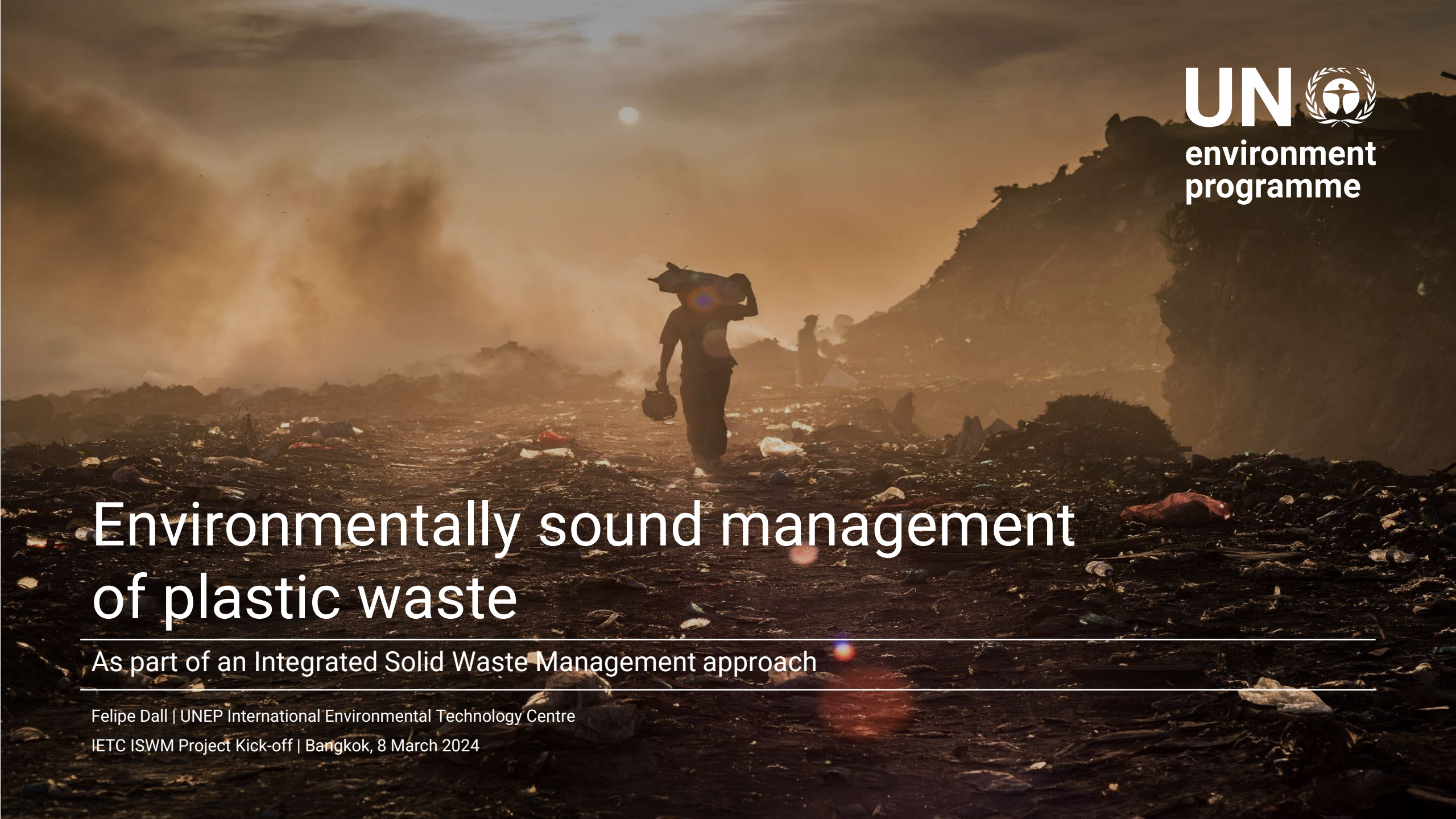

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Environmentally sound management of plastic waste

As part of an Integrated Solid Waste Management approach

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IETC ISWM Project Kick-off | Bangkok, 8 March 2024

The fate of plastics

Littered

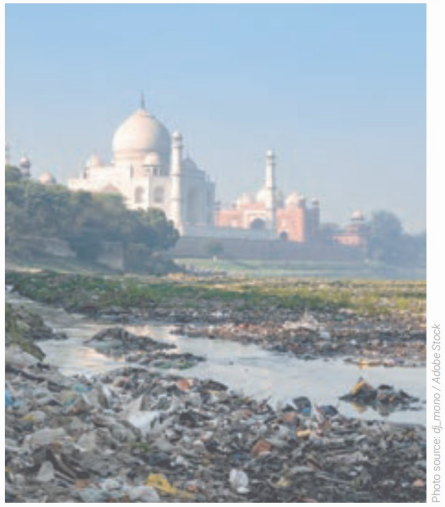

Photo source: dj_mono / Adobe Stock

Disposed

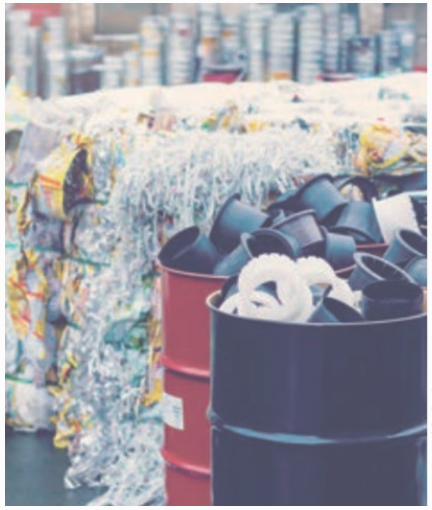

Photo source: Angelov / Adobe Stock

Burnt

Photo source: Timothy Bouldry

Recovered

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Challenges associated with plastic circularity

- Plastic waste valorization
- Who is in charge of what?
- Informality, vulnerable actors
- Infrastructure-related costs
- Waste is (and will keep) growing

Photo source: Timothy Bouldry

Photo source: Natali / Adobe Stock

Photo source: Timothy Bouldry

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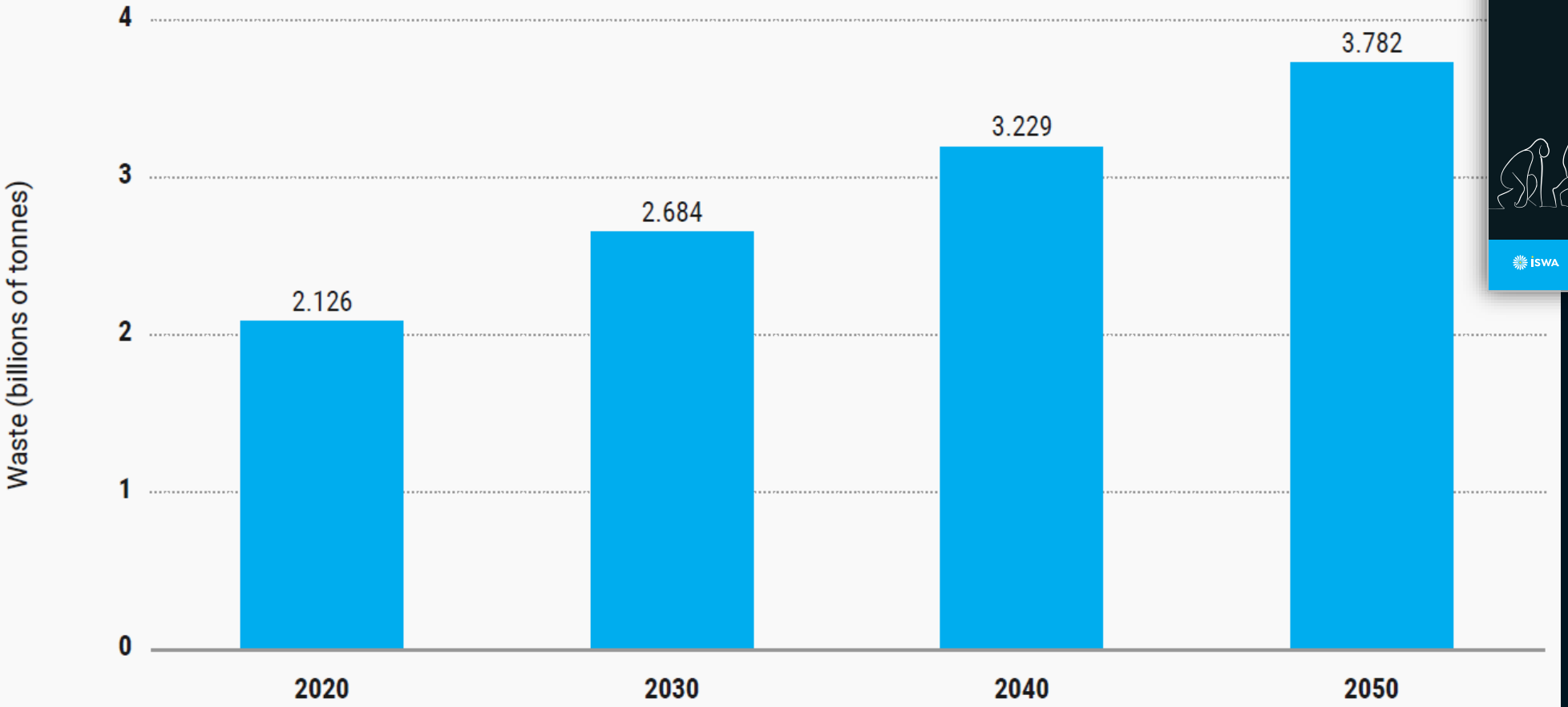
Projections of global municipal solid waste generation per year in 2030, 2040 and 2050 if urgent action is not taken.



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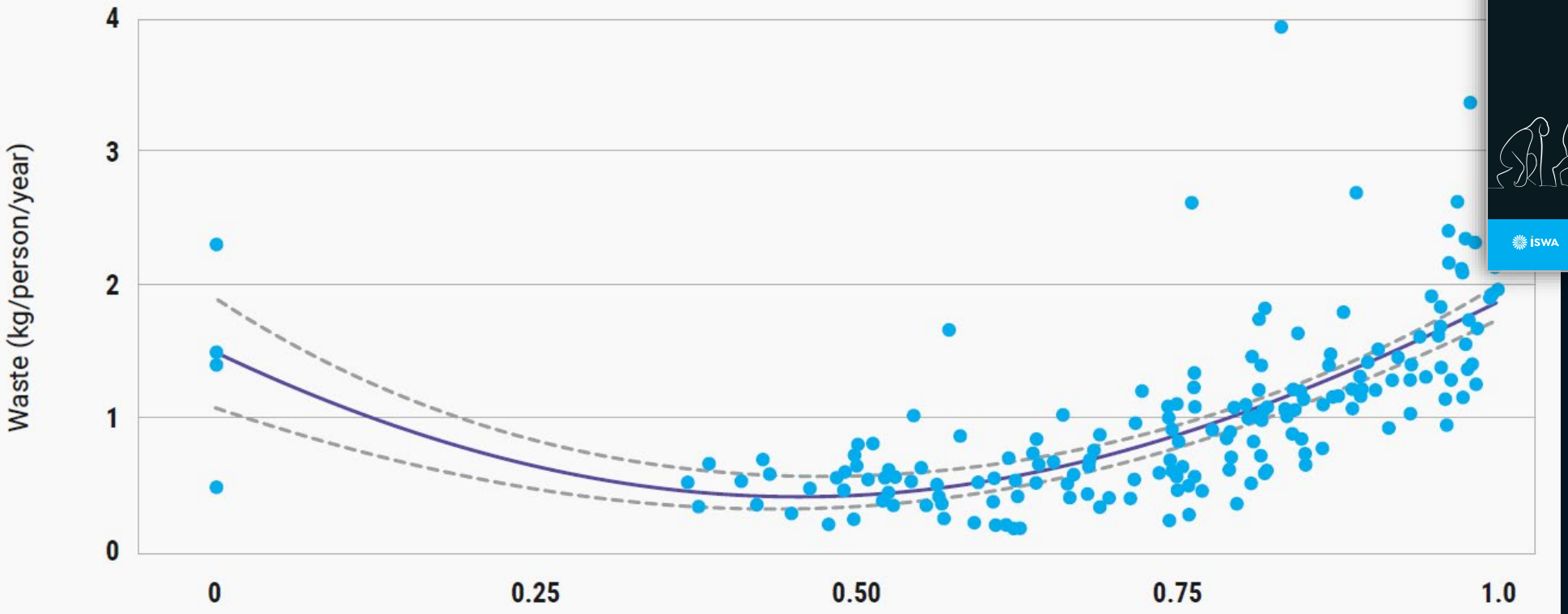
Municipal solid waste and the Human Development Index



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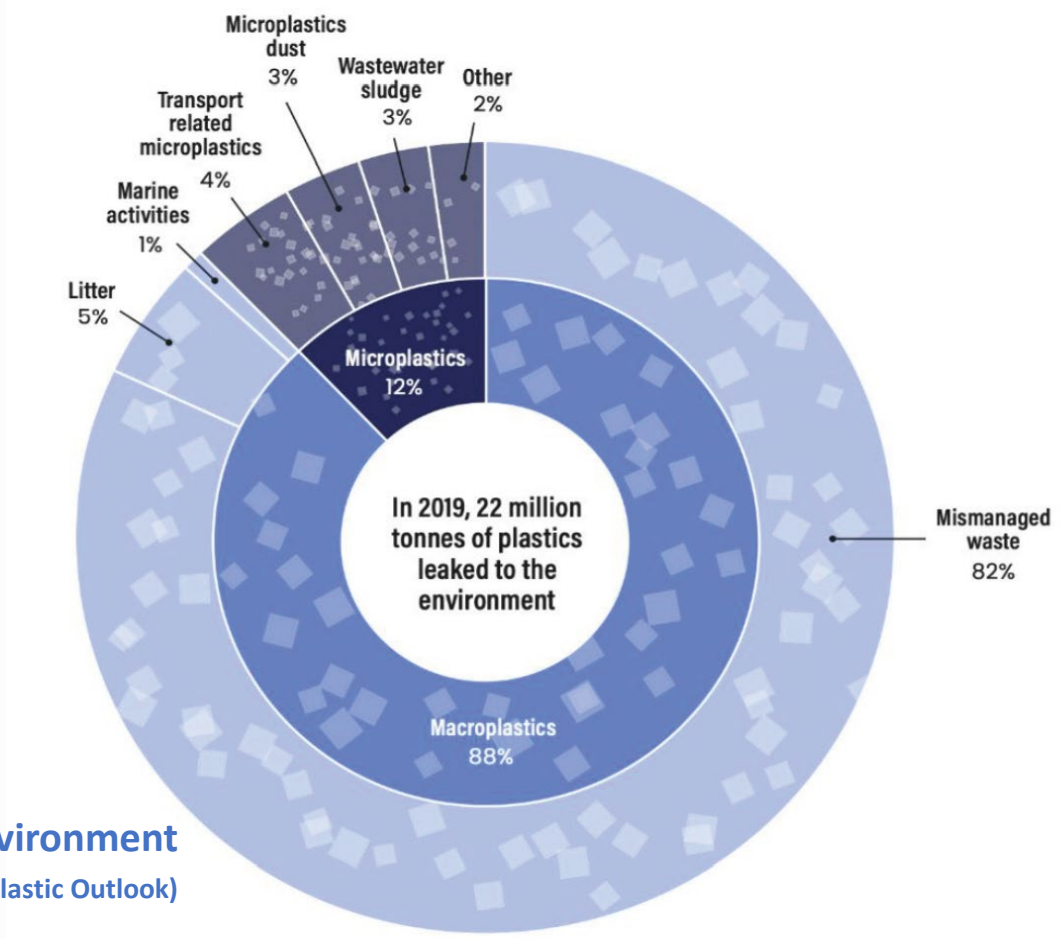
Waste management as a resource management

Applied to plastics

Understanding the problem

- Sources
- Patterns
- Leakage hotspots



Global leakage of macro- and microplastics to the environment

(OECD, 2022. Global Plastic Outlook)

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Environmentally sound management of plastic waste

Reuse

Recovery

- Mechanical
  - Closed-loop
  - Open loop
  - Downgrading
- Chemical
  - Closed-loop
  - Open loop
- Energy recovery
  - WtE
  - WtF
- Biodegradation

Landfilling

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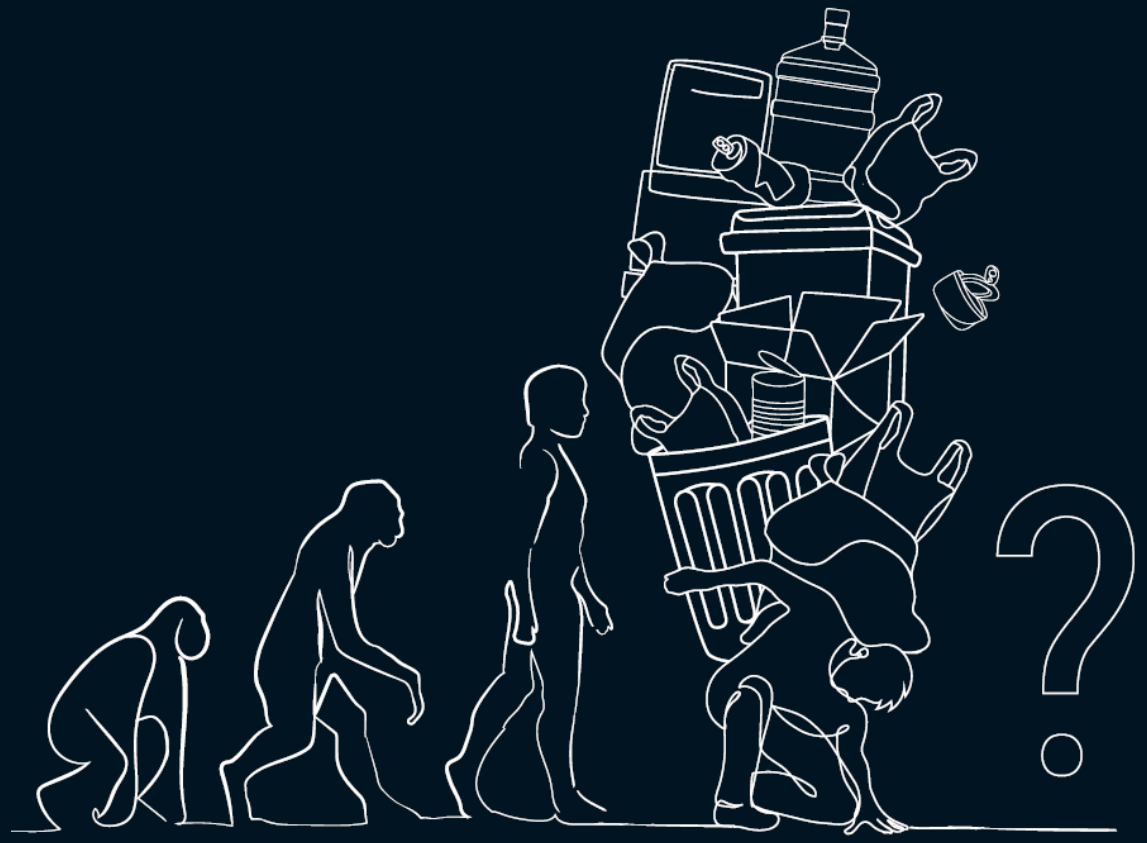
How do we do this?



- Creating demand to avoid disposal
- Stakeholders hub
- Social/environmental/climate impacts
- Suitable system/technology
- Business-oriented

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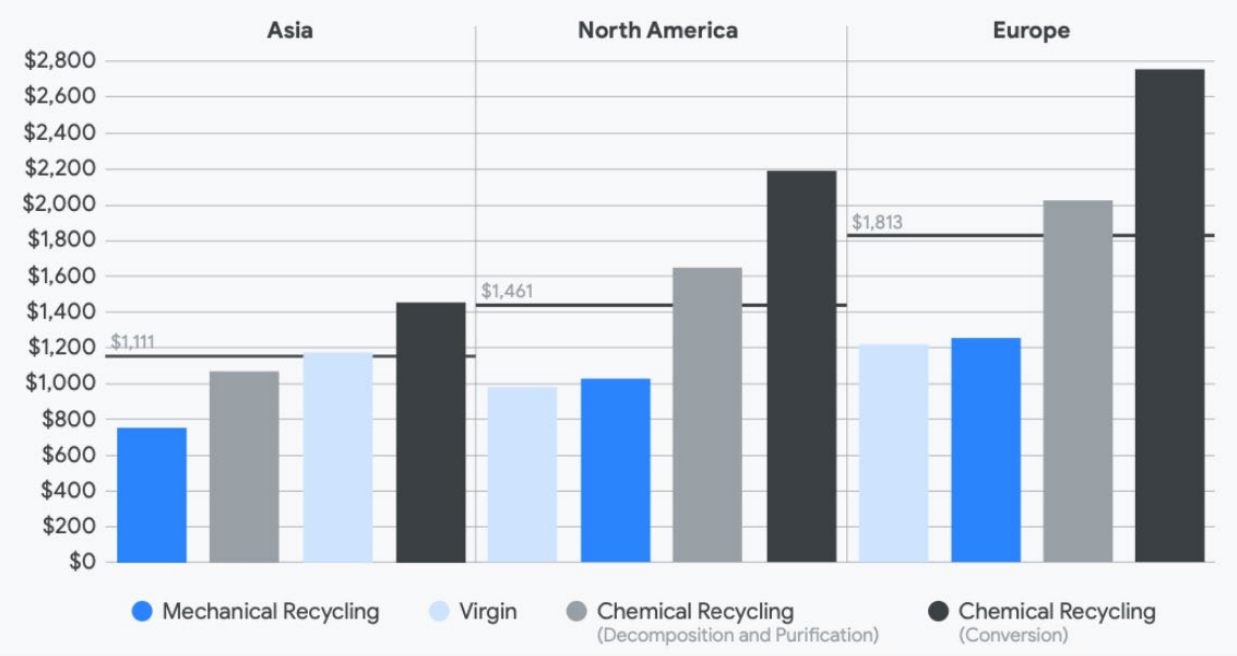
How do we do this?



Trade values of virgin and recycled plastics by region

Werner et al., 2022. Closing the Plastics Circularity Gap - full report.

Creating demand to avoid disposal

Stakeholders hub

Social/environmental/climate impacts

Suitable system/technology

Business-oriented

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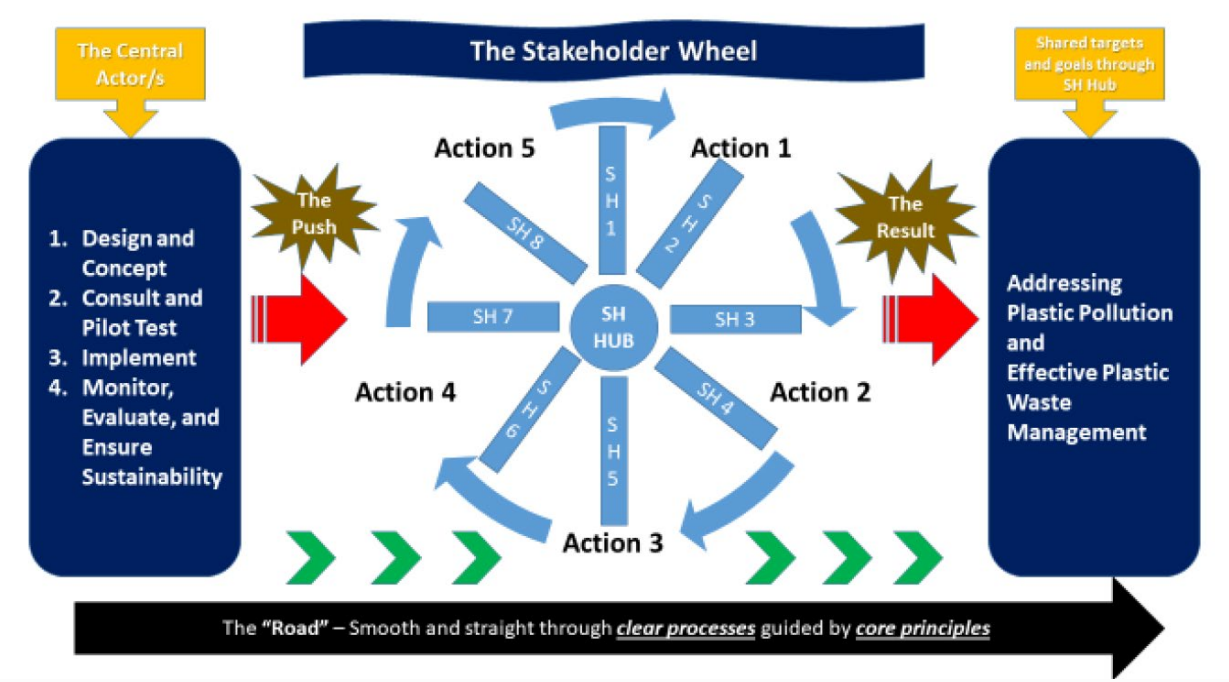
How do we do this?



Creating demand to avoid disposal

Stakeholders hub

Social/environmental/climate impacts

Suitable system/technology

Business-oriented

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How do we do this?

Type of facility	Throughput (tonne/year)	Investment cost		Operational cost (€/tonne)	Location
		m€	€/tonne/year		
MBT (general)	25 000	12.2	488	24 - 81	
	60 000	13.5	225	24 - 81	
	100 000	56	560	NA	
	120 000	42	350	55	
	200 000	40.5	203	24 - 81	
MRF	12 000 - 15 000	2,37	158	NA	Karditsa, Greece
	12 000 - 15 000	2,35	157	NA	Alexandroupoli, Greece
	30 000	5,39	180	NA	Elefsina, Greece
MRF (general)	50 000	5	100	40	
Fully automated MBT	40 tons / hour (320 000 t/yr)	20	62,5	NA	Skedsmokorset, Norway

Advantages and disadvantages of centralised and decentralised approaches

Creating demand to avoid disposal

Stakeholders hub

Social/environmental/climate impacts

Suitable system/technology

Business-oriented

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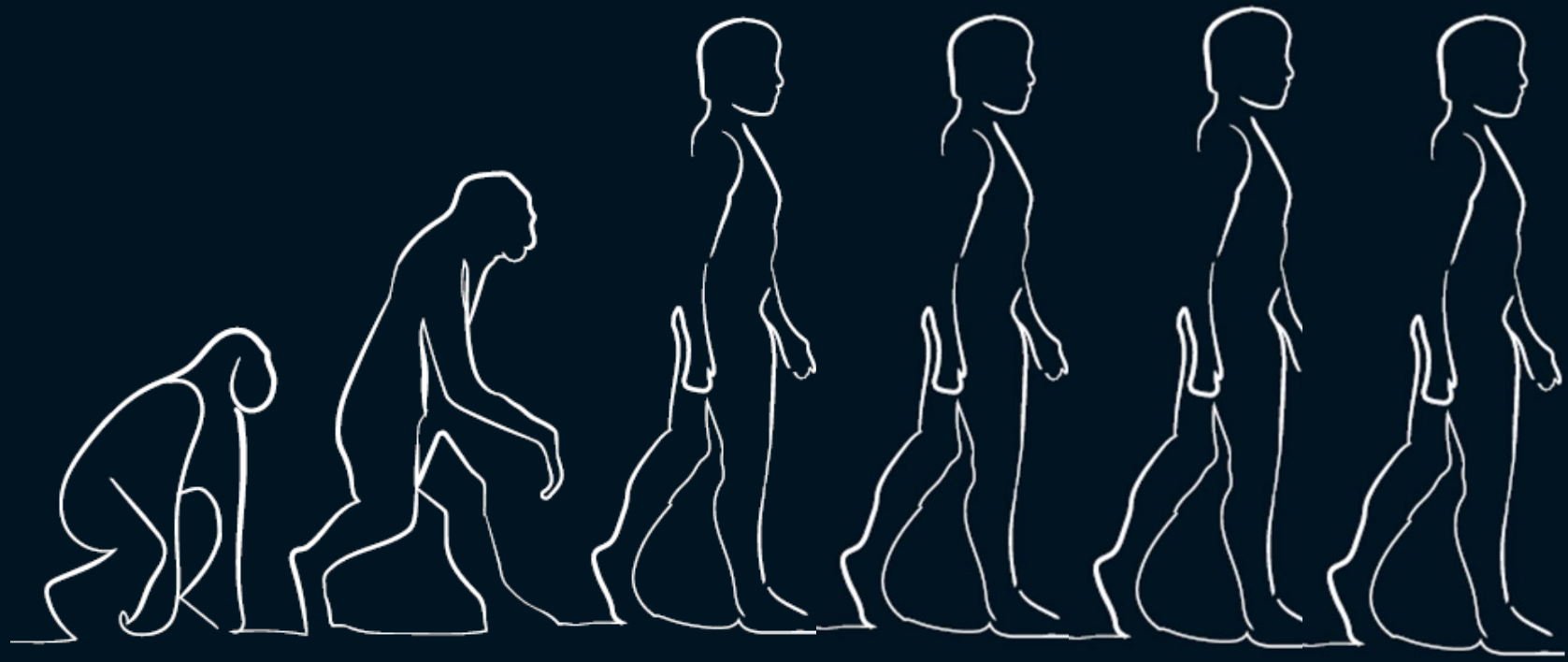
Waste management as a resource management



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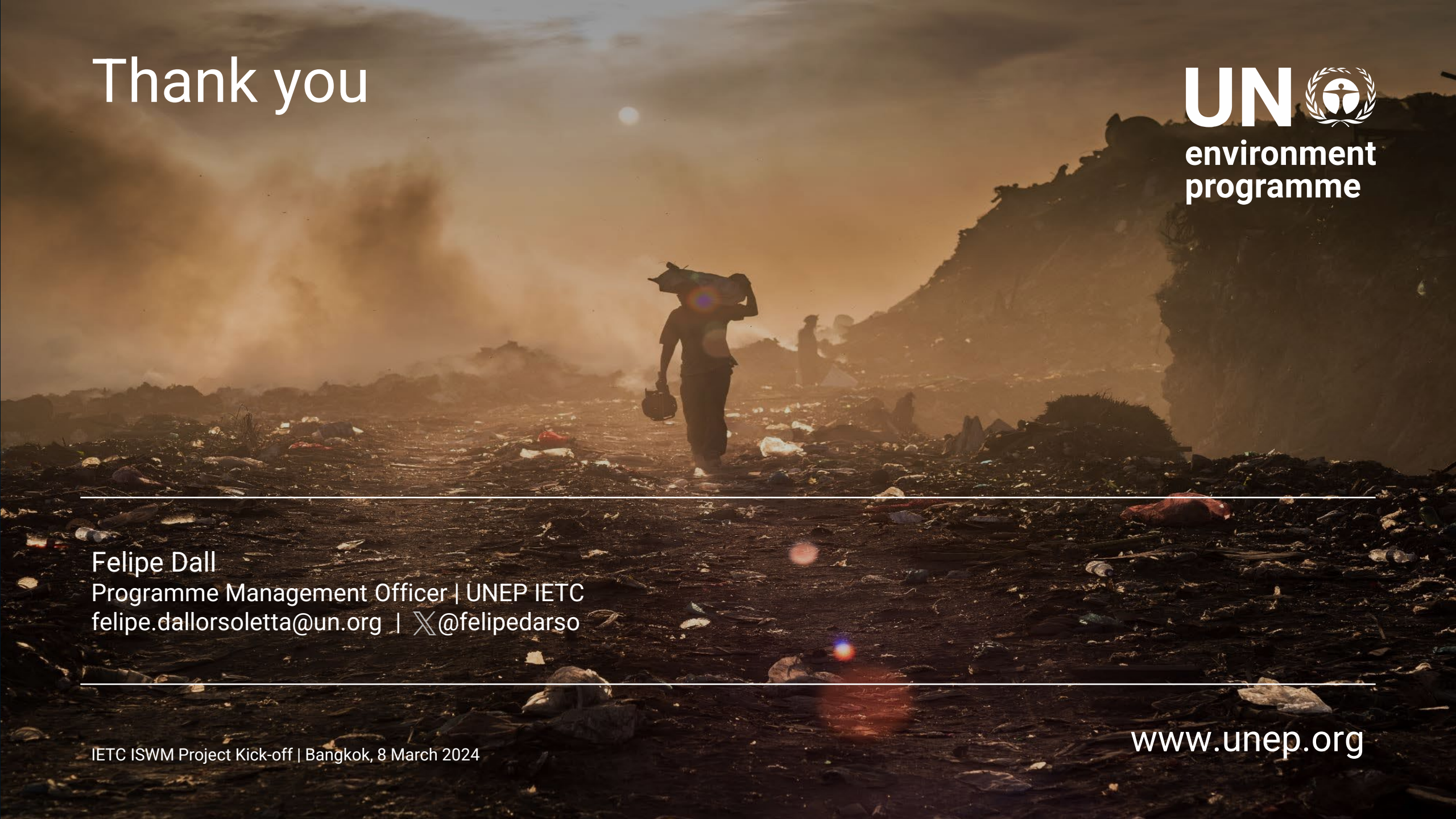
Thank you



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