This brochure was prepared by the project "Rethinking Plastics - Circular Economy Solutions to Marine Litter", funded by the European Union (EU) and the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and Expertise France (EF). As regards the summary of project results, the content is the sole responsibility of GIZ, EF and the implementing organisations and does not necessarily reflect the views of EU and BMZ.

Contact

Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) GmbH 193/62 Lake Rajada Office Complex, 16th Fl., New Ratchadapisek Rd., Klongtoey, Klongtoey, Bangkok 10110

Ms. Imporn Ardbutra National Senior Advisor, Thailand E-mail imporn.ardbutra@giz.de Website https://rethinkingplastics.eu/ As of September 2022, Thailand



Website



Rethinking Plastics - Circular Economy Solution to Marine Litter

โครงการส่งเสริมการใช้เศรษฐกิจหมุนเวียน เพื่อจัดการปัญหาไรยะทะเล

Project Results in Thailand











Marine Litter - A growing global challenge

Due to a rapid increase of plastic waste generation and a lack of integrated waste management system for plastics, plastic waste in the environment is on the rise.

Without intervention, the amount of plastic waste entering the ocean will reach per year by 2040



on every meter of coastal line.

23-3

million

tons

Source: UNEP (2021): From Pollution to Solution. A Global Assessment of Marine Litter and Plastic Pollution.

Plastic waste accounts for

of marine

litter

¬Circular Economy Solutions

To tackle the global plastic waste challenge, joint efforts are needed for a circular economy. The European Union (EU) presented the Plastic Strategy and Circular Economy Action Plan, as well as issued the Single-use Plastic Directive, aiming to reduce marine pollution.

EU

2018	European Strategy for Plastics in a Circular Economy
2019	Single-use Plastic Directive
2020	New Circular Economy Action Plan as part of the European Green Deal
2022	EU strategy for Sustainable and Circular Textiles; Proposal for a new Eco-design for Sustainable Products Regulation



the Ambassador of the European Union to Thailand H.E. Mr. David Daly

"We support the project in partnership with the German Government and work closely with the Thai Government - particularly the Ministry of Natural Resources and Environment - and other Thai partners. This collaboration is one example of how we need to tackle marine litter and plastic waste-related challenges: that is together with multiple stakeholders and with like-minded countries around the world, if we are to achieve meaningful progress".



In recent years, Thailand has also released strategies, summarised in the roadmap on plastic waste mangagement and related action plans.

Thailand

2016 - 2021	National Solid Waste Management Master Plan
2018 - 2030	Plastic Waste Management Roadmap
2020 - 2022	Action Plan on Plastic Waste Management Phase 1
2020	Arrangement of Bio-Circular-Green Economy (BCG) committee
2022 - 2027	Bio-Circular-Green Economy (BCG) action plan
2021	Clean province Action plan
2023 - 2027	Draft Action Plan on Plastic Waste Management Phase 2

Source: European Commission







¬Project Information

Rethinking Plastics - Circular Economy Solution to Marine Litter

Contracting Authority	European Union (EU), German Federal Ministry for Economic Cooperation and Development (BMZ)
Implementation Organisation	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Expertise France (EF)
Partner Countries	China, Indonesia, Philippines, Thailand, Vietnam, Singapore, and Japan
Implementation Period	May 2019 to October 2022



The project supports the transition towards a circular economy for plastic in East and Southeast Asia to reduce plastic waste leakage into the sea and thus marine litter



Rethinking Plastics in Thailand:

The project supports Thailand on the way towards a circular economy for plastics with policy advice, dialogues, knowledge sharing, pilot projects and campaign activities. The activities and pilots aim to inform about the risks of marine litter, to encourage sustainable consumption and production of plastic along the value chain, to develop recommendations for a legal framework for Extended Producer Responsibility (EPR) in Thailand and to better manage plastic waste from sea-based and land-based sources to reduce environmental leakage. For this, "Rethinking Plastics" cooperates with various partners on identifying best practices and to find new solutions for the country.



⊲ Key Concepts



Extended Producer Responsibility (EPR)

EPR is an environmental policy approach in which a producer's responsibility, or a product is extended to the waste stage of that product's life cycle, including collection, sorting, recycling, or final disposal. Source: Basel Convention (2019): Practical Manual on EPR



Deposit-Refund System (DRS)

In a Deposit-Refund System, the packaging is given an economic value by requiring consumers to pay a deposit at the point of sale. When the empty packaging is returned, the deposit is refunded.



Sustainable Consumption and Production

Sustainable consumption and production encourage circular economy development, for example through the reduction of Single-use plastic products and by promoting reuse and recycling. Consumers can choose more sustainable or reusable alternatives, refuse overpackaging, or bring their own bag, cup, or cutlery. Products can also be designed by using less material or with materials that can be recycled or are following eco-standards.



Awareness Raising

Awareness raising is an important approach on environmental topics that aims to inform and engage people regarding more environmental-friendly and sustainable attitudes and behaviors. The target groups are broad and cover decision makers on policy level and in businesses, youth and consumers.



In a circular economy, resources are used and managed in a more efficient and sustainable way through the principles





¬Extended Producer Responsibility (EPR)

Legal Framework for Extended Producer Responsibility (EPR) for Packaging Waste Management

Partner	Pollution Control Department, Ministry of Natural Resources and Environment
Supported by	Environmental Research Institute, Chulalongkorn University (ERIC)
Key Question	How can EPR improve the management of packaging waste in Thailand and how can the country adopt and implement EPR in terms of a legal framework in line with the local contexts?
Contribution of Rethinking Plastics:	 Knowledge sharing on EPR and technical exchange series Multi stakeholder consultation Policy Brief on Developing a Policy Framework for Extended Producer Responsibility (EPR) for Packaging Waste in Thailand Contribution to the elaboration of the legal framework on EPR

Thailand EPR Insight developed by Rethinking Plastics

Policy brief on EPR for packaging waste in Thailand:

- How can EPR improve packaging waste management?
- What are the key challenges?
- Policy Recommendations



Policy brief on EPR for Packaging Waste in Thailand

EPR toolbox in Thai version

- What are roles and responsibilities of each stakeholder?
- How to manage financial flows?
- How to design a regulatory framework?
- How to integrate the informal sector?



EPR toolbox in Thai version

Let's Explore.....

EPR Policy Brief EN/TH



Findings

- . There are laws and regulations controlling waste management, but the existing laws have not yet supported the EPR scheme and Circular Economy.
- Even though the EPR scheme in Thailand has been discussed by government and private sectors, many details need to be discussed further for example, who will be the Producer Responsibility Organisation (PRO) etc.
- The private sector, manufacturers, and distributors are quite active in plastic waste management towards Circular Economy and EPR scheme. They jointly initiate drop-off points to take back used packaging in cooperation with the recycling plants.
- The informal sector (waste collectors/junk shops) plays an important role in plastic waste management and its inclusion needs to be considered when establishing an EPR scheme.

Ā Suggestions

- Existing policies and regulations as well as the collaboration between ministries should be promoted to support the Circular Economy and EPR scheme.
- · Clear criteria should be raised and applied to the recycled product for example, mandatory recycled content.
- The informal sector (waste pickers/waste collectors) plays an important role in plastic waste management and needs to be integrated into the plastic management system.



Dr. Sujitra Vassanadumrongdee

"To drive the EPR scheme in Thailand, all stakeholders along the packaging value chain need to adopt and implement a fair game having the government sector involved in supporting, initially, budgets, laws, and regulations".



Senior Researcher. Environmental Research Institute, Chulalongkorn University (ERIC)

06/07







- A small plastic waste compactor and a small-scale cleaning machine were created and applied to 3 prototype communities (Wangwa, Ban Thapma, and Rayong City communities) and one pilot school (Wat Lum Mahachai Chumpon Municipal School).
- · Benefits of adopting small plastic waste compactor in 3 communities: the amount and transportation costs for the sale of plastic to a recycling company were reduced.
- In total, the compactor and the washer could help to collect, clean and sell about 121.8 tons of plastic waste in 2021 which can be implied to 2.4 tons of marine debris prevented.
- The knowledge of waste pickers and waste collectors and interested local actors about plastic waste separation for closed-loop recycling was enhanced.

Plastic Waste Separation Guidebook

provides information to the communities on the steps of cleaning, sorting, classifying, and finding channel to proper disposal





Ms. Suthisa Samithiwetcharong

Garbage pickers would previously have to walk in the sun to the landfill to salvage things to sell, but now recyclables are sorted and ready for pickup from the municipality. Thus, the machine helps improve life quality of garbage pickers, as well as reduce fuel costs, transportation time and carbon footprint, and allows them more spare time."

Suggestions

- the communities more actively.







• Establishing the collaboration among communities, authorities and private companies in the network is critical. A recycling waste facility that benefits the recycling business and is economic feasibility and closing of the recycling loop is also a key factor.

· Strong leadership of community leaders tends to drive policy and recycling activities in

• For the development of EPR schemes in Rayong provice, it is necessary to clearly define the role and responsibility of each stakeholder and set up a priority plastic products category. Local stakeholders highlighted the need of support by the local government in terms of infrastructure, networking, and provision of public information.

Waste Compactor



Local Waste Collector

Milk Bag Washer



Students use reusable water bottles

Researcher, Faculty of Engineering, Chulalongkorn University





Koh Libong

Enhancing Circular Economy Model and Improving Municipal Plastic Waste Management



Koh Libong Sub District Administration Organisation Save Andaman Network Foundation



International Union for Conservation of Nature and Natural Resources (IUCN)



How can the circular economy be increased by/in communities close to the sea and on islands?

€ Main Goal

ontribution

lastics

Rethinking

To improve community-based waste management at sub-district level to prevent the leakage of plastic and other types of waste and their impacts to the environment through the implementation of circular economy model.

- Support capacity building and awareness raising of local community members and local authorities
- Develop waste management action plans and enhance collaboration
- Conduct a feasibility study and develop a business model for alternatives to single-use plastics



To ensure long-lasting change, the local authorities' capacities must be strengthened, and guidance on the circular economy model to improve the local recycle rate with local recyclers and small recycle business owners in the sub-district is needed.



Plastic waste on the beach, Libong island



community waste management action plans were fomulated. 8 community waste management working groups were set up and Sub-district waste management committee consisting of local stakeholders, academic institutions, and government agencies from the province have been established to develop, drive forward, and monitor a community waste management plan.

8 Communities in Koh Libong Sub-districts were trained on waste management as prototype communities and the policies on waste management are currently being developed.

Waste collectors' capabilities in the sub-district area were improved having 9 informal waste collectors got registered for the first recycle material marketplace. In collaboration with recyclers, they removed 228,172.20 kg. of plastic waste and other recyclable materials from their communities.

Community beach and ocean clean-up activities for awareness raising took place with more than 400 participants collecting 3,850 kilograms of waste.



Mr. Kittipan Sabkhoon

There is a lot of awareness about plastic waste in Koh Libong, as well as about microplastics in food, and people here are especially concerned about the issue of dugongs. The purpose of my work here is not to educate them, but rather to connect them with recycling plants capable of buying their plastic waste





Community close to the sea

Project Field Coordinator, IUCN





¬Sustainable Consumption and Production

Reducing Single-Use Plastics in Food Delivery and Takeaway

Partner	Pollution Control Department, Ministry of Natural Resources and Environment
Supported by	Advantage Consulting Co, Ltd.
Situation	A lot of the plastics leaking into the environment are single-use. After a few minutes, they are disposed and never be used again, such as, bags, straws and take away cups. Food delivery and take away services have raised the Single-use plastics usage especially during COVID-19.
Key Question	How can restaurants and cafes contribute to reducing single-use plastic in food delivery and takeaways?
Main Goal	To encourage plastic waste reduction in the delivery system through effective guidelines, alternatives, and good practices.
Contribution of Rethinking Plastics:	 Study on the current situation of single-use plastic use and reduction in Thailand Stakeholder consultation Regional guideline on reducing single-use plastics in food delivery and takeaway



- · Plastic separated into seven types including plastic bottle caps, plastic with oxo, Microbeads, handle bags with a thickness of less than 36 microns, foam packaging, plastic cup, and plastic straws will be banned by 2025 under the plastic waste management roadmap in Thailand.
- Each food delivery order generates 5-10 pieces of plastic waste, including for example a food bag, food box, split condiment sachet, spoon, fork, straw, and, on sometimes, a secondary plastic wrapper.
- The practice of lending containers in exchange for a deposit is still uncommon, especially in the food delivery industry. Challenges include to find a practical financial mechanism and to set up the logistics for return.







- · Giving promotion to customers for reducing plastic can gain the customer's interest and the business also can gain the loyalty from customers.
- Deposit Refund scheme is an interesting model by encouraging customers to return.
- Expanding and strengthening the network with other shops can facilitate to reduce the use of single-use plastics. For example, alternative packaging will be cheaper when purchasing in huge amounts.
- From Knowledge and information on reusable plastic packaging about hygiene and safety should be communicated to restaurants/-cafes and consumers as well as a measure focusing on benefits for restaurants/cafes that can engage in plastic waste reduction should be considered.



Workshop on "Reducing Single-use Plastics in Food Delivery and Takeaway: Discussing options for restaurants and cafes"









Monitor and assess the implementation. What needs to be improved?



16th June 2022, Bangkok





Phuket

Less plastics in Phuket: Reduction and Better Plastic Waste Management in Households and Businesses



Phuket City Municipality



Phuket Environmental Foundation (PEF) in cooperation with the Institute of Asian Studies, Chulalongkorn University for specific parts



How can we reduce plastic waste in Phuket, Thailand's largest island via food delivery platform?



of Rethinking

To encourage stakeholders such as restaurants, online food delivery platforms, delivery workers and consumers to reduce the use of plastics and prevent plastic litter from entering the marine environment

- Facilitating multi-stakeholder engagement for the Less Plastic Phuket Roadmap
- Marine and coastal litter prevention through training and information
- Plastic reduction activities through food delivery application and campaigns to reduce plastics through the use of eco-friendly food boxes (Pinto) and alternative packaging.
- Public Awareness Raising



• The Less Plastic Phuket Roadmap was drafted with key partners and publicly declared to support policy measures to reduce plastic waste in Phuket signed by 30 organisations aiming to ensure the adoption and implementation of plastic reduction in Phuket. There were 9 measures in the roadmap, for example:

- Local governments Organisations (LGOs) support the integration of entrepreneurs to promote the use of environmental friendly products and waste recycling process by educating people on the sorting process.
- LGOs establish a system and infrastructure to manage waste in all areas.
- The Tamsang Tamsong application helped reduce plastic waste in food delivery by inviting environmentally conscious restaurants to use eco-friendly packaging and Pintos for food delivery. It provided options for selecting reusable packaging for food orders to customers which no other food delivery platform offers.
- The eco-friendly food boxes were given to participating restaurants in the project for a total of 136 restaurants which can reduce up to 15,000 pieces of plastic.
- The restaurants were pleased and cooperated in using eco-friendly food boxes instead of single-use plastics or foam boxes.





Tamsang Tamsong rider in Phuket



Results

- platform administration and promotion.
- of using Pinto or other alternatives.



Promote Tamsang Tamsong delivery with Pinto



"We see the Pinto campaign to raise awareness on plastic consumption and promote lifestyle change more than anything else. Symbolically, we hope people who use the lunchbox see that they are part of the improvement. Before plastic and delivery services this was our original Phuket lifestyle and it's sustainable."



 The involvement of local government agencies is critical in order to develop a roadmap for reducing plastic ensuring long-term adoption and implementation.

 Cooperating with established delivery services on a provincial level is challenging due to their processes. It is valuable to explore the market and work with smaller social platforms or initiatives, but implementation needs time and resources, especially for

• Using Pintos in restaurants requires active encouragement and supervision. The best way to create conditions for Pinto circulation is to educate customers on the purpose

Support eco-friendly packaging for restaurants

Padang restaurant is currently serving with Pinto for regular customers.

Chairman of the Phuket Environmental Foundation

14/15



Bangkok Port

Ship and Port Waste Management Ship Waste Management Online Platform Development

$\stackrel{\circ\circ}{\Box}$	Partner
	Implementation agency

Chula Unisearch, Energy Research Institute, Chulalongkorn University

Bangkok Port, Port Authority of Thailand (PAT)



How to stop illegal ship waste discharges into the ocean?

ξ©} Main Goal To reduce illegal dumping of ship waste into the sea by developing an efficient ship waste management notification system (WMNS) and analysing a cost recovery system (CRS) in Bangkok Port



The International Convention for the Prevention of Pollution from Ships (MARPOL73/78) covers the prevention of pollution of the marine environment by ships. Port Authority of Thailand has operated ship waste management to be in line with the MARPOL Convention to reduce illegal dumping of ship waste into the sea.



- Ship Waste Management at Bangkok Port Manual
- Online Ship Waste Notification Management System
- Analysis of the cost recovery system
- Training and public awareness

\bigcirc Results

- An Online Waste Notification Management System (WNMS) was developed and is now in use for collecting waste information (volume and types of waste to be delivered) from the ships/ship agent calling the port. The System is considered as a vital innovation that effectively helps controlling and managing the ship waste management contributing to prevent and reduce marine pollution.
- The information received through the notification forms can also facilitate analysis and planning and thus contribute to more efficient ship waste management procedures in the future.
- The development of an Online Waste Notification and Management System (WNMS) increases convenience and reduces the documentation process, making the management of ship waste at the port more efficient.
- The cost recovery system has been analysed and recommendations were developed to incentivise ships/ships agent to deliver waste to the port.

Suggestions

Ā

- marine litter into the sea.



Closing Ceremony for Ship Waste Management System Development of Bangkok Port 1st September 2022





Site Visit of Bangkok Port

Let's Explore.....

Video-Waste Notification Management System (WNMS) of Bangkok Port (TH with EN sub)



"To reduce illegal dumping of ship waste into the sea, there is a need to develop an efficient mandatory waste notification system. The project had a good cooperation with all the relevant stakeholders in the last months and could provide training and experiences of the pilot project to shipping agencies and other major Thai ports".



 Awareness and engagement of all stakeholders including port operation staffs, ships, ship agent play an important role to achieve the target of reducing illegal dumping of

 Ports should consider handling all types of ship waste collecting 100% a waste fee indirectly as a fixed rate. This system has low adminsitrative costs, improves transparency and ships know the exact amount to be paid.

1st September 2022

Dr. Jakapong Pongthanaisawan

Project leader, Energy Research Institute, Chulalongkorn University



Nakhon Si Thammarat

Strengthening of Marine Debris Management on Small-scaled Fishing Vessels and in Communities for Sustainable Marine Debris Reduction

Partner	Department of Fisheries, Ministry of Agriculture and Cooperatives
Implementation agency	Faculty of Fisheries, Kasetsart University
? Key Question	How can the small-scaled fishing vessels and communities contribute to marine debris reduction?
Main Goal	To strengthen participation of fishermen in marine waste management and debris reduction
Contribution of Rethinking	 Field survey to obtain information on types and numbers of debris generated Practical guideline on marine debris management

• Training and seminar on debris management for small-scaled fishing vessels and community



• Thailand's coastal communities mostly comprise of small-scale fisher, around 500,000 individuals or 60,000 households from around 3,500 villages. In total, there are about 32,000 vessels, of which 65% are small-scaled vessels. Waste disposal from the fishing activities is still not efficient



Training on debris management for small-scaled fishing community



Small-scaled fishing vessels



Used fishing gear



Results

- respectively.





The Practical Guideline on Marine Debris Management for Small-Scale Fishing Vessels and Community is a friendly user guideline talking about:

- How are the small-scale fishing vessels and community related to marine debris?
- What are the impacts from marine debris?
- What should small-scale fishing vessel and fishing community do to reduce marine debris?
- Marine debris data collection form

Let's Explore.....

Practical Guideline on Marine Debris Management for Small-Scale Fishing Vessels and Community (TH)

Asst. Prof. Dr. Methee Kaewnern

"The key success factor is that the Local Government Organisation and community leaders have to stay active and drive the issue of marine debris management. It must be integrated into the community's existing lifestyle or activites. Then, the community would easily understand and cooperate sustainably with pleasure".



• There are 3 types of fishing nets used by the local fishermen including fish gill net (93%) grab gill net (5%) and shrimp gill net (2%). Other than the fishing gear, the fishermen also bring stuffs into the fishing vessel, for example, plastic bag, water bottle etc.

• It was found that High Density Polyethylene (HDPE) was the highest plastic waste as 2.882.3 g (33%). Polyvinyl Chloride (PVC), Polyethylene Terephthalate (PET) and Polypropylene (PP) were the other major plastic wastes composed of 21%, 18% and 9%,







Koh Mun Nai

Love Wildlife Foundation

Awareness raising, research and education: 'Tangled: ติด – ร่าง – แห'

Marine and Coastal Resources Research and Development Center, Eastern Upper Gulf of Thailand



How can we increase knowledge and awareness on marine litter reduction?

To collect and use data/information to raise awareness in a creative way for marine plastic pollution and inspire social and behavioral change.



- Scientific research and conservation
- Ocean waste removal and data collection • Funding of conservation internships
- Educating school children
- Art exhibition in Bangkok
- (Findings
- At least 12 different kinds of coral (genera) were affected by entanglement by Discarded Fishing Gear (DFG).
- 68 animals were entangled and dead in DFG (fish, mollusks and crustaceans).
- 98.5 square meter of fishing net removed from reefs
- Results
- 2 Thai students were trained as conservation dive instructors and plastic waste educators during their internship.

•188 students and 21 teachers visited Koh Mun Nai and received knowledge on conservation and Discarded Fishing Gear (DFG) impact data collection

- A total of 33 cleanup dives were carried out, in addition to waste removed from beaches.
- · 93 meters of rope and line removed from reefs
- animals were rescued from DFG
- 431 kilograms of marine and beach plastic waste were removed
- 72 6 kilograms of marine and beach plastic are reused

Tangled: ติด – ร่าง – แห Art Exhibition 11 - 27 January 2022

The exhibition in cooperation with the Environmental Justice Foundation showcased the plastic pollution journey, its impact on marine wildlife and the path towards solutions at the Bangkok Art and Culture Centre (BACC). The visitors were able to experience the impacts of plastic waste, fishing gear and single-use plastics through artworks and photography of well-known Thai Artists. Visitors could in addition join talks, activities and a tour in which they took over roles and reflected about what they would to if they got "tangled".

12,548 people visited the exhibition in 2,5 weeks.

A Virtual Exhibition is still on, let's explore.....







Tangled: ติด – ร่าง – แห Art Exhibition



Mr. Narongyot Thongyu

Thai Artist

"The images of plastic covering beaches make me wonder how it would be like down there in the oceans. So, I created turtles from scraps entangled by fishing nets retrieved from the bottom of the sea. We are all part of a society, and we can all do our part to help raise awareness and make positive changes."



The Virtual Tangled ติด - ร่าง - แห Art Exhibition







20/21