



CIRCULAR ECONOMY IN THE CITY



A RAPID ETHNOGRAPHIC RESEARCH ON
CIRCULAR ECONOMY IN A PHILIPPINE URBAN SETTING

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United Nations Development Programme
15th Floor North Tower, Rockwell Business Center Sheridan
Sheridan Street corner United Street
Highway Hills, 1554 Mandaluyong City
Philippines

Email: registry.ph@undp.org
Website: <https://www.ph.undp.org/>



Table of Contents

[I] ACKNOWLEDGMENTS

[II] EXECUTIVE SUMMARY

[1] INTRODUCTION .01

- [2]** A. The Global Context
- [5]** B. The Philippines Context
- [9]** C. Metro Manila & Pasig City
- [10]** D. COVID-19 Pandemic Adds a Layer of Complexity
- [12]** E. The Complexity of Marine Litter & Plastic Pollution
- [13]** F. Circular Economy in the Cities
- [16]** G. A Complex Challenge Requires a New Approach
- [19]** H. Rapid Ethnographic Research for Circular Economy

[20] METHODOLOGY .02

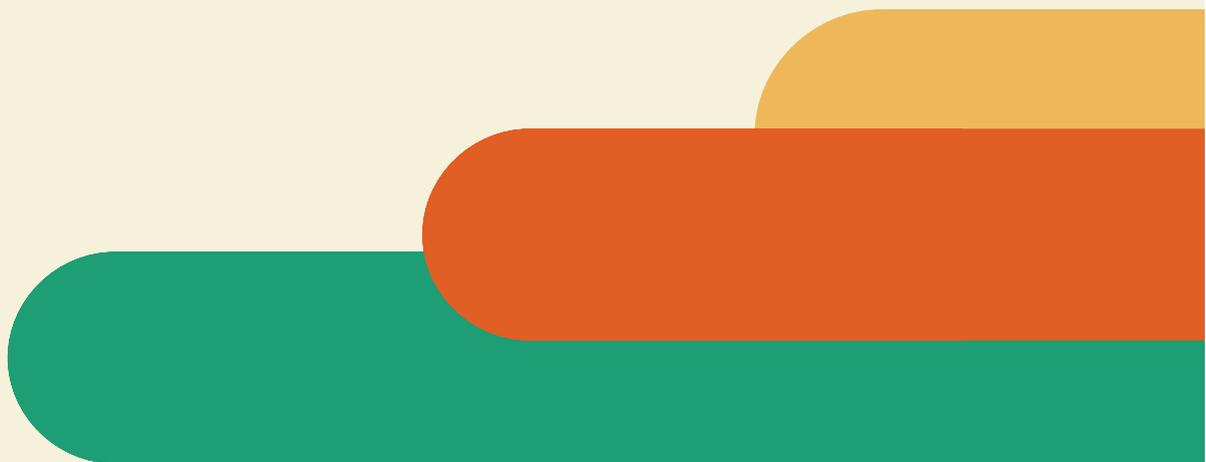
03. RESULTS [25]

- A. The User Personas **[26]**
 - a. The Waste Manager **[27]**
 - b. The Curious Civil Servant **[29]**
 - c. The Social Innovator **[31]**
 - d. The Community Enabler **[33]**
 - e. The Hesitant Neighborhood Organizer **[35]**
 - f. The Alarmed Youth Influencer **[37]**
 - g. The Pragmatic Eco-conscious Entrepreneur **[39]**

04. DISCUSSION & RECOMMENDATIONS [41]

- A. Thematic Insights **[43]**
- B. Conclusion & Recommendations **[53]**

REFERENCES [56]



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Executive Summary

The Circular Economy concept was put forward by global organizations and development agencies as a restorative economic system that has the potential to help tackle climate change, prevent biodiversity loss, address the waste problem, and provide green novel jobs among others. With the Philippines named as the third largest source of discarded waste – bulk of which is plastic waste that ends up in the ocean, a shift to a more circular economic model has been deemed urgent.

With two-thirds of the global population expected to be living in the cities in 2050, according to a UN Department of Economic and Social Affairs report in 2018, implementing a circular economy in the city have been thought to bring significant economic, social, and environmental benefits. There is a lot of potential in implementing circular economy in the city as it is naturally a center for innovation and contains a high concentration of capital, resources, and data. But implementing a circular economy model has always been thought to be a pipe dream in the Philippines as most initiatives and projects have been done ad hoc, in silos, or in a piecemeal manner.

This research, therefore, seeks to have a structured understanding of the professional and lived experiences of various sectors working within the framework of a circular economy ecosystem in Pasig City. By doing so, the researchers was able to have a real live look at the status quo across the cross-section of people interviewed in the study. The results of the rapid ethnographic study have been used to supplement the conduct of a systemic design on circular economy in Pasig City.

As part of this research, twenty-three (23) residents of Pasig City were interviewed by a team of UNDP Philippines field re-

searchers, supported by the Pasig City Hall staff. Guided by an interview protocol, perspectives and experiences on Circular Economy in the city was drawn out, recorded, and analyzed by the team. As part of the output, user personas and stories were generated, and unique insights were surfaced from the ensuing analysis. The user personas identified were: the waste manager, the curious civil servant, the social innovator, the community enabler, the hesitant neighborhood organizer, the alarmed youth influencer, and the pragmatic eco-conscious entrepreneur.

The study surfaced the following insights: 1) The interviewees characterized the city as having two distinct symbolic communities: the formal and informal communities. 2) Because of the inherent uniqueness of these communities, solutions should be a combination of education, awareness, incentivization, and punitive actions. 3) Leveraging kapitbahayan and the spirit of volunteerism generates support and engagement for government programs. 4) When waste is perceived by people as a commodity that has value (or can be exchanged with equal value), this encourages people to treat them differently. 5) The local governments are in the best position to leverage the ecosystem by supporting sectors working in the

city through a combination of business, technology, and policy. 6) The COVID-19 pandemic has caused disruptions and surfaced new challenges in various aspects affecting all sectors. 7) Circular Economy-related projects and Initiatives including the actors involved do not seem to follow a common and cohesive strategic vision.

Finally, the report presents some recommendations that include: ensuring diversity and inclusiveness in the co-design of the problem agenda and solutions-making; keeping in mind social behavior when putting in place structural interventions to create an aesthetic domino effect encouraging physical transformation in cities; adapting a portfolio approach that encompasses policy, advocacy, interventions, and behavior; ensuring that incentivization, in any form, should be accessible to all sectors; and provision of a governance mechanism to ensure coherent, cohesive, and integrated framework that circular economy actors can adhere to.

01

Introduction.



The Global Context

The assessment by the United Nations Environment Programme that covered nearly five decades (1970- 2017) explained that the use of the material resources such as biomass, fossil fuels, metals and non-metallic minerals reached 88.6 billion tones. It is more than three times the amount from 1970, with high-income countries consuming ten times more per person than low-income countries. And this amount may more than double from 2015 to 2050 (IRP, 2017). Together with the growing rates of material extraction and material flows we see increasing pressure on environment and this impact results in the pollution around the world.

For example, the use of plastic has increased twenty-fold (Ellen Macarthur Foundation, 2016) in the past half-century thanks to combination of its functional properties and low cost. Cumulative production of plastic over the period from

1950 to 2015 reached 8.3 billion metric tonnes (Geyer et al., 2017) – more than one metric tonne of plastic for every person alive today. Nearly half of global output in plastic production is centered in Asia (Worm et al., 2017). Plastic pollution is globally pervasive, as it was found in the oceans, in lakes and rivers, in soils and sediments, in the atmosphere, and in animal biomass (Lau et al., 2020). The Ellen Macarthur Foundation (2016) presented in their study that plastic packaging remains the largest application in the production and currently packaging represents 26 percent of the total volume of plastics used. After a short first- use cycle, 95 percent of plastic packaging material value is lost to the economy and 32 percent of plastic packaging escapes collection systems, generating significant economic costs by reducing the productivity of vital natural systems such as the ocean and clogging urban infrastructure.

Global primary plastic production
270 million tonnes per year

Global plastic waste:
275 million tonnes per year

It can exceed primary production in a given year since it can incorporate production from previous years.

Coastal plastic waste:
99.5 million tonnes per year

This is the total of plastic waste generated by all populations within 50 kilometers of a coastline (therefore at risk of entering the ocean).

Mismanaged coastal plastic waste:
31.9 million tonnes per year

This is the annual sum of inadequately managed and littered plastic waste from coastal populations. Inadequately managed waste is that which is stored in open or insecure landfills (and therefore at risk of leakage or loss).



Figure 1. The pathway by which plastic enters the world's oceans. (Jambeck et al., 2015; Erikson et al., 2014)

Plastic inputs to the oceans: 8 million tonnes per year



Plastic in the surface waters: 10,000s to 100,000s tonnes

There is a wide range of estimates of the quantity of plastics in surface waters. It remains unclear where the majority of plastic inputs end up - a large quantity might accumulate at greater depths or on the seafloor.

The growth in use of plastic together with linear economic models help to proliferate this problem further. Today 11 million metric tons of plastic waste is entering the ocean every year (Jambeck et al., 2015), where it is damaging marine life and habitats. If no action is taken, this will grow to 29 million metric tons per year by 2040 (Lau et al., 2020). To compare to other marine debris, such as glass, cloth, paper, food waste, metal, rubber and wood, plastic litter is more persistent in the water due to its long shelf-life and easy transportation by water current and wind (Thushari, 2020). Given that Asia accounts for more than 80 percent (Jambeck, 2015) of the total leakage of plastic into the ocean, this region has been the focus for a variety of crucial leakage mitigation efforts aimed at improving basic collection infrastructure.

The Philippines

Context

The Philippines is one of the fastest growing economies in the Asia Pacific region. A low middle-income country, its Gross Domestic Product was US\$330.91 billion and annual growth rate at 6.2 percent in 2018. It is the second largest archipelago in the world, with over 7,600 islands. The country is divided into 18 regions, 81 provinces, 1,489 municipalities, 145 cities, and 42,036 barangays. In 2018, the country had a population of 106.65 million, growing by 1.4 percent annually. Thirteen percent (13 percent) of the country's population resides in Metro Manila, the national capital region composed of 16 cities. In 2015, 51.2 percent of the population was living in areas classified as urban.

The Philippines is an archipelago situated in the apex of the Coral Triangle, which is a global epicenter of marine biodiversity, with diverse coral reefs, sea grass beds, mangrove and beach for-

ests, fisheries, invertebrates, seaweeds, and marine mammals. It is considered as one of the 17 mega-diverse countries in the world and its waters have been identified as the “center of centers” of marine shorefish biodiversity because there is a higher concentration of species per unit area in the country than anywhere in the regions of the world.

The Philippines is one of the main polluters of the marine environment globally. Lack of strict implementation of solid waste management regulations has led to mismanaged wastes, especially plastics, that eventually end up in water bodies (Diola et al., 2020). At the global level, best estimates suggest that approximately 80 percent of ocean plastics come from land-based sources, and the remaining 20 percent from marine sources (Li et al., 2016). One of the main inputs of plastic pollution from the land

into the ocean environment is through river systems. Most river plastic originates from Asia, which represents 86 percent of the global total. And the Pasig River in the Philippines is in the top 10 rivers that contribute the most to the plastic pollution, with estimated 38,800 tons of plastic annually coming from it to the oceans (Lebreton et al., 2017).

The latest research by Meijer et al. (2021) estimates that 81 percent of ocean plastics come from Asian rivers and the Philippines alone contributes around one-third of the global total. Using higher-resolution mapping and consideration for factors such as climate, terrain, land use, and distance to the ocean, this research suggests that many smaller rivers play a bigger role than we thought. On per capita basis the Philippines emit 3.5 kilogram of plastic per person to the ocean.



The plastic pollution is dominant in places with the poor local waste management practices; near big cities, where there are a lot of paved surfaces where water and plastic can drain into the river outlets; near the river basins with high precipitation rates; and with the close location to the coast. That is why rivers in Manila account for a large share of plastic emissions, even if people in the Philippines produce just 0.07 kilograms of plastic per person per day, that is just the half of it in the UK (Jambeck et al. 2015). The other sound statistic is the probability of mismanaged plastic waste entering the ocean by country, and in the Philippines it is 7 percent, the highest in the world (Majers et al. 2021).

The National Solid Waste Management Commission calculated that from 37,427.46 tons per day in 2012, the country's waste generation steadily increased to 40,087.45 tons in 2016 with an estimated average per capita waste generation of 0.40 kilograms per day for both urban and rural. The National Capital Region (NCR), as expected, generated the biggest volume of wastes for the past five years due to its population size and being highly urbanized. In 2019, the Environment Management Bureau (EMB) of the Department of Environment and Natural Resources (DENR) estimated that the country generated 21,016,523 metric tonnes (MT) of waste.

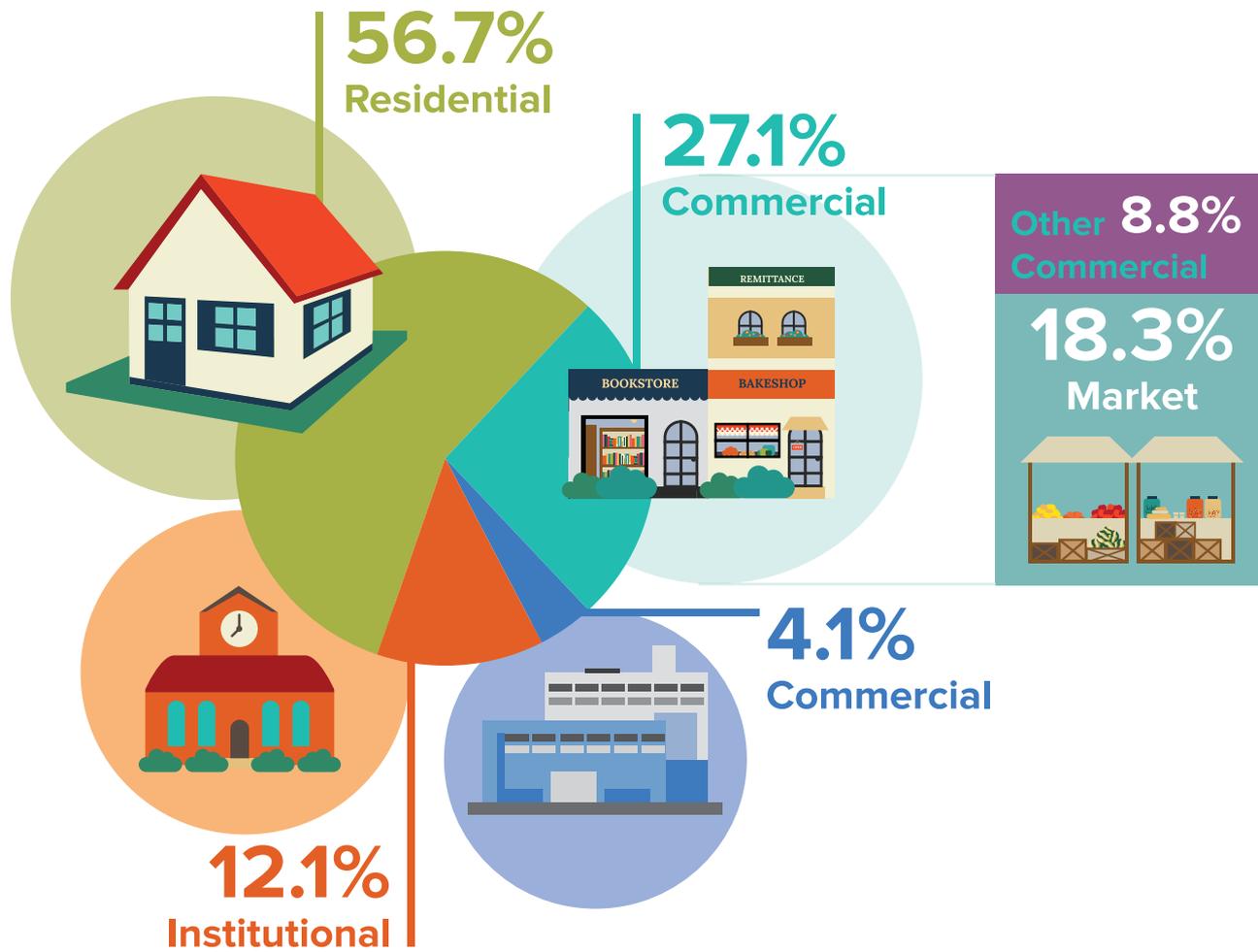
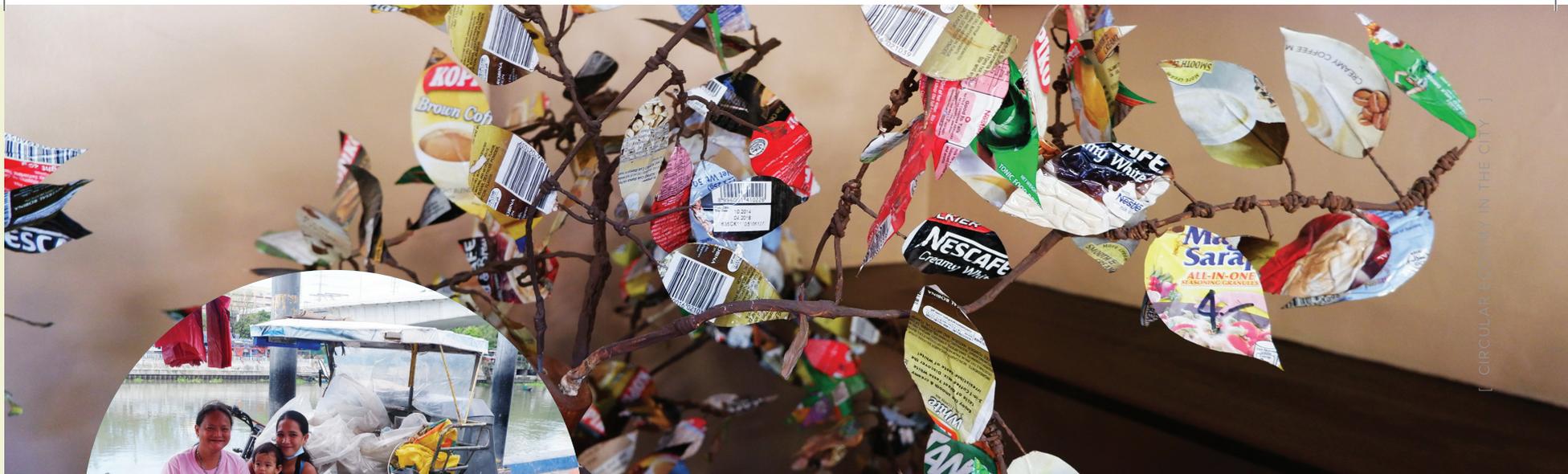


Figure 2. Sources of municipal solid waste in the Philippines. (NSWMC, 2015)



[CIRCULAR ECONOMY IN THE CITY]



From 2008-2014, households across the country generated the bulk of municipal solid waste (MSW), comprising 56.7 percent of waste tonnage. Commercial sources such as general merchandise stores and restaurants contributed 27.1 percent, of which public or private markets accounted for two thirds of this share. About 12.1 percent of waste originated from institutions while the remaining 4.1 percent represents MSW from industrial sources. About half (52.31 percent) of MSW generated in the country is biodegradable in nature although primary data suggest that figures can range from 30 percent to as much as 78 percent. About 27.8 percent of the waste is classified by LGUs as recyclable materials and this rate can range between 4.1 percent and 53.3 percent depending on the city or municipality.

Plastics comprise around 38 percent of recyclables, followed by paper and cardboard waste (31 percent). The remaining 31 percent comprises metals, glass, textile, leather and rubber. Residuals make up 18.0 percent of generated MSW, which often comprise of low value 'potentially recyclable' materials, inerts, and other disposable wastes.

The Philippines is surrounded by water and has also an extensive network of rivers and tributaries. As study done by Ocean Conservancy and McKinsey in 2017 found that over half of open dumpsites in the country are located within a kilometer of a waterway and estimated that between 70 and 90 percent of the waste dumped illegally in the Philippines ultimately ends up in waterways.

Metro Manila & Pasig City Context

Despite being one of the main contributors to the marine plastic pollution in the world, in the Philippines, currently, there are no existing national full-blown research programs or scientific research framework dedicated to basic studies on plastics in the Philippine marine environments (Abreo, 2018). Various research focuses on the Pasig River noting it as an important river system in Metro Manila since it connects two large water bodies in Metro Manila: Laguna de Bay (the largest freshwater lake in the country) and Manila Bay (the country's main port for maritime trade and travel). Yet another work by Deocarís et al (2019) confirms the high level of plastic pollution in it.

Smaller local research by Tanchuling et al. (2020) analyzed plastic wastes in river mouths discharging to Manila Bay, especially five big rivers which run through the highly urbanized and densely populated Metro Manila, namely

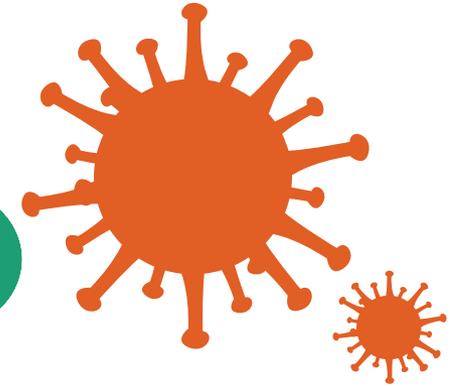
Pasig, Cañas, Tullahan, Meycauyan and Parañaque. Plastic alone comprises from 27 percent to 46 percent from the wet weight of waste. The plastic wastes taken were all household products directly dumped by those residing by the river mouths, that signifies poor waste management infrastructure, lack of materials recovery facilities, and lack of discipline of people. Paler et al. (2019) provide a plastic litter profile of a typical coastal area, namely in southern Luzon. The beach area was classified as dirty and had a high level of plastic contamination, as plastic compromised 85 percent of beach litter with packaging wrapper as the most abandoned litter.

The latest research on marine microbe and plastic debris by Onda et al. (2020) highlights another problem associated with public health risks, namely the spread of antibiotic resistance among pathogens through resistance gene-carrying bacteria that accumulates on

plastic debris in the embayment of the Manila Bay. The team from the Marine Science Institute of the University of the Philippines argues that the Philippines, being at the center of marine biodiversity, is already vulnerable to many environmental issues such as nutrient pollution, extreme weather events, illegal fishing practices, poaching, and climate-related changes that continue to degrade its marine environment, and the issue of plastic adds to this long list of problems. However, unlike other problems, plastics pollution can be controlled but would need participation from all stakeholders – from its production to its consumption and its management and reuse, from knowledge to action, and from the scientific community to the larger public (Onda et al. 2020).



COVID-19 Pandemic Adds a Layer of Complexity



The COVID-19 pandemic has reemphasized the indispensable role of plastics in our daily life, as it emerged as a life-saver for protecting the health and safety of healthcare workers and common citizens (Parashar et al., 2021). More and more research highlights the importance of plastic management, especially in the low-income countries (Klemes et al., 2020). It is not only packaging and personal protective equipment that generate additional plastic waste during the pandemic, but also plastic generated during testing. A single PCR test for COVID-19 generates 37 grams of plastic residues. Worldwide, 15,000 tons of plastics have been generated by this kind of tests and 97 percent of plastic residues from coronavirus diagnostic tests are incinerated (Celis, 2021). To combat the challenge of plastic pollution in these specific conditions, plastic waste type-specific and country demand-specific action plans are required. (You et al., 2020).

The latest research from Chowdhury et al (2021) estimates marine plastic pollution from COVID-19 face masks in coastal regions using behavioral data on face masks usage and solid waste management data: the Philippines use 98,192,700 masks daily, generating 78.6 million surgical masks and 19.6 million of N95 masks daily. The study also estimates mismanaged plastic waste and plastic debris entering the oceans from the used face masks: annual plastic waste generated from mismanaged masks was 2.37 million tons worldwide with the Philippines being responsible for 6 percent of plastic generation (153,824 tons of mismanaged waste annually and from 23,073 tons to 61,529 tons of debris input into oceans from face masks only).

The challenge of the increasing consumption of single-use plastics hound local government units (LGUs) in the

Philippines, many of which still struggle to manage plastic waste and implement the provisions of Republic Act (RA) No. 9003 or the Ecological Solid Waste Management Act of 2000 – a landmark legislation for managing waste in the country. Under the law, LGUs must craft their own local solid waste management plans that detail their framework for reusing, recycling, and composting waste in their jurisdiction. The National Solid Waste Management Commission (NSWMC) is mandated to approve and oversee the implementation of these solid waste management plans. Almost 20 years after the law was passed, only 62 percent or 1,005 out of 1,634 LGUs in the Philippines have an NSWMC-approved 10-year solid waste management plan as of November 2020, according to National Solid Waste Management Commission.



The Complexity of Marine Litter and Plastic Pollution

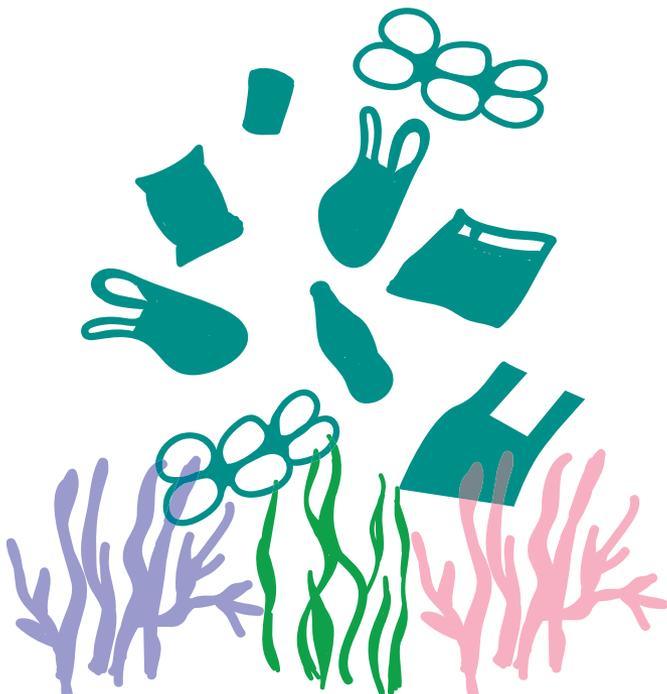
Marine litter is a systemic issue, mainly rooted in unsustainable production and consumption patterns; poor solid waste management and lack of infrastructure; lack of adequate legal and policy frameworks and poor enforcement—including interregional cross-boarder trade of plastic waste—and the lack of financial resources.

Current response to the complex waste issue, including plastic waste and marine litter, has been mostly piecemeal and fragmented and missing to achieve desired transformation and impact. Often, these interventions merely address the symptoms and not necessarily addressing the underlying causes, including the political, economic, and behavioral aspects.

Acknowledging this threat and the urgency to respond to this issue, the National Economic and Development Authority (NEDA) published The Philippine

Development Plan (PDP) 2017- 2022 targeting a national waste diversion rate of 80 percent by 2022. This will be primarily achieved through the enforcement of the Ecological Solid Waste Management Act RA9003—an integrated solid waste management plan based on the 3Rs (reduce, reuse, and recycle). Furthermore, in 2019, NEDA published the Philippine Action Plan for Sustainable Consumption and Production (PAP4SCP) to improve waste management and plastic circularity. But latest studies outline the critical need for a private sector focused market assessment of plastics recycling in the Philippines and more initiatives coming from different stakeholders in all levels (World Bank Group 2021).

The Philippines' Department of Environment and Natural Resources (DENR), supported by UNDP Philippines, has been leading the development of the National Plan of Action on Marine Litter (NPOA-ML). Taking a holistic approach,



the NPOA-ML aims to prevent and significantly reduce marine litter pollution, foster sustainable consumption and production, and promote a circular economy, while mitigating further environmental, social, and economic risks.

In support of the NPOA-ML, UNDP has conducted the stocktaking of waste management and circular economy initiatives in the Philippines. This aims to help understand the current landscape of circular economy in the Philippines, which is crucial in accelerating the Philippines' transition towards it. The results served as an input to the formulation and implementation of the NPOA on Marine Litter and inform UNDP's and other stakeholders' interventions.

The Philippines submitted its first Nationally Determined Contribution in April 2021, which committed a 75 percent reduction of greenhouse gas emissions for the sectors of agriculture, wastes, industry, transport, and energy. It also identified circular economy and sustainable consumption as among the key mitigation measures against climate change and that would bring about co-benefits, including green jobs and investments.

The Circular Economy in the Cities

Ellen MacArthur Foundation in its first report in 2013 outlined the limitations of the linear “take-make-dispose” economic model that leads to scarcity, volatility, and unaffordable pricing levels. The term circular economy started to be formally used in an economic model for the first time in 1990 (Rizos, 2017) and from this moment there have been various attempts to define the circular economy influenced by different concepts. And one of the most-frequently cited definitions that incorporate elements from various disciplines has been provided by the Ellen MacArthur Foundation (2013, p. 7) which describes the circular economy as “an industrial system that is restorative or regenerative by intention and design. It replaces the ‘end-of-life’ concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models”.

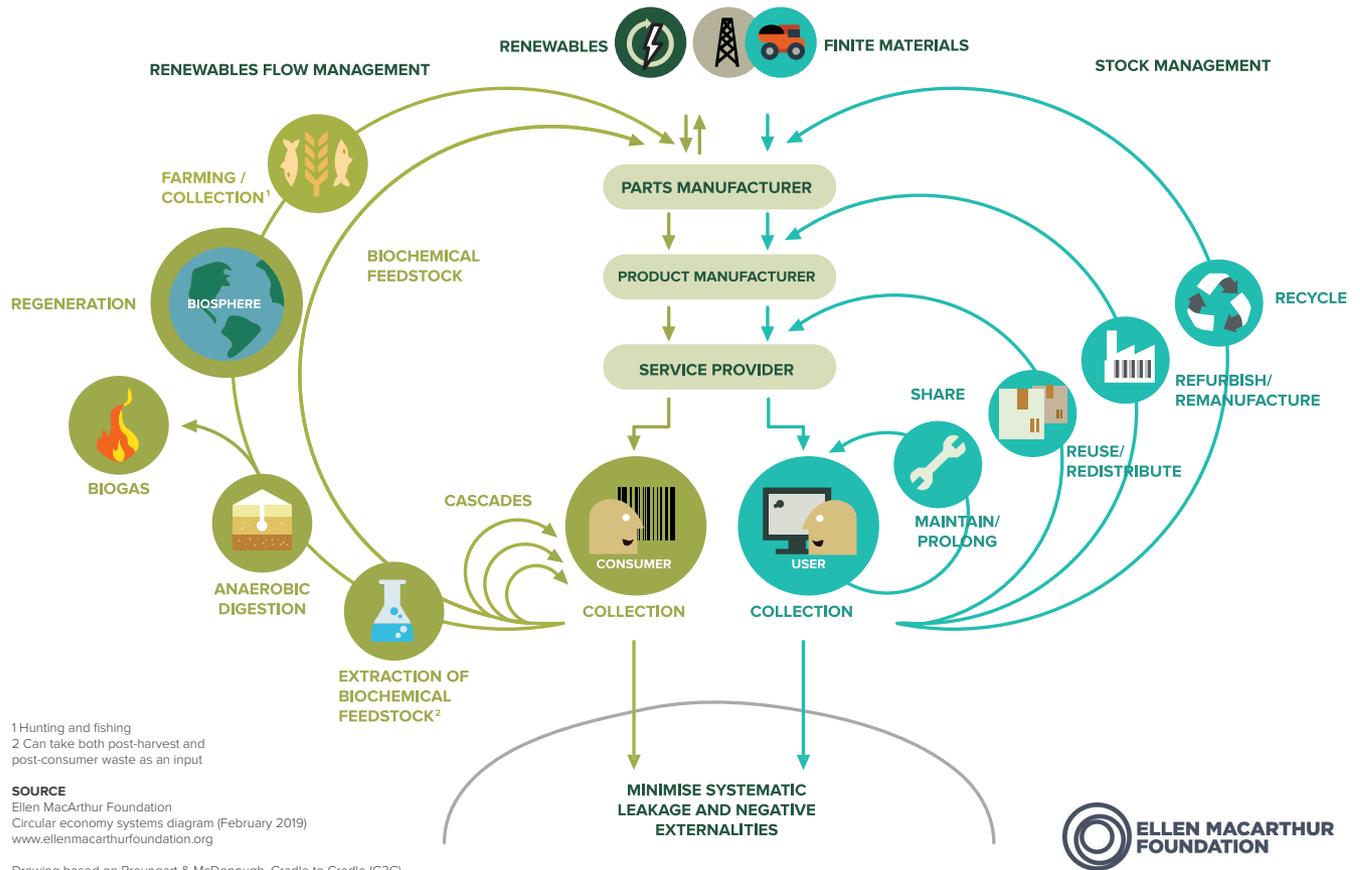


Figure 3. The Circular Economy Model as proposed by the Ellen Macarthur Foundation (2019).



The Ellen MacArthur Foundation in its Circular Economy in Cities Project Guide (2019) highlights the opportunity that circular economy can bring to the cities. Cities are where most materials are used and wasted, and where buildings, vehicles, and products are consistently under-used: 75 percent of natural resource consumption occurs in cities; cities produce 50 percent of global waste; and 60-80 percent of greenhouse gas emissions. With a greater proximity between where people live, work, and play, cities have a big potential in the implementation of the circular economy model. The Foundation emphasized that adopting circular economy in cities can have significant impact: the air gets

cleaner as vehicles switch to zero-emission engines and congestion reduces as shared transit increases; more people walk and cycle to work, boosting health and interactions with local businesses and communities; valuable land previously dedicated to roads and car parks is freed up for green spaces, commerce, offices, houses, and recreation; the layout and design of cities also changes the way materials and products move around them; instead of throwing materials 'away' to landfill or incineration, a new distributed system of resource management, nutrient flows, and reverse logistics makes the return, sorting, and reuse of products possible; materials stay in use.

A Complex Challenge Requires a New Approach

The waste problem is considered a complex, “wicked” issue, which requires systemic solutions. Linear problem-solving techniques and methods are becoming insufficient with the increasing complexity caused by globalization and interrelationships of systems. According to Yosie (2021), this is particularly true as “efforts to date, while yielding insights and incremental progress, have not developed solutions at the scale at which the crisis exists.” He added that a more creative, bolder, and imaginative strategies should be adopted channeled through a system of multi-layered interventions – a portfolio.

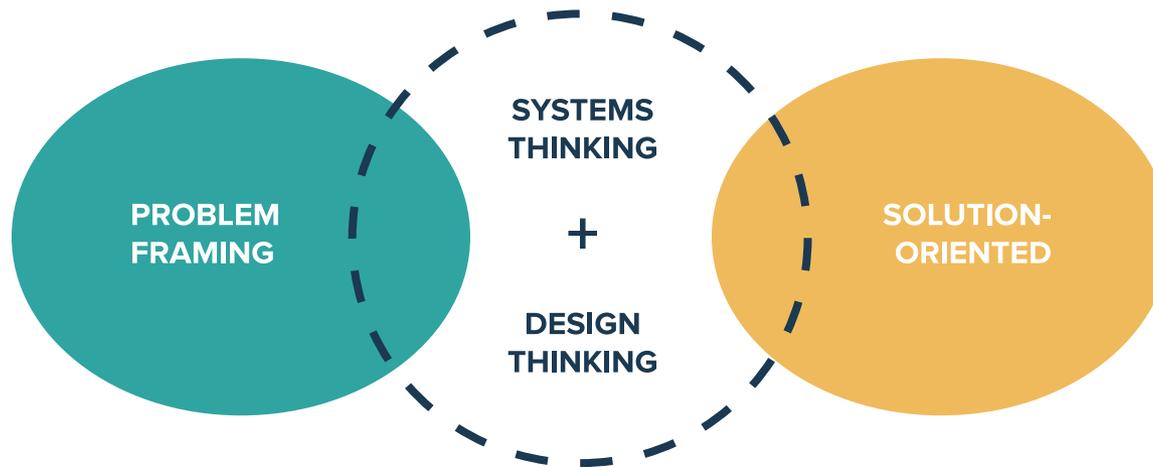


Figure 4. Systemic Design Framework (www.learningforsustainability.com)

The Systemic Design methodology combines both systems thinking and human-centered design. It is an interdisciplinary and participatory methodology and is intended to help organizations and societies meaningfully confront their most complex challenges by integrating systems thinking and practices with design practices and design thinking approaches (Ryan 2013). In his definition Ryan connects systemics, the idea of interdependence and design, and the idea of intentionality. More and more studies outline the importance of systemic design and the renewed interest in this approach as the way of finding solutions for complex challenges of modern world (Buchanan 2019, van der Bijl-Brouwer 2020).

Systemic design is deemed best suited to address complex challenges. It allows participants to view challenges through different lenses and perspectives. In doing so, it enables a more fulsome understanding of the current state -which is required before we can explore pathways to move towards a desired future state. It is ideal for integrating the views of multiple stakeholders where “design” implies intentionality and “systemic” implies interdependence. By asking different questions or framing questions in new ways - we are able to see complex problems from different perspectives. In

addition, the systems approach can also guide us in designing a portfolio of interventions that act on the multiple levers of change to address the problem.

The approach offers transformative and systemic measures that veer away from piecemeal and fragmented approaches in addressing the waste issue and moving towards a more circular and green economy. These are based on the lessons from past experiences of UNDP and other organizations in tackling the complex waste problem and informed by series of consultations with stakeholders, including national and local Government, private sector, civil society, and sectoral groups.

Elements of the systemic design approach have been applied in UNDP’s support to the development of the National Plan of Action on Marine Litter. In applying stakeholder consultation approach in the NPOA-ML process, it was found that despite differing perspectives and agendas among stakeholders, including the national and local government, private sector, NGOs and sectoral groups, it is possible for everyone to arrive at a common vision, which serves as an anchor for more collaborative and collective action towards addressing marine pollution. This started with acknowledging the need to shift from

the status quo and providing a platform where different stakeholders, including those who have different perspectives, come together and be given the opportunity to be heard and understood.

Using systemic design as a participatory process for engaging participants in systemic inquiry allowed stakeholders to draw up a more holistic view of the marine litter issue, encompassing the environmental, economic, social elements, and the dominant local cultures and perceptions towards plastics and waste. The systems analysis provided a good starting point in identifying points in the system where key actors can intervene in a systematic manner. It showed how complex the current system affecting marine litter is, with many actors and elements involved as well as the relationships between those elements. The systems analysis allowed the identification of leverage or strategic intervention points which could potentially create significant change in the system.

The project features several phases, which individually all serve an important role in surfacing systemic insight into the problem space, as well as creating the space to experiment towards sparking shifts towards circular practices within city setting.

Stage	Description	Outcome(s)	Timeline
Ethnographic Research	Seeks to surface preliminary insights from a diverse range of system actors concerning their mindset and actions as it pertains to waste and circular economy.	This data aids in surfacing the lived experience of the problem space which helps to reveal what people actually feel, think, and do and what their needs, wants, and fears are. Creates a container for seeing the problem space from a variety of different perspectives.	February to March 2021
Systemic Design Workshop	Divergent workshop designed to convene diverse system stakeholders to co explore, evolve, socialize, and frame the problem space from a systemic perspective, co visioning a desired future and pathways to get there, and solutions ideation session.	Workshop is critical for setting the direction for the project. It authentically engages system stakeholders and requires them to work together in exploring/diagnosing current state issues, identify opportunities for systemic intervention, and idea incubation for how to begin to shift the system.	May to June 2021
Developing a Portfolio of Solutions and Experimentation	Organized/consolidated information surfaced from the workshop with additional research to align a series of interventions across particular intervention areas based on a portfolio logic to have them work in concert to spark systemic change.	A designed systemic approach that is tailored within contexts to experiment with change at a system level. The outcome is a portfolio design with a coherent set of interventions.	Approximately 6 months for portfolio design and experimentation July to September 2021
Re-engaging local communities the broader ecosystem	Intentional effort to constantly engage system stakeholders to involve them in the efforts to create lasting momentum and champions of this work	We believe that lasting impact can only be driven if local system stakeholders immerse themselves in this work. Through this focused effort we seek to embed this work in the community.	Throughout the process. February 2022 onwards

Table 1. The 4-stage Systemic Design Process

Through the systemic design approach, the aim is to address the issue that embraces systemic mindsets and methods capable of holistically tackling this challenge. The approach seeks to create systemic awareness and alignment of this challenge amongst a myriad of stakeholders in select locations, and also to curate a “portfolio of actions” that work in unison to address multiple areas for change at one time (e.g. policy/regulatory, behavioral tendencies, infrastructure issues, etc.).

Rapid Ethnographic Research for Circular Economy



To further enhance the systemic design methodology, rapid ethnographic research precedes the workshops to provide a window into the lived experiences of representatives in target sectors of the community. This form of research is a quick collection of ethnographic data to analyze user journey/realities and needs by spending as much time as possible with the persons who are relevant to the design challenge.

The rapid ethnographic research allows the researcher to get closer to the everyday realities of people in a system. The MaRS Solution Lab (2021) describes that rapid ethnography includes a variety of qualitative research methods such as semi-structured interviews, journey mapping, personas and empathy mapping, participatory observation and focus groups that can be combined to give more insights into someone's life and how they interact with the world and systems around them. This broad approach can point to not only about

values, attitudes, and norms of people, but also their motivations, actions, and behaviors. Sangaramoorthy (2020) highlights several contexts when rapid ethnography is especially useful: when more information is needed; when an issue is developing; when hidden or vulnerable populations need to be reached; when a program or policy needs to be developed or adjusted; and when communities need to be involved.

The rapid ethnographic research conducted in Pasig City ran from February to March 2021 and sought to surface insights from a diverse range of system actors in the city. The inquiry focused on their mindset and actions as it pertains to waste and circular economy. The data captured aids in surfacing the lived experience of the problem space, which helps to reveal what people feel, think, and do and what their needs, wants, and fears are. This enables us to see the problem space from a variety of different perspectives.



02

Methodology.



The study draws on the rapid ethnographic fieldwork conducted in Pasig City, Metro Manila from February to March 2021. The empathy interviews were conducted by a team of six from the UNDP Philippines and supported by Pasig City Hall employees to examine the current state of Circular Economy in the urban setting. Rapid Ethnographic research involves a quick collection of data to analyze user journey, realities and needs by spending as much time as possible with the persons who are relevant to the design challenge. The interviews are also a way to get a real live look at the status quo across the cross-section of people to be interviewed or surveyed. The inquiry is done through participating and immersing in the natural environment and their everyday life. The ethnographic research that preceded the online Systemic Design workshops sought to supplement the professional and lived experience of participants that will be attending in the five-session online workshop.





Drawing from similar experiences of researchers conducting rapid qualitative research during the COVID-19 pandemic, rapid ethnography is a practical strategy to address urgent situations and provide evidence-based policy decisions and strategies (Vindrola-Padros et al, 2020). The research will allow the researchers to understand what is real about and for them and inquire into the problem space. This is an opportunity to deliberate with, make sense of, and frame the current and future state potential of the environment. The relevant data and information are documented accordingly through field notes, documented observations, interactions, and conversations.

To aid the team conducting the interviews, an ethnographic research field guide (See Annex 1) was developed. It outlined the list of interviewees, specific guidelines in conducting the interviewees and key questions, particularly on the following:

- How individuals perceive waste and circular economy and other priorities beyond waste and environment
- Habits/views of interviewees in terms of consumption and production (especially for manufacturers), generation, disposal, re-use / recycle, and other applicable circular economy strategies

- Positive aspects of current practice
- Barriers and challenges as it relate to waste generation and disposal and sustainable consumption and production
- Future-focused investigation around needs/opportunities, including opportunities around circular economy in terms of transforming and generation of business, jobs, and livelihoods; incentives/disincentives to shift to sustainable consumption and production

The interviewees were jointly identified by the Pasig City Hall representatives as well as the research team members. An interview guide was prepared to facilitate the in-depth interviews. The goal of the interviewees was to elicit experiences and perspectives on the Circular Economy framework earlier presented in Figure 1. In-depth interviews were conducted by the research team members following the guidance from the Interview Guide. Interviews were approximately 60-90 minutes, audio recorded and transcribed verbatim. Videos and photos were also taken upon consent from the interviewees and all identifying information were removed to ensure confidentiality. The interviewees did not receive any compensation nor honorarium.



In total, the research team interviewed twenty-three (23) residents of Pasig City based on the following categories: a) Waste Management / CE Actors; b) Households; c) Policymakers & Government Workers; d) CSOs / NGOs / CE Startups / Enablers; e) Businesses / Entrepreneurs; f) Students. Table 1 presents the Demographic Characteristics of the interviewees.

Interviewee Characteristic	n (%) N=23
Age	
• Mean	43
• Range	18 - 68 years
Sex	
• Female	9 (39%)
• Male	14 (61%)
Sector	
• Waste Management / CE Actors	9 (39%)
• Households	2 (9%)
• Policymakers & Government Workers	5 (22%)
• CSOs / NGOs / CE Startups / Enablers	4 (17%)
• Businesses / Entrepreneurs	2 (9%)
• Student	1 (4%)

Table 2. Participant Demographics

Data collected from the interviews was imported into a persona canvas on google sheets and analyzed thematically by the research team. Inductive thematic coding proposed by Saldaña (2009) using the nVivo software was done on the transcripts of the 23 interviews and focused on the various experiences of the interviewees.

In addition, the research team also conducted a series of weekly online meetings during the rapid ethnographic research and the systemic design workshops to conduct collaborative thematic analysis and validate the insights and findings on the nVivo software. Interviewees were clustered according to their common characteristics and the team identified seven (7) personas which have surfaced from the analysis. User stories were then developed by the research team which were informed from the insights and common characteristics of the persona.

03



Results.



In this section, we will be presenting the processed results of the immersive rapid ethnography interviews conducted by the UNDP field research team. The results will be presented as user narratives or stories – a form of persona analysis which combines the quantitative method such as cluster analysis with qualitative method such as direct observation and empathic interviewing to develop personas that are representatives of the actors in the circular economy ecosystem in Pasig City (Tu, et al., 2010). According to Tu, et al. (2010), a persona is a detailed and fictitious user model that represents archetypal users bearing the characteristics of the group of similar persons. In addition, a persona is defined by his / her goals borne out of a deep analysis and synthesis of the real interviewees' goals, behaviors, and motivations around the design challenge being tackled.

The personas, therefore, provides the participants of the Systemic Design workshops a unique look into the lived human experience of different sectors through the lens of the user persona's needs, behaviors, and goals.

Each of the user personas will be presented in two parts: 1) a user persona card; and 2) the user story or narrative. The user persona card presents a bird's eye view of the persona's demographic details (i.e. age, education, family, location, and job), the technographic (i.e. how a persona understands and engages technology, especially social media), and media (i.e. how to communicate with or reach out to a persona). The user story presents a narrative on the perspective of the persona detailing his or her goals, needs, opinions, and feelings.

The User Personas

The Waste Manager

DEMOGRAPHICS

- AGE** : 40-50 years old
- EDUCATION** : Highschool Graduate
- FAMILY** : Married with Kids
- LOCATION** : San Miguel, Pasig City
- JOB** : Palero

TECHNOGRAPHICS

- INTERNET** : 
- SOCIAL MEDIA** : 
- MESSAGING** : 
- GAMES** : 
- ONLINE SHOPPING** : 

MEDIA

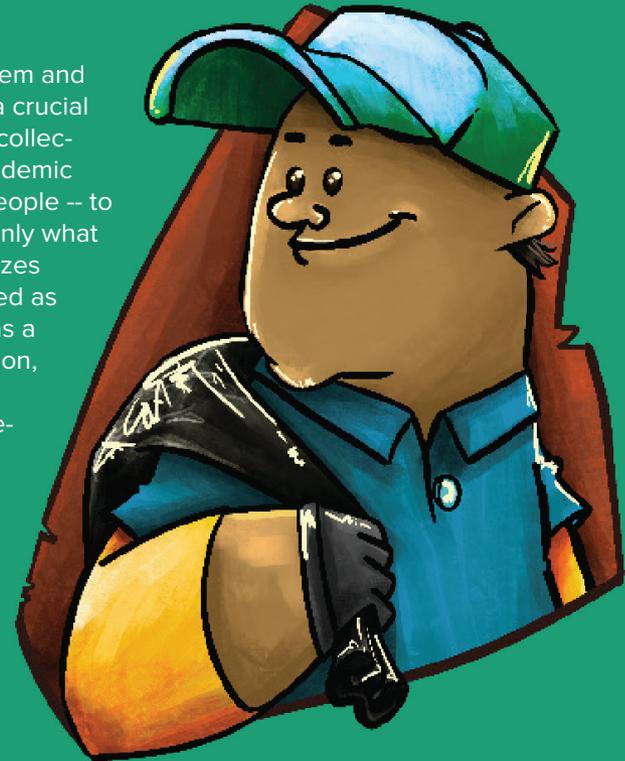


The Waste Manager is a middle-aged family man who works for the solid waste management office of the Pasig City Environment and Natural Resources Office (CENRO). He is married, has children, and is proud that despite his work in the waste sector, he was able to send his kids to school and provide for his family. His main motivation to keep on doing what he does is his family -- this is what drives him despite the many challenges he encounters in his work. As a waste manager, his goal is to ensure the city's cleanliness because this is also the city where his family resides. His biggest frustration, however, is that people are not sorting their waste properly and are not disciplined enough to enable waste sorting.

The waste manager understands that his work involves a lot of risks, but somehow, he has developed resilience despite the challenges he encounters daily. He recounted an experience where trash bags were thrown in their direction when the residents missed the scheduled waste collection. He hopes people would not leave their trash everywhere for easier collection and would respect designated points and pick up sched-

ules. Coordination between them and local community leaders play a crucial role in ensuring proper waste collection. He observed that the pandemic has changed the mindset of people -- to value what we have and buy only what we really need; but he recognizes that the experience can be used as an excuse to consume more, as a diversion from stress. In addition, the Waste Manager is worried about his health as a palero because of the facemasks and syringes mixed together with normal household waste.

He perceives waste as something that has value, especially when this is segregated. According to him, this can easily be turned into money by selling it to junk shops that consolidate these to be sold to a wholesale buyer or consolidator. He mentioned that in the past, it was from the reselling of scrap or recyclable materials that he was able to earn additional income to augment his family's daily expenses. But since this has been outlawed by the city, he now only relies on his monthly income as a palero.



The waste manager understands how interconnected the cities insofar as waste is concerned. To prove this point, he recounted that it is particularly difficult to collect trash in inter-city borders because residents from the other side would usually take their trash to the Pasig side as their waste collection schedule is erratic.



The Curious Civil Servant

DEMOGRAPHICS

- AGE : 30 years old
- EDUCATION : College Graduate
- FAMILY : Single
- LOCATION : San Antonio, Pasig City
- JOB : City Hall Employee

TECHNOGRAPHICS

- INTERNET : 
- SOCIAL MEDIA : 
- MESSAGING : 
- GAMES : 
- ONLINE SHOPPING : 

MEDIA





The Curious Civil Servant is an employee of Pasig City Hall. His stint at City Hall started with the fresh term of the mayor, believing in his call to reform Pasig City. The curious civil servant is a single, 30-year-old college graduate and is passionate about public service. He is curious, open, and innovative and readily explores novel creative ideas.

While he's aware of waste management initiatives, the Curious Civil Servant admits that he is not yet familiar with the concept of Circular Economy. But he is curious and interested to learn more. His particular interest in Circular Economy is that this promotes a cleaner city while providing new job opportunities. The curious civil servant is pragmatic and acknowledges that there will always be challenges when you implement projects like waste segregation, proper waste collection, urban gardening, and the like. He also supports the recycling of plastics and encourages barangays and Homeowners' Associations (HOAs) to participate in local recycling competitions and the plastic incentivization program.

The curious civil servant observed during the pandemic that there is an increase in the use of single-use plastics primarily due to the use of PPE equipment and the rise of grocery and food

delivery services. He laments the fact that citizens need to be more disciplined and should have proper education and awareness of the city programs for these to be successfully implemented. But despite this, he is a firm believer that when the community comes together, a lot can be achieved. He observes that the closely knit HOAs can encourage the neighborhood to be self-disciplined and participate in cleanups, segregation, and urban gardening. He also believes that to turn good practices into habits, there should be a sustainable incentivization program, especially targeting the informal sector.

Already, the plastic collection and exchange program initiated by some FMCG companies has encouraged people to segregate. He further explained that in gated communities, residents are more disciplined and therefore only need proper education and awareness to ensure that they follow the policies.

He believes in inclusive economic growth, discipline in the community, and sustainable green initiatives in Pasig City. His main goal as a public servant is to have a livable, clean, and progressive Pasig City where no one is left behind. He believes that this can be done by collaborating closely with the local community.

The Social Innovator

DEMOGRAPHICS

AGE	: 50+ years old
EDUCATION	: Masters Degree
FAMILY	: Married with Kids
LOCATION	: Bagong Ilog, Pasig City
JOB	: Manager/Director

TECHNOGRAPHICS

INTERNET	: 
SOCIAL MEDIA	: 
MESSAGING	: 
GAMES	: 
ONLINE SHOPPING	: 

MEDIA



The Social Innovator is a startup / enterprise / community enabler who organizes and invests in social impact projects. The social innovator is married with children, well-educated from one of the top universities in the country, and holds a top position in her social innovation institution. It is her personal as well as her organization's mission to create value for marginalized communities through innovative solutions, social innovation, and social enterprise pursuits.

The social innovator observes that there are two types of communities in Pasig: the gated communities that includes both upper and middle class and the informal communities that includes the HOAs and the informal communities. They have different characteristics and should have different approaches. She feels that the government should provide a strong support system (i.e. ethical, economic & environmental) through proper policy implementation. In working to promote circular economy and other social innovation pursuits, she realized that there is a need to have an ecosystem approach and to focus on a

combination of tech, business, and policy. As waste is a community issue, the Social Innovator sees culture as a way to encourage people to make solutions matter for them.

The social innovator observes that some national policies implemented at the local level are stale. In addition, mechanisms like segregation-at-source and materials recovery facilities (MRFs) are not being widely implemented and, in some places, not present at all. Recycling and recovery of plastic waste is also a gap she observed. While these are mandated, these are highly fragmented because the capacity, ability, and willingness at the local level are at different levels. There also needs to have a balance between wide policy awareness and education with incentivization applied at different levels according to the characteristics of the community.

The social innovator observed the need for the national government to engage the local governments and the academe / research & development centers, es-



pecially encouraging LGUs that have the appetite for risk-taking, experimentation, and collaboration with other LGUs. Furthermore, she explains that scale should be at the barangay level; but needs the LGU to provide standardized policies, monitoring, and evaluation. Finally, the social innovator's goal is to encourage experimentation on the business model and technology for both government (policy) and startups (entrepreneurship).

The Community Enabler

DEMOGRAPHICS

AGE	: 54 years old
EDUCATION	: Highschool Graduate
FAMILY	: Married with Kids
LOCATION	: Pineda, Pasig City
JOB	: Urban Garden Supervisor

TECHNOGRAPHICS

INTERNET	:    
SOCIAL MEDIA	:    
MESSAGING	:    
GAMES	: 
ONLINE SHOPPING	: 

MEDIA



The Community Enabler is a government employee who regularly interacts with the community, usually at the barangay or Homeowners' Associations (HOA) level. She is in her mid-fifties, married with children and grandchildren. She has a strong sense of family and extends even towards her peers and subordinates, treating them like a mother would.

She has a strong sense of volunteerism and is particularly passionate about waste management, especially about segregation at home. She is also the go-to person when “plantitas” in the village need help or advise about segregation, composting, and gardening. The Community Enabler has a deep sense of service and makes it her mission to support in any way she can the communities or HOAs where she belongs or are assigned. She has a deep desire to see change in her community.

The Community Enabler sees value in waste, especially through composting of organic or kitchen waste and recycling and upcycling for plastics. This is the reason why she has a tendency to keep recyclable objects in her storage space

for future reuse in her urban garden. She also is a bokashi composting ambassador in the community and enthusiastically shares her knowledge to everyone she meets.

She expresses that the pandemic has limited her capacity to do her passion projects of composting, urban gardening, and segregation because her staff had to be moved to support the frontline tasks of the city's COVID-19 response. She is also unable to follow up on interest to conduct training in various HOAs due to restrictions on local events. She also wishes for households to segregate their waste, especially the organic and kitchen wastes, as these are wasted opportunities to turn them to compost to support the urban gardens in the city.

The community enabler hopes that one day the city residents will see the value of waste as compostable and recyclable materials for use in their personal as well as community projects. In addition, she feels that everyone should be disciplined, and this can be done by proper education, awareness, and support from barangay officials.



The Hesitant

Neighborhood Organizer



DEMOGRAPHICS

- AGE** : 38 years old
- EDUCATION** : Highschool Graduate
- FAMILY** : Married with kids
- LOCATION** : Pinagbuhatan, Pasig City
- JOB** : Housewife/Small Store Owner

TECHNOGRAPHICS

- INTERNET** : 
- SOCIAL MEDIA** : 
- MESSAGING** : 
- GAMES** : 
- ONLINE SHOPPING** : 

MEDIA





The hesitant neighborhood organizer is a household level leader who organizes activities on behalf of the Homeowners Associations (HOAs) or the barangay. She is a forty-year-old housewife who lives in a 30 square meter lot with her family of six as an informal settler. She maintains a small sari-sari store that helps augment their family income. Since her neighbors cannot afford high volume purchases, she repackages grocery items (e.g. oil, sugar, salt) in smaller sachets.

The hesitant neighborhood organizer lives in an informal commune in a former marshy garbage dump which has been slowly developed into a growing and more organized community. She and her female neighbors love to congregate to discuss the latest gossip and local issues, and often find themselves arguing over small things.

She is also starting to be actively involved in the HOA, an aggregation of around 200 households organized un-

der the barangay. As a local community leader, she is a bit hesitant because this is the first time that the LGU has encouraged them to participate in the government processes and service delivery. She recalled that in the previous administration, they were discouraged to speak out but now they feel that their voice is heard. The HOA projects they pursue include the waste collection and segregation with the barangay and the plastic collection and exchange program with Unilever and Alaska.

For the hesitant neighborhood organizer, she immediately associates segregation and recycling when she thinks about waste, especially plastic bottles. According to her, she usually turns plastic bottles into plant and vegetable pots. As a self-confessed plantita, she claims that she also segregates kitchen waste and uses it as compost or fertilizer for her plants. Her major pet peeve as a community leader are her neighbors who have no discipline and “matigas ang ulo” despite being told plenty of times to follow the rules. But despite that, she loves her kapitbahay and finds value in kapitbahayan, the connections she creates, and relationships she builds with her neighbors.

The Alarmed Youth Influencer



DEMOGRAPHICS

- AGE** : 18 years old
- EDUCATION** : Senior Highschool Graduate
- FAMILY** : Single
- LOCATION** : San Antonio, Pasig City
- JOB** : Student

TECHNOGRAPHICS

- INTERNET** : 
- SOCIAL MEDIA** : 
- MESSAGING** : 
- GAMES** : 
- ONLINE SHOPPING** : 

MEDIA



The alarmed youth influencer is an environmentally conscious senior high school student who is part of her private school's sustainability club. Her club launched a bazaar before the pandemic that featured sustainable products sourced directly from farming communities. The eighteen-year-old student lives with her parents and is particularly adept in digital apps and hardware. She is a heavy social media user and regularly chats with her friends online.

The alarmed youth influencer is observant and not afraid to ask on issues that surface on social media. She is very conscious of her carbon footprint and actively tries to practice zero waste in her daily life. While her village does not practice waste segregation, she is mindful that she recycles all plastic packaging she receives through food and grocery deliveries.

She has very strong opinions on the government and is well educated on the impact of climate change. She is "mulat", (aware or conscious of social issues), especially about the environment, saying that: "climate change is going to be their problem in the future." The alarmed youth is also not afraid to ask "what" but also "why". She is articulate

and not hesitant to express her views on social media. Because of her access to the internet and her adeptness to it, she is more knowledgeable and opinionated on current issues and is able to influence her peers.

The alarmed youth influencer understands the impact of plastic on the environment and strongly believes that good governance and policies can help mitigate the effects of marine litter / plastic waste. She believes that although she should be conscious of what she consumes, she asserts that responsibility should be on the government and producers to find sustainable alternatives to plastic waste. She believes that companies like Coke and McDonalds should be the ones to step up their efforts in using alternative packaging given how much they are part of people's everyday lives. She also recognizes the "cool efforts" by brands such as Adidas that incorporate sustainability in their design by producing shoes made of ocean plastics.

She laments the fact that her generation has seen the effect of mass consumption and are the ones who will bear the brunt of their effects: "If it's bad now, how much more for the younger generations to come?"



Despite all these worries, the alarmed youth does not believe her generation would have reversed the effects of climate change by the time she's 30. But she is hopeful that strict and concrete laws will be enforced by then where "no one is an exemption" and proper mechanisms and treatment facilities are in place to curb these issues.

The Pragmatic Eco-conscious Entrepreneur



DEMOGRAPHICS

AGE	: 55 years old
EDUCATION	: Masters Degree
FAMILY	: Married with Kids
LOCATION	: Pasig City
JOB	: CEO/Sectoral Leader

TECHNOGRAPHICS

INTERNET	: 
SOCIAL MEDIA	: 
MESSAGING	: 
GAMES	: 
ONLINE SHOPPING	: 

MEDIA



The Pragmatic Eco-conscious Entrepreneur is married and in his early mid 50s. He is a top executive in a private sector company and a leader in their sectoral association. He is very pragmatic and prefers practical solutions to everyday problems. The Entrepreneur is also purpose-driven and works to ensure a good future for his family. He claims he is not an expert in Circular Economy but understands the basics of sustainability and being waste free. He is interested in learning more about Circular Economy and its implications in his company, his association, and his daily living.

Like his co-entrepreneurs in the association he belongs to, their primary motivation for lessening their waste is economic. They want to avoid waste at



all costs because more waste means higher cost. This practical way of looking at the economics of waste leads him to promote a more sustainable business model because he believes this can also help add to the longevity and resilience of businesses in the long run. But for now, they have not prioritized sustainability and circular economy as they are focusing on just helping businesses find strategies to surmount the pandemic.

He asserted that the government should step in to provide better support through incentivization so that the initiative will not just be for the rich businesses but accessible for the middle class as well. He explained that by incentivizing, value is generated around sustainability and can become a potential source of income. For entrepreneurs like him, motivation is economic and the pursuit for income maximization and cost minimization through the prevention and recovery of waste. He also believes that if they are to pursue circular economy, they need testimonies from experts,

backed up by the government, to convince businesses that this is the best way forward.

The COVID-19 pandemic has been a major pain for him and has allowed him to recognize that the entire value chain may be disrupted one way or the other. By redoubling their efforts in the value chain, they will be able to make sure no materials are wasted, and they are able to maximize their profits. This is perhaps how a circular business model can help mitigate the value chain challenges experienced during the pandemic by making sure that sustainable materials and practices are in place.

As his company shifted to online retailing during the pandemic, he observes that there is excessive packaging and is driven by feedback by consumers. He thinks that there should be efforts to nudge consumer attitudes on excessive packaging and proper disposal and urging upstream vendors of using optimum need-based packaging.

04

Discussion,
Conclusion &
Recommendations.



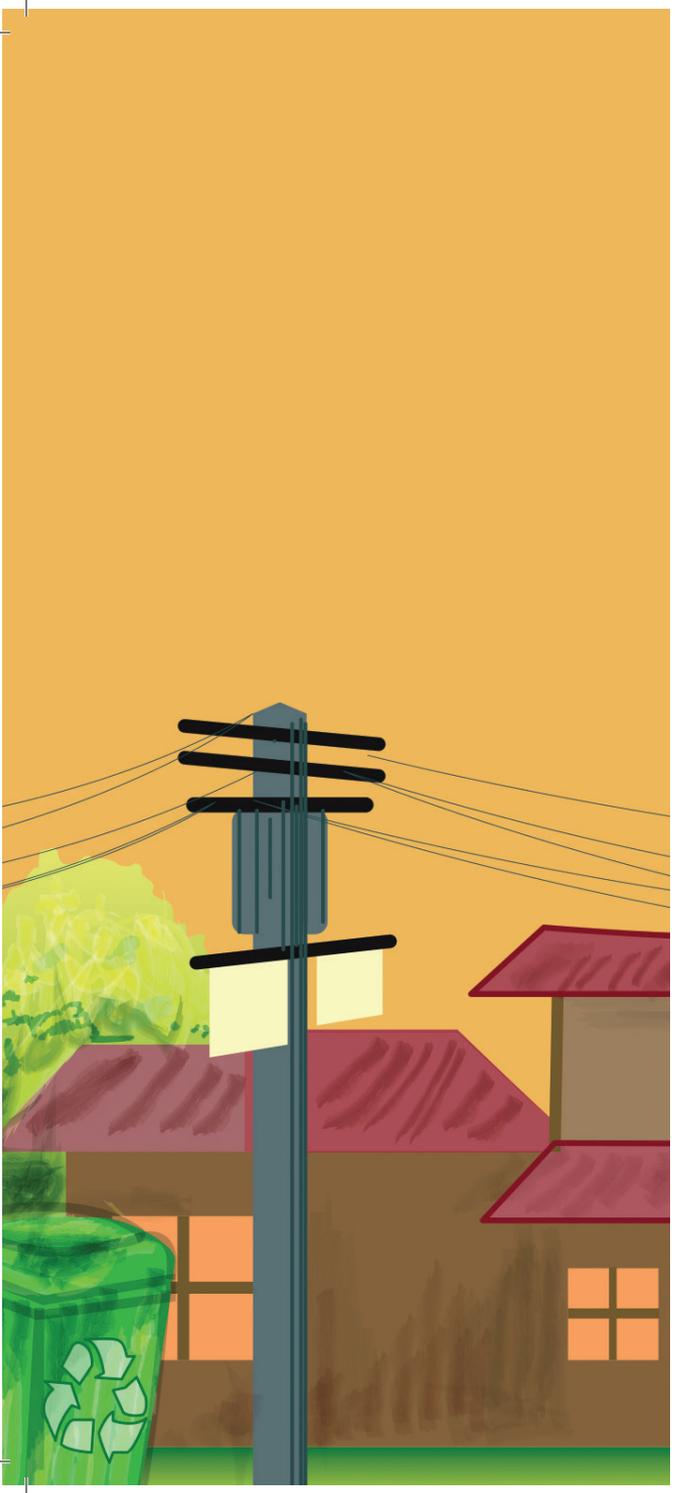
This section will discuss the insights borne out of the thematic analysis conducted on the data collected from the interviewees. A computer-aided qualitative data analysis software tool, nVivo, was used to identify the most frequently used words visualized as a word cloud (see Figure 4).



Figure 4. Word Cloud based on the data word count.

The nVivo word frequency analysis lists down the following top words: organizer, personal, community, change, actively, and events. Insight from the word frequency count points to how circular economy is both actively personal and community based. This unique insight is consistent to the inductive thematic analysis in the next section of this study.

Furthermore, nVivo was also used to code and identify thematic clusters which represent as insights into how a circular economy works in an urban setting based on the collective experiences of the personas.



Thematic Insights

Theme 1: A tale of two cities

The interviewees characterized the city as having two distinct symbolic communities: the formal and informal communities. The formal communities refer to the upper and middle class living in fenced subdivisions and those in the central business district of Pasig City. On the other hand, the informal communities include the informal settlers and those living near or around the rivers and esteros (canals). While the interviewees explain that the reference point to the two cities as more symbolic than actual citing that, in reality, the city is very mixed.

Each of these identified symbolic “cities” within the city have unique characteristics and requires different approaches when dealing with them. An interviewee identified under the social innovator persona mentioned: “*Iba sa amin sa subdi-*

vision kasi initiative ng household namin na mag-segregate kasi alam namin na ito ay batas. Kung may effective back support system sa LGU sana kaya mong itulak and waste segregation policy.”

[It’s different in our subdivision because it is the initiative of our household to segregate because we know it is the law. If there is an effective back support system in the LGU, it is likely that you can push for the waste segregation policy.] He added: “*Iba sa informal communities kasi di lang information and advocacy ang kailangan, kailangan mo din ma-incentivize. Ang feeling ko naman ay kayang mai-promote as long as nandiyan ang support ng gobyerno.”*

[It is different from informal communities because not only information and advocacy is needed, you also need to incentivize. My feeling is that it can be promoted as long as there is govern-





ment support.] The social innovator understands that interventions should reflect the realities on the ground and realities differ greatly from these type communities.

The social innovator as well as the eco-conscious entrepreneur also explained that policy and system structures dictate behavior. *“Sa mga informal communities na talagang madumi, walang paki-alam ang mga tao kasi madumi na ang paligid nila. Sa mga magagandang subdivision o kaya sa central business district o CBD, mahiya kang magtapon ng basura kasi malinis ang kapaligiran. Pero isipin mo ito, kapag ang mga nakatira sa informal communities ay pumunta sa CBD, sila mismo may disiplina kasi maganda ang implementasyon sa palisiya at maganda ang structures dun.”* [In informal com-

munities that are dirty, people don’t care because their surroundings are already dirty. In good subdivisions or in the central business district or CBD, you are ashamed to throw garbage because the environment is clean. But think about it, when those living in informal communities go to the CBD, they themselves have discipline because the policy implementation is good and the structures there are good.]

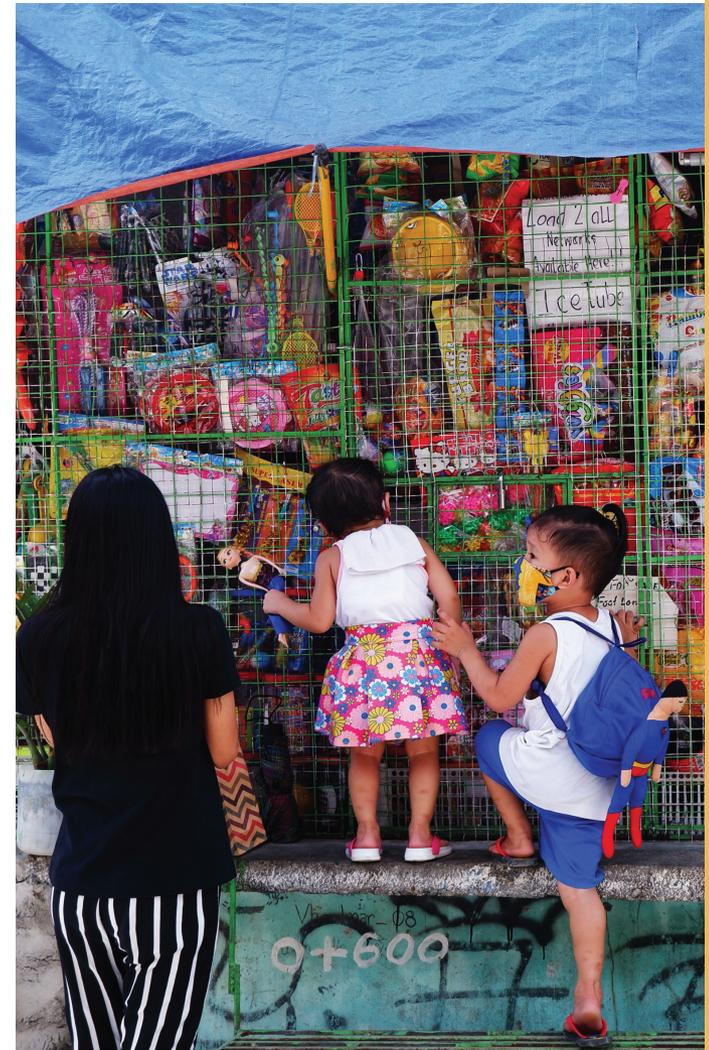
This insight presents an argument that existing system structures, especially physical ones, dictate how people behave. Corollary to this insight is that when novel policy and physical structures are put in place, people are more than likely to change their behavior to suit the new realities set by the new system.

Theme 2: No one-size-fits-all solution

Because of the inherent uniqueness of the communities in Pasig City, the interviewees reasoned those interventions should not be one-size-fit-all solutions. National government, CSOs, private sector, and other sectors working on circular economy should also not parachute ideas but approach intervention activities by engaging the communities. As one interviewee (Social Innovator persona) points out: “Policy is deter-

mined centrally but implementation is left to the local governments, to local units. And you’re going to get different levels of capabilities with the implementation, and different levels of willingness to implement. Ah, also, different levels of resource. And that’s before you talk about different strategies, approaches, vested interests. There’s a huge variability across different municipalities, cities, even villages and communities within cities.”

According to another interviewee identified as a curious civil servant persona: “*Meron dapat na magandang balanse ng edukasyon at incentivization at dapat tama ang pagka-apply nito sa mga target communities. Hindi dapat isang solusyon lang para sa lahat.*” [There should be a good balance between education and incentivization and it should be correctly applied in the target communities.] This insight points to the need to underscore an approach that presents a differentiated set of solutions that may be structured as a portfolio of options.



Theme 3: Community-based and participatory approach works



Leveraging kapitbahayan and the spirit of volunteerism generates support and engagement for government programs. The hesitant neighborhood organizer is an advocate for this insight as she has observed that when neighborhood or Homeowner Associations (HOAs) come together, their programs are successful. Neighbors are also great influencers when it comes to promoting discipline on the ground: *“Ayaw na ayaw namin ang kapitbahay na napakatigas ang ulo. Pinagsasabihan naming lahat hanggang siya ay magbago. Kailangan lang talaga ng paalala sa mga kapitbahay’ng matigas ang ulo. Ayun, nagbago naman.”* [We don’t like the neighbor who is so stubborn. We all tell him until he changes. We just need to constantly remind our stubborn neighbors. He has changed though.]

This also calls for solutions to be scaled at the barangay level, with local govern-

ment standardizing policies and M&E. The curious civil servant, the hesitant neighborhood organizer, and the social innovator calls for close collaboration with the community insofar as designing and implementing solutions is concerned. According to the curious civil servant: *“Nasa community ang labanan kasi sila yung nakakita at sila yung direktang naapektuhan.”* [The battle is in the community because they are the ones who see, and they are the ones who are directly affected.]

Community-based and participatory approach to promote and implement circular economy in the cities calls for bottom-up processes that includes all sectors, including the communities and neighborhood associations, in the design, implementation, and monitoring of solutions carried out in the city.

Theme 4: Waste isn't waste when it has value



When waste is perceived by people as a commodity that has value (or can be exchanged with equal value), this encourages people to treat them differently. Various personas most especially the waste manager, the community enabler, and the hesitant neighborhood organizer agree to this insight because residential communities have started to take segregation seriously after incentivization programs were introduced in coordination with the local government unit.

The following statements are from the hesitant neighborhood organizer and the waste manager:

• **“Alaskalikahan¹ po dun sa amin. Bumaba po ang waste diversion sa amin. Sa mismong bahay pa lang, nag-segregate na sila. Parang nadidisciplina na rin ang mga ka-baranagay namin.”** [It’s Alaskalikahan in our community. The waste diversion went down because of it. They already segregate in their own houses. Our community seems to be disciplined as well.]

• **“Sa Walastik² kasi, ang mga junkshop ang partner nila. Kada-kilo ng plastic, pera ang pinamimigay nila. Ang mga junkshops nakakatanggap rin ng pera galling sa Unilever.”** [In Walastik, junkshops are their partner. Every kilo of plastic, they give away money. Junkshops also receive money from Unilever.]

When asked if in case the incentivization program stops, the community enabler answered: *“Magtutuloy pa rin yan! Minsan may nagdadala po dito na walang kapalit, binibigay po nila. Positive po ang effect. Naituro na po kasi namin sa tao ang tamang pag-segregate. Nagiging habit na po nila.”* [It will still continue! Sometimes, there are those that bring the segregated plastics without expecting any return. The effect is positive. We already taught them how to segregate properly. It has become a habit for them.] He added: *“Sabi nga po nung nagwawalis sa’min, wala na daw sila halos mawalis dahil nakukolekta na namin.”* [The street sweeper told us that they have lesser litter to sweep because we already have collected these.]

1 Alaskalikahan is a sustainability project of Alaska Milk Corporation where AMC gives out 165gms of Alaska Fortified Powdered Milk dink for every 1 kilo of flexible plastics. <https://www.alaskamilk.com/purpose/newsroom/a-win-win-alliance-for-the-environment-and-nutrition/>

2 Walastik is Unilever’s initiative to scale up plastic collection. They have partnered with Pasig City LGUs and utilized the junk shops and MRFs as collection agents. <https://www.unilever.com.ph/news/news-and-features/2021/plastic-collection-in-partnership.html>



The social innovator pointed out that existing waste management infrastructures in the city are potential areas for LGUs, private sector, and other sectors working on circular economy can engage communities. *“The materials recovery facilities (MRFs) are the lynchpin of any initiative that involves plastics that are already in the system, right? So, when you think about dealing with a plastic waste problem, there is the approach of replacement so that you stop the addition of new plastic and thereby reducing future waste because you’re not using plastic anymore. But the other approaches other than replace then moving out of plastic require a very efficient MRF system whether you’re using reuse, reduce, recycle. The MRF system becomes critically important because you need to be able to re-obtain the plastic from retail consumers.”*

For the eco-conscious entrepreneur, *“incentivization is key for entrepreneurs to adopt a circular business model. If they can redouble their efforts to make sure no materials wasted by minimizing*



waste, reusing them and reintroducing these materials in the production process.” He adds: *“They would need expert opinion & testimony to make the business case not just for income maximization. Businesses rely on long value chains and are subject to supply disruptions/choke points. Circular economy helps mitigate the occurrences by making sure materials are in place so they can purchase or manufacture the goods that they need.”* He also asserted that *“the government needs to better incentivize things like using solar power - he believes this is not just for the rich but can easily be accessible for the middle class as well.”*

Theme 5: Local Government as facilitator than enforcer

The Local Governments are in the best position to leverage the ecosystem by supporting sectors working in the city through a combination of business, technology, and policy. Other personas agree with this thinking because each of the community has its own characteristics, therefore, an ecosystem approach should be applied when engaging them. The interviewee identified as a hesitant neighborhood organizer explained: *“Dapat isama lahat ng mga sectors. ‘Di lang problema ng isang tao o isang sektor ito tulad ng gobyerno. Dapat*

kasama lahat pati mga companies at iba pang organisasyon.” [All sectors must be included. It is not just a problem of one person or one sector like the government. We must include all as well as companies and other organizations.]

For the alarmed youth influencer, she believes that local governments are key to good governance and strict implementation as this can help mitigate the effects of plastic pollution and promote sustainable practices in the city.



In terms of impact, the social innovator believes that there is a need to approach intervention activities from a collaborative and participatory standpoint veering away from just an enforcer but as a facilitator of various stakeholders. She explains: *“Most of the time, the greatest immediate impact arises at the local or community level. There, you’re really engaging with legislatures that can affect policy within the local community. So, we need to ensure that we’re constantly talking to other sectors and organizations that are trying to achieve impact.”*



[CIRCULAR ECONOMY IN THE CITY]

Theme 6: The COVID-19 challenge is also an opportunity

The COVID-19 pandemic has caused disruptions and surfaced new challenges in various aspects affecting all sectors. For the eco-conscious entrepreneur, the pandemic has caused unprecedented disruption in the supply chain that includes demand drops, supply shortages, inventory placement challenges, and increase in prices. Adding to this, he noted that there is an increase in the use of single use plastics for both medical use and delivery-related items. He likewise noted that this has forced retailers to move their operations in the digital space to continue operating.

This additional layer of challenge has affected all personas especially from the economic standpoint. For the hesitant neighborhood organizer: *“Napakahirap ang pandemic. Mahirap makahanap ng trabaho. Mahirap ang transportasyon. Mahal ang bilihin.”* [The pandemic is very hard. It’s very hard to find a job. Transportation is difficult. Prices are

high.] But despite that, the hesitant neighborhood organizer was able to find new hobbies that involves recycling of plastic waste. *“Naging plantita ako sa pandemic. Walang ibang libangan eh. Yung mga plastic containers ginagawa kong paso. Dun ko tinatanim mga flowers at gulay ko. Pati yung mga tirang pagkain nagiging fertilizer.”* [I became a “plant auntie” during the pandemic. There is no other way to kill time. I turn the plastic containers into plant pots. That’s where I plant my flowers and vegetables. Even our leftover food becomes fertilizer.]

The community enabler also agrees that the pandemic disrupted their waste collection, cleanup, and kitchen waste composting drives. But she mentions that the lockdown allowed them to focus on their urban gardens. She believes that the urban garden is a good way to promote segregation of kitchen waste, recycling of plastic waste, and pro-



mote healthy living. *“Sa urban garden kasi nagco-composting kami ng tirang pagkain sa mga bahay. Nagiging fertilizer yun. Yung mga plastic din na nakokolekta namin, nire-recycle namin at ginagawa naming paso. Maganda ang urban garden kasi nakakabili na ng mura at masustansyang gulay.”* [In the urban garden, we compost leftover food we collect from the houses. It becomes fertilizer. The plastics that we collect, we recycle and turn into plant pots. The urban garden is beautiful because you can buy cheap and healthy vegetables.]

Theme 7: Fragmentation in the System



Circular Economy-related projects and Initiatives including the actors involved do not seem to follow a common and cohesive strategic vision. Fragmentation is evident in the current ecosystem as claimed by various interviewees. The social innovator attests to this: *“There are a lot of sustainability and waste management initiatives in Metro Manila. But the question is, are they working together? Are they guided by a common goal or a circular economy framework? I think this is an opportunity for the national government to provide guidance.”* The eco-conscious entrepreneur asserts that the government is *“key in providing the overall direction of the business community that includes technical advice and incentivization programs.”*

It is also evident from the data collected from different sectors that there is fragmentation in the perspectives and inter-

pretation of the concept. Of the seven personas identified in this study, only the social innovator and the waste manager has claimed that she has a good grasp of what circular economy is but does not claim that she is a subject matter expert. The rest of the personas mentioned that they are not familiar and that this is their first time to hear of the circular economy concept. This is also evidenced on their perspective where it is mostly limited on downstream activities such as waste management and consumer behavior.

The Ellen Macarthur Foundation (2016) is explicit in its recommendations that to have an effective implementation of circular economy, there needs to have a systemic and collaborative approach *“to overcome the limitations of today’s incremental improvements and fragmented initiatives.”*

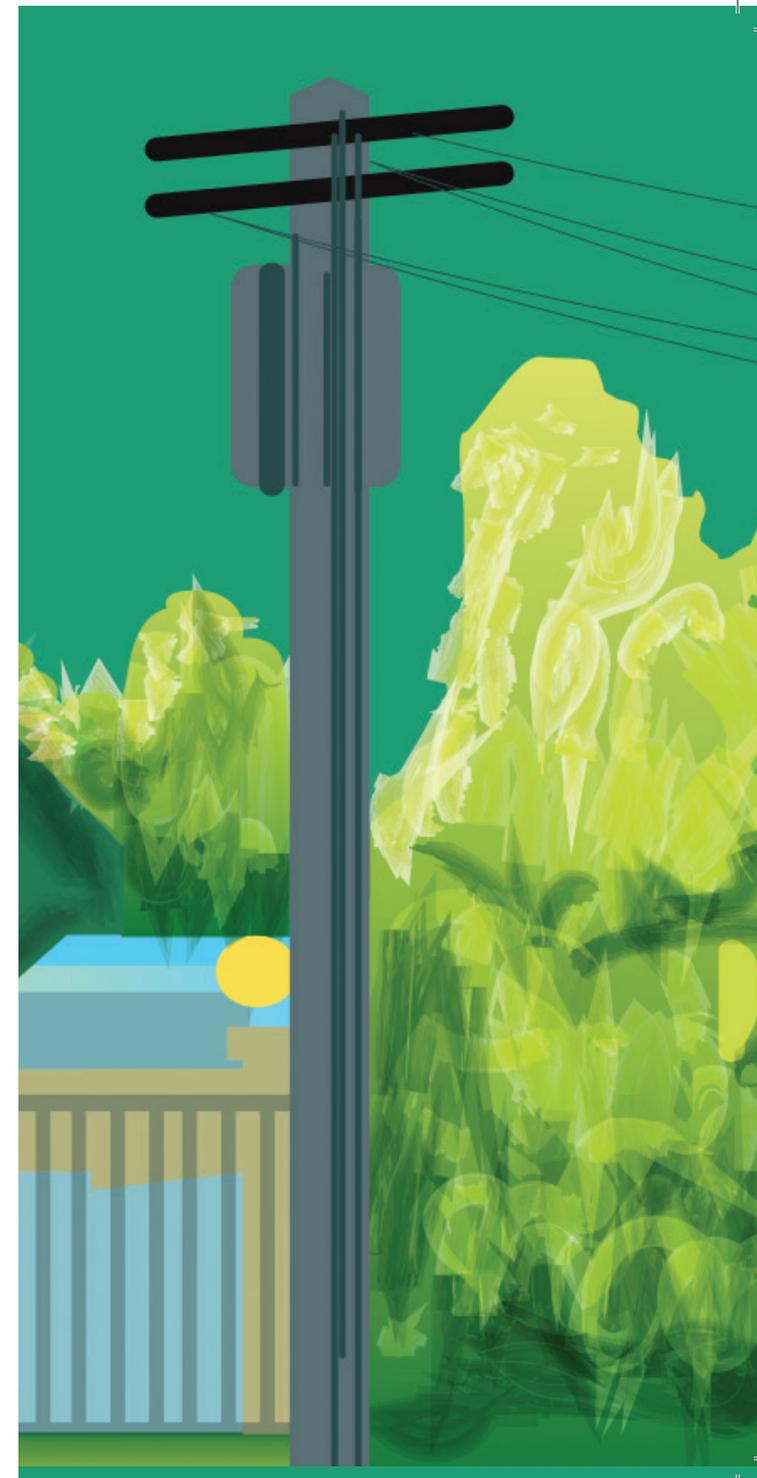
Conclusion & Recommendations

This study presents the findings and insights on the rapid ethnographic research on circular economy in the city of Pasig. This also provides an analysis on the thematic insights surfaced from the lived experiences of various personas who represent the various sectors in the current circular economy ecosystem in the city. The study also provided us with an opportunity on how these actors behave within the current system, what their goals are, and the myriad of ideas and solutions that they have brought forward to pursue a more inclusive and sustainable city. The interviews not only provided us with insights on how a circular economy will look like in the urban setting but also allowed us to have an intimate look into their collective dreams and aspirations. While the topic most certainly focuses more on waste management, this is understood as an entry point in the broader circular economy conversation being the most obvious and painful issue experienced by the citizens.

The following are the set of recommendations taken from the lived experiences of the personas and the thematic insights explained in the previous section:

1. Diversity is a feature. The insights from this study indicate the need to have a more inclusive approach when implementing circular economy solutions in the city. It is therefore imperative to involve all the sectors and approach design and implementation from a collaborative and participatory perspective. Approaching this from the perspective of inclusiveness, there is a need to conduct bottom-up processes to co-design the problem agenda and foster participation in solutions-making and generate ownership during implementation.

2. Structure as an enabler. System structures create a shared sense of direction among the communities and catalyzes towards a collective set of





action and innovation to support circular economy in the city. We refer to system structures here as proposed by Bai, et al. (2016) that encompasses the physical, social, ecological, and economic. Beauty or aesthetics can have a profound effect on people's use of the space. Hence, cities who aspire to be circular need to keep in mind social behavior when designing and putting in place interventions and solutions to create an aesthetic domino effect encouraging physical transformation in cities. For example, Pasig City's Comprehensive Land and Water Use Plan (or CLWUP) (2016) highlights the emerging opportunities of the growing Mixed-Use Developments (MXDs) that combines residential, commercial, and cultural areas in the city. Blending that circular economy principles in the design of MXDs will ensure that these policy and physical structures are integral from the beginning.

3. Not a single-point solution but a portfolio. Since circular economy is a complex challenge, a portfolio approach is needed that encompasses policy, advocacy, interventions, and behavior. We refer to a portfolio as a coherent set of interventions that are logically linked together that can

help address the systemic challenges by leveraging on each other thereby creating a bigger impact. To achieve a circular economy in the city, multiple levers of change should be considered that encompasses policymaking, design of products or materials, innovation and experimentation of new solutions, and leveraging existing nascent community-based solutions, among others. For example, urban gardens and MRFs are nascent bottom-up solutions that can be transformed into a hub for citizen-driven policymaking, education, creativity, and innovation.

4. Accessible incentivization.

The insights learned from this study point to the fact that when value is attached to waste, it becomes a resource. There is therefore a need to communicate that waste is a valuable resource where communities can earn from especially when including innovative value-adding activities. It is also essential to make incentivization accessible for all, especially to both businesses and communities. Accessibility includes not just providing various streams targeting different sectors but also communicating them well, so people know about them. Incentivization goes beyond just segregation, recycling, and re-use but also

in re-designing products and materials to lengthen the lifetime and making them easily separatable and recyclable. In addition, there is also a need to incentivize businesses to rethink their business model that reduces waste from the beginning and changing consumers' behavior.

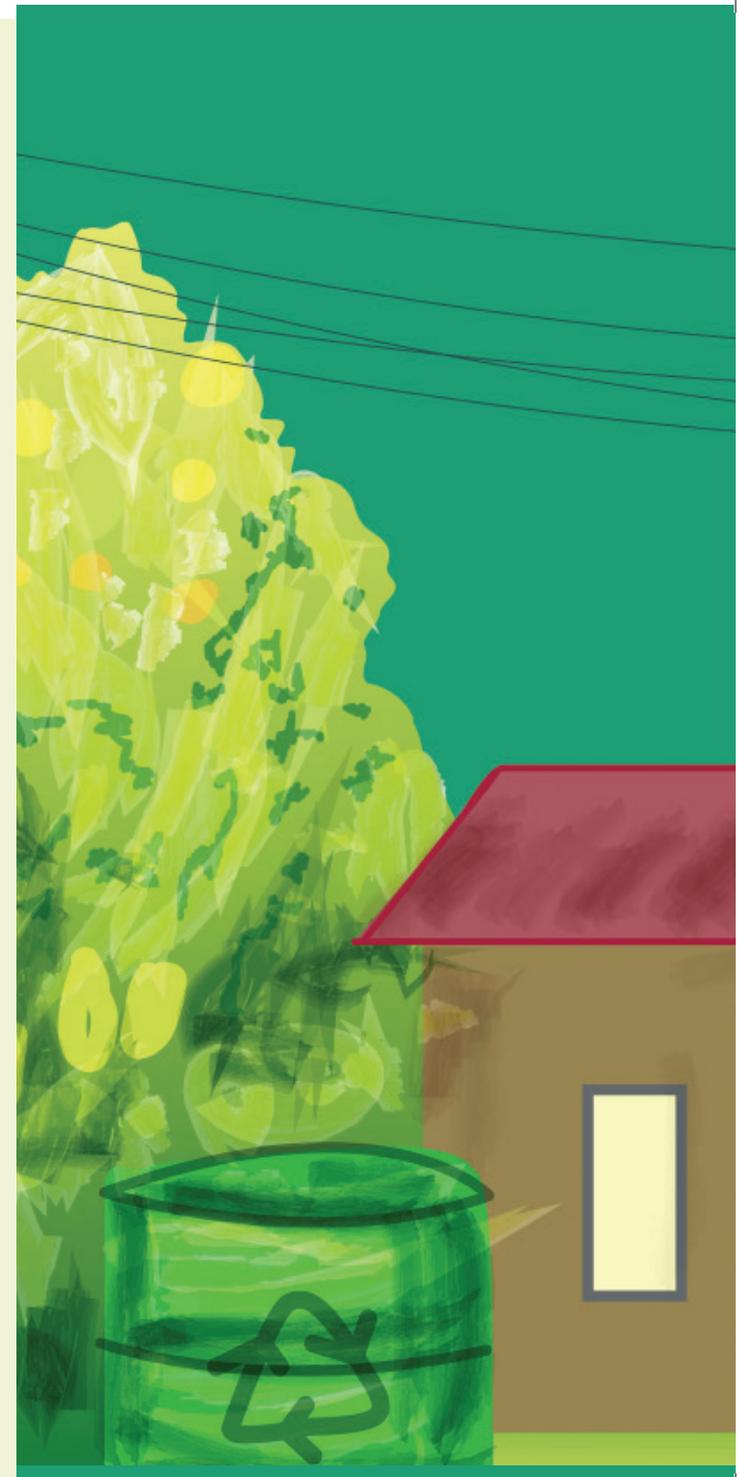
5. Cohesive and integrated CE governance.

The Ellen Macarthur Foundation (2016) has proposed to establish policies and mechanisms that provide dedicated and stable funding for collection and sorting through fair industry contributions to ensure that recycling and upcycling is economically viable and scalable. While there are existing laws and policies in the Philippines that are in place (e.g. Solid Waste Management Act of 2019 [RA 9003], Philippine Green Jobs Act of 2016 [RA 10771], National Plan of Action on Marine Litter [set to be released]), implementing these uniformly on the ground is another story. There is therefore a need to provide a governance mechanism to ensure coherent, cohesive, and integrated framework that circular economy actors can adhere to. In addition, the local government also needs to build trust among government agencies and different sectors in the

design, planning, and monitoring and evaluation, while ensuring transparency and accountability in the implementation of these governance mechanisms.

This paper is an attempt to show that rapid ethnography is an alternative approach to generate rich and in-depth qualitative data and capture a wide range of perspectives from sectoral representatives presented as a persona. Shifting towards a more citizen-centered approach is transformational because it places the citizens in the heart of the problem-solving process. While this research is limited to Pasig City, considered as a microcosm of Metro Manila, the insights gained, and lessons learned may be applied to other cities in the region. This study can also be used as a springboard for ideating solutions that will target a specific sector ensuring that it is focused on the needs of the persona. Finally, rapid ethnography is one of many methodologies used to understanding the problem and should be used alongside or layer with other research methods especially when tackling systemic challenges such as circular economy.

It is worth noting that there is still a lot of opportunities to do research on implementing circular economy, most especially in the cities. According to an article by UN Department of Economic and Social Affairs (2018), 55 percent of the world's population lives in urban cities in 2018 but is projected to balloon to 68 percent (two-thirds) by 2050. The effect is that cities will be grappling with the effects of the current wasteful linear economic system. Implementing a circular economy in the city will allow for policymakers to rethink how we build sustainably, how we move people efficiently, and how we produce and consume products sustainably. This paper, therefore, is a proactive step towards reimagining how cities should strive to be more inclusive, sustainable, and circular.



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A RAPID ETHNOGRAPHIC RESEARCH ON
CIRCULAR ECONOMY IN A PHILIPPINE URBAN SETTING

