DRIVING CIRCULARITY from SEA to CITIES

Christine Bellen
Project Manager, Circular Explorer

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Made possible by HOLCIM | In Partnership with oeoe one earth-one ocean | Endorsed by SOLAR IMPULSE EFFICIENT SOLUTIONS OUR CHALLENGE 1000

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Our approach to sustainability

Our sustainability pillars are embedded across our operations, and focus on climate, circularity, nature and people.

CLIMATE

We are taking a science-driven approach to becoming a net-zero company.

CIRCULARITY

Holcim is driving circular construction at scale across key metropolitan areas.

NATURE

We are restoring and preserving biodiversity and freshwater, and bringing nature into cities.

PEOPLE

Our 63,448 Holcim people worldwide are driven to make a positive difference.

SCIENCE BASED TARGETS

WORLD ECONOMIC FORUM

TNFD

FAST COMPANY

We only have one planet but are living like we have two. A circular global economy could fulfill people's needs while reducing the materials we extract and use

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At Holcim, circularity is at the core of everything we do, facilitating our net-zero journey. We are driving circularity by raising awareness and taking local action:

- **Team Holcim-PRB** is racing the seas and oceans to raise awareness about the importance of circular building and living, and with a call to action to accelerate this transition
- **The Circular Explorer**, a solar-powered catamaran, is taking local action by collecting and recycling marine litter and empowering local communities to become changemakers through science and education.

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Go Circular | The Ocean Race at the 2024 Ocean Decade Conference in Spain

THE OCEAN RACE

NEWS EUROPE 2025 RACING WITH PURPOSE RACE REPORT 2022-23 EXPERIENCE CENTRE

The Ocean Race and IOC/UNESCO: contributing towards the science we need for the ocean we want

Rosalin Kuiper, the skipper of Team Holcim-PRB. "Being out on the ocean and changing the water filters every day yourself, it also changes you and makes you realise how important this work is. I'm very motivated to continue this work with Team Holcim-PRB to make a difference in ocean preservation."

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SAILING FOR OUR OCEANS FROM SEA TO CITY GO CIRCULAR SAILING NEWS VIDEOS SOCIAL

COLLECTING DATA TO HELP SCIENCE

The data that Team Holcim-PRB collects provides the world's leading science organizations with valuable information, in real-time, to paint a more accurate picture of what is happening to the ocean and the important role it plays in maintaining a healthy planet. This vital data is helping scientists get more information that is currently lacking on two of the biggest threats to the health of the seas: the impact of climate change and plastic pollution.

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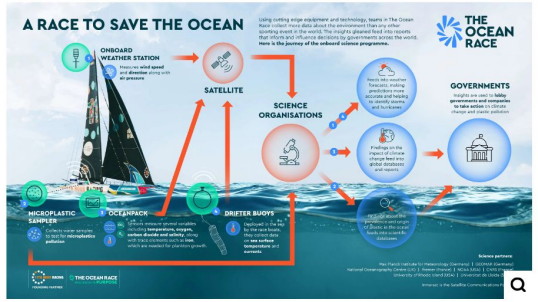
HOW THE DATA IS USED

The collected data is open-source and shared with The Ocean Race's science partners – organizations that are examining the impact of human activity on the ocean.

They use it in reports that inform and influence governments across the world. This includes reports from the Intergovernmental Panel on Climate Change (IPCC) along with databases such as the Surface Ocean Carbon Dioxide Atlas, which provides data for the Global Carbon Budget, a yearly assessment of carbon dioxide that informs targets and predictions for carbon reduction.

Part of the data gathering also supports efforts by international organizations who work together as part of the Global Ocean Observing System, a network aimed at improving understanding of our one ocean.



Credit: The Ocean Race

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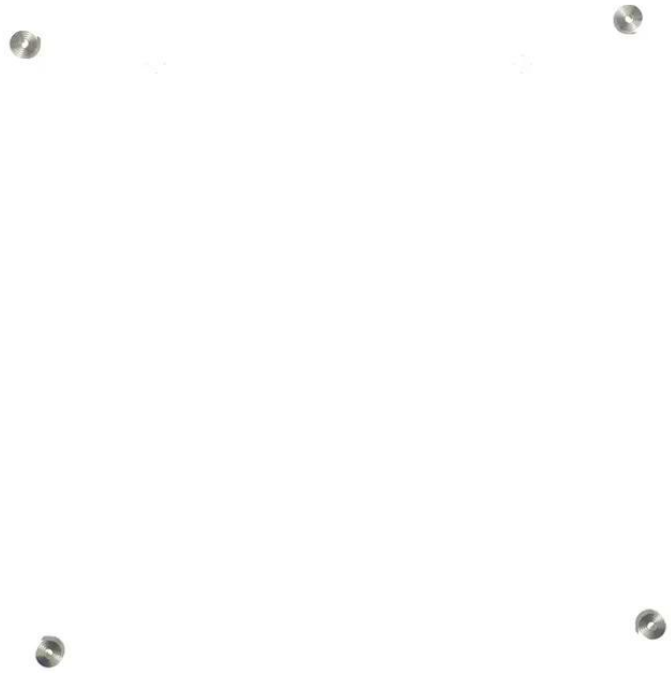

Project Overview: Three main streams

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RECYCLING

- **Recover marine litter and partner with existing recyclers / upcyclers**

  If recovered plastics are recyclable >> recycling partner;

  If residual >> Geocycle

- **Co-processing / alternative fuels and raw materials for end of life waste**

EDUCATION

- **Develop and implement educational toolkits**
- **Workshops** with local **schools and communities**. Holcim employees as volunteers.
- **"Welcome Aboard"** sessions to raise awareness on circularity.

SCIENCE

- Collect and analyze data from the installed **microplastic sampler** and **environmental sensors to track key trends.**
- Collaborate with **research institutes and government agencies** for a **science-based approach** to gain **new insights and recommend actions to policy makers.**

COMMUNICATIONS

- **Dial up impact and outreach** through continuous **communications activities** (local and global): **Multimedia content** production / **PR campaigns** / **Welcome aboard sessions** for key stakeholders (government authorities, media, other private companies, etc.)

oeos one earth-one ocean · PTC Philippine Transmarine Carriers, Inc. Moving the World® · geocycle · ASSIST · MSI University of the Philippines Marine Science Institute · MERF

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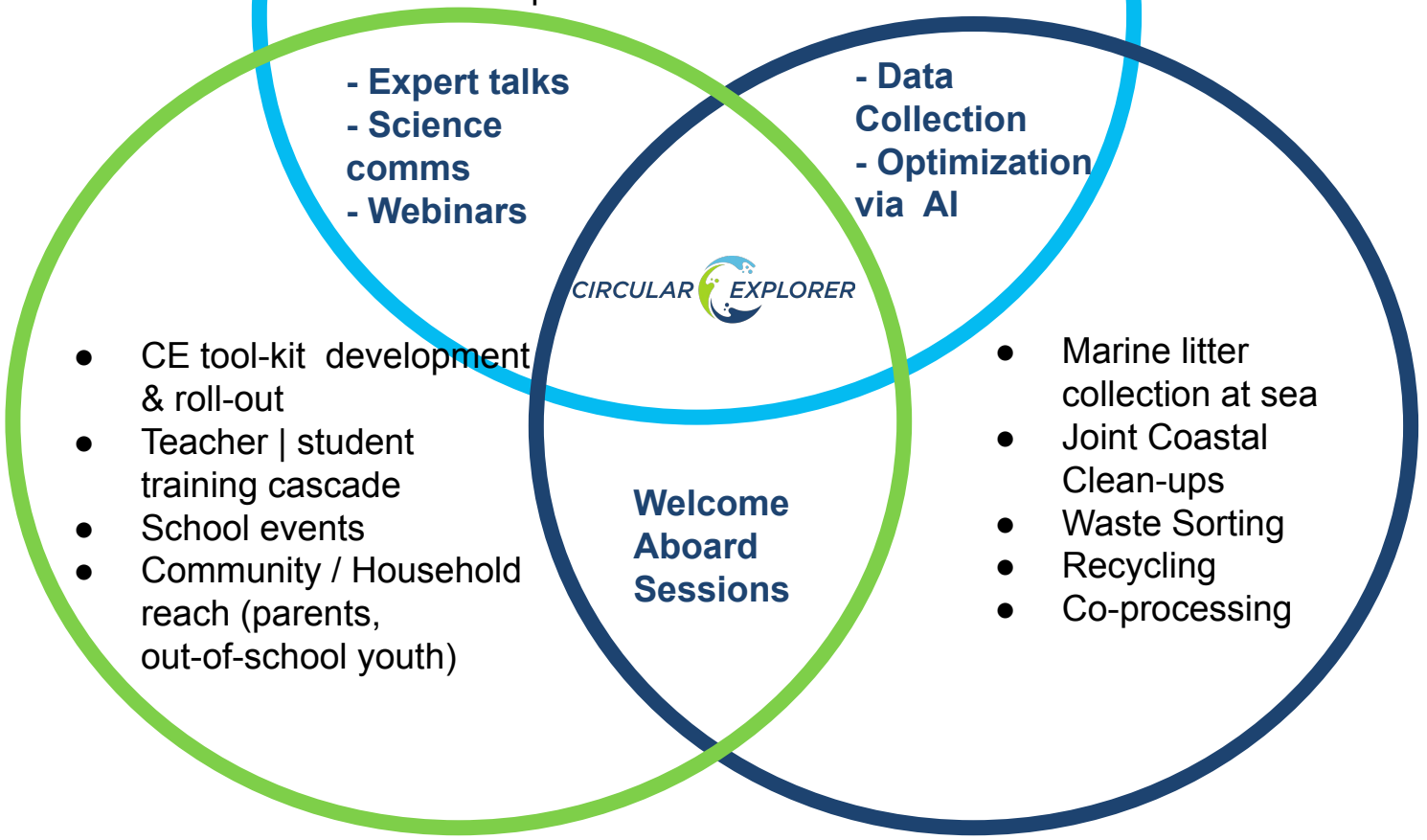
SCIENCE

- Data analysis
- Scientific writing / Policy briefs
- Capacity-building for early-career researchers (PRIMe-TP)
- Citizen science initiatives
- Contribute to the PlastiCount portal.

- Expert talks
- Science comms
- Webinars

- Data Collection
- Optimization via AI



EDUCATION

- CE tool-kit development & roll-out
- Teacher | student training cascade
- School events
- Community / Household reach (parents, out-of-school youth)

Welcome Aboard Sessions

RECYCLING

- Marine litter collection at sea
- Joint Coastal Clean-ups
- Waste Sorting
- Recycling
- Co-processing

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CIRCULAR EXPLORER - MAKING AN IMPACT
FAST FACTS

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Marine Litter Recovery & Recycling

66,000 kg
Total marine litter collected (i.e., plastics, wood, glass, textile etc.)
Plastics comprise about **30% of this mix**

450 volunteers have joined Circular Explorer-organized **coastal cleanups**

Advancing Marine Science

100 Early-career researchers & educators from

50 different universities and gov't agencies intensively trained across the country

350 unique microplastic samples by end of 2024.

5 Technical papers featuring research enabled by the Circular Explorer

Education: Raising Awareness

3,700 external attendees at Circular Explorer-related events

Tailored **educational toolkit to > 10 of the country's public schools** to include government-endorsed Circular Explorer toolkit in their curriculum.

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PARTNERING ACROSS VARIOUS SECTORS TO DRIVE CIRCULARITY

CE as a platform to gain shares of voices in important roundtable discussions.






SCIENTISTS & ENGINEERS

Gather new insights from our oceans through the oceanographic sensors and microplastic sampler in the Circular Explorer.
Scale-up the training of early-career researchers in the field of plastic pollution. Leverage on existing platforms and materials




CIRCULAR EXPLORER

University of the Philippines
Marine Science Institute

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Circular Explorer x PRIMe-TP*

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CE fully supports the capacity-building of early career researchers and educators across the country

Pilot Batch | Oct. 2022

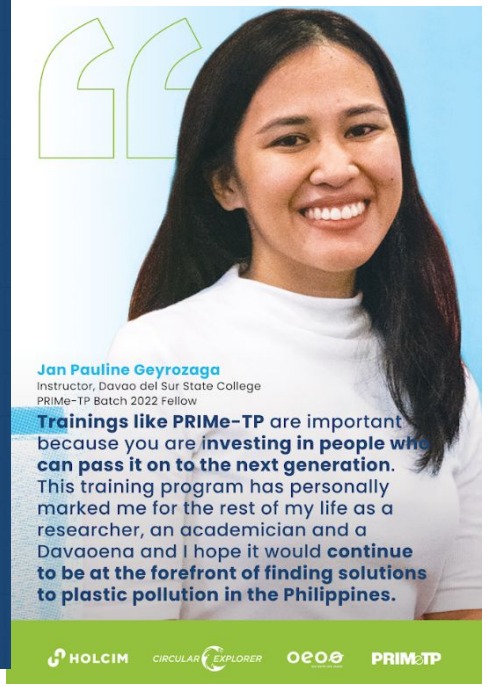
Mindanao Leg | Sept. 2023

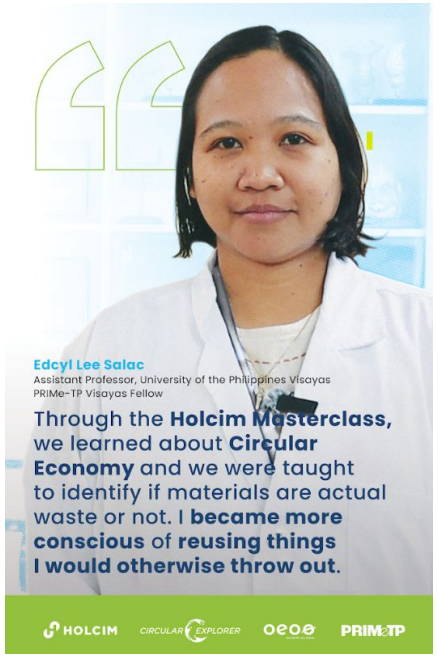
Visayas Leg | Mar. 2024

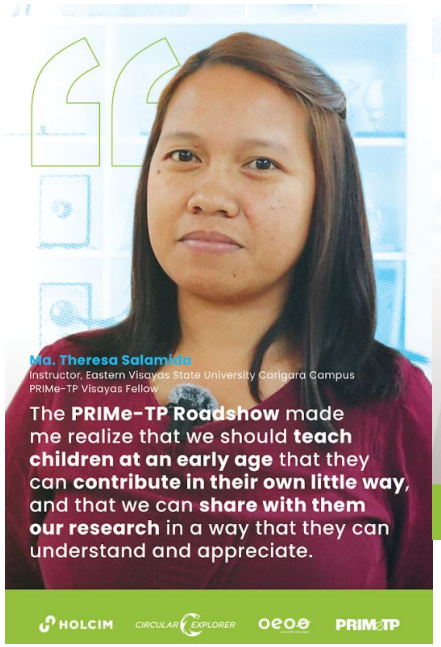
Luzon Leg | Sept. 2024

***Plastics Research Intensive Methods - Training Program**

- Research methods and skills (e.g.,various substrates [water, sediment, biota]; use of FTIR, AI)
- Science communication
- Coastal community & school roadshows







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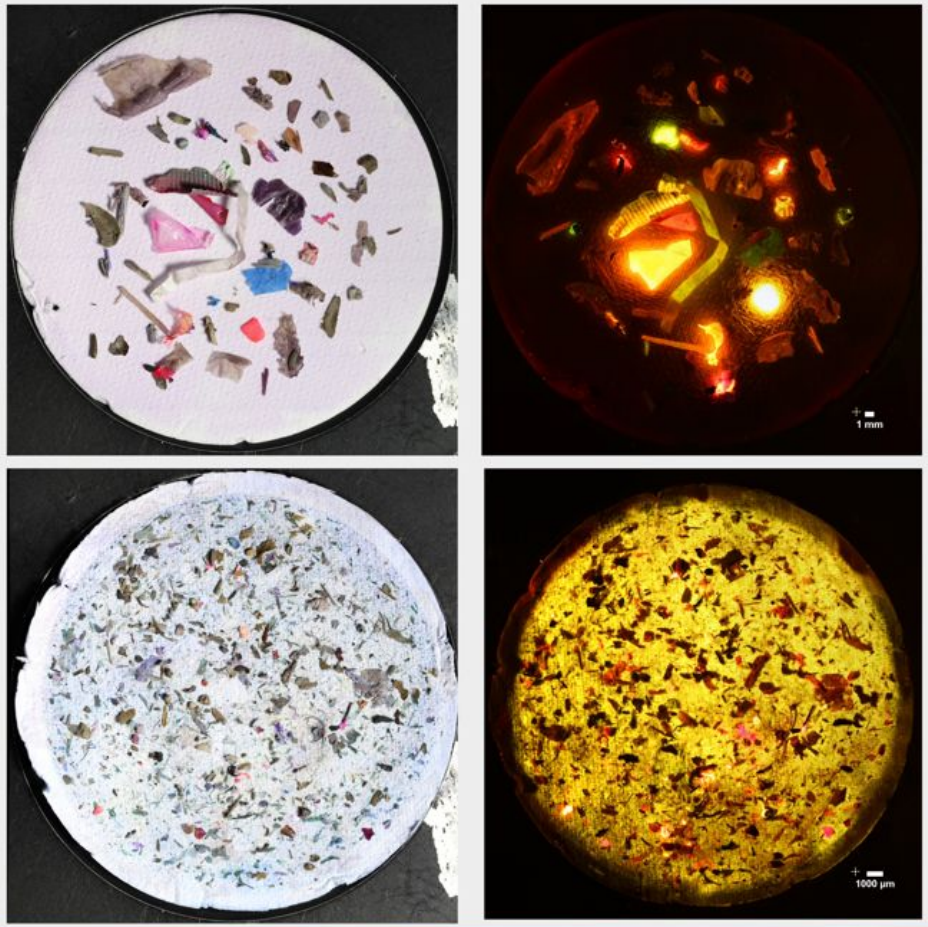
MICROPLASTICS in Manila Bay



Top row: Large microplastics (1mm to 5mm), n=22 (26.5%, N=83)
Bottom row: Small microplastics (< 1mm), n=61 (73.5%, N=83)

University of the Philippines Marine Science Institute

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An AI-model developed by the team from the University of the Philippines, thru the PlastiCount project* is now being optimized using the marine litter data collected by the Circular Explorer.

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PlastiCount Pilipinas

AWAITING the approval from the proponents (Dr. Onda and Dr. Ignacio) if it is okay to show the sample video of said model at this stage.

PARTNERING ACROSS VARIOUS SECTORS TO DRIVE CIRCULARITY

CE as a platform to gain shares of voices in important roundtable discussions.

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From left, DENR Undersecretary for Integrated Environmental Science Carlos Primo David, Holcim Philippines Chief Sustainability Officer Zoe Sibala, DENR Secretary Maria Antonia Yulo-Loyzaga, Holcim Philippines President and CEO Horia Adrian, and Holcim Group Circular Explorer Project Manager Christine Bellen

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Holcim Philippines decarbonized its operations and reduced carbon emissions per ton of cement by 7%.

In partnership with the DENR, it will be deploying a 100% solar powered catamaran, the Circular Explorer, operated by One Earth One Ocean, to clean up coastal areas from plastic waste in Manila Bay. There is a new project in Northern Mindanao to support coral and coastal ecosystems via a 'marine bio-active concrete'.

PUBLIC AUTHORITIES

Drive enabling regulatory environment.

The EAS is composed of the following countries: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam, Australia, China, Japan, India, New Zealand, Republic of Korea, Russia, and the United States. END

Delegates and speakers of the EAS Workshop on Maritime Cooperation join Undersecretary Ma. Theresa Lazaro for a group photo during the Opening Ceremony. (DFA-OPCD Philip Fernandez photo)

PARTNERING ACROSS VARIOUS SECTORS TO DRIVE CIRCULARITY

CE as a platform to gain shares of voices in important roundtable discussions.

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CITIZENS

Raise public awareness on the importance of our marine environment.
Inspire future change makers to advocate for sustainable production and consumption and promote circular economy.

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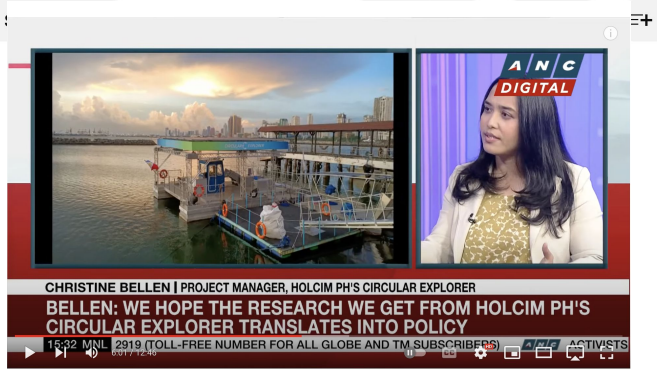
Circular Explorer helps to tell the story of the plastic pollution problem in the country and inspire the public and government leaders to take action

Ang Plastic Mo! – The Philippine Plastic Problem | DigiDokyu

GMA Integrated News
14.7M subscribers



WATCH: Holcim PH on efforts to clean Manila Bay, push boundaries of marine science | ANC

ANC 24/7
1.72M subscribers

"Circular Explorer," solar-powered sea vessel na nangongolekta ng basura sa Manila Bay | 24 Oras

GMA Integrated N...
15.3M subscribers

27K views 1 day ago #GMAIntegratedNews #KapusoStream

How Circular Explorer project fuses sustainable economy into PH education system

By Bianca Ysabel Abrencillo - August 23, 2024 - 3:03 PM

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Circular Explorer's Link to the UN SDGs

Image source: https://www.un.org/sustainabledevelopment/

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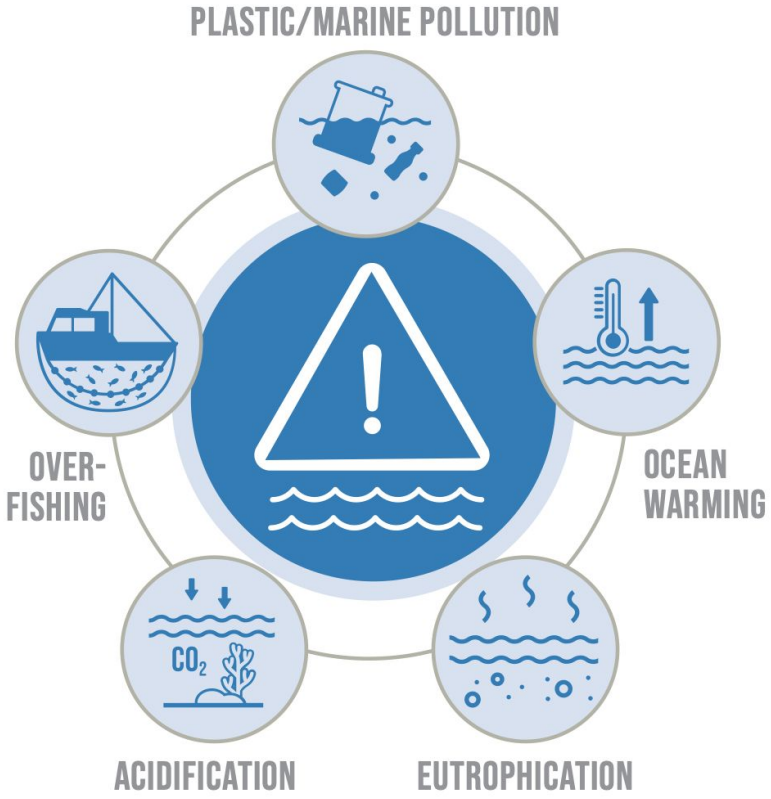
14 LIFE BELOW WATER

CONSERVE AND SUSTAINABLY USE THE OCEANS, SEA AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT



PLASTIC POLLUTION IS CHOKING THE OCEAN

17+ MILLION METRIC TONS OF PLASTIC ENTERED THE OCEAN IN 2021

PROJECTED TO DOUBLE OR TRIPLE BY 2040

Image source: https://www.un.org/sustainabledevelopment/

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12 RESPONSIBLE CONSUMPTION AND PRODUCTION

ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

UNSUSTAINABLE PATTERNS

OF CONSUMPTION AND PRODUCTION ARE ROOT CAUSE OF

TRIPLE PLANETARY CRISES

CLIMATE CHANGE

BIODIVERSITY LOSS

POLLUTION

OUR RELIANCE ON NATURAL RESOURCES IS INCREASING

RISING OVER 65% GLOBALLY FROM 2000 TO 2019

EPR Image from: https://www.zerowastescotland.org.uk/our-work/extended-producer-responsibility

Image source: https://www.un.org/sustainabledevelopment/

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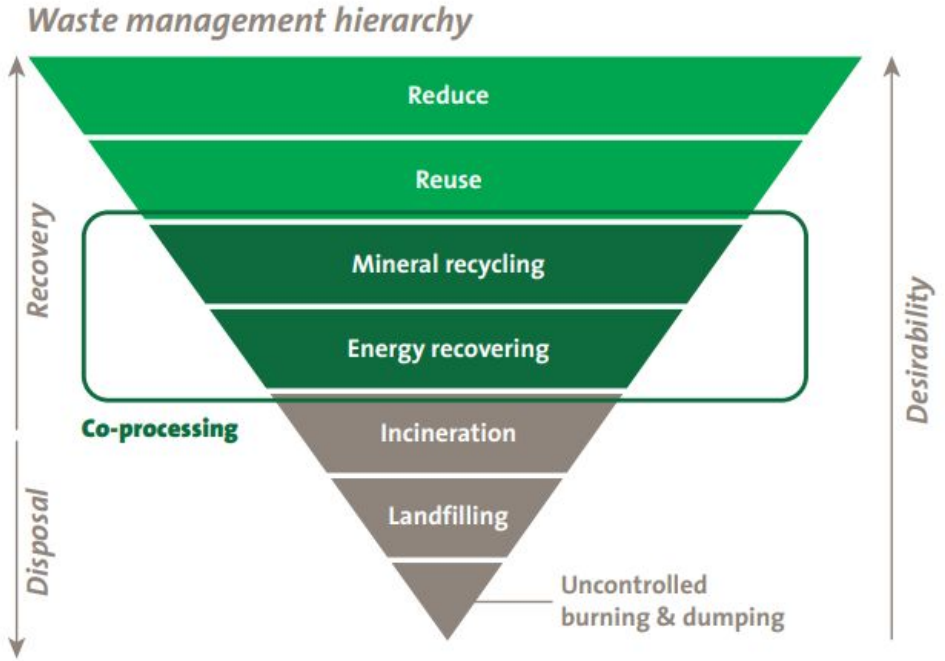
11 SUSTAINABLE CITIES AND COMMUNITIES

MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE



According to EU Waste Framework Directive, "recycling includes any operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes".

Image source: https://www.un.org/sustainabledevelopment/

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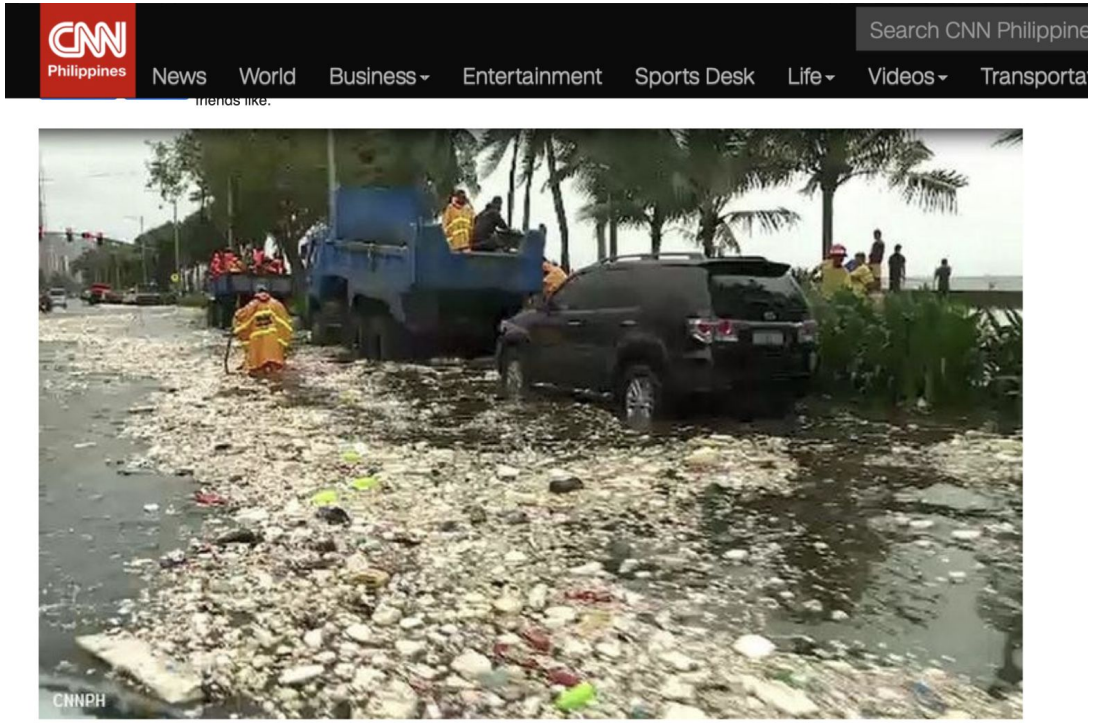
13 CLIMATE ACTION

TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

- With a climate cataclysm looming, the pace and scale of current climate action plans are wholly insufficient to effectively tackle climate change. Increasingly frequent and intense extreme weather events are already impacting every region on Earth. Rising temperatures will escalate these hazards further, posing grave risks.

"...regions vulnerable to **flooding** often coincide with high **plastic mobilisation** potential during floods. Consequently, clean-up, mitigation measures and flood risk management are inherently interdependent and need to be managed holistically" (Roebroek et al, 2021)



Metro Manila (CNN Philippines, August 11) — Manila Bay overflowed due to heavy downpour Saturday morning, leaving the stretch of Roxas Boulevard flooded and full of garbage.

https://www.cnnphilippines.com/news/2018/08/11/Manila-Bay-overflows-floods-garbage.html

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17 PARTNERSHIPS FOR THE GOALS

STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

17 PARTNERSHIPS FOR THE GOALS

Strong international cooperation

Invest In Our Planet

EARTH DAY 2023

PLANET VS. PLASTICS: GLOBAL THEME FOR EARTH DAY 2024

PARTNERSHIPS: WHY THEY MATTER

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