DECEMBER 2023

DISCUSSION PAPER SERIES NO. 2023-30

Assessing the Adoption of Circular Economy among Women-Led MSMEs in Metro Manila: A Pilot Study

Jovito Jose P. Katigbak and Jemimah Joanne C. Villaruel

Unveiling Women's Roles in Circular Economy Adoption and Tourism Growth

14 March 2024

PIDS Philippine Institute for Development Studies

Outline

I. Introduction

II. Review of Related Literature

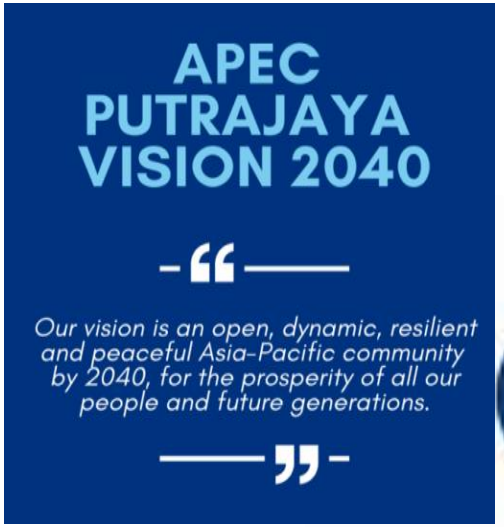
III. Conceptual Framework of the Study

IV. Methodology

V. Results and Analysis

VI. Conclusion and Recommendations

I. Introduction

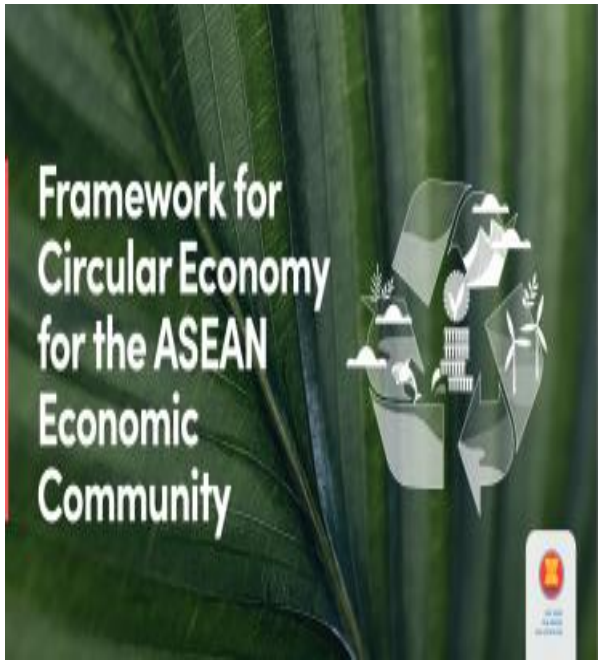


ABAC COVID-19 Report: Laying the Groundwork for Economic Recovery and Resilience

Purpose: Information
Submitted by: ABAC

Asia-Pacific Economic Cooperation

I. Introduction



ASEAN Circular Economy Stakeholder Platform

ASEAN is currently developing the Work Programme to Support the Implementation of the Framework.

I. Introduction

The Philippines produces at least 61,000 million metric tons of waste daily, with plastic waste comprising 24 percent of the total (Cariaso 2023). Of this latter figure, only 28 percent are recycled while about 800,000 metric tons of plastics are discarded annually.

Notably, MSMEs comprise 99.5 percent of the total businesses in the country and women-owned/run enterprises comprise around 60 percent of business name registrations (new and renewal) in 2019 (DTI 2019).

"How has the women-led MSMEs in Metro Manila adopted circular economy into their operations and practices?"

I. Statement of the Problem and Objectives of the Study

This research aims to answer the following questions:

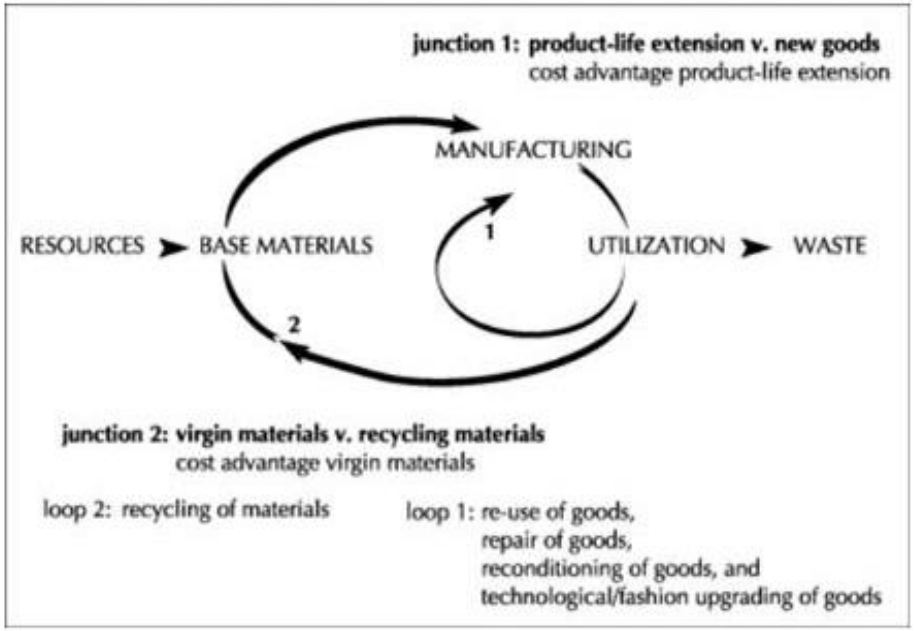
1) What is the circular economy (CE)?;
2) What are the CE-related laws, policies, and frameworks in the Philippines?;
3) What is the quality and nature of circular economy adoption among women-led MSMEs in Metro Manila?; and
4) What are the policy options and considerations for the Philippine government in supporting CE adoption among women-led MSMEs in Metro Manila?

It seeks to attain the following objectives:

1) Characterize the CE;
2) Review the laws, policies, and frameworks related to CE in the Philippines;
3) Describe the quality and level of CE adoption among WMSMEs in Metro Manila; and
4) Outline policy considerations and options for the Philippine government to effectively mainstream and support the uptake of CE among WMSMEs in Metro Manila.

II. Review of Related Literature: Characterizing the Circular Economy

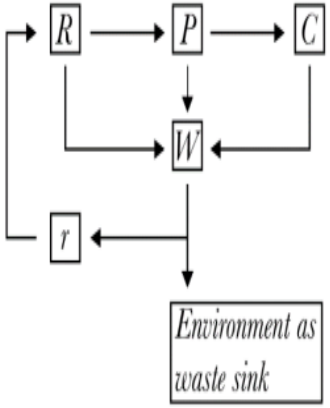
Stahel and Reday's Circular Economy Model



Source: Based on Stahel and Reday, 1981: 70 (figure supplied by Stahel, personal communication, May 2019)

seeks the promotion of a "spiral-loop system that minimizes matter, energy-flow and environmental deterioration without restricting economic growth or social and technical progress" (Stahel 1982: no page numbers) through reuse (loop 1), repair (loop 2), reconditioning (loop 3) and recycling (loop 4).

Circular Economic System



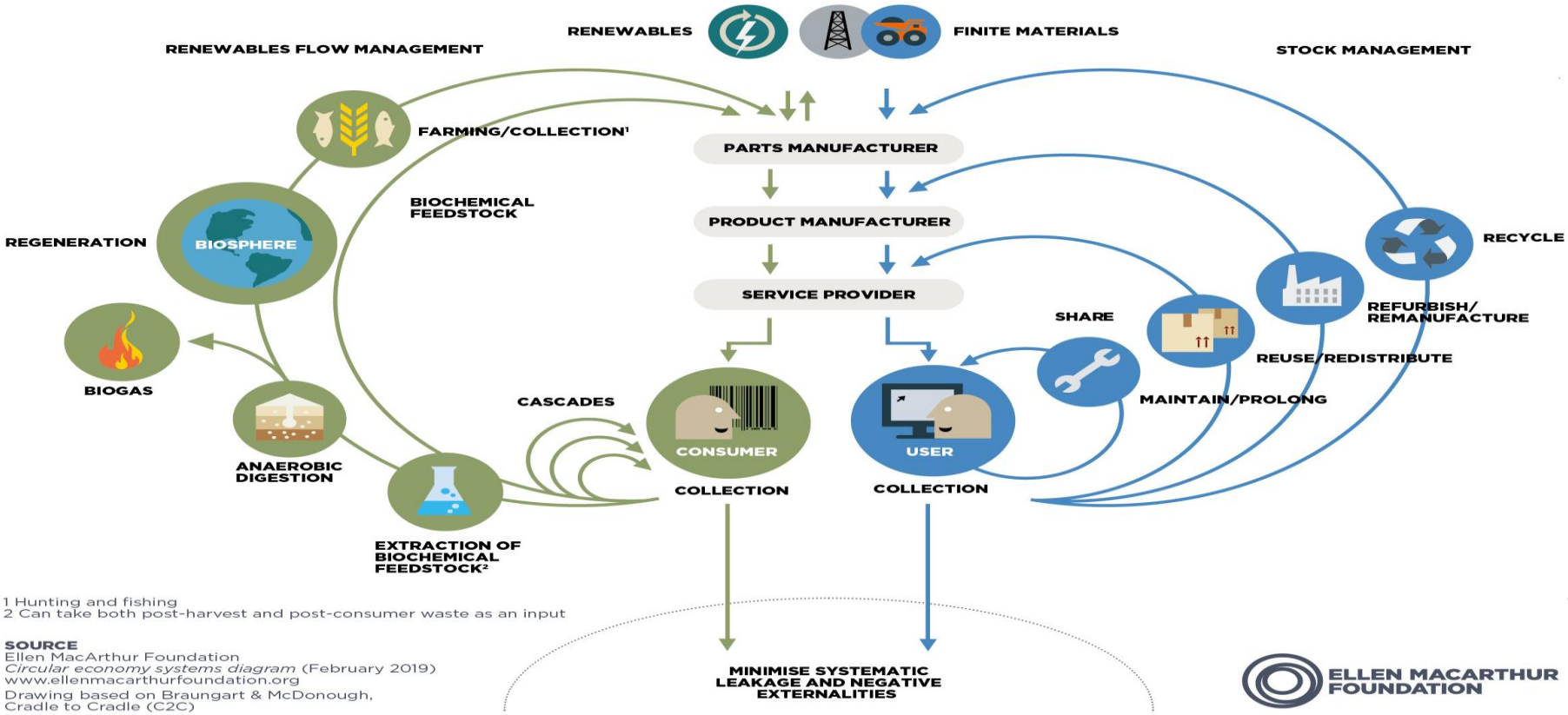
Note: Key: R=resources, P=production, C=consumption, U=utility, W=wastes, r-recycling
Source: Pearce and Turner 1990: 38

"Earth as a closed economic system: one in which the economy and environment are not characterized by linear interlinkages, but by a circular relationship. Everything is an input into everything else."
(Pearce and Turner, 1990: 37)

***Both figures are lifted from Ekins et al. (2019). "The Circular Economy: What, Why, How and Where". https://www.oecd.org/cfe/regionaldevelopment/Ekins-2019-Circular-Economy-What-Why-How-Where.pdf**

II. Characterizing the Circular Economy

EMF's Butterfly Diagram of the Circular Economy

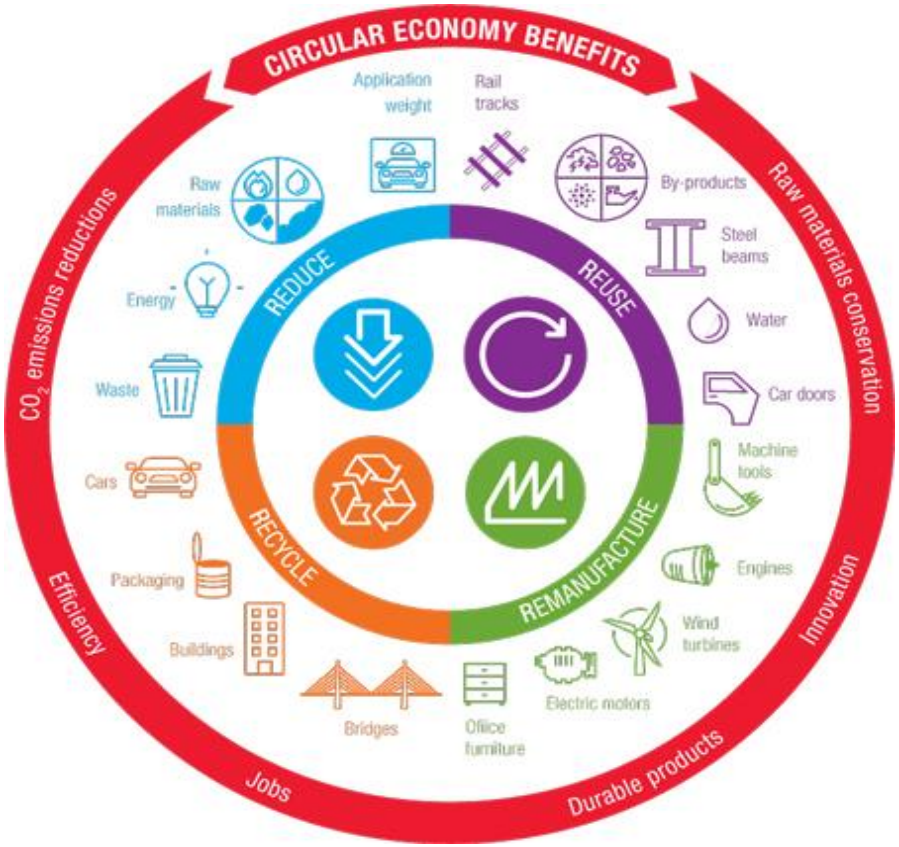


In the technical cycle, products are kept in circulation in the economy through reuse, repair, remanufacture and recycling. In the biological cycle, the nutrients from biodegradable materials are returned to the Earth, through processes like composting or anaerobic digestion.

Source: https://ellenmacarthurfoundation.org/circular-economy-diagram

II. Characterizing the Circular Economy

Circular Economy according to UNCTAD



Source: https://unctad.org/topic/trade-and-environment/circular-economy

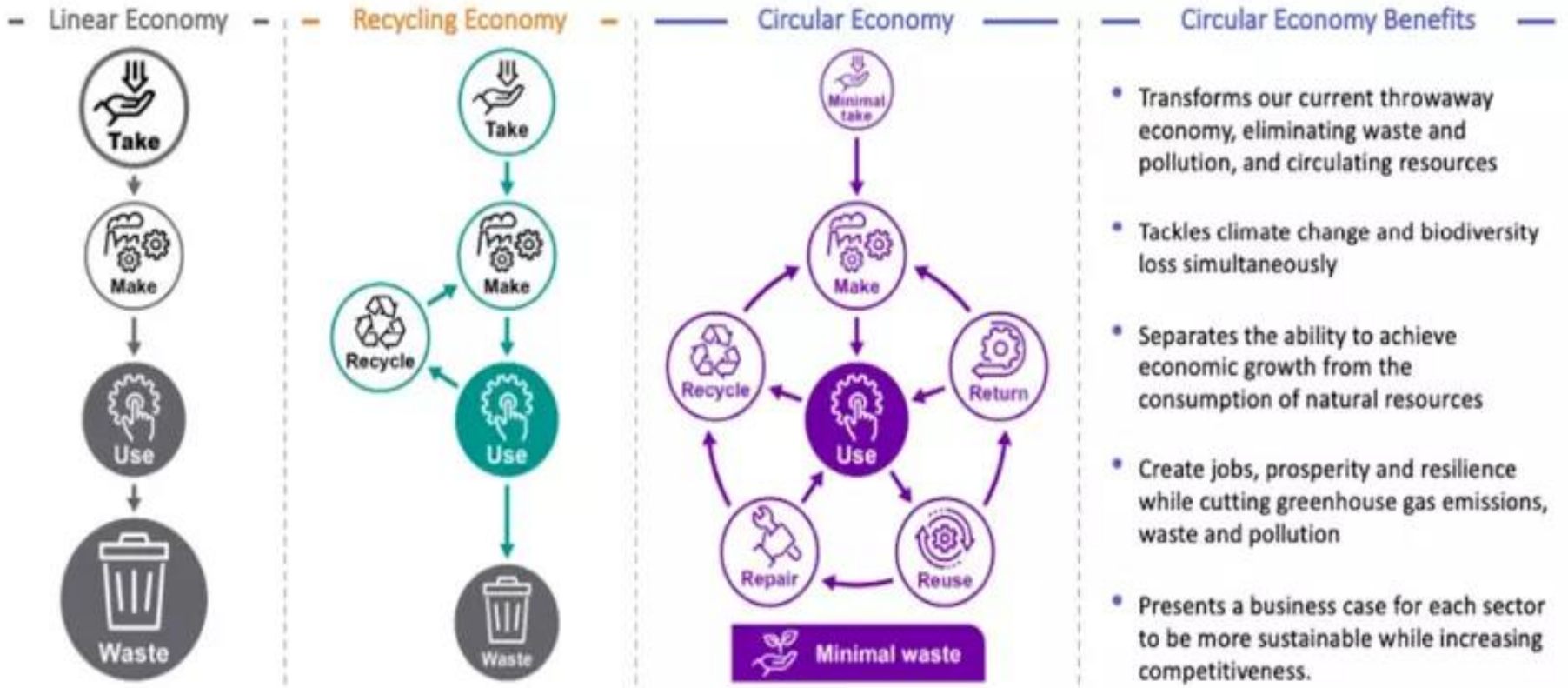
Definitions of CE include:

"A circular economy is 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."
(EMF, 2013: 7)

"circular economy describes an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes" (Kirchherr et al. 2017: 224-225)

II. Characterizing the Circular Economy

Benefits of Circular Economy according to WEF



Source: https://www.weforum.org/agenda/2022/01/5-circular-economy-business-models-competitive-advantage/

In the Philippine context, House Bill 07609 defines circular economy as: "a system approach wherein products are designed for durability, reuse and recyclability, and materials for new products come from old products. It minimizes waste and maximizes the use of natural resources."

II. Characterizing the Circular Economy

Summary of Clusters of Drivers and Barriers

Drivers of CE		
Cluster	Scope	Source/s
Policy and economy	Laws to promote cleaner production, consumption, and end of life management; recycling and manufacturing activities to promote sustainable revenue creation	External and internal
Health	Advancement of public and animal health	External
Environmental protection	Initiatives concerning climate change, modern agriculture, and preservation of renewable resources	External
Society	Matters related to population growth, urbanization, employment generation, and consumer awareness	External and internal
Product development	Enhancement of product quality, efficiency of materials, and energy use in supply chains	Internal

Source: Author's compilation from Govindan and Hasaganic (2018)

II. Characterizing the Circular Economy

Summary of Clusters of Drivers and Barriers

Barriers to CE		
Cluster	Scope	Source/s
Governmental issues	Ineffective recycling policies; unclear regulations that are not properly coordinated and implemented; incompatible extant environmental laws; lack of uniform system for performance assessment	Internal and external
Economic issues	Weak economic incentives for CE adoption; high short-term, upfront investment, and production costs coupled with low short-term gains; inaccurate product pricing	External and internal
Technological issues	Technological limitations in tracking recycled materials; difficulty in managing product quality through its life cycle and those made from recovered materials; design challenges; and effective and safe return of materials to biosphere	Internal
Knowledge and skill issues	Lack of reliable information to the enterprises; lack of public awareness and sense of urgency; inadequate skills of employees in CE; lack of customer knowledge about refurbishment	Internal

Source: Author's compilation from Govindan and Hasaganic (2018)

II. Characterizing the Circular Economy

Summary of Clusters of Drivers and Barriers

Barriers to CE		
Cluster	Scope	Source/s
Management issues	Poor leadership and management; outdated organizational structure; prioritization of other issues	Internal
CE framework issues	Lack of CE-related business models and frameworks; access to other favorable solutions than recycling	External
Culture and social issues	Lack of enthusiasm by industries towards CE; erroneous consumer perceptions about refurbished products; low level of excitement in new products (newness)	Internal
Market issues	Ineffective take back programs by companies; ownership mentality of consumers rather than 'access to service'; absence of standards on refurbishment products; resources and labor needed for remanufacturing	Internal and external

Source: Author's compilation from Govindan and Hasaganic (2018)

II. CE Adoption among SMEs: Cases and Experiences

Prieto-Sandoval et al. (2018) note that circular economy (CE) has been implemented at the macro, meso, and micro levels.

At the micro level, Geng et al. (2009) cited several barriers to CE uptake including inadequate environmental policies, low level of expertise, and insufficient knowledge on safe technology production and consumption practices.

Marrucci et al. (2022) emphasized culture as the most vital aspect of circular business models while others identified commitment and acceptance of change as the crucial elements in effectively applying CE (Mishra et al. 2022; Mathivathanan et al. 2022).

Notably, many SMEs are risk averse towards CE transition due to low cost savings, uncertain financial returns, firm sustainability, low level of environmental awareness, and weak regulatory pressures. (Bhattacharya and Kalakbandi 2022; Austin and Rahman 2022; Barreiro-Gen and Lozano 2020; Zhang et al. 2022).

II. CE Adoption among SMEs: Cases and Experiences

Hartley et al. (2020) mentioned the lack of cooperation between executive and legislative bodies in developing relevant policies, SMEs' access to capital (Bhattacharya et al. 2022), complex administrative procedures (Paletta et al. 2019), and traditional mindset, especially among family-owned businesses (Luthra et al. 2022).

In Europe, Bassi and Dias (2019) posit that firm size, total turnover, percentage of turnover devoted to research and development (R&D), and type of activity are determinants of CE uptake. Further, Dey et al. (2022) revealed that the design of products, processes, and facilities positively contributes to CE adoption and sustainability performance of SMEs in Greece, France, Spain, and the United Kingdom, while the recovery function has a negligible impact.

Ormazabal et al. (2018) found that Spanish SMEs are less ready to integrate CE principles into their operations because it does not automatically result in greater profits and market sustainability. The low demand and investment in CE-related technologies is due to their limited resources, insufficient time, short-term vision, and lack of support from public institutions.

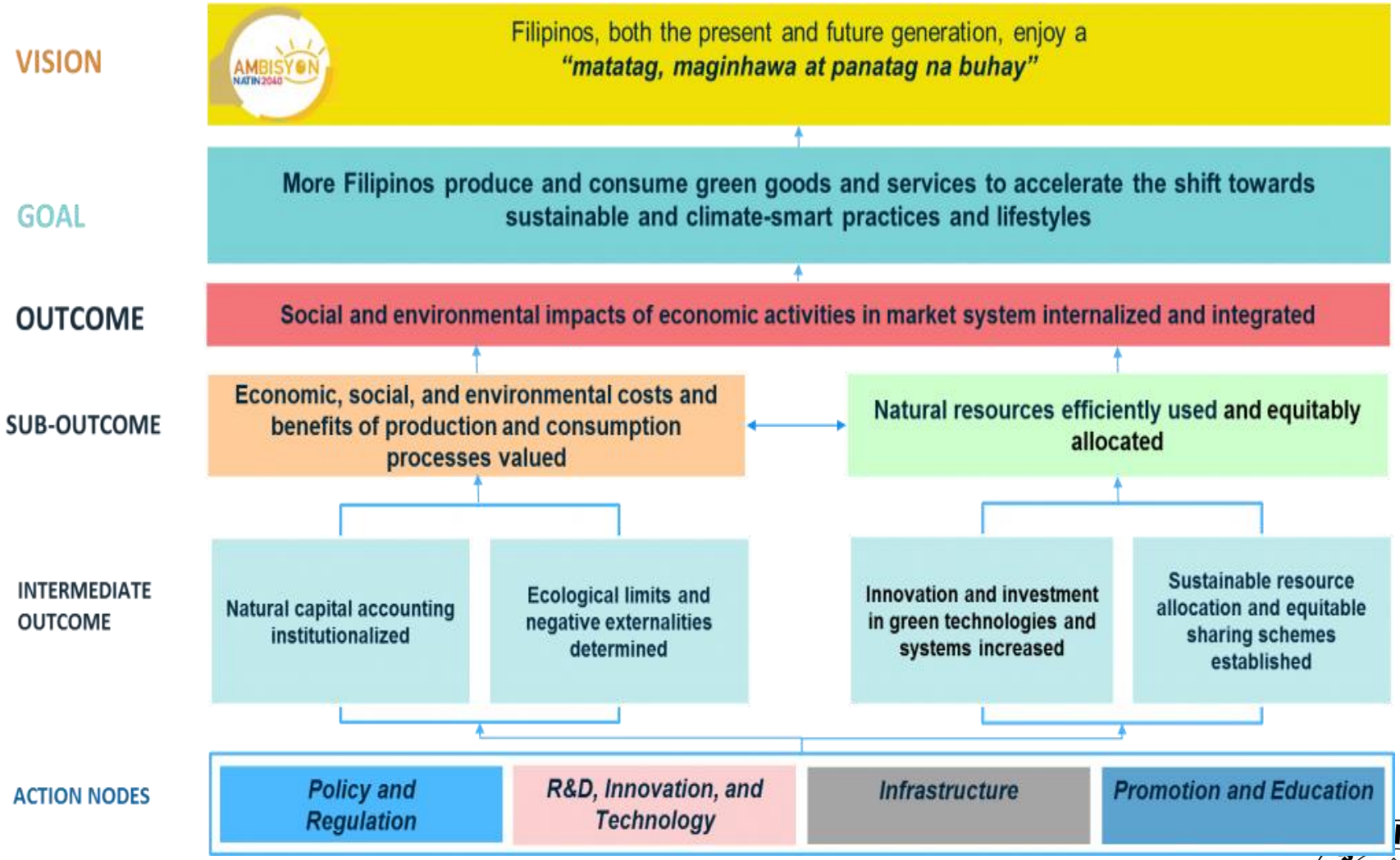
II. CE Adoption among SMEs: Cases and Experiences

In Asia, China is recognized as a leader in CE mainstreaming. To illustrate, it has been implementing a CE promotion law since 2009 and oversees the simultaneous application of CE at three levels – macro, meso, and micro (Ogunmakinde 2019). Min et al. (2021) then employed a systematic review to determine impediments and enablers of CE adoption among Chinese SMEs.

Japan is another model in CE advancement at the domestic level. It enacted a 'resource efficient' law as early as 1991 and stressed the significance of a whole-of-society approach towards the optimal use of non-renewable resources (Ogunmakinde 2019). Benton and Hazell (2015) highlighted the indispensable role of the public in embodying CE practices through separation of recyclables, timely payment of recycling fees, and exercise of their consumer rights.

In the Philippines, Gue et. al. (2020) surveyed 17 respondents from various sectors and found that there are varying perceptions regarding drivers of CE adoption. Nevertheless, all industries view economic attractiveness and consumer demand as causal drivers, while company culture is cited as an effect driver.

II. Overview of the Legal and Policy Landscape of CE in the Philippines



Source: https://sdg.neda.gov.ph/philippine-action-plan-for-sustainable-consumption-and-production-pap4scp/

II. Overview of the Legal and Policy Landscape of CE in the Philippines

POLICY INTERVENTION	EXAMPLE/S
EDUCATION, INFORMATION & AWARENESS	> Programs of the Philippine Center for Environmental Protection and Sustainable Development, Inc.: Sustainable Diner Project; National Ecolabeling Program (Green Choice Philippines); Kalikasan GP3; Philippine Green Pages > Life cycle analysis courses in the academe (e.g, De La Salle University)
COLLABORATION PLATFORMS	> Ecotown Scale-up Project (Global Green Growth Institute (GGGI) and PHL Climate Change Commission) > Promotion of green business practices among MSMEs in food processing industry (GGGI and DTI) > Zero Waste to Nature Ambisyon 2030 by Philippine Alliance for Recycling and Materials Sustainability > Eco-brick projects by Pilipinas Shell and Ayala Land Inc.
BUSINESS SUPPORT SCHEMES	> Training programs of Mother Earth Foundation > Zero Carbon Resorts project of EU SWITCH-Asia Programme > Landbank's Carbon Finance Support Facility

Sources: https://www.adb.org/sites/default/files/project-documents/50158/50158-001-tacr-en_0.pdf; https://mbc.com.ph/2021/12/02/the-futu circular-economy-in-the-philippines/

II. Overview of the Legal and Policy Landscape of CE in the Philippines

POLICY INTERVENTION	EXAMPLE/S
PUBLIC PROCUREMENT AND INFRASTRUCTURE	> Executive Order No. 301 s. 2004 > The Philippine Green Public Procurement Roadmap: Advancing GPP until 2022 and beyond > GPP Program of Quezon City LGU
REGULATORY FRAMEWORKS	> PD No. 1152 or The Philippine Environment Code of 1977 > RA No. 6969 or The Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 > RA No. 8749 or The Philippine Clean Air Act of 1999 > RA No. 9003 or The Ecological Solid Waste Management Act of 2000 > RA No. 9513 or The Renewable Energy Act of 2008 > RA No. 10068 or the Organic Agriculture Act of 2010 > DOT's Public Utility Vehicle Modernization Program > National Plan of Action on Marine Litter (Draft by DENR) > Philippine Action Plan for Sustainable Consumption and Production (Draft by NEDA) > Sustainable Science and Technology for Solid Waste Management Road Map (Draft by DOST) > Local Ordinances (e.g., Quezon City's regulation on plastic bags)
FISCAL FRAMEWORKS	> RA No. 10771 or The Philippine Green Jobs Act of 2016

Sources: https://www.adb.org/sites/default/files/project-documents/50158/50158-001-tacr-en_0.pdf; https://www.adb.org/sites/default/files/publication/774936/adbi-transitioning-linear-circular-economy-developing-asia-web.pdf

II. Overview of the Legal and Policy Landscape of CE in the Philippines

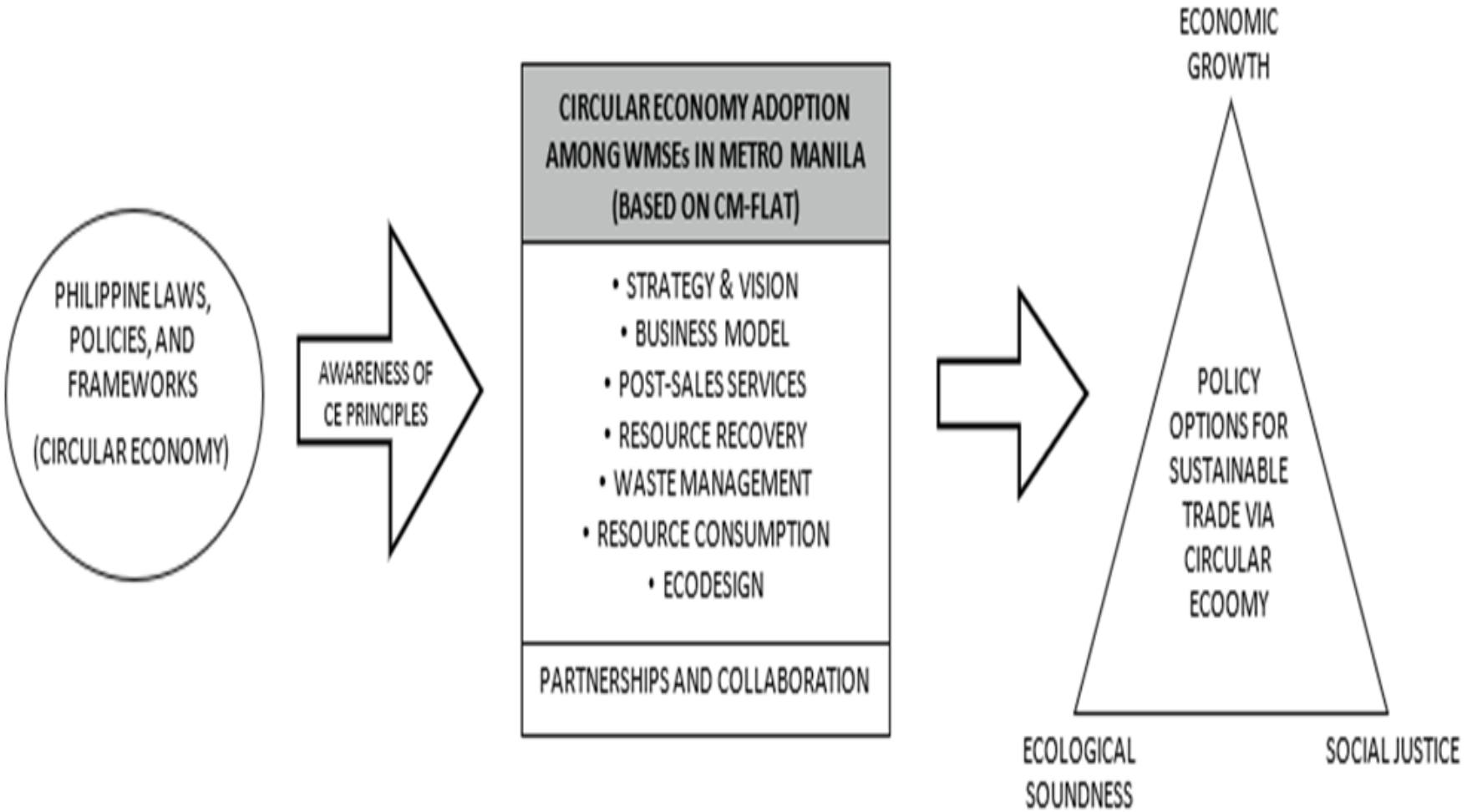
Since 2010, Bueta (2022) observes the following points regarding the country's legal and policy frameworks on CE:

- Piecemeal and ad hoc approach to addressing waste management issues and promoting a circular economy;
- Proposals tend to be reactive to current events and "flavor of the times";
- No adequate follow-through on proposals due to a lack of action taken by the government and legislators, extending to civil society; and
- No serious momentum driving forward the transition to a circular economy, but recent EPR proposals could be a crucial starting point.

Only one measure (i.e., EPR Act) out of 415 circular economy-related bills and resolutions have successfully hurdled the Philippine Congress.

Sources: Bueta, G. (2022). Circular Economy Policy Initiatives and Experiences in the Philippines: Lessons for Asia and the Pacific and Beyond. https://www.adb.org/sites/default/files/publication/774936/adbi-transitioning-linear-circular-economy-developing-asia-web.pdf

III. Conceptual Framework of the Study



Sources: Developed by authors

IV. Methodology

This pilot study employed a mixed-methods approach to gather, characterize, and analyze data. This will be done by collecting data such as profile of women-led MSMEs (WMSMEs), their awareness regarding circular economy (CE) adoption (McIntyre 2005; Creswell 2009), and their status and nature of CE adoption.

Survey forms were disseminated to WMSMEs situated within Metro Manila (both registered and unregistered) using both online (i.e., Google Forms) and offline (physical distribution) platforms.

Call for interested participants was likewise shared via network partners (e.g., DTI, PTTC, WomenPhil, PCWE, etc.) to expand the original directory. The online survey questionnaire, through Google Forms, was made available from August 15 to October 1, 2023.

IV. Methodology

The questionnaire was mainly based on the Circular and Maturity Firm Level Assessment Tool (CM-FLAT) developed by Sacco et. al. (2021). Since this paper only attempts to ascertain the level of CE adoption among WMSMEs, the questionnaire only featured queries on circularity-related indicators and was modified in accordance with the domestic context

It contained a total of 78 items which are categorized into 11 major sections, namely: (1) profile of the business owner; (2) general business information; (3) awareness of circular economy principles and practices; (4) strategy and vision; (5) business model; (6) post-sales services; (7) resource recovery; (8) waste management; (9) resource consumption; (10) ecodesign; and (11) partnership and collaboration for circular economy.

The dataset generated through the questionnaire was utilized for a descriptive analysis to effectively identify common themes and CE-related experiences of WMSMEs in Metro Manila.

V. Results and Analysis: Profile of Respondents and Businesses

Using the PSA definition, 93.1 percent of the survey participants are micro enterprises and the remaining 3.4 percent are small and medium firms, respectively.

Majority of the respondents (67.3 percent) are aged 18-35 years old, while the 29.3 percent are 36-65 years old, and the remaining 3.4 percent are 65 and older. Around 81 percent of them are highly-educated who possess baccalaureate and/or post-baccalaureate degrees, with the remaining 19 percent having primary, secondary, or vocational diplomas.

Primary Products/Services of Respondents

V. Profile of Respondents and Businesses

The top locations of the respondents are Manila City (20.7 percent), Quezon City (19 percent), Caloocan City (10.3 percent), Makati City (8.6 percent), and Taguig City (8.6 percent). There were no participants from San Juan City, Navotas City, Pateros City, and Valenzuela City.

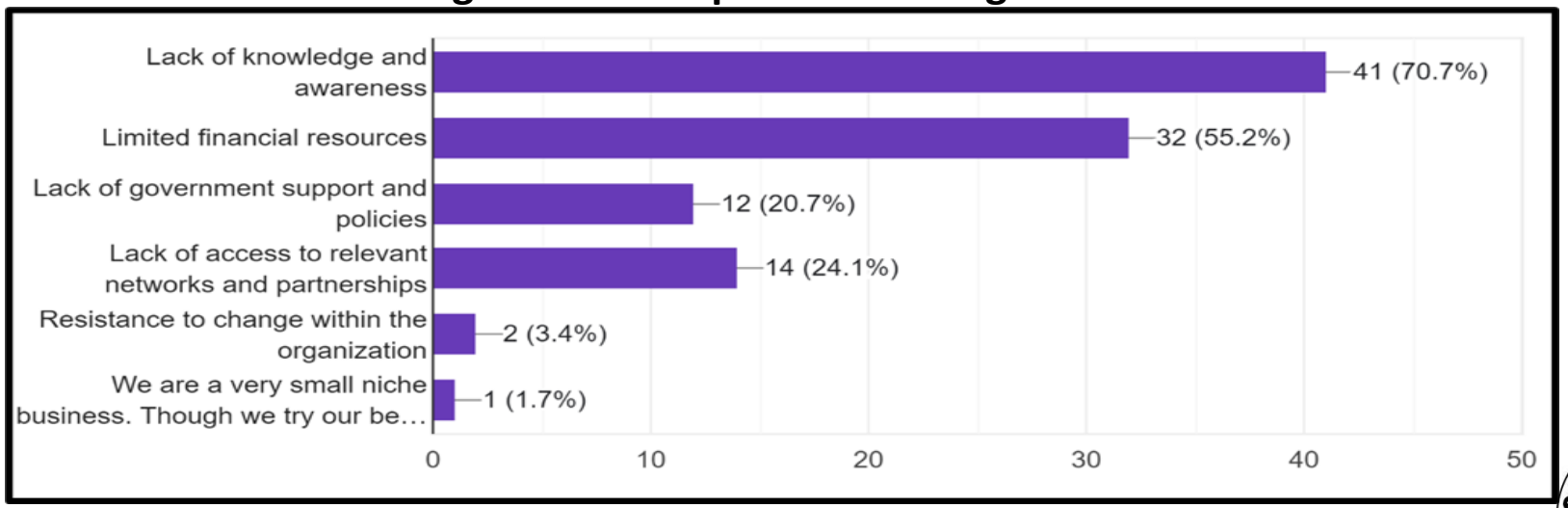
87.9 percent of the firms cater directly to consumers while the 12.1 percent transact with other businesses. Indeed, the emergence of e-commerce has empowered MSMEs, including WMSMEs, to reach a wider audience and instantaneously conduct business transactions across market segments (Bacasmas et al. 2022). This was accelerated during the COVID-19 pandemic.

Only 58 WMSMEs responded and completed the questionnaire.

V. Awareness of CE Principles

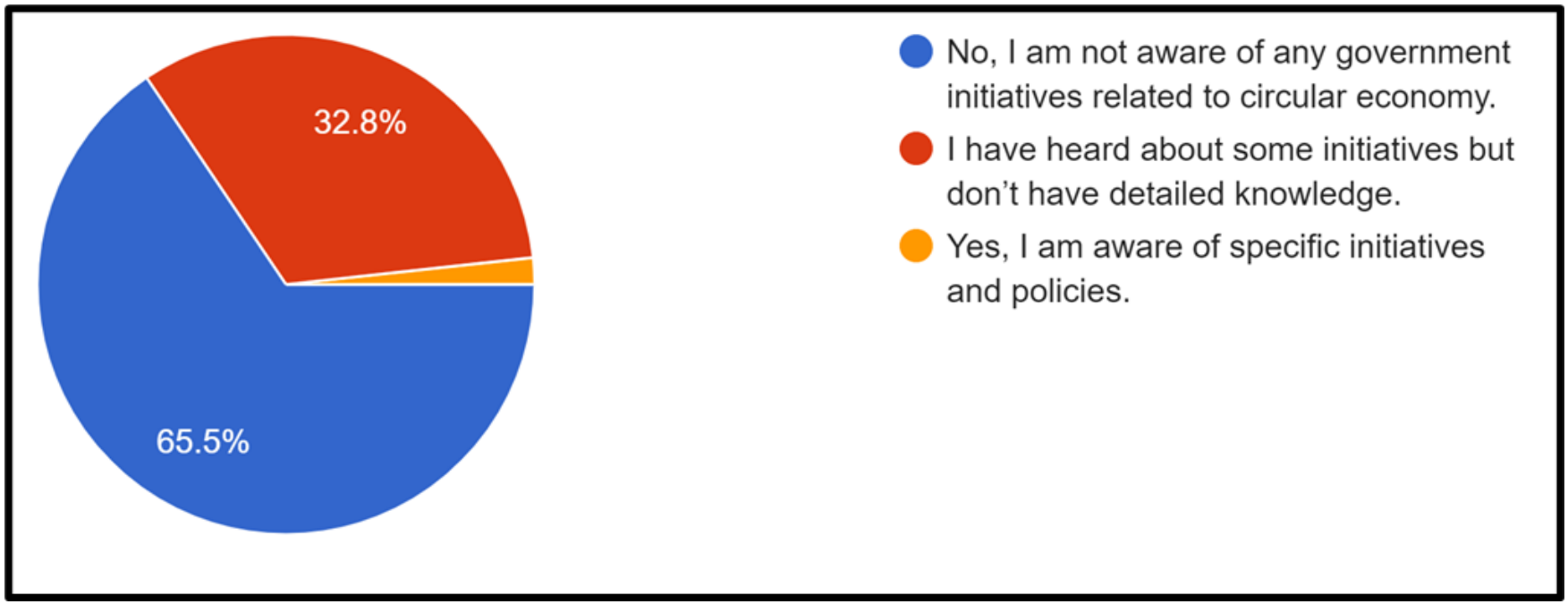
Level of Understanding by WMSMEs Regarding CE

Challenges to CE Adoption according to WMSMEs



V. Awareness of CE Principles

Awareness of WMSMEs concerning CE-related Government Programs



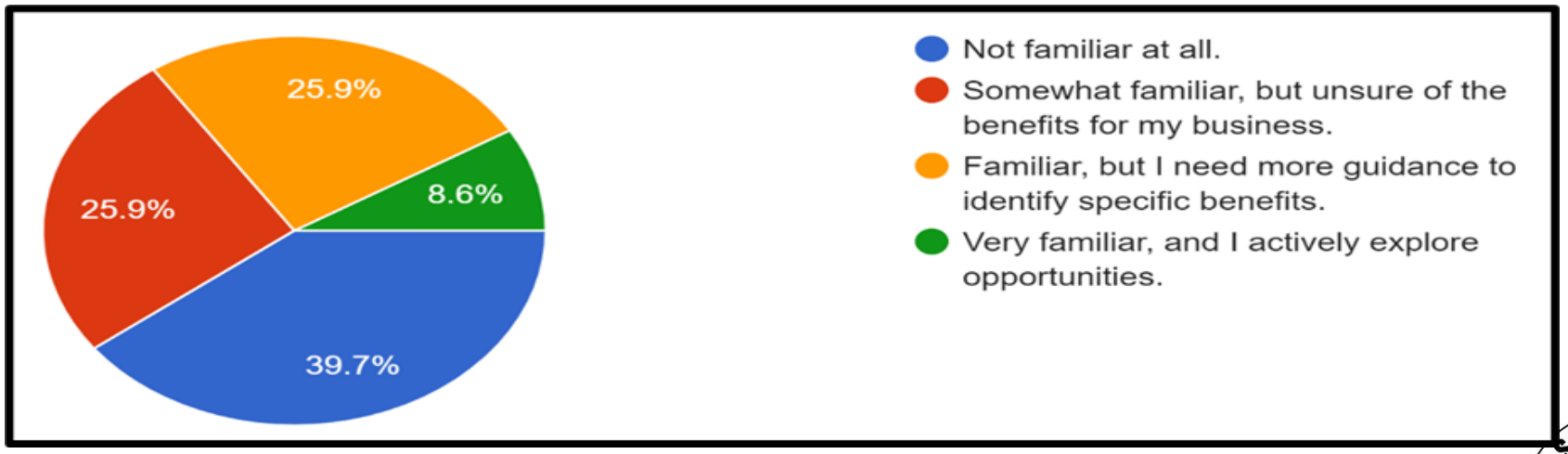
43.1 percent shared that they did not receive any government support and 27.6 percent described government guidance as poor. An average rating was given by 24.1 percent of the respondents, while 5.2 percent gave a good rating. No respondent characterized government support as excellent.

V. Awareness of CE Principles

Internally, 70.7 percent confirmed that they have not conducted any assessment or evaluation to identify potential CE applications while 13.8 percent occasionally do. 10.3 percent intend to undertake an assessment soon while a minute 5.2 percent regularly observes such. Perhaps this is shaped by the low level of familiarity by MSMEs concerning the potential benefits of CE adoption.

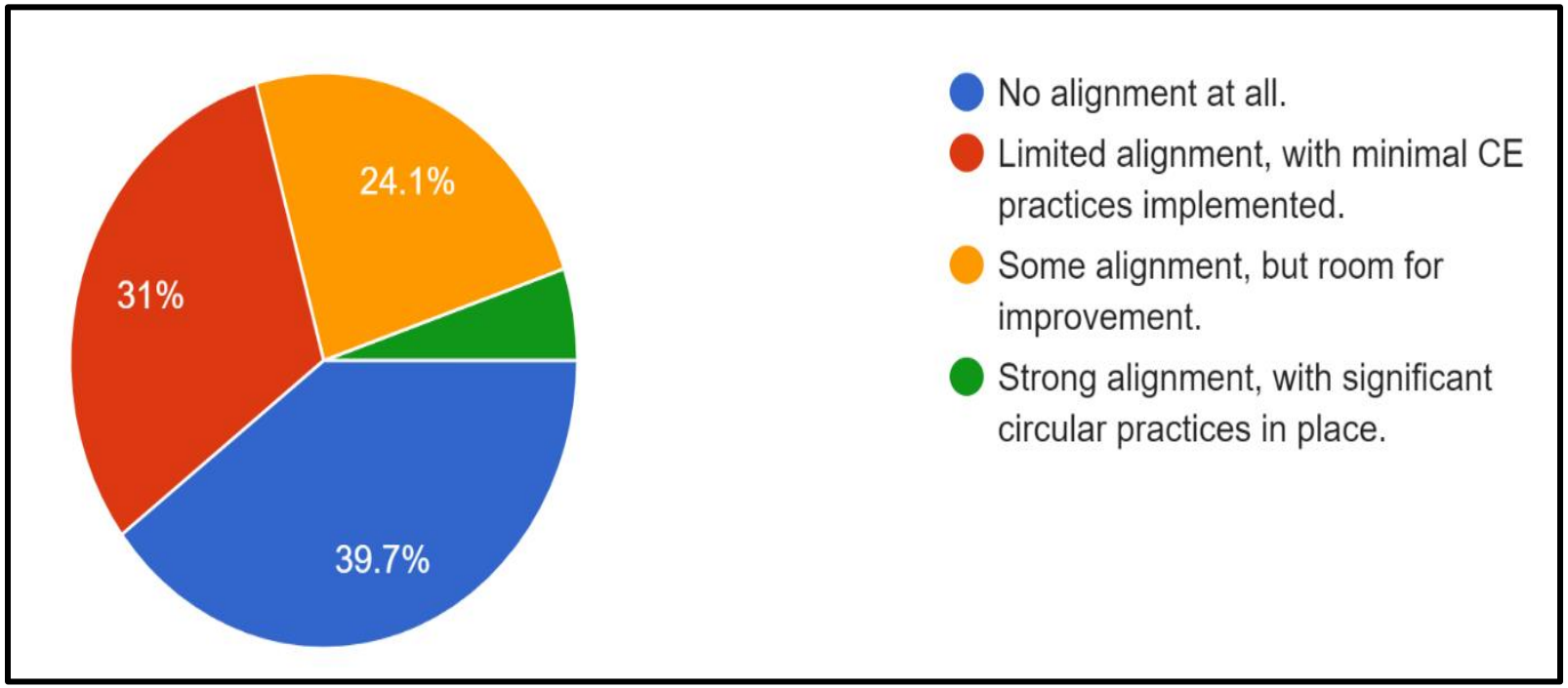
In addition, 44.8 percent of surveyed WMSMEs revealed that there is no customer demand for CE practices and only 5.2 percent shared that there is high demand for circular products and processes.

Familiarity with the Benefits of CE



V. Current Level of Circularity

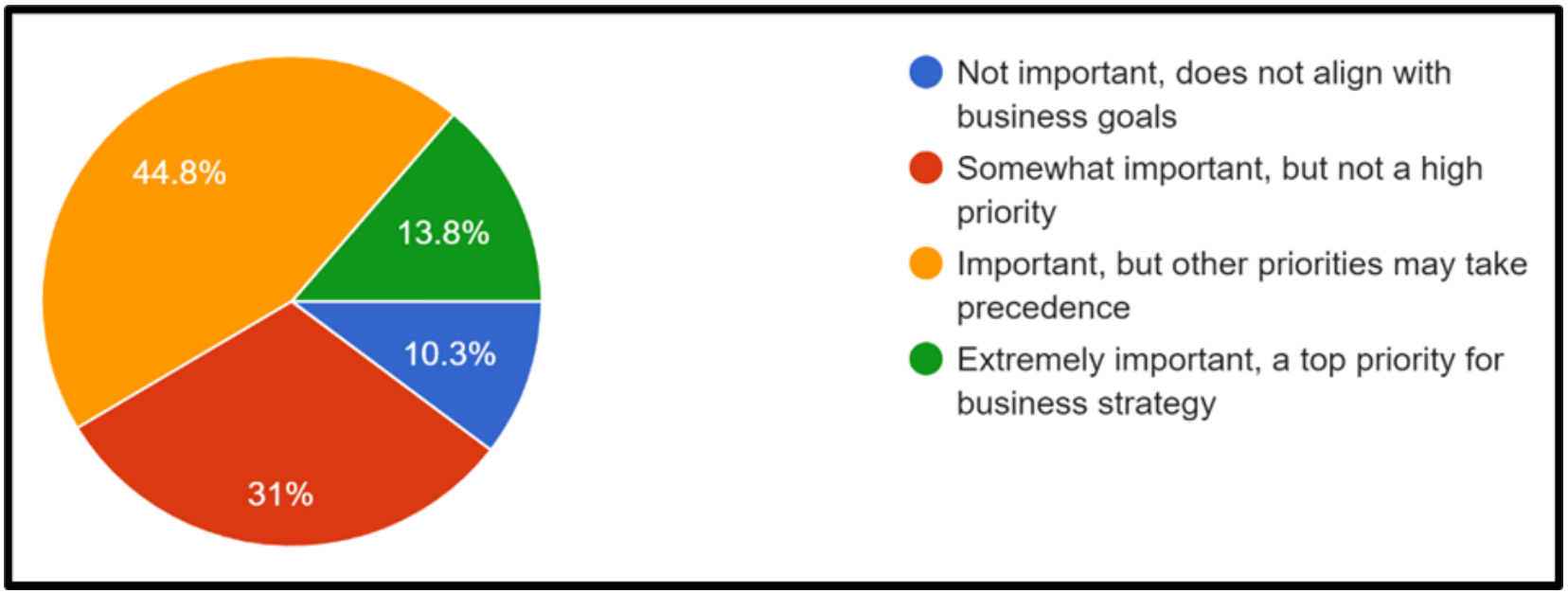
Alignment of Business Strategy and Vision with CE Principles



This results in absence of CE components in the strategy of many firms (51.7 percent) as well as the absence of knowledge sharing platforms and activities (41.4 percent of firms).

V. Current Level of Circularity

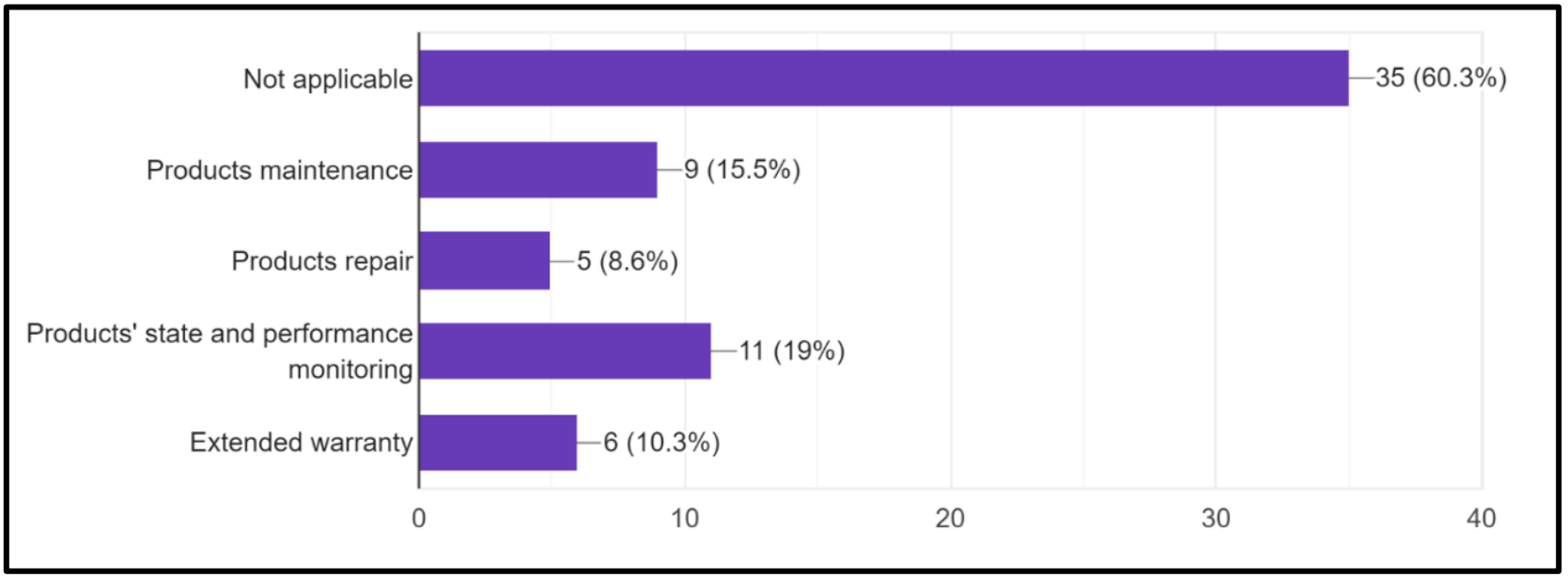
Significance of CE Adoption for Business Sustainability and Success



Circularity is low in the business models of WMSMEs. Particularly, 72.4 percent of respondents do not engage in sharing activities, 67.2 percent do not dematerialize, 58.6 percent do not rent or lease, and 56.9 percent do not utilize pay-per-use goods and services. They seem to partake more in the sale of second-hand products (48.3 percent) due to the latter's convenience and profit-generation potential.

V. Current Level of Circularity

Post-Sales Services related to CE



Results are similarly discouraging in resource recovery. Specifically, 92.3 percent of respondents directly dispose their liquid waste, 90.4 percent discard their gaseous waste, and 75.8 percent dispose their solid waste. This signifies that majority of the firms still utilize a linear approach.

V. Current Level of Circularity

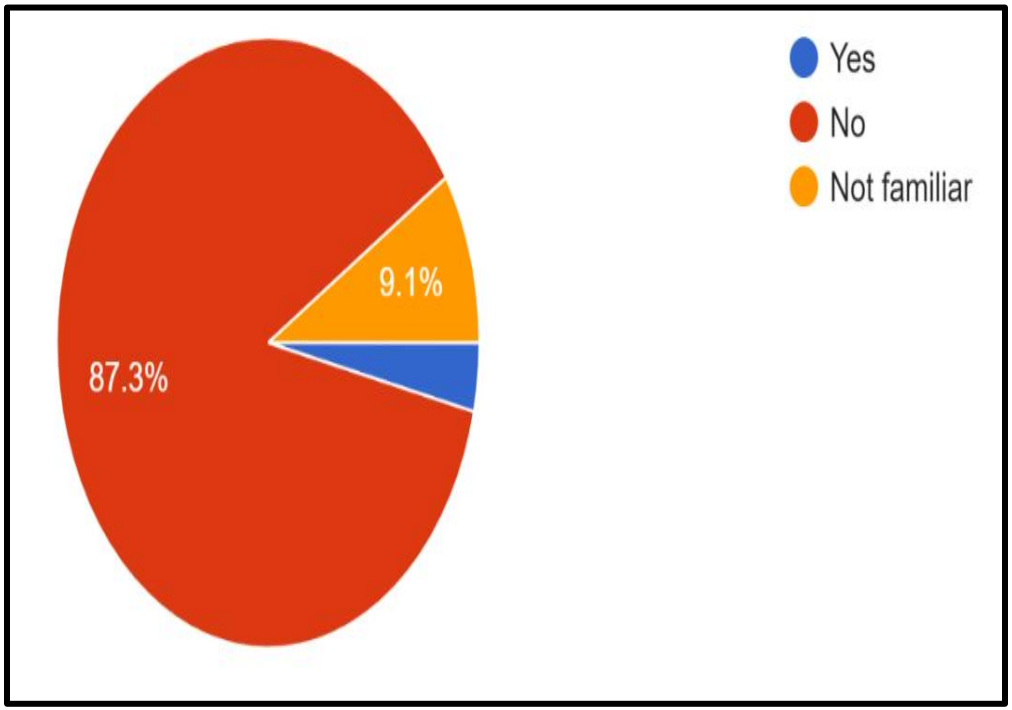
An overwhelming number of WMSMEs (89.7 percent) do not use renewable energy sources (e.g., solar, wind, geothermal) nor implement energy management strategies (80.3 percent). Interestingly, a much higher number of firms (48.1 percent) implement material consumption management strategies. A total of 69.3 percent is somewhat aware with local recycling and waste management facilities.

Majority of WMSMEs (67.2 percent) also have little to no knowledge, experience, and application of ecodesign/circular design practices. The use of ecodesign among WMSMEs in Metro Manila is grounded on the desire to reduce material intensity and energy intensity during production and use phases, facilitate easy repair/assembly/disassembly, promote the use of standard components, and increase the use of shared, reused, or recycled packaging.

91.4 percent of respondents revealed that they are neither familiar nor have patent/s related to circular economy

V. Partnerships and Collaborations for CE

Involvement of WMSMEs in Industrial Clusters



81 percent of WMSMEs in Metro Manila are not active in collaborating with external partners. They likewise exclaimed (8.6 percent) that companies still operate in silos.

Majority of WMSMEs (70.7 percent) are not active in collaborating with customers for CE promotion.

VI. Conclusion and Recommendations

Indeed, the country's move toward the circular economy is steered by no less than President Ferdinand R. Marcos, Jr. as exclaimed in his 2023 SONA. The PDP 2023-2028 cites the promotion of CE as essential in achieving outcome 2 or an improved environmental quality under the strategy framework to establish livable communities (NEDA, 2023).

The DENR is tasked to implement the EPR Act and the NPoA-ML and the NEDA shall oversee the realization of the PAP4SCP. The private sector, external partners, and civil society organizations likewise contribute to mainstreaming CE through various policy interventions.

Notwithstanding these efforts, this study found that there is low level of awareness regarding CE principles among women-led MSMEs in Metro Manila.

VI. Conclusion and Recommendations

It translates to a low level of circularity which was ascertained through strategy and vision, business model, post-sales services, resource recovery, waste management, resource consumption, and ecodesign.

Moreover, WMSMEs tend to work in isolation and shun collaboration and partnerships with external parties, co-enterprises, or customers in the advancement of CE.

For its part, the Philippine government will play a leading role in the pursuit of sustainable trade en route to the successful attainment of national (i.e., PDP, EPR Act), regional (i.e., ASEAN, APEC), and international (i.e., SDGs 2030) objectives.

Hence, it may consider the adoption of a multilevel system of governance by categorizing programs, projects, and activities into micro (consumers and enterprises), meso (economic agents in eco-industrial parks/industrial symbiosis), and macro (city/regional/national) levels.

VI. Conclusion and Recommendations

Policy actions may be pursued simultaneously at the micro, meso, and macro levels:

MICRO: DENR and DTI can focus on education campaigns and advocacies to raise the current level of awareness about CE principles. It may build on extant programs and expand CE-related trainings for WMSMEs across various sectors. The PTTC, in collaboration with the academe and expert practitioners, may develop course/s and/or modules on CE intended for WMSMEs.

The government may provide incentives and business support schemes to WMSMEs to address the challenges withholding them from CE uptake. DENR and/or DOST may then issue awards and certifications recognizing sustainable business practices, which may encourage greater CE adoption among MSMEs (Gue et al. 2020).

Moreover, the promotion of CE among the public, wider MSMEs, and the informal sector may be pursued through digital technologies and social media platforms.

VI. Conclusion and Recommendations

MESO: Smart regulation may be incorporated to nurture partnerships among the public sector agencies, businesses, and commercial or non-commercial third parties.

It would benefit the government to simplify burdensome regulations and advance the principles of subsidiarity and proportionality through regular "check-ins" and consultations with the cited actors.

Existing government- and private sector-led mechanisms such as the ecotown scale-up project, Zero Waste to Nature Ambisyon, and eco-brick projects may serve as models in fostering partnerships and collaboration. The establishment of mini eco-parks may be explored to facilitate sharing of CE-related facilities, technologies, and technical know-how. These parks may be situated across economic centers in the Philippines and host firms in similar and interlinked industries.

VI. Conclusion and Recommendations

MACRO: Government may prioritize the formulation and implementation of a national framework on CE to facilitate the harmonization of existing dispersed initiatives and programs. Several bills such as HB7609 are already in the Philippine Congress. This may effectively cluster CE-related initiatives and promote better coordination between and among actors simultaneously pursuing various tailor-made solutions.

The government should determine the most beneficial timeframe for a national plan (e.g., 5-year, 6-year, 10-year). This is critical in ensuring that the overarching strategy towards CE is agile and can account for both expected and unforeseen changes in the internal and external environments.

Another equally important endeavor is the development of a CE monitoring framework to track the government's progress in mainstreaming CE principles among firms and households. It should contain Philippine-specific CE indicators to accurately examine the (non-) achievement of nationally agreed targets and objectives. Hence, the proposed National Natural Capital Accounting or Environment and National Resource Accounting and Assessment Plan may play a vital role.

Thank you!

FSI Philippines

@FSIPhilippines

jovito_katigbak04@yahoo.com.ph
Foreign Service Institute
Department of Foreign Affairs