

Circular economy in Viet Nam: from legal framework perspective to practical implementation at the city level

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1. Legal framework for circular economy in Viet Nam

Law on Environmental Protection¹ 2020 of Viet Nam stipulates:

- a) Circular economy is an economic model which encompasses the design, production, consumption and services activities aimed at reducing raw materials, extending product life cycle, reducing waste generation and minimizing adverse impacts on the environment.
- b) Ministries, ministerial agencies and provincial People's Committees shall incorporate circular economy immediately at the stage of formulating a development strategy, planning, master plan, program or project; managing, reusing and recycling waste.
- c) Every business shall establish a management system and take measures to reduce extraction of natural resources, reduce waste and increase waste recycling and reuse from setting up a project and designing a product or goods to production and distribution.
- d) The Government shall elaborate on criteria, roadmap and mechanisms for encouraging the implementation of circular economy in conformity with the national socio-economic conditions.

Circular Economy Scheme² was approved by Prime Minister 2022 identifies the following key objectives:

- a) Reduce the intensity of greenhouse gas emissions per GDP by at least 15 percent by 2030 and supports the target of achieving net-zero emissions by 2050
- b) By 2025, the country also aims to reuse, recycle, and treat 85 percent of plastic waste generated, reduce 50 percent of the plastic waste in the seas and oceans.
- c) The volume of municipal solid waste collected and treated in line with the standards and criteria of circular economy models should reach 50 percent by 2030, with 100 percent of urban organic waste and 70 percent of rural organic waste being recycled.

Policy tools identified to promote the adoption of the circular economy in the country:

- a) Command and control tools, including ban, restriction, environmental permit, technical standards; technical regulations; responsibility and sanctions
- b) Economic instruments or market-based tools, including: taxes, fees and charges; Subsidies, waste reduction allowances; mixed policy; information, labels, voluntary agreements

¹ Law on Environmental Protection No72/2020/QH14, Article 142.

² Decision 687/QĐ-TTg dated 7 June 2022 by the Prime Minister.

- c) Propaganda, persuasion, resource and environmental education

Principal for waste management aiming at promotion of the circular economy:

- a) Extended producer responsibility applied for manufactures, importer of products and packaging for waste recycling: options for fulfilling responsibilities *i)* self-organized recycling or *ii)* contribution of fund to Environmental Protection Fund for recycling
- b) Extended producer responsibility applied for manufactures, importer of products and packaging for waste disposal: options for fulfilling responsibilities *i)* self-organized recycling or *ii)* contribution of fund to Environmental Protection Fund for recycling.
- c) Wastes that meet the standards and technical regulations of raw materials, fuels and materials in accordance with the law on the quality of products and goods under management such as products and goods and are allowed to be used directly as raw materials, fuels and materials for production activities;
- d) Charges of services for collection, transportation and treatment of domestic solid waste from households and individuals shall be calculated according to the following grounds: In accordance with the provisions of the law on prices; Based on the volume or volume of classified waste; Solid wastes capable of reusing, recycling, hazardous waste arising from households and individuals that have been classified separately shall not have to pay the charge of collection, transportation and treatment services.

Upcoming agenda to implement circular economy in Viet Nam:

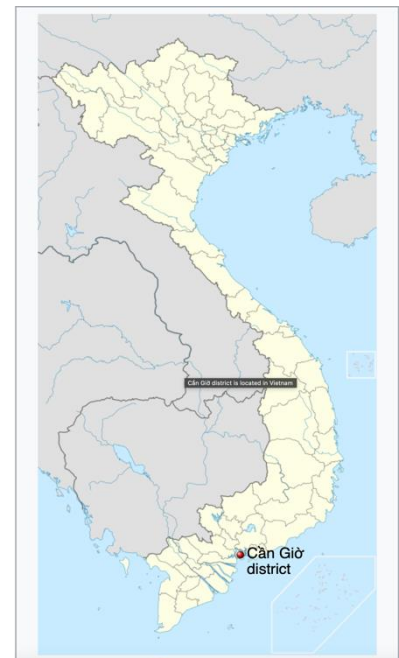
- a) Develop National Action Plan for Circular Economy
- b) Specific criteria and indicators for industries, fields and levels to be developed
- c) Guidelines for integrating Circular Economy into Strategy, Planning, Plan, Program, Scheme and waste management
- d) Organize training, coaching, guidance for stakeholders to implement Circular Economy; science and technology development; human resource development
- e) Promoting international cooperation in implementing circular economy.

2. Success stories and opportunities to go circular in Can Gio District, Ho Chi Minh City

Stories and circular economy models to be introduced are main results from the Project "Promoting the circular economy of plastic waste in Can Gio District, Ho Chi Minh City" funded by The Coca-Cola Foundation and implemented by Green Development Support Center (GreenHub) and Can Gio District People's Committee from 2022 – 2023.

Can Gio is a coastal suburban district of Ho Chi Minh City, in the Southeast region of Vietnam. The district is located 50 km from downtown Ho Chi Minh City. The district had an area of about 704 km² and population of 71,526. Can Gio is home to Can Gio Mangrove Forest, a biosphere reserve listed by UNESCO.

- a) **Establishment of stable connection between VE CHAI (recyclable waste pickers) and recycling industry:**



Can Gio and the problem of plastic waste: 15,000 tons is the amount of plastic waste each year in Can Gio district, the rate of plastic use increases by 7-8% per year, of which only 15% of plastic is collected and recycled. Faced with this situation, within the framework of the project, the District People's Committee has coordinated with the project implementation team to deploy a circular economy model and enhance energy efficiency, operating capacity for waste collection points of various sizes in Can Gio district. The main focus of the project revolves around establishing connections between independent collection units scattered throughout communes in Can Gio district to agent warehouses, from the agent warehouse connecting to the recycling plant.



This strategic initiative aims to close the waste life cycle, promoting livelihood stability for local waste collectors. More importantly, these connections are decisive for the future success of plastic waste recycling is the premise for the economy circulation of plastic waste future. Despite the difficulty in applying effective collection methods and meeting the strict criteria set

by large recycling plants such as Duy Tan, the recycling granaries operate under supervision within the project framework still quickly recognized and overcome difficult points from previous traditional purchasing processes to successfully transport green shipments, carrying recycled plastic.

According to the owner of Trung Hang granary said, previously, on average, each month their granary collected ranged from 700-800kg to 1 ton, sometimes nearly 2 tons in a month because of waste in Can Gio is usually not fixed. After participating in the project and being connected with Duy Tan, it helped my warehouse stabilize shipments. With help from Duy Tan on how to meet input requirements, my warehouse also felt secure about its business. In fact, it is no longer as uncertain as selling to other traditional agents like before. From September 2022 until now, shipments from Trung Hang warehouse to Duy



Tan

Tan factory have regenerated the life cycle of more than 62 tons of plastic waste. From there, it can be said that the end of each journey is not simply tons of recycled plastic but also a transformative impact on the circular economy from local plastic waste.

Efforts to bridge the gap between small-scale collectors and large recycling plants not only result in tons of recycled plastic, but also bring value to the local economy. Each piece of reused plastic represents a step forward in reducing the tide of plastic waste that threatens Can Gio's ecological balance. The success story of sustainable development cooperation and closing the plastic cycle of Can Gio is laying the foundation for circular economic development by promoting power of cooperation, perseverance and steadfast belief in a cleaner, greener future.

b) Improve collection and transportation efficiency of recyclables:

Two small private waste warehouses belonging to Ms. Nguyen Thi Chau, 60 years old and Ms. Le Thi Chinh - 46 years old receive support and companionship from the project, with the goal of helping individuals and groups with great contributions in the plastic value chain gain sustainability from the waste circular economy. From there, they can stick with the profession longer, continuing the life cycles of plastic waste for a green environment.

Having been involved in the collecting profession for more than a decade, Ms. Chau has had enough of the joys and sufferings of the scrapbooking profession. Every day, Ms. Chau goes through open roads to collect plastic bottles, water cans,... and other materials to make a living. However, her old age and age restrictions make it difficult for Ms. Chau to maintain the same productivity in collecting waste as before. Ms. Chau desired to be supported with tools to continue to devote herself to her profession, like a new, bigger and better cart. The project then sponsored Ms. Chau with a new collection cart to replace the old one. Here to reduce the burden on her health. Choosing vehicle models, structures, materials, to construction units... has been carefully consulted with units specializing in production of most appropriate garbage collection carts.

With the finished new cart, according to Ms. Chau "Previously, when I went to buy and push the old car, I had to use all my strength to get the new car to move, so it was very heavy even though the car looked very small.



Now I have a new, bigger car, but if I push it gently, it will go because the wheel spins evenly. Before, I didn't have the means to repair the old car, so I had to bear with it". Ms. Chau now alone push the cart to collect more than 100kg of waste without any difficulty. The new collection cart

has a load capacity of more than 1000kg, with a stainless steel structure, with good resistance to impacts from collected waste. The vehicle's tank is large, completely made of high quality steel, the vehicle is scientifically designed to withstand good force. On average, each favorable purchasing day, her cart will reach 300-500kg per trip. The average time to purchase all familiar locations will range from 5 to 6 hours. Currently, it only takes 4 to 5 hours for Ms. Chau to complete the purchasing process.

Ms. Le Thi Chinh - 46 years old this year, has been involved in the bottle scraping profession for 11 years, and also receives support for carts and labor safety equipment to replace her altered motorbike – her previous transport vehicle for waste. With the new transportation cart, she now can roughly collect as much as about 80-100kg per day, comparing to only 40-50kg in the past.



The value of the plastic waste cycle chain of Can Gio district would not be complete without the dedication from small granaries like Ms. Chau and Ms. Chinh. It can be said that the success of the Plastic Waste Circular Economy project in Can Gio district is closely linked to the success of the links in the plastic value chain in general and small granaries in particular. It is important to support small granaries to develop sustainably according to their implementation capacity as well as meet the needs of their customers. With a long-term vision, the livelihood support model for granaries can be expanded further to shorten the time to achieve the goal of a circular economy of plastic waste in Can Gio area in the near future

c) Empowering women – empowering the community:

Green Garment team of women: located about 50km from the Ho Chi Minh city center, Can Gio district accounts for 1/3 of the city's natural areas and is separate from neighboring localities. Among them, people mainly make a living from fishing and aquaculture. In particular, some women have only been housewives and do not have a stable source of income to support their families. Therefore, job opportunities in Can Gio district are still limited and the problem of training and solving non-agricultural jobs has become even more urgent. The project coordinated with the



local government and the Women's Union of Can Gio district to establish a Green Garment Team,

aiming to target local economic development while still ensuring the integrity of the mangrove ecosystem and marine resources and not sacrificing all costs for development.

The highlight of the Green Garment Team model focuses on utilizing materials from billboards, advertising banners, and scrap fabric to create environmentally friendly products such as lunch bags, pen boxes, and shopping baskets. This not only reduces the amount of waste from promotional and propaganda activities but also creates creative raw materials for unique products that meet market needs.

Twenty sisters, each with their own assigned production step, from selecting raw materials to cutting by hand, sewing every stitch to packaging and delivering. With two sponsored industrial sewing machines, Green Garment Team members under the management of the Local Women's Union, after more than a year of operation, has used over 1,000 kg of raw materials, banners and 100 kg of leftover fabric to produce nearly 2,000 shopping bags and wallets of all kinds to sell to the market and earn a profit of nearly 8 million VND, contributing to reducing about 1,000kg of PVC, PP, PE plastic waste in banners and banners into the living environment. They also received 03 orders with the quantity of 5,000 shopping bags expected to be delivered in May 2024.

The Green Garment Team also built a brand identity, a logo with a symbol of the solidarity and sacrifice and a mass media channel to get closer to consumers and earned strong and enthusiastic support from the community. This opens up potential opportunities, contributing to shaping Green Garment Group's business model to become sustainable and have a greater impact on the community in the future. The Green Garment Team promises to develop into a destination for savvy consumers who wish to contribute to local economic development. This is not only a success story but also a source of encouragement and inspiration about the combination of art and environmental responsibility.

Women-lead campaign for waste collection: in all aspects of economics and environmental protection, the presence of women always plays an important role, paving the way for positive and comprehensive change movements. In the Circular Economy model, women play an irreplaceable role. Every woman, every family is a seed of change.



With the support of the project, Women's Union of the City and the People's Committee of Can Gio district, the Association The district Women's Union organized the contest "Creative women with recycled products to protect the environment", with the theme "New vitality from plastic waste". The contest is one of the efforts to communicate awareness and change behavior to each resident in the district. After 3 months of the contest, with the participation of 5,902 households, 19,245 women members, people in the district collected more than 4,000 kg of trash; each person in the district has helped raise a sense of responsibility, actively participate and organize activities to combat plastic waste with specific initiatives and practical actions. People gradually change their habits, saying no to single-use plastic products and plastic bags through shopping, daily living, working, and labor; use environmentally friendly products instead. People actively participate in environmental protection activities in their places of residence with the smallest actions such as classifying, recycling, reusing waste, and economically using raw materials and fuel; promptly condemn acts of environmental pollution and wasteful use of resources and energy.

At the end of the contest, the total amount of money the women earned from sorting scraps and selling them to scrap yards was more than 6 million VND. With that budget, the organization cooked 250 meals and gave them to disadvantaged and lonely elderly people, lottery sellers. It's a beautiful journey with the sisters working together. It is not difficult to feel or see the affection hidden in each job. From the results obtained from the competition, the playground filled with humanity will be, is and will always be supported by sisters, mothers and aunts. Because of common sense, the future will become increasingly green when nurtured by women who do their best.

d) Alternative solution for organic waste:

Can Gio has long implemented awareness communication measures for people in the area, as well as supported competitions and collective actions to respond and encourage people to carry out environmental protection activities. Based on the existing foundations, the project coordinated with the Can Gio district committee to organize a series of advanced training on waste classification and waste recycling solutions, such as composting, making bio-cleaning agents to various target groups in the district.

With the purpose of helping every household access efficient and easy-to-apply organic composting and classification methods at home, through visual examples, the training programs were developed based on the local waste classification context, ratio of organic waste generated (which is more than 50% of the total waste) to focus on organic waste recycling through making organic fertilizer, making biological cleaning agents to train people in the area.

Training sessions are not only to update new methods, but also an



opportunity for people to directly ask and answer concerns or share lessons from previous experiences with everyone. Traditional methods such as making biological dishwashing liquid have been applied by women for a long time, but there still exists a gap in the lack of comprehensive information and effective communication about the methods has hindered widespread adoption. Through training classes, farmers have the opportunity to enthusiastically exchange with training staff, focusing on absorbing and applying advanced composting at home, which is especially practical for farmer.

The training had successfully helped a community in a small tourism island of Can Gio district, with its geographical difficulties in finding and purchasing catalytic materials for the composting process with organic enzymes. With small gifts of enzyme bags and compost bin lids from training team to households, every household can apply it at home, and organic waste will be recycled on the island. From there, it is a premise to be able to handle organic waste when developing tourism in the future without polluting the landscape like traditional garbage collection.

f) Sustainable tourism and conservation of mangrove:

Located in the center of Can Gio Biosphere Reserve, Vam Sat Tourist Area is one of the tourist attractions that attracts a large number of domestic and foreign tourists. A location that offers more than an experience with a harmonious combination of environment and local culture. With the growing demand for natural exploration tourism, the Protection Forest Management Board has

been applying tourism waste management measures to protect the pristine environment here. With the Board staff's previous experience, the project coordinated to produce trash can designs suitable to the needs of the Vam Sat tourist area. Choosing the



mascot - Monkey, the Board produced trash bins with images of these mischievous Monkeys and installed the trash bins work to the collection points. The new trash can has new mechanism to open the iron cage, to prevent injuries for baby monkeys in the Reserve playing with the trash bins and got trapped in the bins. Trash bins are also strategically placed and educational campaigns are deployed to raise awareness among tourists about responsible waste disposal.

The Protection Forest Management Board actively strives to implement activities to promote and raise awareness of the local community through waste collection competitions, rewards and recognition of individuals and units with good spirit, at the same time, maintaining sustainable tourism culture, each tourist is not only a visitor, but also becomes a direct contributor to

preserving the mangrove ecosystem. The process of action in accordance with Vam Sat Tourist Area's commitment to sustainable waste management under the guidance of the Protection Forest Management Board is a testament to the potential for local tourism development in parallel with environmental conservation. Today, when we visit Can Gio, we will hear more about Vam Sat Tourist Area - a model for responsible tourism, where each tourist becomes a mangrove forest manager, contributing part of the legacy of sustainable practices at this biodiversity reserve.

g) Environmental education – green circular thinking for the circular future:

The project pilots a unique and creative approach in related content to environmental education and propaganda dialects designed specifically for school environments. The success of these initiatives includes the GreenTalk competition with the theme: "Green schools recycle plastic waste"; the training program to improve awareness of the problematic plastic; waste segregation, and circular economy solutions for schoolchildren in the district. Both GreenTalk and training programs is to encourage the future managers, leaders of the country to join hands to protect the environment with practical actions related to the practice of classifying waste, collecting waste, recycle waste, turn waste into resources, thereby raising awareness of students on the issue of consuming disposable plastic products and handling plastic waste.



The journey towards circular thinking begins when teachers quickly jump into intensive training sessions, delving into the principles of waste recycling and sustainable practices. It is important not only disseminating information but also transferring a deep understanding of the connection between human actions and the environment. Through



activities like organizing local environmental clubs such as I Love Nature Club, encouraging outstanding and energetic students at schools who become child propagandists - media

messengers about waste circulation, environmental protection in the school context; promote slogan like "every student, every environmental communicator", the teachers can advocate sustainable living, promote a comprehensive approach that goes beyond beyond waste disposal to include broader ecological concepts, and help schoolchildren will become proud, representative green citizens in the future.

3. Conclusion:

According to the Global Waste Management Outlook 2024, jointly published by UNEP and published with the International Solid Waste Association (ISWA), municipal solid waste generation is predicted to grow from 2.3 billion tonnes in 2023 to 3.8 billion tonnes by 2050. In 2020, the global direct cost of waste management was an estimated USD 252 billion. When factoring in the hidden costs of pollution, poor health and climate change from poor waste disposal practices, the cost rises to USD 361 billion. Without urgent action on waste management, by 2050 this global annual cost could almost double to a staggering USD 640.3 billion. Getting waste under control by taking waste prevention and management measures could limit net annual costs by 2050 to USD 270.2 billion. Projections show that a circular economy model, where waste generation and economic growth are decoupled by adopting waste avoidance, sustainable business practices, and full waste management, could in fact lead to a full net gain of USD 108.5 billion per year.

In Viet Nam, annual generation of municipality solid waste reaches about 24.5 million tones in 2023: 64% of the municipality solid waste goes to the landfills, 10,25% is treated in waste-to-energy incinerators; 9,6% is treated in normal incinerators and 16,15% is sent to composting plants.

At the moment, two main funding sources used to fund the municipality solid waste management in Vietnam are state funds and user charges collected from households. Research on the current costs shows that user fees cover some 27% of total annual operational expenditures. The remaining 73% of operational expenditures and 100% of capital investment expenditures is financed from state funds. State funds contributed US\$ 481 million to the sector in 2020. Revenue raised from user charges was estimated to be US \$152 million, used exclusively to cover operating cost. Total financing municipality solid waste management in Vietnam 2020 was equivalent to 0.23% of GDP (0.20% to operations and 0.03% to investment). This compares with a figure of 0.5% for global GDP spent on waste management.

In order to maintain the proper and environmentally sound management system of solid waste, the country will need to double the investment in the waste management sector or promptly develop control system by taking waste prevention and management measures, and especially apply waste avoidance, sustainable business practices, and full waste management following circular economy models in the cities, rural areas and nation-wide. There are many challenges and limitations in a low-middle income economic and social development model, but many good practices and success stories show better chances and opportunities for the country to go circular./.