be used to purchase basic commodities, grocery items and online orders from partner merchants, and to pay electric and water bills.

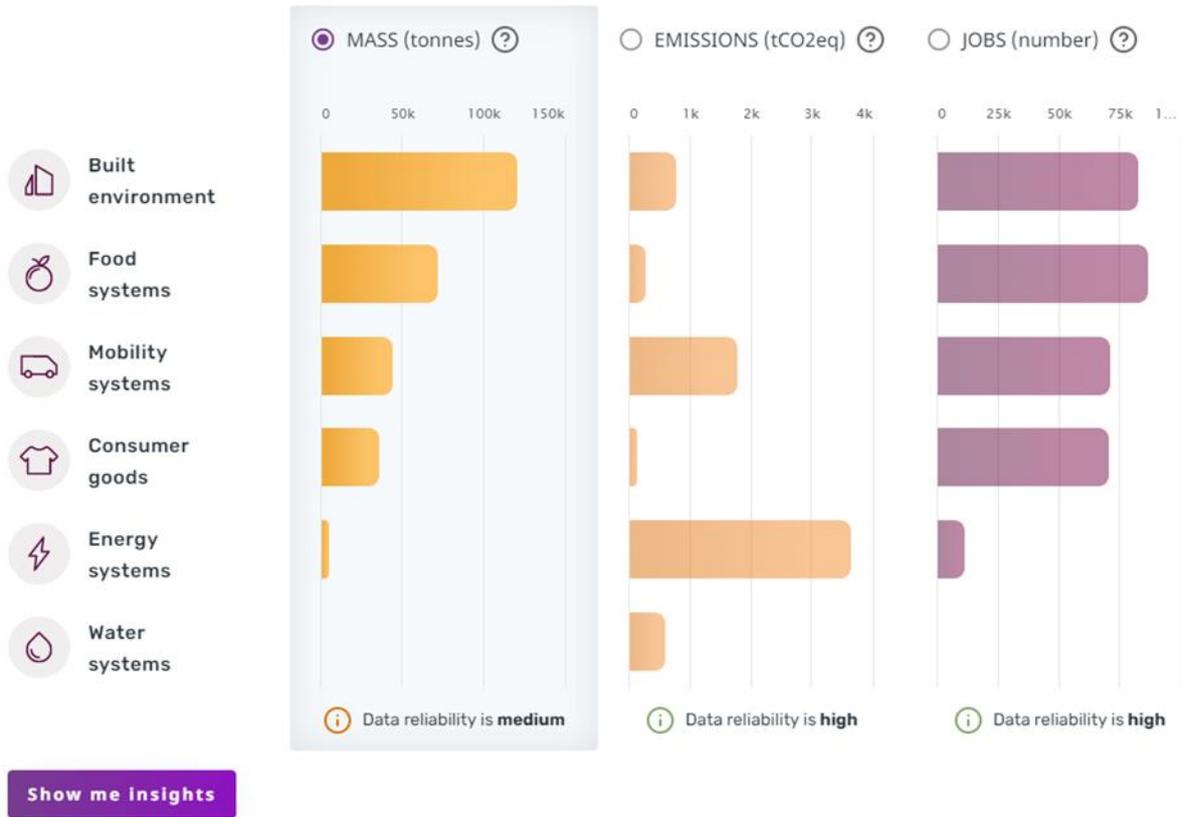
## **Identifying circular economy entry points for Quezon City**

Circular development principles can be applied to a wide range of thematic areas at the local level. Often, local governments start their circular development journey with one or two priority thematic areas to make the case for the circular economy and simplify action planning. Several considerations can guide this selection, such as the potential environmental and socio-economic impacts that could result from actions in the selected priority thematic area. Also, interesting to consider are aspects related to readiness and governance: are there existing



initiatives or business ideas already planned or underway that would contribute to more circularity in the thematic area? Does the city have agency over actions that could support the circular transition of the thematic area? In how far would the circular transition of the thematic area contribute to achieving other strategic goals of the city and region?

**The city’s data overview**



**Selecting a priority thematic area**

Food Security is one of the priorities of Quezon City, which is also aligned with the priority pillars of the national government. An enhanced food system provides numerous opportunities across various sectors, including health and nutrition, carbon emissions reduction, regeneration of ecosystems and increased community resilience, and livelihood and employment, among others.

To ensure that the City’s objectives on food security are attained, the Quezon City Food Security Task Force (QC FSTF) was established through Executive Order 32 series of 2020, signed last May 2020, to promote and enhance food security and food self-sufficiency through Urban Agriculture, the Development of Agriculture Zones & Food Zones, and the overall optimization of food systems.



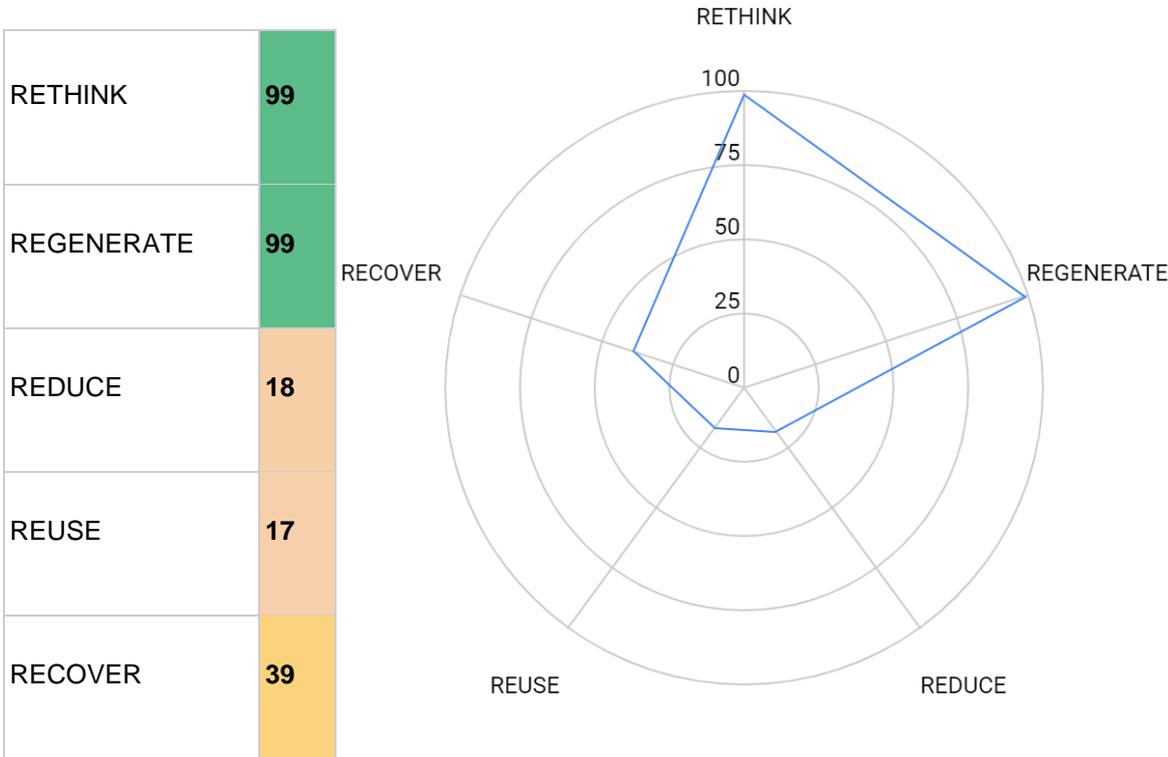
With the collaboration of all the involved internal and external stakeholders, a more data-driven and science-based approach can be used to deliver the City’s ambitious actions.

## Identifying interventions to transform Food System

### Circular Food System baseline

The Quezon City Government has enacted food strategies and policies that cover production, consumption, and waste management. It has also targeted, in particular, impoverished communities to promote food self-sufficiency and nutritional food intake. The City also partnered with several stakeholder groups and networks in the food service sector. Laying down regulations allowed Quezon City to gather its partners and implement necessary interventions within its jurisdiction, being this the reason behind the city gaining high scores in the Rethink and Regenerate strategies of the framework.

The accommodation and food services sector ranks 3<sup>rd</sup> in Quezon City’s economic services sector. However, the percentage of food/kitchen waste generated based on the city’s 2013 Waste Analysis and Characterization Study (WACS) was at 43.17%. This is one of the reasons why Quezon City prioritizes food systems. There are efforts currently being undertaken, as mentioned in the initiatives above, but more is needed to close the gap.



## **Quezon City's approach for circular Food Systems**

Quezon City follows a cooperative and integrated approach for a circular food system through enabling policies, forging commitments, building partnerships, and engaging stakeholders. The City, with its relevant departments and offices, is working towards sustaining the momentum gained in implementing these programs.

The increasing population and economic development resulting in rapid urban growth put a lot of pressure on maintaining open areas for urban farming and having a sufficient supply of affordable and healthy food. As a highly urbanized and service-oriented city, there is a tendency to overproduce food to cater to the city's fast-moving population.

Robust public and private partnerships supported by a dynamic food policy can help to minimize food and packaging wastage and maximize benefits among partners and beneficiaries.

### **Opportunities for action**

From the solution explorer, Quezon City does not need to look far for the initiatives that can be adopted to fill the gaps in the Reduce, Reuse, and Recover strategies. These solutions will bring together the city government and the private sector.

Reduce: [Training on Handling of Food Waste](#)  
[York's Food Waste Audit](#)

Reuse: [Bonn Goes Reusable](#)

Recover: [Organic Waste Collection in Accra](#)

### **Key stakeholders to engage**

In the City's Enhanced Local Climate Change Action Plan 2021-2050, the City's external partners and stakeholders are identified, as outlined below, given the cross-cutting nature of climate actions, which also include food security. This is to ensure that the intended actions and impacts are delivered to the citizens of Quezon City, especially to the most vulnerable sectors and communities.

External Partners and Stakeholders:

<ul style="list-style-type: none"> <li>○ National Government Agencies</li> <li>○ Academe and Research and Development Institutes</li> <li>○ Development Think Tanks and Project Incubators</li> </ul>	<ul style="list-style-type: none"> <li>○ Data sharing and research collaboration</li> <li>○ Multi-level governance</li> </ul>
<ul style="list-style-type: none"> <li>○ Quezon City Government</li> <li>○ Private/Business Sector</li> </ul>	<ul style="list-style-type: none"> <li>○ Peer-to-peer Exchange</li> <li>○ Public-Private Partnerships</li> </ul>
<ul style="list-style-type: none"> <li>○ Civil Society and Non-Government Organizations</li> <li>○ Local and International Development Partners</li> </ul>	<ul style="list-style-type: none"> <li>○ Bottom-up social and technological innovation</li> </ul>



	<ul style="list-style-type: none"> <li>○ Inclusivity and safeguards</li> </ul>
<ul style="list-style-type: none"> <li>○ Government Financing Institutions</li> <li>○ Private, International Financing Institutions and Banks</li> </ul>	<ul style="list-style-type: none"> <li>○ Climate and Green Financing needs</li> </ul>

## Lessons learned

Quezon City is beginning its journey towards circularity. The Circle Lab for Cities program has been supporting the city to transition from a linear to a circular economy by providing tools and knowledge resources on circularity such as the Circular City Actions Framework and Ganbatte Cities.

Through the Circular City Actions Framework, Quezon City has utilized the five complementary strategies to guide their work toward a more circular economy. Circular economy allows the city to tackle climate change while addressing and empowering the socioeconomic needs of the city. Meanwhile, the Ganbatte Cities enabled the city to track its progress toward circularity through the food systems thematic area. It showed the city's next steps by identifying the gaps in its circular economy and providing guidance in tackling circular economy actions to achieve its sustainability goals.

