ASEAN Circular Economy Business Alliance

Circular Economy: an Opportunity for Indonesian Businesses

SPOTLIGHT

Around Indonesia, a number of businesses are prospering from innovation and collaboration in their processes and value chains that avoid waste and improve the efficiency and longevity of materials use. Great Giant Foods recovers its fruit processing waste as animal feed and processes the animal manure for bio-energy and bio-fertilizer for use in its sustainable plantation operations. WEGE and Unilever reduce materials use and waste through respectively modular building construction and sustainable consumer packaging redesign. Leading start-ups have specialized in recycling textile waste (Pable) and plastic waste (Robries) into innovative, designer products. Burgreens and MYCOTECH Lab champion the transition to vegan food and vegan leather alternatives. These initiatives are exemplary for the Circular Economy – and a call-to-action for businesses and other organizations in Indonesia and beyond.

CIRCULAR ECONOMY

The Circular Economy (CE) is positioned as the alternative for the current linear economy, which is based on taking materials from nature, making and using these in products, and discarding these products after their useful life. This linear extraction and use of materials is unsustainable, as it – globally - causes 60% of climate emissions, contributes up to 90% of loss of nature on land, and 40% of particulate matter pollution[1]. Materials use continues to increase rapidly – the Global Materials Flow Database estimates that the total material consumption of the Indonesian economy doubled over the past 25 years while the per capita material footprint increased 2.5-fold over the same period[2]. Plastics use and pollution illustrate the shortfalls of the linear economy; however, they are only part of the bigger problem of the wasteful use of all materials.

1 International Resource Panel (2024), Bend the Trend: Global Resources Outlook 2024, see: https://wedocs.unep.org/bitstream/handle/20.500.11822/44901/Global-Resource-Outlook_2024.pdf?sequence=3&isAllowed=y

2 International Resource Panel (2025), Global Materials Flow Database, https://www.resourcepanel.org/global-material-flows-database

The CE concept has diverse roots, which has given rise to divergent definitions, each highlighting different elements, such as nature's principles, circularity practices, circular business models, and sustainable materials resource management. In operational terms, CE envisions **circular value chains**, that bring the net use of virgin materials as well as the net disposal of waste as close as possible to zero (see Figure 1). This invokes three material resource strategies, respectively: repeatedly recovering and reusing end-of-life materials (**resource circularity**); using materials more efficiently and longer (**resource efficiency**); and switching to renewable materials and energy (**resource substitution**). CE starts with developing circular products and value chains, then fosters materials efficiency in all value chain stages, and ends with recovering and recycling the end-of-life materials that could not - yet - be avoided.

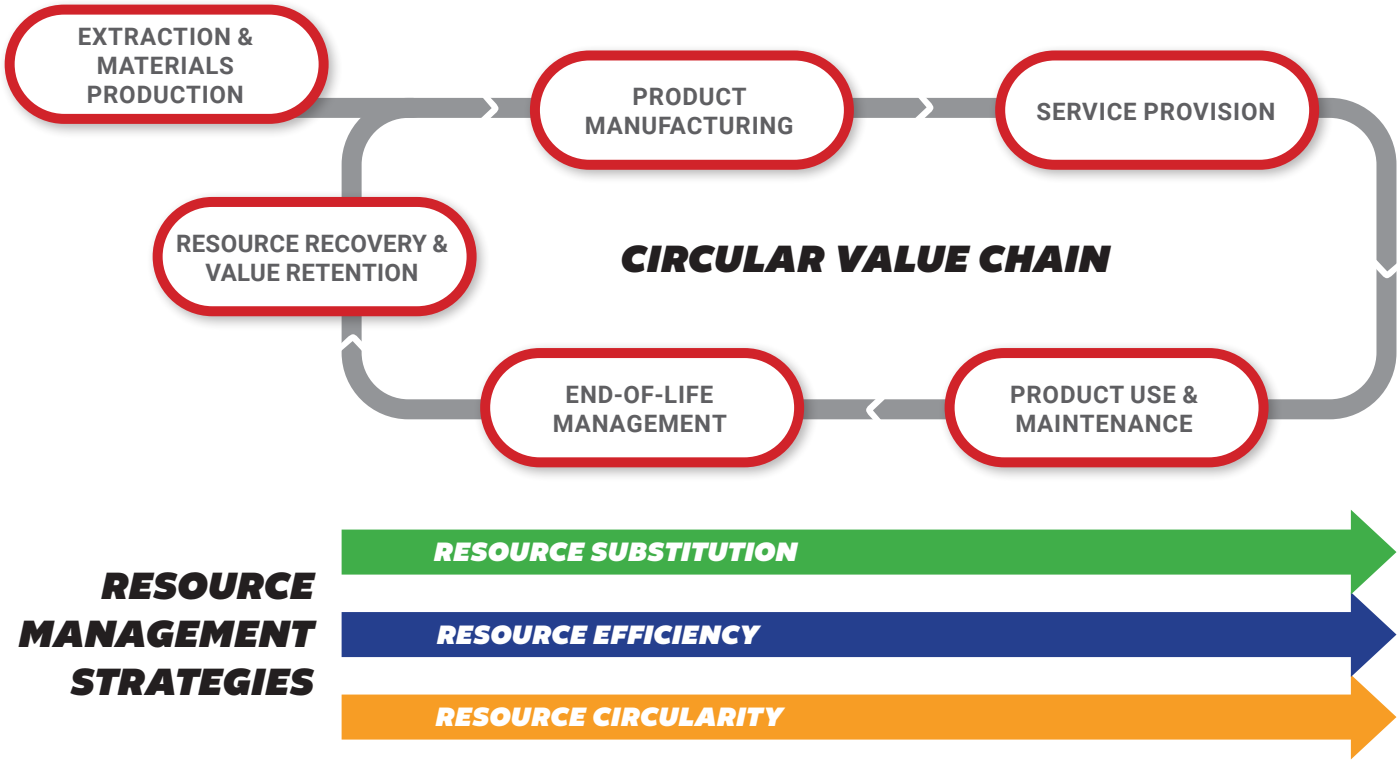

Figure 1: Circular Economy: circular value chains driven by resource management strategies[3]

POLICY PRIORITY

CE is a regional and national priority in Southeast Asia and other regions. The Association of South-East Asian Nations (ASEAN) adopted its CE Framework in 2021 in support of ASEANs regional economic integration. Seven ASEAN Member States have already adopted specific CE national roadmaps and/or action plans: Indonesia, Cambodia, Laos, Malaysia, Singapore, Thailand, and Vietnam.

Indonesia officially first committed to the CE concept in the 2020-2030 National Strategy for Sustainable Consumption and Production.[4] This includes the provision to strengthen sustainable public procurement, that had already been introduced under the 2009 Law on Environmental Protection and Management, and since gradually expanded to cover government procurement of consumer goods, like office paper and stationary, energy efficient ICT and AC, etc. Furthermore, Indonesia committed to develop a system of extended producer responsibility as a means to improve collection and recycling of waste, in the 2019 Roadmap for Waste Reduction.

Since then, Ministry of National Development Planning (BAPPENAS) has prioritized circular economy development in five key sectors: food and beverage; retail and wholesale packaging; electronics; and construction – which together hold promise to increase Indonesia's GDP by an estimated 519 to 638 trillion

3 Van Berkel, R (2025), *Circular Economy: An Introduction and Overview*. https://www.aceba.co/site/assets/files/1430/ce_background_note_final.pdf

4 KLHK (2020) *Kerangka Kerja Strategi Pencapaian Konsumsi dan Produksi Berkelanjutan Indonesia Tahun 2020-2030*, Kementerian Lingkungan Hidup dan Kehutanan, Jakarta.

IDR by 2030[5]. Diverse business and community CE practices have been analysed and are being showcased and promoted by government[6] and business[7]. The most recent 2025-2045 CE Roadmap and Action plan is structured around three objectives, respectively: reduction in material and resource use; extension of product and material use; and enhancement of recycling and recovery[8]. Crosscutting interventions address standardization, public procurement and creating other enabling conditions for CE transition through the market, with active leadership and involvement of the business sector.

BUSINESS OPPORTUNITY

CE provides a responsible business opportunity. Firstly, using materials, energy, and water more efficiently and longer reduces business costs. Secondly, circular products and services can unlock access to new markets or consolidate and grow current markets. Thirdly, as countries and societies gradually transition to circularity, businesses need to get prepared with alternatives particularly for single-use products, fast-moving consumer goods, and other products and services that are genuinely problematic from a circularity perspective.

A growing number of Indonesian businesses are already benefitting from CE. The ASEAN Circular Economy Business Alliance (ACEBA)[9], with support from the EU SWITCH-Asia Policy Support Component[10], documented in 2024 sixteen business cases from Indonesia, as summarized in below table. Comparable sets of CE relevant business cases are already available for Cambodia, Laos, Malaysia, Philippines, Thailand and Vietnam – and are continuously being expanded[11].

Table 1: Indonesian CE business cases

Title	Company	Circular Economy practices
Agriculture, food & beverage		
Sago as alternative starch source	ANJ Agri Papua (ANJAP)	The sago plantation and its processing support the circular economy transition by making efficient use of natural resources (resource efficiency), and by recovering biomass waste (resource circularity) to replace fossil fuel use (resource substitution).
Vegan food for a better planet	Burgreens	Vegan dining chain and manufacturer of ready-to-eat frozen vegan meals, which substitute animal protein with plant- and mushroom-based proteins that are more resource efficient to produce. Minimization and recovery of food preparation waste in products or through composting.
Value chain innovation in domestic edamame production	Gading Mas Indonesia Teguh (GMIT)	Application of good agricultural and processing practices for increased efficiency of use of water, fertilizers and energy in cultivation and processing of edamame and other high value frozen vegetables in water stressed growing area.

5 BAPPENAS. 2021. *The Economic, Social and Environmental Benefits of a Circular Economy in Indonesia.* Jakarta: BAPENAS - Ministry of National Development Planning Agency. https://lcdi-indonesia.id/wp-content/uploads/2021/02/Full-Report-The-Economic-Social-and-Environmental-Benefits-of-a-Circular-Economy-in-Indonesia.pdf.

6 BAPPENAS. 2022. The Future is Circular: uncovering circular economy initiatives in Indonesia. Jakarta: BAPENAS - Ministry of National Development Planning Agency. https://lcdi-indonesia.id/wp-content/uploads/2023/02/230206_Buku-CE-ENG-version-low-res.pdf.

7 IBCSD (2023), Best Practices from Businesses in Indonesia: closing the loop in plastics and packaging, Indonesia Business Council for Sustainable Development, Jakarta, https://ibcsd.or.id/news-insights/closing-the-loop-in-plastic-packaging-best-practices-from-businesses-in-indonesia/

8 BAPPENAS. 2024. Circular Economy Strategy and Action Plan 2025 - 2045. Jakarta: BAPENAS - Ministry of National Development Planning Agency. https://lcdi-indonesia.id/wp-content/uploads/2024/07/RAN-ES-2025-2045.pdf.
ACEBA website: https://www.aceba.co/aceba/

9 ACEBA website: https://www.aceba.co/aceba/

10 SWITCH-Asia. Regional / Multi-Country Interventions › ASEAN Circular Economy Business Alliance (ACEBA): Moblising Business Action for Circular Economy in ASEAN. https://www.switch-asia.eu/our-work/multi-country/asean-circular-economy-pact-acep-mobilizing-business-action-for-circular-economy/

11 ACEBA Business Cases: https://www.aceba.co/aceba/business-case/

Title	Company	Circular Economy practices
Integrated operations for sustainable agriculture	Great Giant Foods	Extraction of bromelain enzyme from pineapple stems, use of recycled materials for packaging, recovery and reuse of plantation and fruit processing residues for animal feed. Production of biogas and liquid fertilizer from manure for use in plantations to regenerate soil and reduce fertilizer inputs. Rainwater harvesting and reuse, advanced irrigation and processing technology, including digitalization for improved resource efficiency.
Automotive		
Two-wheeler EVs to reduce climate and air emissions	Electrum	Design and manufacturing of 2-wheeled electric vehicles (e-scooters) which are customized for use in dense urban areas. Development and operation of supportive battery-swapping ecosystem, partially powered with renewables (through grid).
Building and construction		
Municipal solid waste as alternative fuel in cement industry	Solusi Bangun Indonesia (SBI)	Use of biomechanically processed municipal solid waste and other industrial wastes as alternative fuel for cement making.
Recycling nickel slag into concrete bricks	Trimegah Bangun Persada	Utilization of nickel slag (by-product of ferro nickel smelting) into bricks as substitute for concrete and ceramic bricks in road and building construction.
Modular: future for sustainable construction	Wijaya Karya Bangunan Gedung (WEGE)	Resource efficient factory-based production of pre-fabricated and pre-fitted building modules, with inclusion of secondary materials as fillers, that significantly reduce total material use for the building and enable reuse of the building at a different location or in a different building configuration.
Packaging		
Less Plastic – Better Plastic – No Plastic: towards circular plastics packaging	Unilever Indonesia	Redesign of consumer goods plastics packaging for lower packaging weight and/or volume and introduction of refill stations. Started with partial shifts to using recycled plastics and to replacing non-recyclable aluminum barrier laminate with recyclable plastic barrier laminate materials.
Textile and garments		
Using gambier waste for sustainable fashion	Galeri Wong Kito	Using waste liquid from gambier extraction with other natural wastes (leaves, bark, skins) for artisanal dyeing and production of ethnic-inspired jumpatan fashion.
Operationalising circularity towards net zero garment-making	Pan Brothers	Energy and water efficiency in production, minimization and recovery of fabric offcuts (with external partners to produce fabric or rugs). Experimenting with use of kapok fibre and organic dyes in fashion products. Integration of roof top solar as renewable power source.
Waste recovery		
Recycling plastic waste into road asphalt	Chandra Asri Group (CAG)	Use of plastic waste (1) in asphalt for construction of roads with extended durability and (2) for decentralized production of pyrolysis oil as alternative fuel.
Revolutionising waste management with zero waste techniques	Masaro	Sorting of municipal waste and subsequent processing of waste fractions through bioprocessing and pyrolysis into suitable products for use in agriculture.

Title	Company	Circular Economy practices
Using mushrooms to produce sustainable materials from agricultural waste	Mycotech Lab (MYCL)	Use of mycelium threads as bio-adhesive to turn agricultural waste products into sustainable leather-like and board materials, suitable for use in fashion, home décor and buildings. Energy and water efficient production practices and composting of remaining organic waste.
Recycling textile waste into circular fashion	Pable	Mechanical recycling and colour sorting of fabric waste (production offcuts, deadstock, used uniforms, etc.) to produce recycled thread which is woven into custom-designed recycled fabrics for different applications.
Unique recycled plastic home décor	Robries	Recycling of source-segregated PET and HDPE plastics into stylish recycled plastic board-based home decoration and furniture items.

GUIDING PRINCIPLES FOR BUSINESS

CE presents an ambitious agenda to bring the use of natural resources back within planetary boundaries. This is contingent on developing circular products, services, and processes by businesses and other organizations. To facilitate business leadership and action, ACEBA developed five guiding principles for business and CE, upon extensive engagement with the business sector in Indonesia, Cambodia, Malaysia, Philippines and Thailand. These guiding principles position CE as responsible business, conducted with an environmental lens, through innovations that improve material and resource use, and foster socio-economic progress.

Figure 2: Guiding principles for business action on Circular Economy[12]

12 EU SWITCH-Asia and ASEAN CSR Network (2023), Towards a Unifying Framework for Business Action for the Circular Economy in ASEAN. https://www.aceba.co/site/assets/files/1086/working_paper_business_action_ce_asean_final.pdf

ACEBA: ASEAN CIRCULAR ECONOMY BUSINESS ALLIANCE

ACEBA was launched in July 2024 as an ASEAN-centric, business-led CE initiative, with the endorsement of the ASEAN Business Advisory Council (ASEAN BAC), the ASEAN Secretariat, and the EU Delegation to ASEAN. At this launch, the Indonesian Chamber of Commerce and Industry (KADIN) committed to serve as ACEBA's country lead for Indonesia.

ACEBA is an initiative of ARAIBA Sdn Bh[13], a purpose-driven, not-for-profit business organization that works to promote and facilitate responsible and inclusive business practices in ASEAN. The activities of ACEBA are further supported by a Technical Advisory under the SWITCH-Asia Policy Support Component.

ACEBA brings together companies and other business organizations that pledge to lead by example. These participating companies agree to 1) promote CE in their business networks and advocacy; 2) consider and adopt appropriate CE solutions in their products and operations; and 3) share CE achievements and experiences. ARAIBA, KADIN, and other country leads support participating companies with accessing appropriate CE knowledge and tools and relevant CE solutions, and promoting their achievements through knowledge sharing and networking activities.

ACEBA encourages CE leadership by enterprises—from large corporates to MSMEs, start-ups, and social enterprises—and business associations in ASEAN Member States. Supported by KADIN in Indonesia and country leads in other ASEAN Member States, ACEBA:

- Provides visibility and voice to participating companies;
- Documents and showcases CE business practices and solutions;
- Facilitates peer-learning and sharing among participating companies and other business exemplars; and
- Promotes operational CE tools and metrics appropriate to ASEAN businesses.

ACEBA invites businesses from all sectors to participate, as CE is applicable across business sectors. In its knowledge sharing and networking, ACEBA is prioritizing eight sectors that are of key economic importance in the region, have large participation of MSMEs, and have demonstrated good CE potential.

Figure 3: Identified priority sectors of ACEBA[14]

13 ARAIBA website: https://www.araiba.org/araiba/

14 EU SWITCH-Asia and ASEAN CSR Network (2023), Towards a Unifying Framework for Business Action for the Circular Economy in ASEAN. https://www.aceba.co/site/assets/files/1086/working_paper_business_action_ce_asean_final.pdf

BUSINESS LEADING THE CHANGE

The future of irreversible climate change, loss of nature, and pollution is already with us. There is no pause button as their negative impacts on livelihoods, society, economy and business are on the rise. Ignoring these signs is a risky business affair. We all need innovative, circular, and low carbon solutions, and business is in the driving seat to provide these. Getting more circular does not have to put you out of business, as there is good potential for cost savings, new products and markets, and new competencies.

Get involved and started—one responsible step at a time business can lead the change towards a sustainable future and livable planet.

Join the Alliance

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SCAN TO EXPLORE

ARAIBA

ACEBA is an initiative of ARAIBA

ACEBA Country Lead in Indonesia

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ACEBA

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