

Sampah Laut dalam Ekonomi Biru Sirkular

5. Peran Industri Ekonomi Biru dalam Menghasilkan Pencemaran Plastik

(Tutorial, Diskusi, atau Kunjungan Lapangan)

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MITRA PROYEK

Malaysia



Indonesia



Greece



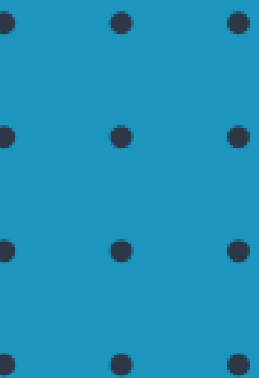
Cyprus



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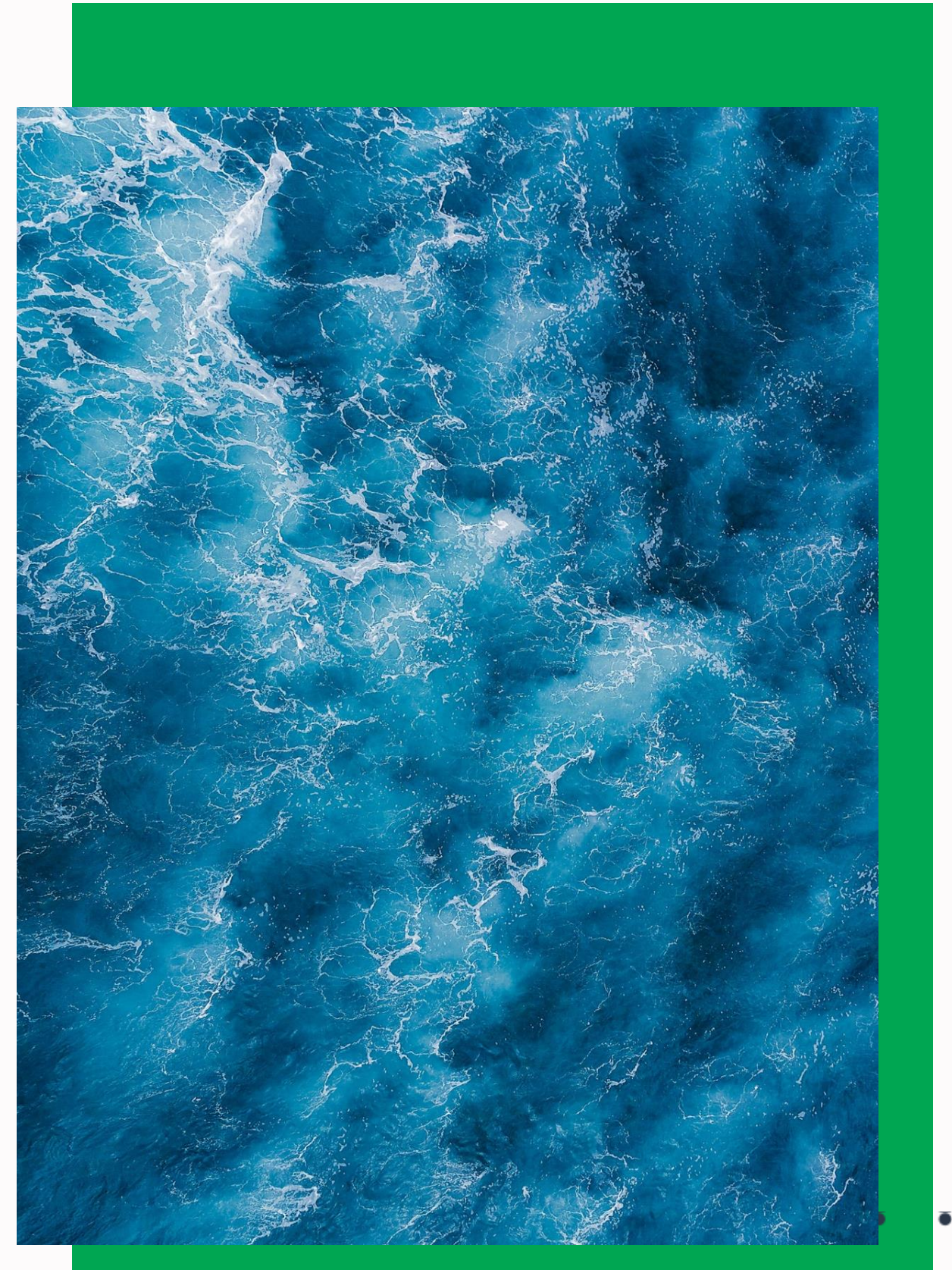
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KONTEN

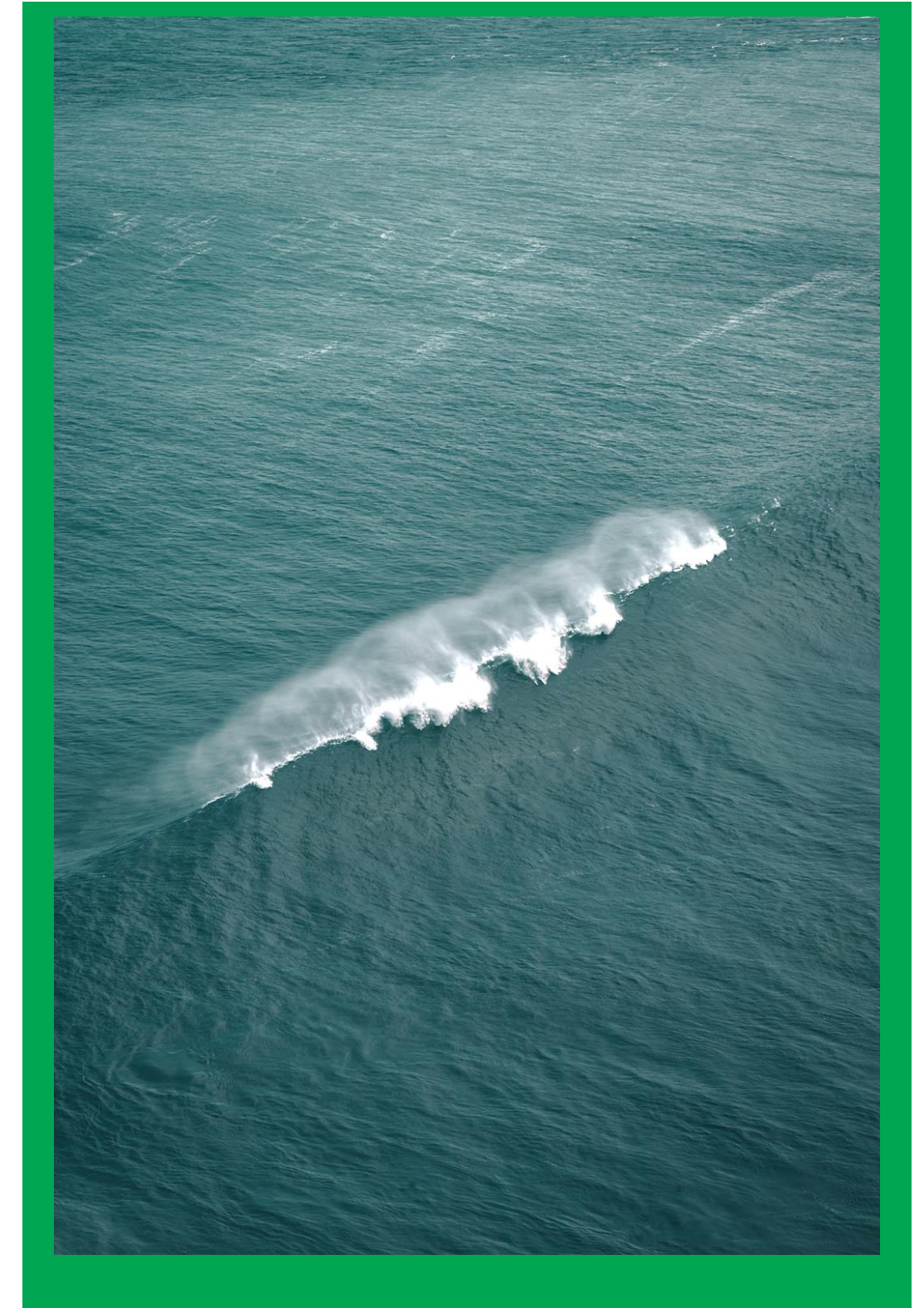
- 01 Pendahuluan
- 02 Capaian Pembelajaran
- 03 Poin-Poin Pembelajaran
- 04 Studi Kasus
- 05 Kegiatan Kelompok
- 06 Daftar Pustaka – Bacaan Tambahan



Pendahuluan

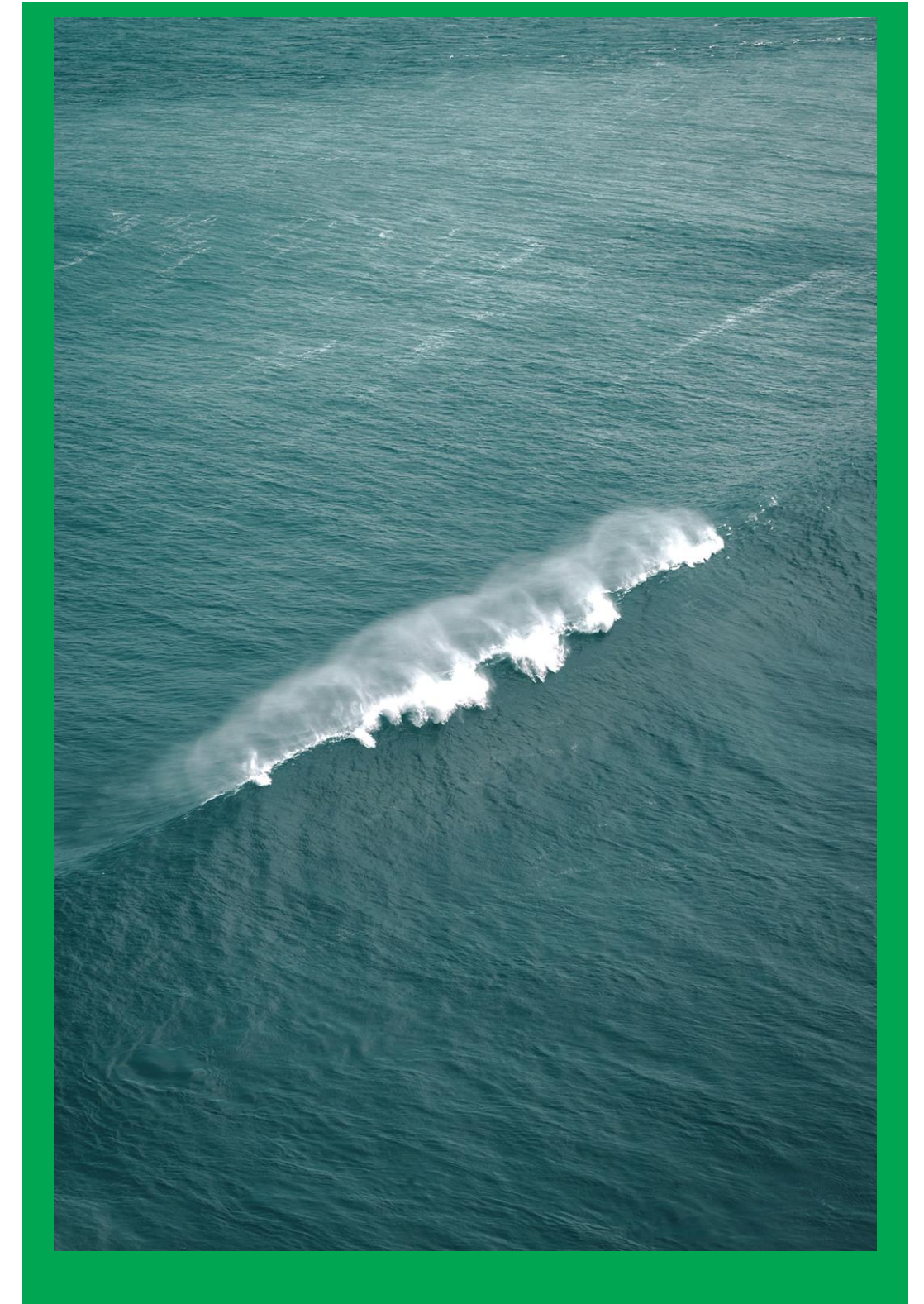
Tutorial ini membahas strategi praktis untuk mengurangi timbulan sampah dan meningkatkan tingkat daur ulang, termasuk sistem pemilahan limbah, inovasi teknologi, edukasi publik, serta pengembangan infrastruktur.

Dalam sesi diskusi, peserta akan menyusun dan mempresentasikan rencana aksi atau proposal yang terarah untuk inisiatif ekonomi sirkular, dengan fokus pada sektor atau wilayah geografis tertentu.



Capaian Pembelajaran

- Mengidentifikasi dan mengevaluasi strategi pengurangan limbah.
- Merancang proyek ekonomi sirkular untuk penerapan di dunia nyata.
- Meningkatkan keterampilan komunikasi dan kolaborasi.



1. Poin-Poin Pembelajaran

Diskusi antara mahasiswa dan dosen (atau refleksi mandiri) mengenai jenis-jenis sampah laut yang umum ditemukan serta usulan solusi realistis untuk pengurangan dan daur ulang.

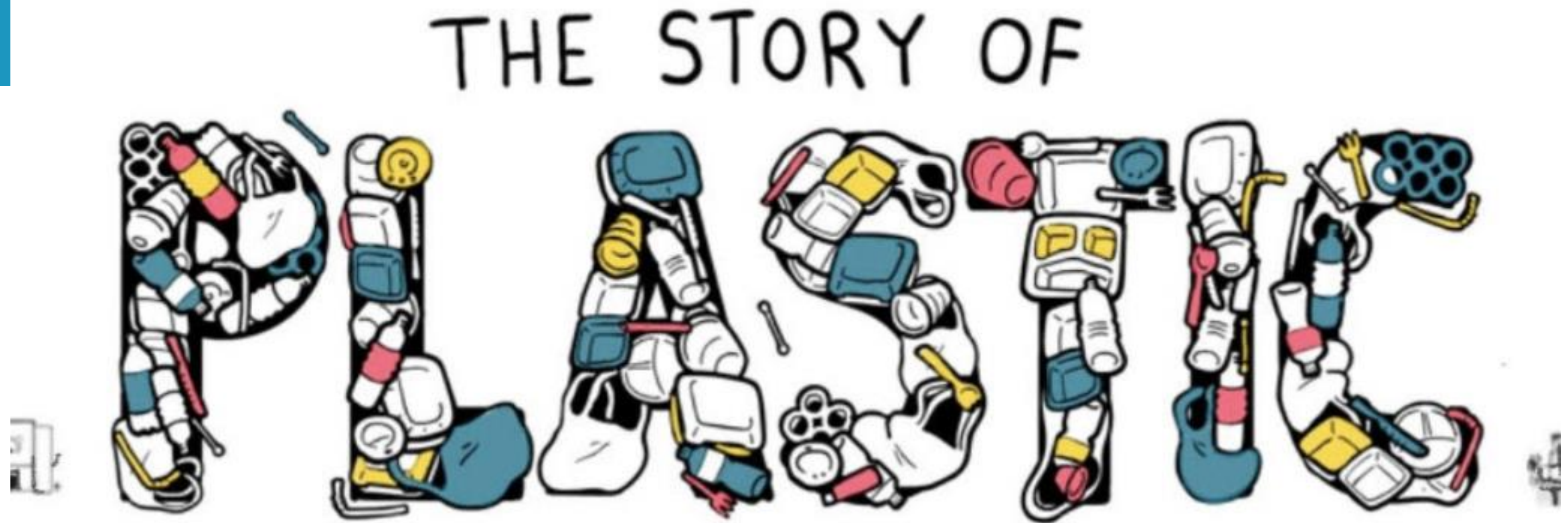
Contoh poin diskusi:

- Hierarki pengelolaan sampah: Reduce, Reuse, Recycle
- Jenis material yang dapat didaur ulang (plastik, logam, kaca, limbah organik)
- Sistem daur ulang berbasis komunitas
- Inovasi teknologi dalam daur ulang (misalnya pemilahan berbasis AI, bio-recycling)
- Teknologi pencegahan sampah laut (misalnya river booms, floating barriers)
- Peran pemerintah dan industri dalam pengelolaan limbah
- Strategi perubahan perilaku dan edukasi publik

(10 – 15 menit)



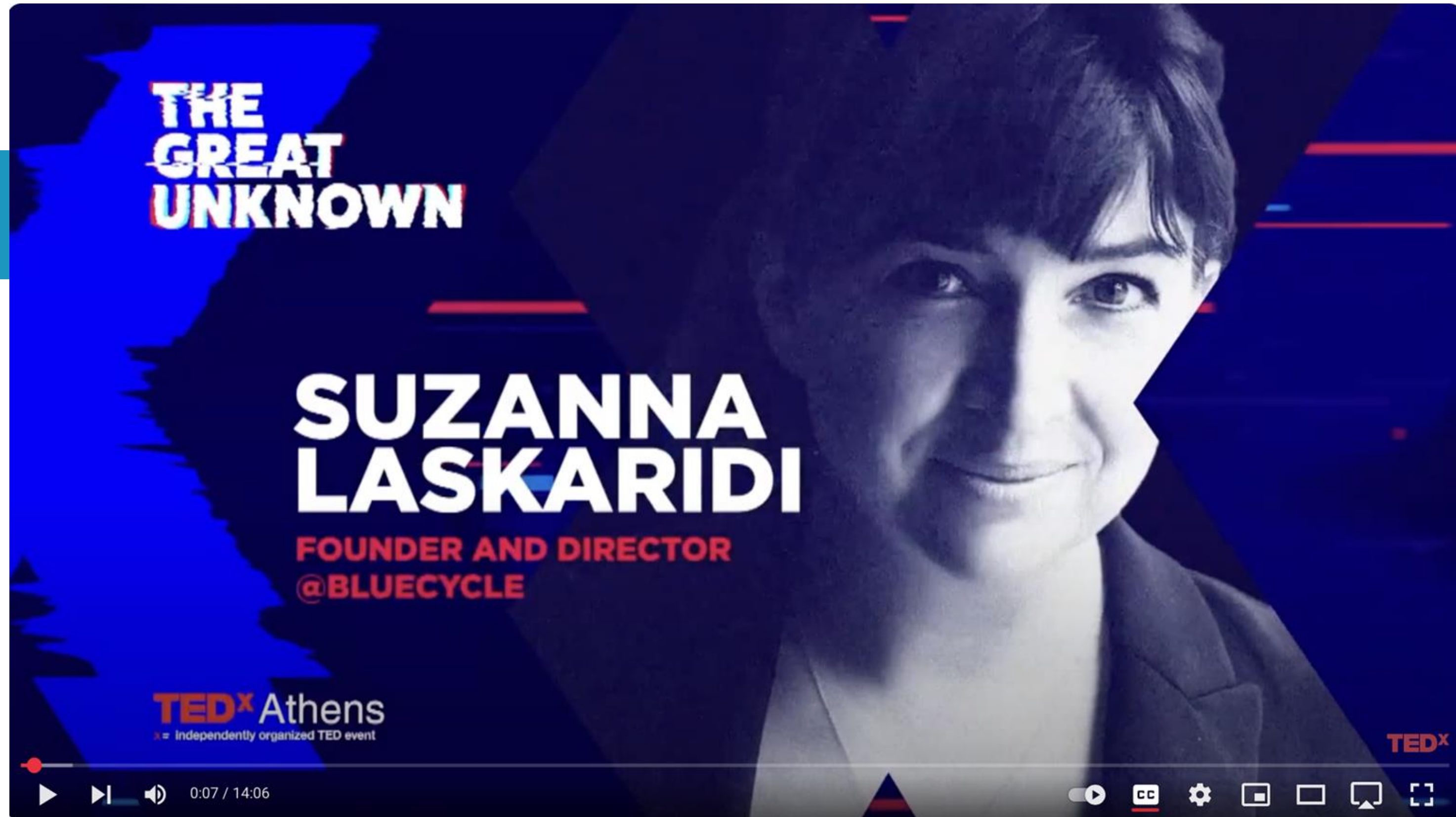
2. Video



Sumber/Kredit:

Narasi oleh Tiza Mafira; animasi oleh Ruben DeLuna; ditulis dan diproduksi oleh Brett Chamberlin, Michael O'Heaney, dan Ruben DeLuna; berdasarkan dokumenter The Story of Plastic yang disutradarai dan diproduksi oleh Deia Schlosberg.

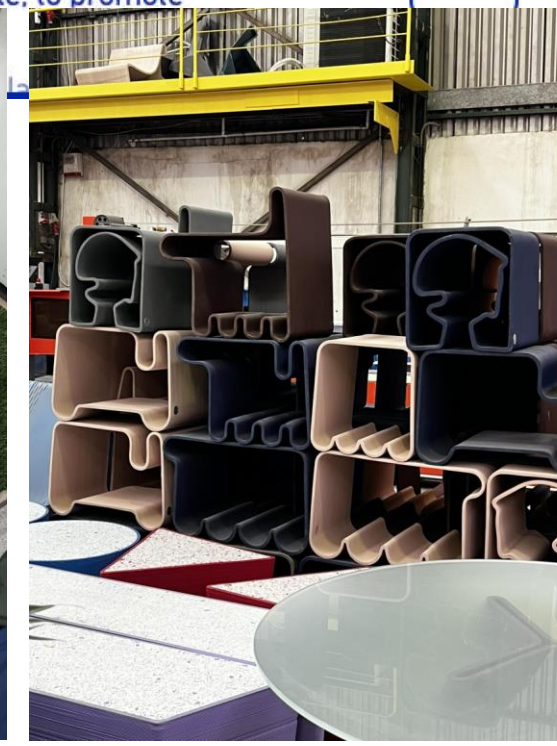
2. Video



Video ini akan membahas permasalahan alat tangkap ikan yang hilang secara global maupun di Yunani, bagaimana hal tersebut dapat diatasi melalui peningkatan daur ulang, serta mengapa ekonomi sirkular menjadi pendekatan ekonomi yang paling tepat untuk masa depan.



3. Contoh



3. Contoh

Pembersihan Laut

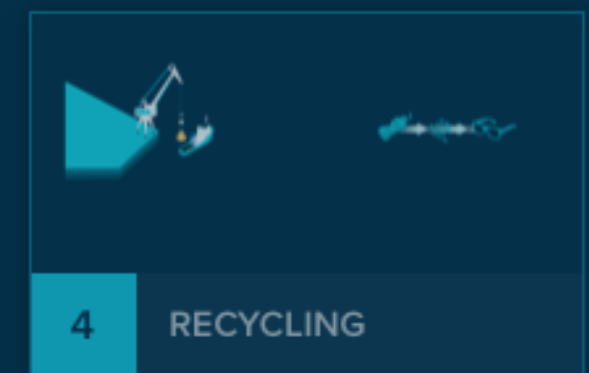
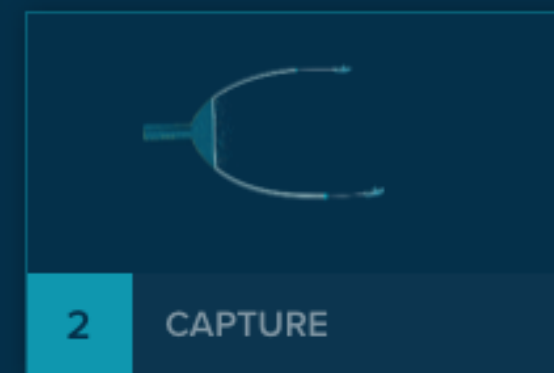
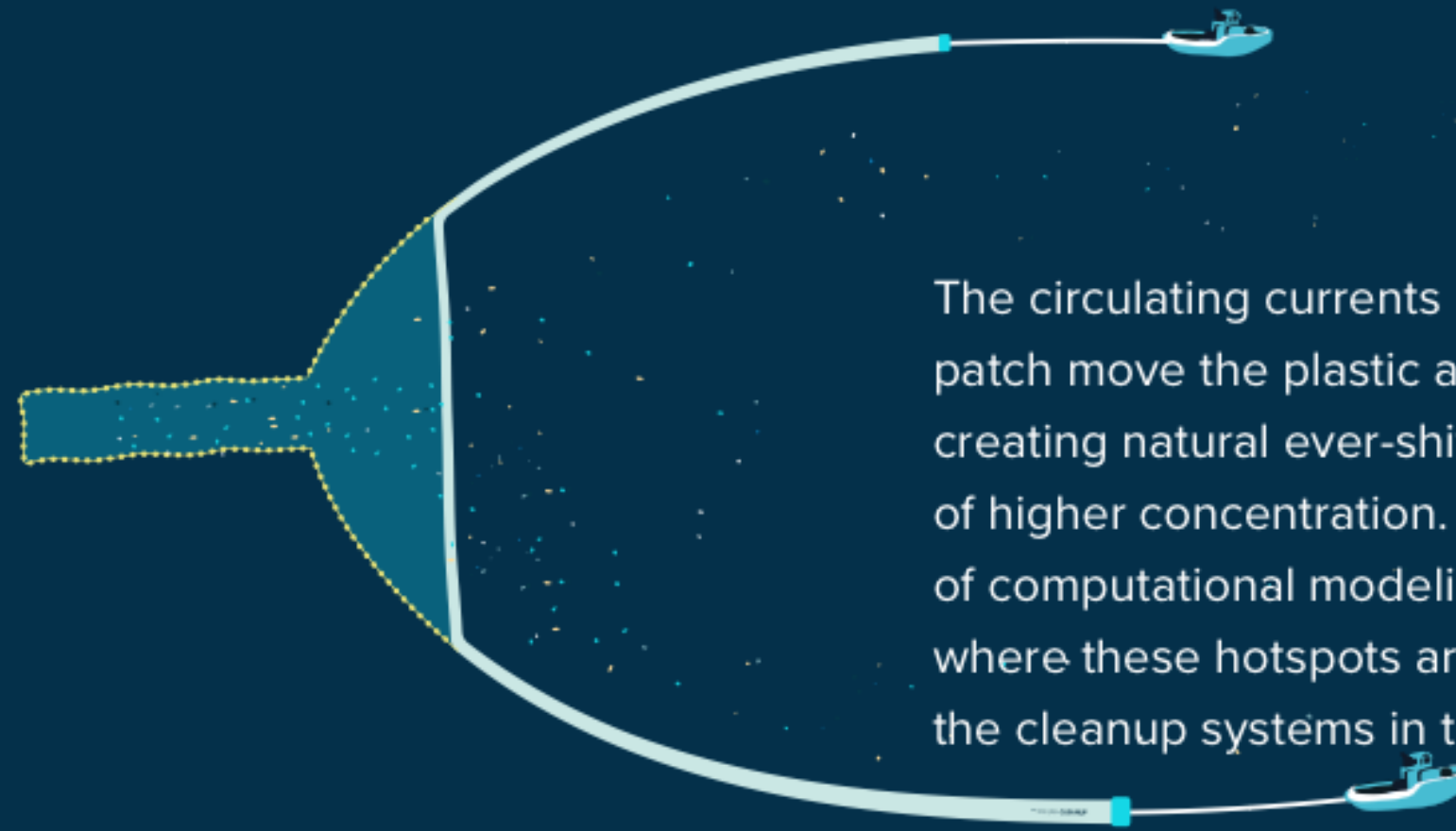
<https://theoceancleanup.com>

Proses

1. **Target**
2. Penangkapan
3. Ekstraksi
4. Daur Ulang



HOW IT WORKS



3. Contoh

Pembersihan Laut

<https://theoceancleanup.com>

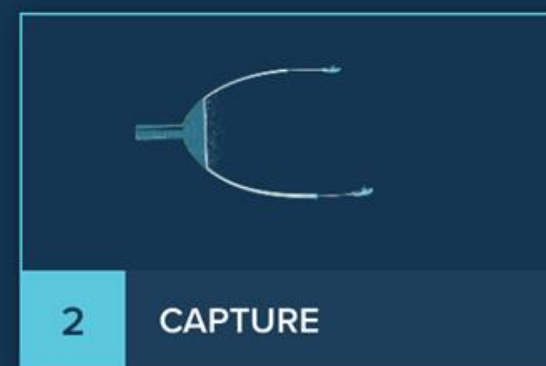
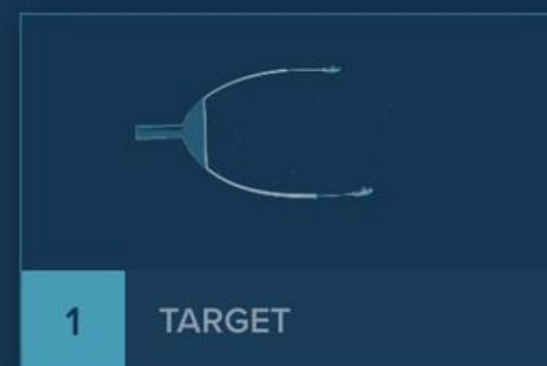
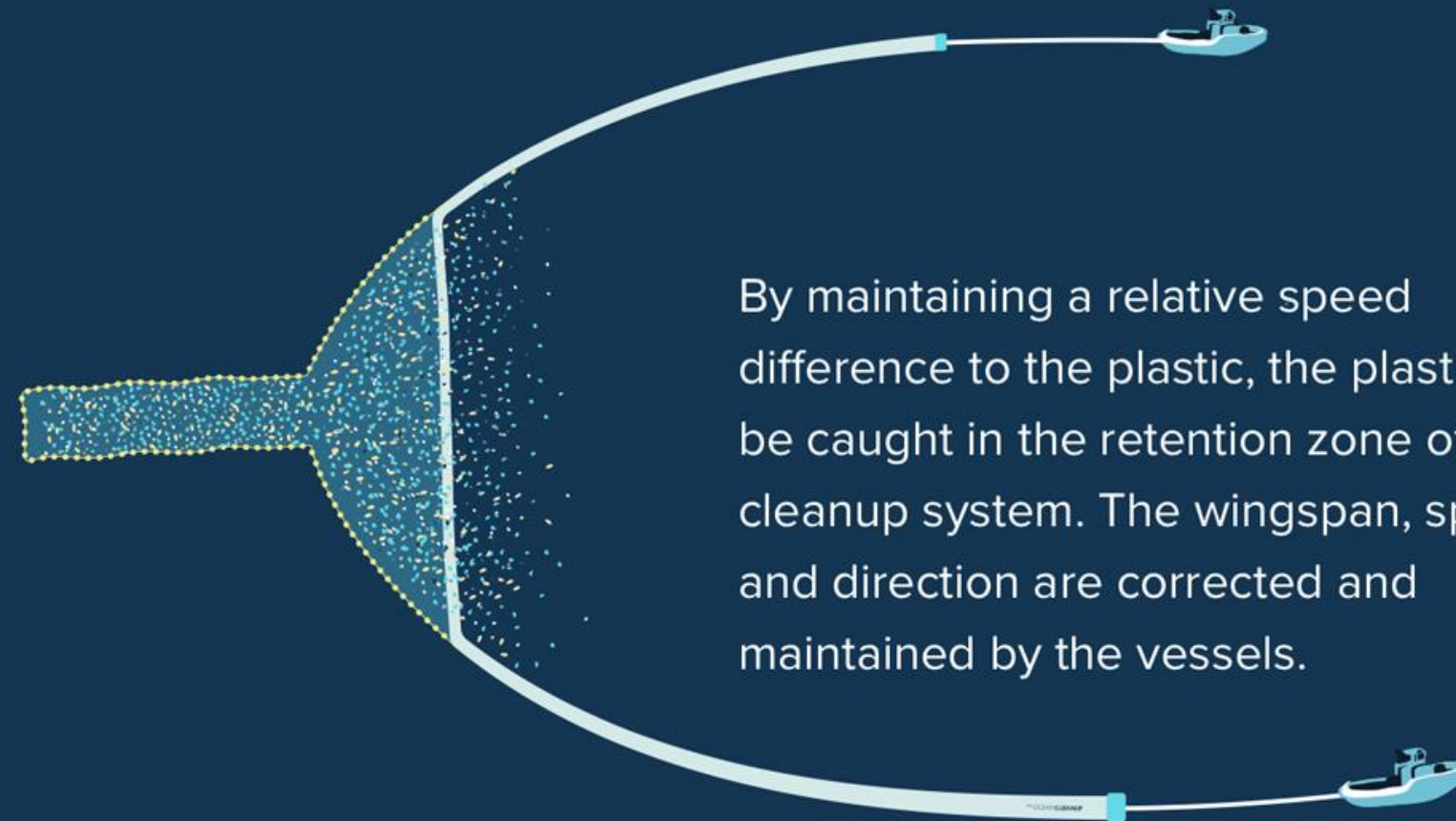
Proses

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HOW IT WORKS



3. Contoh

Pembersihan Laut

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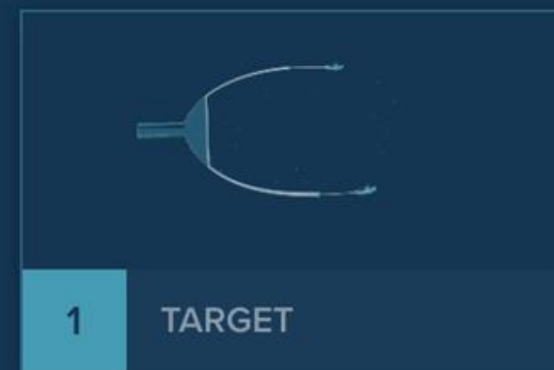
Proses

1. Target
2. Penangkapan
3. **Ekstraksi**
4. Daur Ulang



HOW IT WORKS

Once the system is full, the back of the retention zone is taken aboard, sealed off, detached from the system, and emptied on board the vessel. The retention zone is then put back in place and the cleanup continues.



3. Contoh

Pembersihan Laut

<https://theoceancleanup.com>

Proses

1. Target
2. Penangkapan
3. Ekstraksi
4. **Daur Ulang**

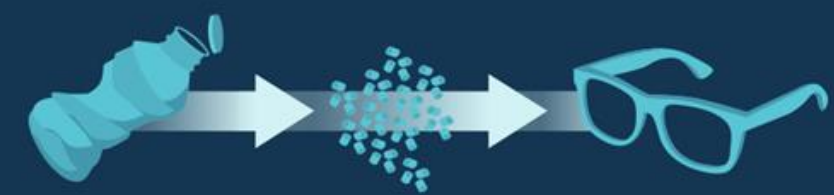


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HOW IT WORKS



Once our containers are full of plastic onboard, we bring them back to shore for recycling. For each system batch, we are making durable and sustainable products. Supporters getting the products will help fund the continued ocean cleanup. Catch, rinse, recycle and repeat - until the oceans are clean. The sunglasses are a proof of concept for this.



Studi Kasus

Reef Check

Tackling Ghost Nets



Ghost nets removed by RMCG

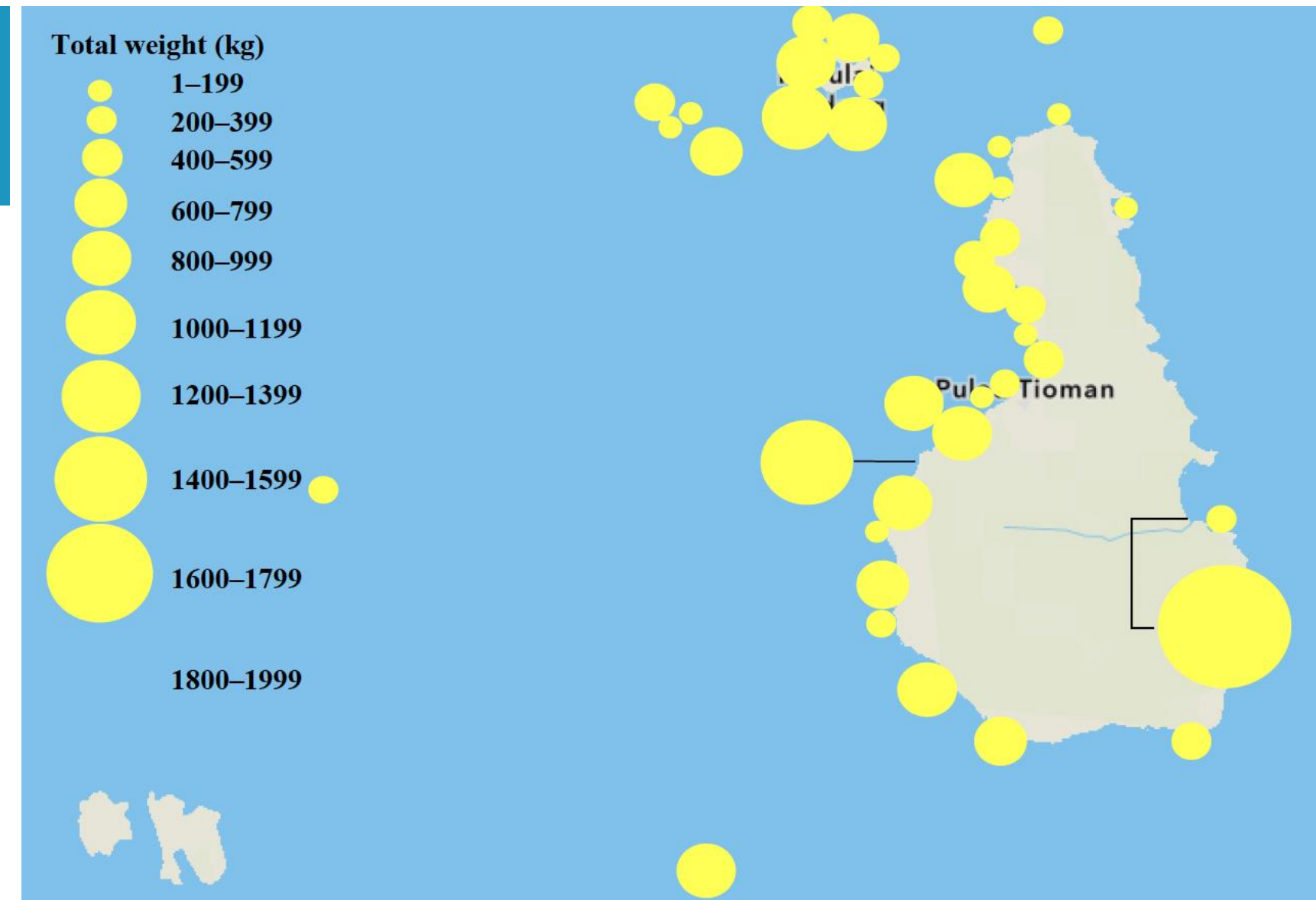
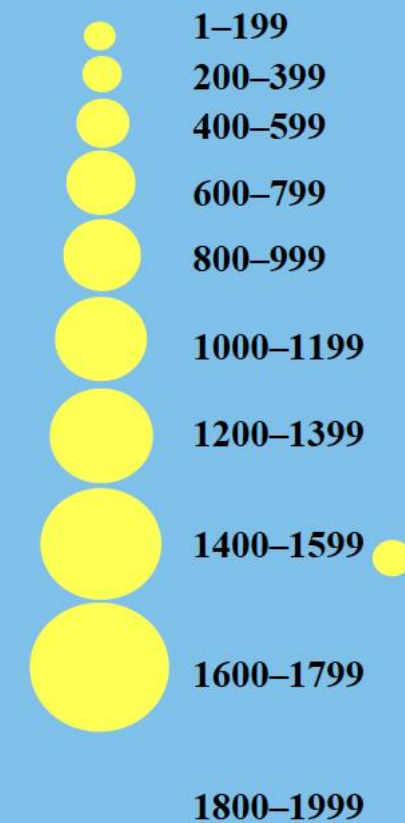
Ghost nets contribute to ocean pollution by causing extensive social, economic and environmental impacts. They trap and entangle marine life, besides smothering and damaging important ecosystems such as coral reefs and seagrass beds.

Reef Check Malaysia's teams on the islands have been receiving reports of ghost nets, and have been working hard to remove them from the marine environment before they cause extensive damage. In just the first quarter of 2024, our local group on Redang Island, the Redang Marine Conservation Group (RMCG), successfully removed approximately 140 kg of ghost nets, all found near the village jetty! The nets collected

were given to the local youth of the island, who planned to recycle them into football goalpost nets.

<https://www.reefcheck.org/coral-bleaching-and-ghost-nets-mark-start-of-malaysia-survey-season/>

Total weight (kg)



Weight (kg) of ghost nets retrieved within the period of 2016 and 2022 around Tioman Island.

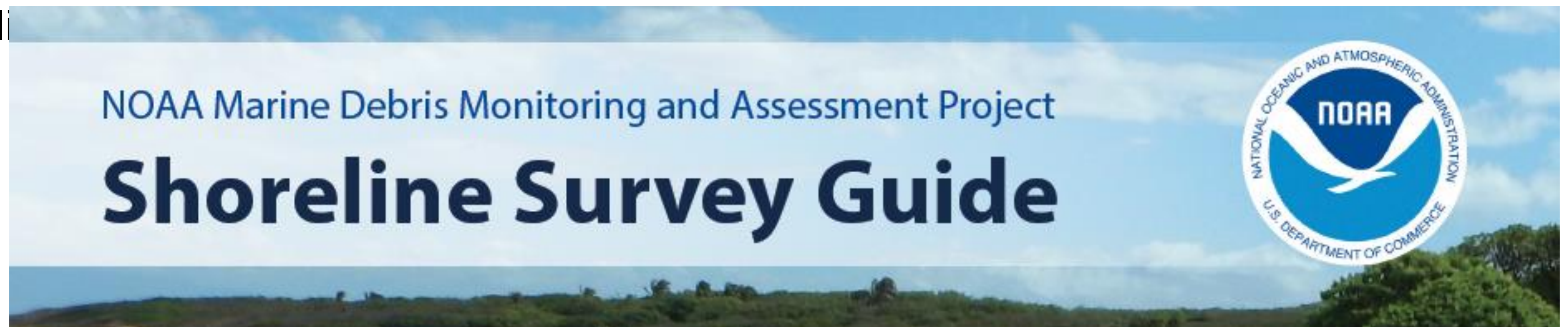
Chelliah et al. (2024)



Kegiatan Kelompok

Dalam kelompok:

- Kategorikan jenis sampah
- Identifikasi item yang dapat dikurangi, digunakan kembali, atau didaur ulang
- Usulkan solusi realistis (misalnya alat tangkap ikan yang dapat digunakan kembali)



MDMAP *at a glance*

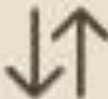
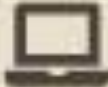
-  **Choose a site**
Select a 100-meter shoreline survey site
-  **Select transects**
Randomly select four 5 meter transects
-  **Record conditions**
Record site condition information
-  **Survey for debris**
Within each transect search for and document items 2.5 centimeters or larger
-  **Enter data**
Enter data online in the MDMAP database
-  **Repeat!**
Repeat, aiming for monthly surveys at each site



Photo: NOAA

Presentasi dan Diskusi Kelompok

Opsi 1 (jika kunjungan lapangan tersedia bagi mahasiswa)

Lembar Kerja:

- Identifikasi jenis-jenis sampah dari laporan pembersihan pesisir
- Usulkan solusi pengurangan dan daur ulang untuk setiap jenis sampah



Presentasi dan Diskusi Kelompok

Opsi 2 (jika kunjungan lapangan tidak memungkinkan bagi mahasiswa)

Lembar Kerja:

1. Bagi mahasiswa ke dalam kelompok kecil (4–5 orang)
2. Setiap kelompok memilih satu sektor (misalnya pariwisata) atau wilayah (misalnya pesisir Malaysia/Indonesia)
3. Menyusun proposal atau peta jalan untuk solusi ekonomi sirkular (contoh: program kemasan dapat digunakan kembali untuk resort pantai)
4. Mempresentasikan proposal kepada kelas untuk mendapatkan umpan balik dari rekan sejawat
5. Melakukan refleksi mengenai kelayakan dan tantangan implementasi



Bacaan Tambahan

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Chelliah, A.J., Chen, S.Y., Shahir, Y. & Dolorosa, R.G. (2024). Incidence of ghost nets in the Tioman Island Marine Park of Malaysia. The Palawan Scientist, 16(1): 28-37.

<https://doi.org/10.69721/TPS.J.2024.16.1.04>



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