Rethinking Circular Economy: Integrating Gender Equality, Disability and Social Inclusion

RESOURCE MATERIAL FOR CIRCULAR ECONOMY PRACTITIONERS

UNDP

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Table of Contents

List of Figures

Acronyms

CHED	Commission on Higher Education
DepEd	Department of Education
EPR	Extended Producer Responsibility
GEDSI	Gender Equality, Disability and Social Inclusion
ILO	International Labour Organization
LGU	Local government unit
SBCC	social behavioural change communication
STEAM	science, technology, engineering, agri-fisheries and mathematics
STEM	science, technology, engineering and mathematics
TESDA	Technical Education and Skills Development Authority
UNDP	United Nations Development Programme

Circular Economy: An Introduction

The Ellen MacArthur Foundation (2019) describes circular economy as a system of solutions to tackle global challenges such as climate change, waste, pollution and biodiversity loss. As opposed to a "take-make-waste" linear model, circular economy is "regenerative by design and aims to gradually decouple growth from the consumption of finite resources". [1] Other definitions define different actors and processes but have a shared vision of increasing resource efficiency, decoupling natural resource extraction and using it for economic output. [2]

The benefits of transitioning to circular economy include job creation, optimizing waste management, energy savings and protection against scarcity of resources and volatile prices.[3] Circular economy can be applied to every sector; however, it is most widely discussed in the plastics, packaged goods, fashion, food, agriculture, electronics, automotive, transport and logistics sectors. Indeed, circular economy principles can heavily impact these sectors through innovation, regulatory changes and shifts in customer preferences. [4]

Circular economy is not a new concept in the Philippines, according to the United Nations Development Programme (UNDP) *Stocktaking Report*. [5] The report mentions that low-income countries such as the Philippines are often more "circular" than their developed counterparts because sorting, reusing and reselling are done out of necessity. The most common circular economy strategy in the Philippines is converting waste into a resource (e.g., converting waste into bricks and chairs). Moreover, the UNDP report highlights that the private sector remains the main driver of circular initiatives. Multinational and national corporations and small and medium enterprises have set ambitious targets to increase collection, co-processing and recycling capacity, with long-term goals to redesign packaging and make it fully recyclable, reusable, refillable or compostable. Non-governmental organizations are also a driving force in solid waste management and circular economy. Many focus on campaigns to reduce single-use plastics at the source through policy advocacy and community-based projects.

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[1] Ellen Macarthur Foundation, "The circular economy in detail". Available at: <https://www.ellenmacarthurfoundation.org/the-circular-economy-in-detail-deep-dive#:~:text=In%20contrast%20to%20the%20'take,concept%20of%20a%20circular%20economy>. (Date accessed 7 February 2024).

[2] Patrick Schröder, "Promoting a Just Transition to an Inclusive Circular Economy", Chatham House, April 2020. Available at: <https://www.chathamhouse.org/sites/default/files/2020-04-01-inclusive-circular-economy-schroder.pdf>. (Date accessed 7 February 2024).

[3] Eurostat, "What is the circular economy about?". Available at: <https://ec.europa.eu/eurostat/web/circular-economy/information-data/policy-context#:~:text=protection%20for%20businesses%20against%20scarcity,production%20processes%20requires%20less%20energy>. (Date accessed 7 February 2024).

[4] Ellen Macarthur Foundation, "The circular economy in detail".

[5] UNDP Philippines, Circular Economy and Waste Management in the Philippines: A Stocktaking Report, 2022.

Why Gender Equality, Disability and Social Inclusion (GEDSI) Matter in Circular Economy

Although circular economy is not a new concept, its social dimension is often overlooked. Much of the literature on circular economy primarily focuses on the technical, environmental and business aspects, with little attention to social considerations. [6] The Collaborating Centre on Sustainable Consumption and Production highlights the need for more research on the social consequences of circular economy and to incorporate social indicators into the circular economy framework.

Social inclusion, as defined by the United Nations, is the "process by which efforts are made to ensure equal opportunities — that everyone, regardless of their background, can achieve their full potential in life". [7] Circular economy programmes and policies must integrate social inclusion to address this gap by including policies and actions that promote equal access to services and enable citizen participation in the decision-making processes that affect their lives. Such policies and actions must also consider barriers and opportunities to participation since some individuals face additional challenges due to their socioeconomic conditions, gender and disability.

Failure to integrate social inclusion perspectives in circular economy risks perpetuating existing inequalities and further marginalizing disadvantaged groups. However, if development interventions are designed to integrate social inclusion, circular economy will not merely narrow or close resource loops but also reduce income and employment disparities.

There are innumerable benefits to inclusive circular economy, as it supports governments in fulfilling their commitment to equality, increases purchasing power, expands the talent pool for circular solutions, promotes food security, bolsters the local economy and reduces social risks such as income loss and job displacement.

Social inclusion is a prerequisite in the transition to circular economy and considers how a diverse population consumes resources. Furthermore, it examines how citizens can participate in waste reduction solutions. The relationship between circular economy and social inclusion can be examined in two ways: through people's participation in circular solutions and their involvement in the product life cycle.

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[6] Fedra Vanhuyse et al., "The lack of social impact considerations in transitioning towards urban circular economies: a scoping review", *Sustainable Cities and Societies*, 75, December 2021. Available at: <https://doi.org/10.1016/j.scs.2021.103394>.

[7] United Nations, "Social inclusion". Available at: <https://www.un.org/development/desa/socialperspectiveondevelopment/issues/social-integration.html#:~:text=Social%20inclusion%20is%20the%20process,their%20full%20potential%20in%20life.>. (Date accessed 7 February 2024).

Participating in circular solutions

The diagram below illustrates how circular economy benefits from a social inclusion perspective, with people participating in various roles, such as consumers, workers, innovators, household waste managers and advocates. Ensuring equal opportunities in these roles enhances overall participation and promotes greater regional circularity.

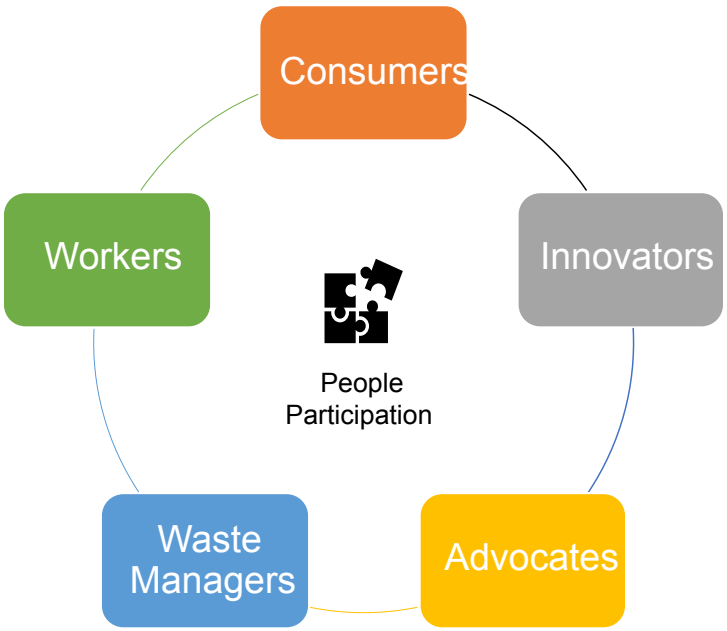


Figure 1. Social Inclusion Entry Points for Circular Economy Participation

Participating in the product life cycle

The diagram below illustrates how people can apply circular economy principles in the product life cycle. Product development promotes social inclusion through universal design. [8] By acquiring skills, information and training, individuals can adopt circular behaviour such as consuming less, recycling, repairing and sorting waste properly. In addition, adopting circular behaviour can improve income and employment, especially in waste collection and recycling.

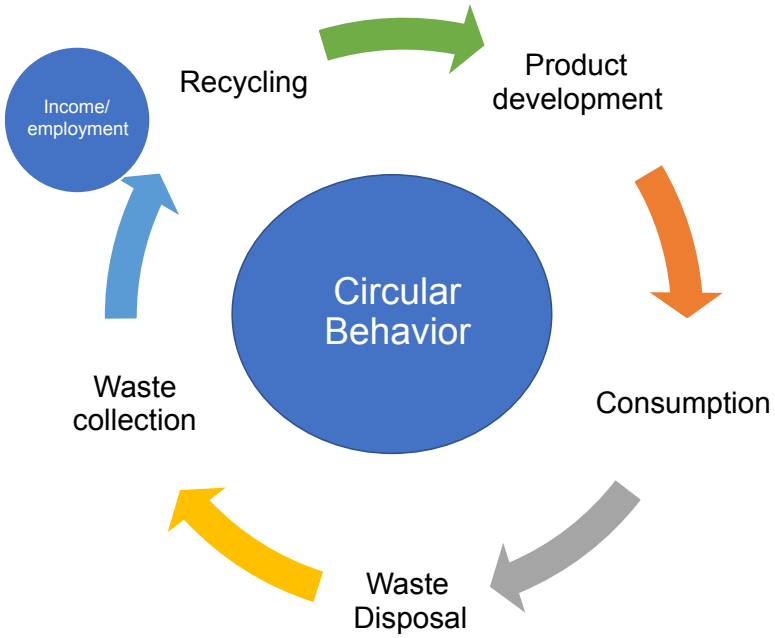
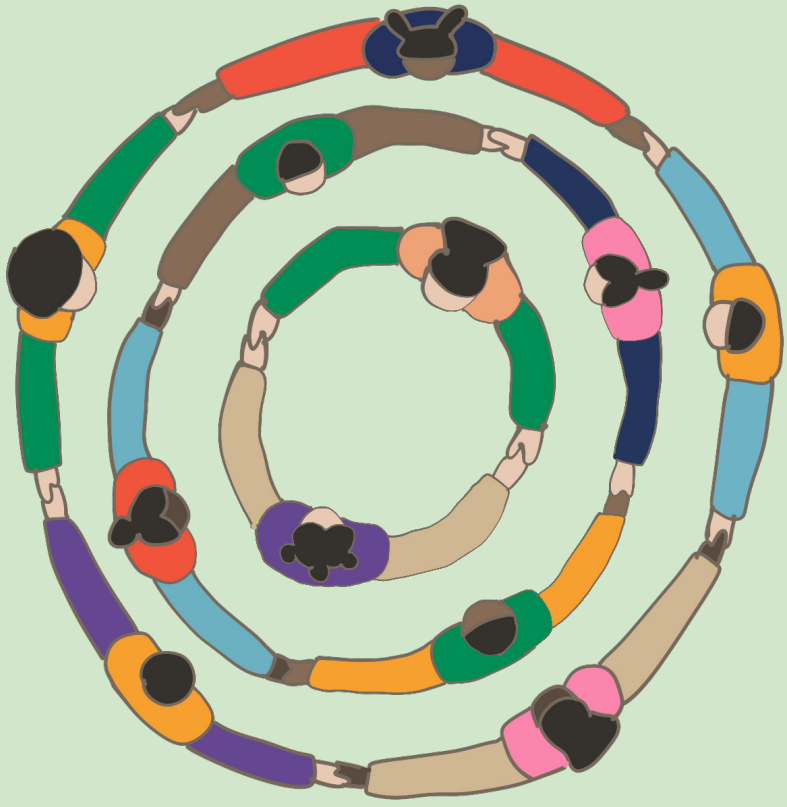


Figure 2. Social Inclusion Entry Points in a Product Life Cycle

[8] "Universal design" means designing products, environments, programmes and services for use by all people, to the greatest extent possible, without the need for adaptation or specialized design.



DIFFERENT LENSES IN SOCIAL INCLUSION

A successful transition to circular economy requires the participation of all sectors. However, some may experience challenges participating in the transition, primarily due to a lack of resources and awareness exacerbated by gender, disability and other socioeconomic conditions. The opportunities and barriers of marginalized groups are explored below through the lenses of poverty, informal economy, gender and disability in their transition to circular economy.

Poverty

According to the 2021 Family Income and Expenditure Survey,[9] 19.99 million Filipinos live below the poverty line, which accounts for 18 percent of the population. Furthermore, approximately 3.5 million families, or 13.2 percent, were considered poor. These statistics imply that a significant portion of the population cannot afford to buy durable and environmentally sound products and must rely on sachet products for daily needs. Consequently, poverty acts as a barrier to adopting circular behaviour.

Poverty impacts consumption patterns as well as waste management. Poverty leads to a lack of decent housing, inaccessible waste collection and poor environmental aesthetics, which impedes the adoption of circular behaviour. The UNDP report *Rapid Ethnographic Research on Circular Economy in a Philippine Urban Setting* [10] highlights that environmental aesthetics profoundly affect the use of space. The report observes that the physical transformation of cities — including informal communities — has a domino effect on social behaviour. Accordingly, those living in formal communities, such as subdivisions, are more likely to practice waste segregation than those living in informal settlements.

A circular business model of products as a service requires smartphones and Internet connectivity. For example, peer-sharing platforms (e.g., Airbnb) and digitally tracking products throughout their life cycle require reliable Internet connectivity. However, poverty hinders innovation, and, as a result, the socioeconomic digital divide makes scaling up this type of circular business model challenging.

Nevertheless, circular economy offers solutions to poverty-related issues (e.g., job creation) if training and resources are provided to disadvantaged groups.

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[9] Philippine Statistics Authority, "Highlights of the Preliminary Results of the 2021 Annual Family Income and Expenditure Survey", 15 August 2022. Available at: <https://psa.gov.ph/content/highlights-preliminary-results-2021-annual-family-income-and-expenditure-survey>. (Date accessed 7 February 2024).

[10] UNDP, *Circular Economy in the City: A Rapid Ethnographic Research on Circular Economy in a Philippine Urban Setting*, 28 February 2022. Available at: <https://www.undp.org/philippines/publications/circular-economy-city-rapid-ethnographic-research-circular-economy-philippine-urban-setting>. (Date accessed 7 February 2024).

The International Labour Organization (ILO) estimates that, by 2030, global employment could grow by six million jobs by transitioning to circular economy. This includes recycling, repairing, renting and re-manufacturing, replacing the traditional "extract, make, use and dispose" economic model. [11] Furthermore, circular solutions bridge gaps in basic services for low-income populations. For example, urban farming can be promoted to address malnutrition in urban settings, and modular and pre-fabricated building solutions offer low-cost housing options for informal settlements. [12]

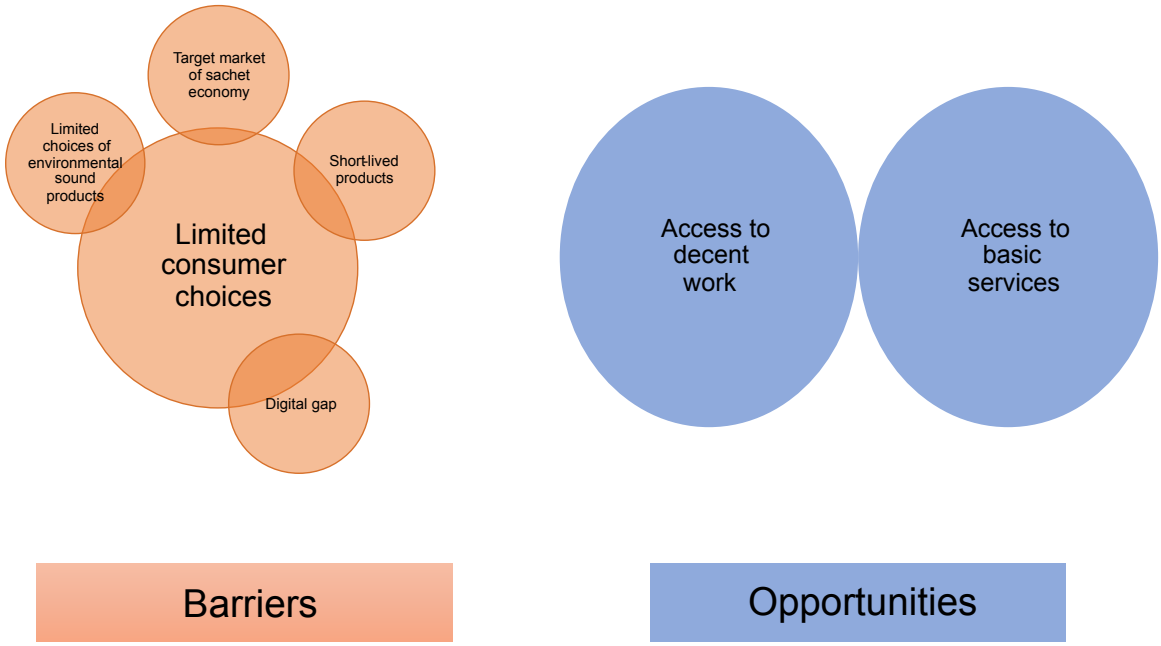

Figure 3. Poverty Issues Linked to Circular Economy

[11] ILO, *World Employment Social Outlook*, 2018. Available at: <https://www.ilo.org/global/publications/books/WCMS_628654/lang--en/index.htm>. (Date accessed 7 February 2024).

[12] Patrick Schröder, "Promoting a Just Transition to an Inclusive Circular Economy", Chatham House, April 2020.

Informal economy

The ILO describes the informal economy as "all economic activities by workers and economic units that are — in law or practice — not covered or insufficiently covered by formal arrangements".[13] These are activities operating outside the formal reach of the law and synonymous with informal labour. Although official statistics do not accurately estimate informal workers, informal labour is present in every sector and stage of the product life cycle. According to the IBON Foundation, 20.2 million Filipinos are engaged in informal work.[14]

Overall, the informal sector faces challenges such as low incomes, occupational health hazards and limited access to finance and technology. Additionally, informal labourers have limited access to markets, restricting their ability to expand their business.

Circular activities such as reuse, repair, waste collection and recycling rely on informal labour.[15] Informal waste pickers stand out in terms of their contributions to product circularity. They play a crucial role in recovering improperly segregated waste at the source. Despite their contributions, these informal workers are often stigmatized[16] and remain invisible to government solid waste management planning and programmes.

In fact, the transition to circular economy may unintentionally increase the demand for informal workers. As explained in the report, *Avoiding Blind Spots: Promoting Circular and Fair Business Models*,[17] if circular business models (e.g., resale, repair and product as a service) are promoted at scale, they may decrease the need for manufacturing and sourcing workers. However, the transition to circular economy may increase subcontracting repair services, as the in-demand skills in circular business models increase certain informal labour sectors.

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[13] ILO, *Resolution concerning decent work and the informal economy*, 2002. Available at: <https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/---reloff/documents/meetingdocument/wcms_080105.pdf>. (Date accessed 7 February 2024).

[14] IBON, "More part-timers, unpaid family workers underscores admin's inability to create quality jobs — IBON", 6 October 2023. Available at: <https://www.ibon.org/more-part-timers-unpaid-family-workers-underscores-admins-inability-to-create-quality-jobs-ibon/#:~:text=IBON%20estimates%20that%20total%20number,family%2Doperated%20farm%20or%20business.>. (Date accessed 7 February 2024).

[15] ILO, "Global South circular economy could generate millions of job opportunities", 9 May 2023. Available at: <https://www.ilo.org/sector/news/WCMS_881334/lang--en/index.htm>. (Date accessed 7 February 2024).

[16] GA Circular, *The Role of Gender in Waste Management: Gender Perspectives on Waste in India, Indonesia, the Philippines and Vietnam*, June 2019. Available at: <https://oceanconservancy.org/wp-content/uploads/2019/06/The-Role-of-Gender-in-Waste-Management.pdf>. (Date accessed 7 February 2024).

[17] Circular Economy Foundation, *Avoiding Blind Spots: Promoting Circular and Fair Business Models*, 2 December 2020. Available at: <https://www.circle-economy.com/resources/avoiding-blindspots-promoting-circular-and-fair-business-models>. (Date accessed 7 February 2024).

As circular solutions are developed, sustainable informal sector working conditions should be incorporated into business models, procurement and public-private partnerships. Potential approaches include integrating transparency into the supply chain to document human rights issues, public-private partnerships ensuring policies protecting employee welfare and minimizing job displacement costs through entrepreneurship and training initiatives. In an ideal circular economy, few workers are needed to make new products, such as clothes and electronics, while businesses transform into service providers renting and leasing products. Informal workers can prepare for these changes by learning new skills specific to circular economy, such as upcycling garments, as well as IT and mechanical skills to extend product life. Likewise, supporting entrepreneurship within the informal economy sector is key to protecting livelihoods.

Finally, circular economy opens up additional opportunities for informal waste collectors. The newly enacted Extended Producer Responsibility (EPR) law, which makes producers responsible for recovering their waste, means waste pickers can be absorbed into the formal value chain by helping large companies meet their waste reduction mandates. In tandem, local governments — at the barangay or city level — should integrate these informal waste pickers into solid waste management plans.

Gender

Circular economy can either promote gender equality or perpetuate gender inequality. The impact of circular economy on gender depends on how it supports positive gender roles, addresses gender issues and provides opportunities to address practical gender needs. The diagram below shows how circular economy is interconnected with gender concerns.

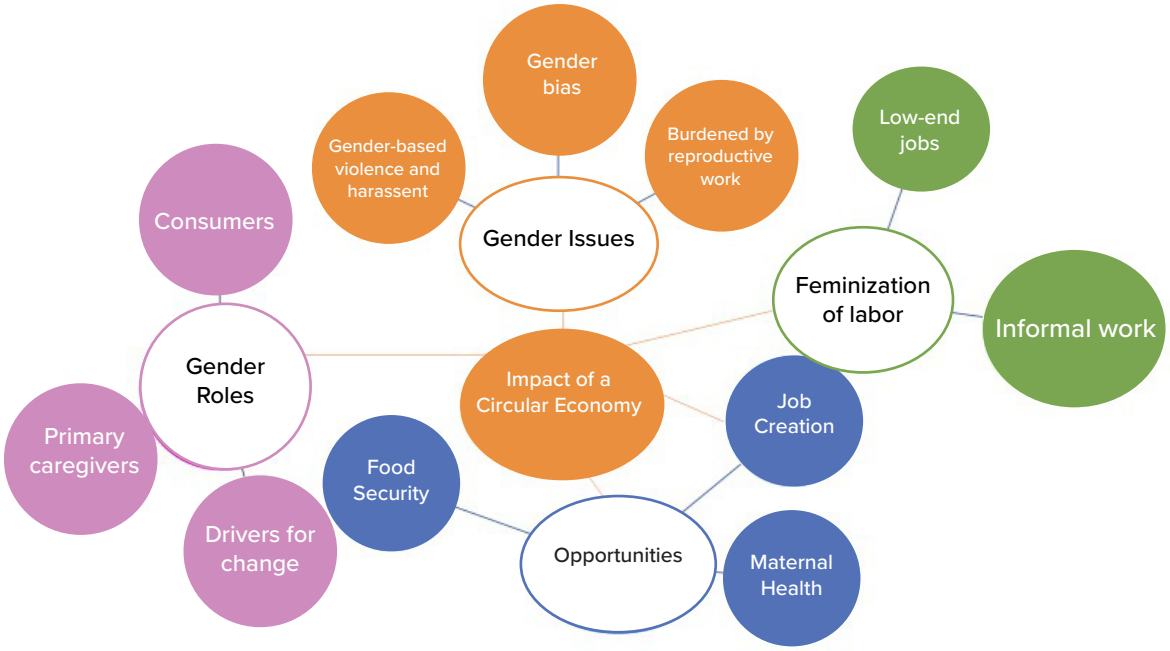

Figure 4. Circular Economy Impact on Gender

Gender roles

Women play a massive role in circular economy as consumers and drivers of change. Even their traditional gender role as primary caregivers plays a dual role that can both hinder and support the advancement of circular economy. The traditional division of household responsibilities influences consumption patterns, as women are often responsible for purchasing short-term use products (e.g., household products, food, etc.), while men tend to be responsible for purchasing more durable items (e.g., cars). [18] Gendered household practices position women as the main consumers and users of film plastics such as sachets and shopping bags. As consumers, they are also the primary target market for fast fashion, household and hygiene products, which significantly contribute to waste generation.

As primary caregivers, women make major decisions on household consumption and waste disposal. The 2017 National Demographic and Health Survey reports that 89 percent of women decide on major household purchases. [19] GA Circular [20] also emphasizes women's role in managing household waste, suggesting that women must be recognized as a key demographic when designing behavioural change.

As drivers for change, studies show that women tend to have pro-environmental behaviours and are more inclined to learn about waste management processes. [21] For instance, they are more likely to contribute to recycling, reusing and reducing waste.

Gender issues

Pressing gender issues such as the burden of reproductive work, gender-based violence, gender bias, discrimination and underrepresentation in science, technology, engineering and mathematics (STEM) may hinder women's participation in circular economy.

Burdened by reproductive work

Placing the bulk of reproductive work in the hands of women by tradition is a double-edged sword in the context of circular economy. It benefits circular economy by mobilizing women to promote and adopt circular behaviour in the household while

[18] OECD, Issue Note: Mainstreaming Gender and Empowering Women for Environmental Sustainability, 2020. Available at: <https://www.oecd.org/env/GFE-Gender-Issues-Note-Session-5.pdf>. (Date accessed 8 February 2024).

[19] Philippine Statistics Authority, 2017 National Demographic and Health Survey, 2017. Available at: <https://www.dhsprogram.com/pubs/pdf/SR253/SR253.pdf>. (Date accessed 8 February 2024).

[20] GA Circular, The Role of Gender in Waste Management: Gender Perspectives on Waste in India, Indonesia, the Philippines and Vietnam, June 2019.

[21] Ibid.

thwarting circular economy due to women's reliance on efficient single-use products, such as diapers and sachet-packed goods. Furthermore, women spend more time performing household work, which forms an obstacle to their participation in the labour force because of the burden of unpaid work in the home.

Accordingly, there is growing concern about unpaid care work and its implications for the circular economy product and programme design. The future of work in circular economy must consider how work arrangements can best support women and men in their care responsibilities.

Gender-based violence

Gender-based violence is often overlooked in circular economy discussions, even though it affects not only women's entry into the workplace but also how spaces are utilized. Gender-based violence in the form of sexual harassment is a barrier to women's mobility, a critical area of concern for circular economy, which encourages decreased use of individual-owned transportation. Every public space, from transport to the workspace, should be safe for women and girls to achieve collective consumption through shared spaces and utilities.

Underrepresentation of women and girls in STEM

The gender gap in STEM education and occupations indicates broader inequalities in employment and income opportunities in STEM-driven circular economy. According to the Circular Innovation Hub, "[a]s a result of gender socialization and the gendered division of labor, women have a low participation rate in STEM fields". [22]

The Philippine Statistics Authority reports that women comprise approximately 48.3 percent of total science, technology, engineering, agri-fisheries and mathematics (STEAM) enrolment. [23] The gender gap is even wider in engineering and technology, with women making up approximately 33.6 percent of the enrolment, while in IT-related disciplines, women represent roughly 39.2 percent.

The underrepresentation of women and girls in STEM education is primarily attributed to low confidence and little awareness of STEM-related careers. [24] Furthermore, girls have different motivations for pursuing STEM education and careers. While men are inclined to pursue STEM education

[22] Joshi Aasavari, "Towards a Gender-Inclusive Circular Economy", Circular Innovation Lab, 25 August 2022. Available at: <https://www.circularinnovationlab.com/post/towards-a-gender-inclusive-circular-economy>. (Date accessed 8 February 2024).

[23] Philippine Statistics Authority, "Gender and Development", 2023. Available at: <https://psa.gov.ph/gender-statistics>. (Date accessed 8 February 2024).

[24] Philippine Business Coalition for Women Empowerment, "Perceptions of the Filipino Youth Around STEM and The Need to Understand It", 29 September 2022. Available at: <https://investinginwomen.asia/wp-content/uploads/2023/05/12022020-Youth-in-STEM-1.pdf>. Date accessed 8 February 2024).

and careers because of the perceived good working conditions, women are more likely to choose STEM education and careers because they see this field as an opportunity to help others. For women who pursue STEM careers, findings show an overall positive work experience; however, gender bias continues to create an obstacle to hiring and recruiting women for technical and leadership roles. [25]

Feminization of labour

The term "feminization of labour" has been commonly used by scholars and activists to describe increasing female participation in the workforce, particularly in low-paid and undervalued occupations. This trend is largely attributed to gender norms that undervalue women's work in both the domestic and productive spheres. In the Philippines, the feminization of labour is reflected in women's high participation in the informal economy and the gender pay gap. According to the World Economic Forum, women's income is just 71.6 percent of that of men performing the same type of work. [26]

The feminization of labour has also led to the increased absorption of women into informal work arrangements because of the flexibility to work alongside family members and devote more time to reproductive work. Informal work puts women in vulnerable positions as they are subjected to substandard wages, long working hours and safety hazards, including sexual harassment. [27]

In circular economy, the feminization of labour is observed in the textile, electronics and informal waste sectors, with the latter two commonly prioritized in circular economy. In the Philippines, many women are employed in low-end jobs in textile and electronics. Globally, the garment industry exposes workers to inadequate compensation, piece-rate pay conditions, no overtime pay, health and safety risks (e.g., chemical exposure), inadequate infrastructure and fire hazards. [28] Similarly, in the Philippines, women workers face multiple challenges in textile and electronic industries, including IT-intensive work, fast-paced work, the need for upskilling, burnout, chronic sleep deficit, superspeed communications and new illnesses.

In the context of circular economy-related activities in the informal sector, women are more likely to work in trash management, recycling and reuse because of the gendered division of labour. Moreover, women are often found at the lowest levels of the solid waste management value

[25] Ibid., "Women in STEM — A Baseline Study", 29 November 2019. Available at: <https://pbcwe.com.ph/2019/11/29/full-report-women-in-stem-a-baseline-study/>. (Date accessed 8 February 2024).

[26] World Economic Forum, Global Gender Gap Report, 2023. Available at: <https://www3.weforum.org/docs/WEF_GGGR_2023.pdf>. (Date accessed 8 February 2024).

[27] Lucita Lazo, "Challenges in the Economic Participation of Women as Entrepreneurs", Philippine Institute Development Studies Policy Notes, 5 March 2015. Available at: <https://www.pids.gov.ph/publication/policy-notes/challenges-in-the-economic-participation-of-women-as-entrepreneurs>. (Date accessed 8 February 2024).

[28] Christine Svarer, Rachael Meiers and Berkley Rothmeier, Empowering Female Workers in the Apparel Industry, BSR, June 2017. Available at: <https://www.bsr.org/reports/BSR_Empowering_Female_Workers_in_the_Apparel_Industry.pdf>. (Date accessed 8 February 2024).

chain. Although women also work at junk shops, the next highest node on the value chain, relatively few women are junk shop owners. Material recovery facilities also offer attractive employment, as women may bring their children. [29]

Disability

According to the *Convention on the Rights of Persons with Disabilities*, "Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others." [30] Disabilities can be apparent or non-apparent, such as disabilities not characterized by physical impairment or impaired mobility or function. Globally, an estimated 1.3 billion people experience significant disability. [31] In the Philippines, an estimated 1.44 million people, or 1.57 percent of the population, have a disability, with the highest number of disabled persons in the 15–49 year age range. [32] A more recent survey on national disability prevalence shows that approximately 12 percent of Filipinos age 15 and older experience severe disability. Meanwhile, almost one in two (47 percent) experience moderate disability, while 23 percent experience mild disability. [33]

Persons with disabilities encounter communication, social and physical barriers, such as challenges accessing education and work. Moreover, stigmatization and access to information are common issues for all persons with disabilities. Those with severe disabilities encounter additional obstacles, such as unmet needs for devices, additional personal assistance and outpatient care.

circular economy can significantly impact persons with disabilities through its impact on the shared economy, job creation and access to circular products and services. While circular economy encourages collective consumption to save resources, it can further marginalize persons with disabilities. For example, promoting mass transit over private car ownership may hinder the mobility of persons with disabilities. Moreover, while circular economy promises job creation, it does not guarantee a spillover effect for vulnerable

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[29] Cesar Leon, Clean Cities, Blue Ocean: Initial Solid Waste Management Assessment — Philippines, Tetra Tech, 1 July 2020. Available at: <https://pdf.usaid.gov/pdf_docs/PA00XWPH.pdf>. (Date accessed 8 February 2024).

[30] United Nations, Convention on the Rights of Persons with Disabilities, 12 December 2006.

[31] World Health Organization, "Disability", 7 March 2023. Available at: <https://www.who.int/news-room/fact-sheets/detail/disability-and-health>. (Date accessed 8 February 2024).

[32] Philippine Statistics Authority, "The 2010 Census of Population and Housing Revels the Philippine Population at 92.34 Million", 4 April 2012. Available at: <https://psa.gov.ph/content/2010-census-population-and-housing-reveals-philippine-population-9234-million#:~:text=GOVPH-,The%202010%20Census%20of%20Population%20and%20Housing,Philippine%20Population%20at%2092.34%20Million&text=The%20total%20population%20of%20the,signing%20by%20President%20Benigno%20S>. (Date accessed 8 February 2024).

[33] Philippine Statistics Authority, "Disability Spares No One: A New Perspective", 3 May 2019. Available at: <https://psa.gov.ph/content/disability-spares-no-one-new-perspective>. (Date accessed 8 February 2024).

groups such as persons with disabilities. Education and employment will also remain inaccessible to persons with disabilities in circular economy unless the rights of persons with disabilities are adequately mainstreamed in the business sector, workplaces, educational institutions and government programmes. Finally, persons with disabilities may not have enough access to circular products and services because of communication and physical barriers, as well as their low incomes.

MAINSTREAMING GENDER EQUALITY, DISABILITY AND SOCIAL INCLUSION IN CIRCULAR ECONOMY

Circular economy can be introduced through several solutions focused on promoting social inclusion. The following solutions provide recommendations on how businesses and governments can integrate the GEDSI lens and reduce inequalities.

Designing circular products and services

One of the core circular economy principles is circulating products and materials at their highest value. There is a wide array of circular products on the market — from biodegradable toothbrushes to compostable diapers — but there is low demand for these products because the majority of the population belongs to low-income households.

When designing circular products for women, products should be price- and time-sensitive since most women shoulder the bulk of domestic work (e.g., promoting standard diapers over reusable diapers). Accordingly, research and development must focus on designing and marketing circular products that are accessible to low-income households and, where possible, address practical gender needs.

To ensure persons with disabilities can also be consumers of products facilitating circular economy, innovators should apply the universal design principle in developing and marketing products. For example, technology companies can apply universal design in software applications and electronic gadgets. As electronic industries rethink how to design devices that can easily be repaired, they must also find ways to make these accessible to persons with disabilities. Several technology companies, such as Samsung and Microsoft, have taken steps to apply universal design in their products. [34]

Research and development are required for entrepreneurs designing circular products with GEDSI considerations. The government can support businesses producing circular products by providing business support schemes such as financial support, direct subsidies, provision of capital, financial guarantees, technical support, advisory, training and demonstration of best practices. [35] By implementing these government interventions, the prices of circular products can be lowered, making them more accessible to a wide range of consumers.

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[34] Fundación ONCE and ILO Global Business and Disability Network, Making the future of work inclusive of people with disabilities, 2019. Available at: <https://disabilityhub.eu/sites/disabilitybub/files/making_the_future_of_work_inclusive_of_persons_with_disabilities_vf.pdf>. (Date accessed 8 February 2024).

[35] Ellen Macarthur Foundation, "Shaping incentives to enable a circular, low-carbon economy". Available at: <https://www.ellenmacarthurfoundation.org/covid-19-shaping-incentives-to-enable-a-circular-low-carbon-economy>. (Date accessed 8 February 2024).

Promoting an inclusive circular business model

As discussed in previous sections, circular business models have been criticized for many reasons, including because they fail to challenge wealth distribution. [36] Regardless of circular economy principles, businesses still operate with the primary purpose of maximizing profit.

Shift Circular developed an inclusive and distributive framework for circular business models. The framework focuses on four key areas: ownership, operations, products and services, and supply chains. Leaders can use these areas to proactively "redistribute" opportunity, income and wealth. The framework also suggests localizing circular business models, shared ownership and improved working conditions to promote inclusivity further. [37]

The inclusive and distributive framework can apply gender equality, social inclusion and disability principles to a circular business model. The diagram below shows how circular business models can apply GEDSI through the lens of consumers, workers and suppliers. The figure also explains the roles of producers/ business owners, government and civil society in promoting inclusive circular business models.

Producers and business owners can consider the GEDSI dimension when selling and marketing circular products by assessing the accessibility, affordability and availability of products and services. They can also apply a GEDSI lens in employment by developing policies to protect vulnerable groups. These include gender quotas for workers and leadership roles based on a gender gap analysis and reasonable accommodation for persons with disabilities. Businesses can also apply the GEDSI lens by sourcing materials from marginalized groups, including small and medium-sized enterprises. (e.g., a fashion business can source discarded cloth from informal waste collectors).

The government and civil society should promote business sector efforts supporting circular economy. The government can incentivize the business community through business support schemes and public recognition, while civil society can help organizations meet their inclusive circular goals. The government can formally encourage businesses to report encourage businesses to report circular economy-related initiatives in government-required

[36] Circular Economy Foundation, *Avoiding Blind Spots: Promoting Circular and Fair Business Models*, 2 December 2020.

[37] Shift Circular, "Connected Systems: A 4th Principle for a Resilient Circular Economy". Available at: <https://www.shiftcircular.com/blog/connected-systems-4th-design-principle-circular-economy>. (Date accessed 8 February 2024).

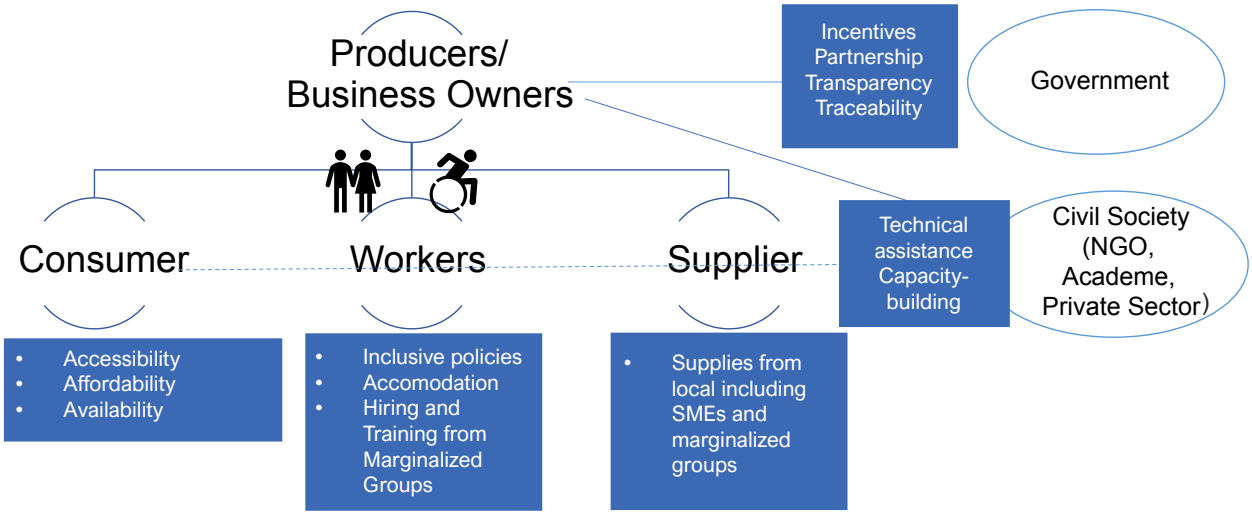


Figure 5. GEDSI Entry Points in Circular Business Models

documents to strengthen inclusion strategies further. As big corporations adopt and produce sustainability reports, it is worth advocating for the inclusion of a social dimension in their sustainability reporting practices.

[38] 'Reasonable accommodation' means necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms. See: United Nations, *Convention on the Rights of Persons with Disabilities*, 12 December 2006.

Circular public procurement

With public procurement accounting for 15–20 percent of global GDP and local governments responsible for nearly 50 percent of procurement decisions, city governments play an essential role in shaping and designing local circular economy. [39] In addition to applying circular economy principles and criteria to their procurement practices, city governments can promote inclusivity by involving marginalized groups as suppliers and consumers to address socioeconomic gaps such as housing and nutrition.

Inclusive public procurement can tap marginalized groups to supply goods and services for government functions and support marginalized groups as both suppliers and consumers. For example, governments can purchase eco-bricks produced by informal workers from plastic and other non-recyclable waste for construction materials to be used in social housing.

Another example is Quezon City's Healthy Food Procurement Policy, which aims to promote health and nutrition by procuring healthy food for government functions and services, such as rehabilitation and child development centres. The vision of this policy includes supply-side inclusive initiatives, such as sourcing food from local farmers, cooperatives and small-medium enterprises.

[39] Ellen Macarthur Foundation, "Lessons learnt by cities in shifting from linear to circular procurement". Available at: <https://www.ellenmacarthurfoundation.org/circular-public-procurement/lessons-learnt-by-cities>. (Date accessed 8 February 2024).

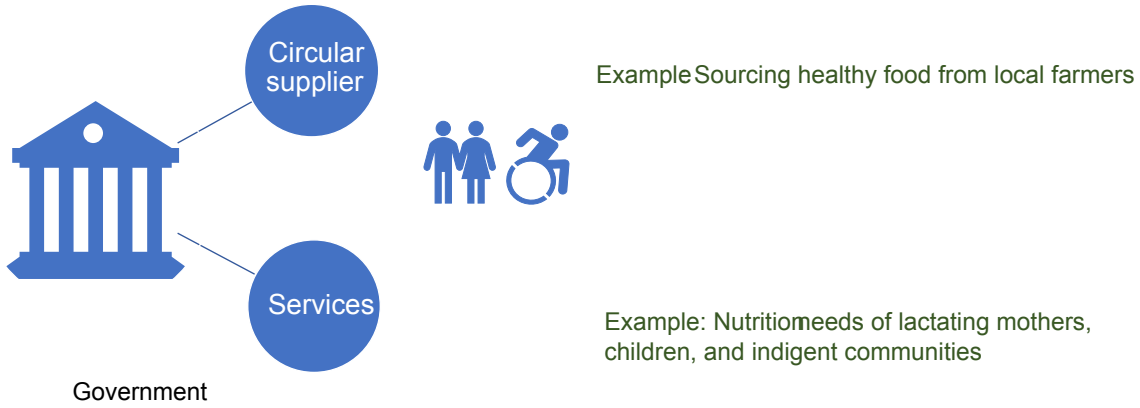


Figure 6. GEDSI Entry Points in Circular Public Procurement

Education and training

While the circular economy has the potential to generate additional employment opportunities, it is unclear how these emerging job markets will help close the unemployment gap. The future job market may be less accommodating of marginalized groups due to limited educational and training opportunities. In electronics and textiles, unequal education and training opportunities explain why a gendered workforce has been maintained, and few women hold technical and leadership roles in specific industries. [40]

As road maps for green jobs are developed, gender and disability can be mainstreamed through indicators, targets and strategies that include women and persons with disabilities and ensure they are included in STEM programmes and technical and vocational education training. Governments are instrumental in linking circular businesses to persons with disabilities and marginalized communities for education and training. Likewise, governments are key to sensitizing the business sector to the rights of persons with disabilities to ensure reasonable accommodations for persons with disabilities.

[40] Circular Economy Foundation, *Avoiding Blind Spots: Promoting Circular and Fair Business Models*, 2 December 2020.

Communication and advocacy for social behavioural change

Business and innovation alone cannot address certain aspects of circular economy. Although circular business models offer avenues to promote social inclusion, their appeal may be limited to specific consumer demographics. For instance, fashion items from upcycled materials may only appeal to a niche market. Consequently, social behavioural change communication (SBCC) and advocacy must be applied when promoting circular practices. People should be encouraged to adopt circular behaviours and principles that do not require considerable financial resources or the increased production of environmentally sound consumer products. The figure below illustrates a spectrum of available actions through SBCC and advocacy.

Adopting a sustainable lifestyle can significantly impact resource utilization. Consumers need to think before they buy and feel motivated to share, rent, lease, buy second-hand goods and seek repair services. For example, promoting a healthy lifestyle by encouraging urban farming reduces food waste. Similarly, encouraging people to walk and cycle reduces dependence on automobiles.

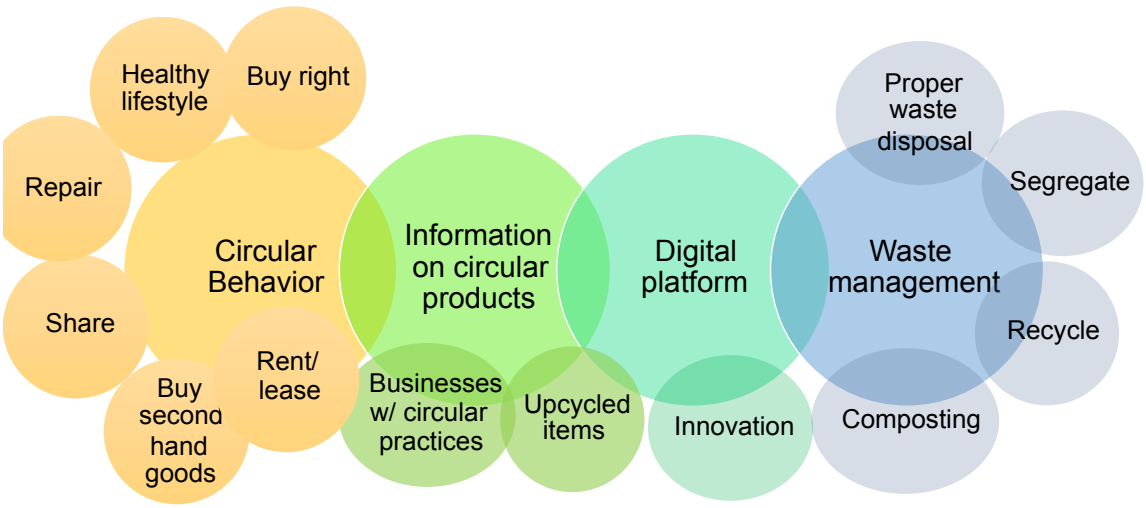


Figure 7. Circular Actions for Inclusion in SBCC Strategy

Disseminating information on circular products and services creates demand for these products, boosting business sustainability and profitability. Furthermore, in circular economy, where technology introduces innovation, circular behaviour can be increased by expanding access to digital platforms.

Solid waste management also requires changes in household behaviours and practices. Some local government units have been utilizing SBCC campaigns on proper waste disposal, segregation, recycling and composting to disseminate and advocate circular economy practices.

SBCC should be rolled out through a multipronged strategy to reach the most marginalized and vulnerable communities and sectors. Advocacy and communication are crucial to ensure circular economy programmes do not harm the living conditions of marginalized groups. Therefore, advocacy strategies should facilitate the inclusion of women, persons with disabilities and other marginalized groups in government programme decision-making and planning.

Shared public spaces

While promoting shared public spaces may not be widely recognized as a circular solution, it positively impacts resource utilization through collective resource consumption. City planning, mobility and logistics are extensions of this core circular economy concept in the urban planning sphere.

Shared public spaces include green spaces, co-working spaces and pedestrian lanes. Housing communities also promote circular economy through social innovation.[41] Designing public spaces that are inclusive, safe and accessible for women, children, older people and persons with disabilities expands access to products and services. In turn, improved access reduces the demand for private cars and delivery services, and, more broadly, public spaces facilitate shared consumption, leading to reduced utility usage.

[41] Marianna Marchesi and Chris Tweed, "Social innovation for a circular economy", Sustainable Cities and Society, 71, August 2021. Available at: <https://doi.org/10.1016/j.scs.2021.102925>.

Mainstreaming GEDSI in city circular economy programmes

Local government units have been implementing circular economy programmes introduced by various development organizations and have incorporated inclusion strategies into these programmes. Current circular economy programmes mainly focus on waste diversion, urban farming and upcycling. Most of these activities target marginalized groups such as low-income households, single parents, and persons with disabilities. These programmes are worth replicating and upscaling. In principle, local government units include persons with disabilities in livelihood programmes; however, it is worth exploring how reasonable accommodations are provided for persons with disabilities. Considering the diversity of persons with disabilities, it is worth revisiting how government programmes cater not only to persons with apparent disabilities but also to those with non-apparent disabilities, including developmental and intellectual disabilities.

RECOMMENDATIONS

Below is the list of recommendations for the government and private sector to promote GEDSI in the transition to circular economy.

Institutional capacity

Government

- Institutionalize commitment to promoting social inclusion in circular economy by developing GEDSI action plans for different sectors, including plastic, food/agriculture, transportation and logistics. Government agencies can develop an action plan based on a detailed GEDSI analysis focusing on sector-specific issues. These action plans will ensure circular economy interventions positively impact marginalized sectors by proposing targets and indicators for marginalized group participation. For example, an action plan on green jobs could include the percentage of persons with disabilities employed and trained.

- Promote and localize circular economy programmes at the city level to improve programme accessibility and services for marginalized communities, especially persons with disabilities. The scope of circular economy is vast and complex, and some solutions are not feasible for nationwide or sector-wide implementation. For example, circular business models such as peer sharing via digital platforms may not be appropriate for all products. Likewise, the feasibility of these business models will depend on each city's demographic profile. Therefore, circular solutions should be tailored to community and market needs.

Circular business model

Government

- Incentivize business sectors that apply circular economy, as well as recruit marginalized groups and procure materials and resources from marginalized communities.

- Certify or publicly recognize businesses applying GEDSI best practices in a circular business model, such as providing reasonable accommodation for persons with disabilities and compliance with occupational health and safety standards.

- Integrate GEDSI dimensions into reporting documents for businesses wishing to engage in circular economy.

- Link the business community and marginalized communities.

Private sector

- Develop GEDSI-responsive policies that include reasonable accommodation and promote non-discrimination and better working conditions for persons with disabilities.
- Promote hiring and training in marginalized sectors.

Circular procurement

Government

- Procure products and services from community-based organizations, including women and persons with disabilities.
- Source goods and services from private organizations that observe decent working conditions for women and persons with disabilities.
- Establish transparency instruments that report products and services from marginalized communities or private organizations promoting GEDSI in their recruitment, training, practice and policy.
- Use public procurement to address socioeconomic gaps (e.g., malnutrition and informal settlement).

Product development

Government

- Support research and development, including a feasibility study of product innovation to ensure the accessibility and affordability of circular products.
- Support grass-roots circular economy initiatives.

Private sector

- Apply universal design in product development to create intuitive and easy-to-use products.
- Explore various eco-labelling formats to inform persons with disabilities and consumers from diverse socioeconomic backgrounds.

Education and training

Government and private sector

- Strengthen private sector, civil society and academic partnerships to support capacity-building for circular economy skills training.
- Strengthen partnerships with cooperatives and organizations of persons with disabilities.
- Strengthen disability inclusion initiatives

in the workplace and through education and training.

- Establish entrepreneurial programmes for the informal sector, including informal waste collectors.

- Provide technical assistance incorporating innovation to marginalized communities.

- Improve the participation of women and persons with disabilities in STEM and circular economy education through gender and inclusion action plans in collaboration with the Department of Education (DepEd), the Commission on Higher Education (CHED) and the Technical Education and Skills Development Authority (TESDA).

Shared public spaces

Government and private sector

- Ensure the safety of women, children, persons with disabilities and the ageing population through an inclusion audit of public facilities, including but not limited to workspaces, pedestrian access, overpasses, parks and other green spaces.

- Ensure the full implementation of the Safe Spaces Act [42] and Accessibility Law [43] in public spaces.
- Integrate child-friendly and gender-responsive facilities in public shared spaces.

- Increase awareness of harassment-free policies in public shared spaces.

Social and behaviour change communication and advocacy planning

Government

- Network with civil society organizations, informal sectors, women's organizations, cooperatives and persons with disabilities organizations.

- Utilize various communication platforms to connect with people from different socioeconomic backgrounds.

- Provide opportunities for marginalized communities to participate in decision-making and planning for circular economy government programmes.

- Apply disability inclusion to communication planning.

[42] Republic Act 1131, known as the Safe Spaces Act, penalizes gender-based harassment acts in public spaces, including public transportation.

[43] Republic Act 344, known as the Accessibility Law, aims to improve the mobility of persons with disabilities by requiring certain buildings, institutions, establishments and public utilities to install facilities and other devices.

Annex

This guide provides an overview of how to include marginalized sectors, including women, persons with disabilities and the informal waste collector sector. However, this guide is not exhaustive and requires consultation with different stakeholders.

Project assess entry points for GEDSI mainstreaming

- Identify which areas of the value chain marginalized groups can participate (e.g., workforce, suppliers, consumers).

- Mainstream social inclusion at the different project stages: project development, project management and monitoring and evaluation

Identifying target participants for livelihood programmes

- Before implementing programme activities, map skillsets and jobs to assess which job functions can be delegated to members of marginalized communities.

- Partner with socio-civic organizations and barangays to mobilize marginalized sectors such as women-based and disability-focused organizations.

- Conduct a needs assessment of target participants.

Workplace for livelihood programmes

- Make the workplace accessible to identified marginalized communities. In some instances, barangay and community centres are strategic locations with easy access to women, low-income households and persons with disabilities or mobility issues.

Consideration for childcare support

- Consider childcare support to improve women's participation in activities. Women lacking childcare support may be discouraged from participating in training and other socioeconomic activities. Provide simultaneous activities for children or assign dedicated staff to serve as childminders during training.

Facilities, equipment and tools

- Ensure the physical properties of facilities, tools and equipment are appropriate for persons with disabilities.

Training providers

- Be sure training providers know how to handle people with different learning and intellectual disabilities.

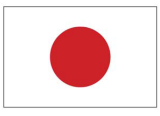
- Address the communication barriers of persons with hearing and visual impairment by offering reasonable accommodation.

- Confirm that sills-based training providers are sensitive to the rights of persons with disabilities.

- Verify that instructions are simple and easy to understand.

GEDSI-responsive policies

- Issue a non-discrimination policy regarding gender expression, gender identity, sexual orientation or disability to recruit workers in circular business models.



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