



Development of life cycle impact assessment methodologies for impacts on marine ecosystems

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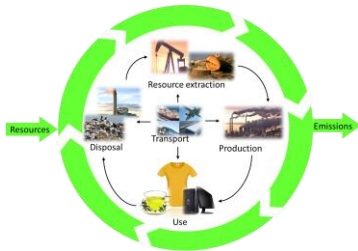
Presentation Outline

- Introduction to life cycle assessment (LCA)
- Impact categories covered by LCA
- Assessment of impacts on marine ecosystems using LCA
- Seabed damage impact category

2



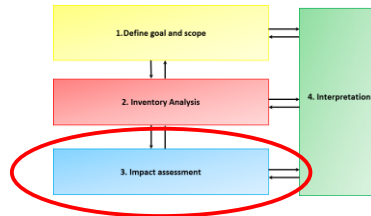
Life Cycle Assessment (LCA)



3



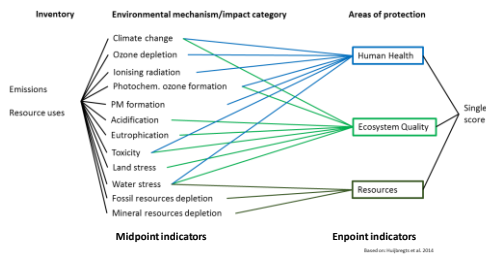
Stages of LCA



4



Life Cycle Impact Assessment (LCIA)



5



Impact pathways in marine ecosystems.

Status	Impact category	Midpoint indicator	Endpoint indicator
Operational	Marine ecotoxicity	✓	✓
	Eutrophication-induced hypoxia	✓	✓
Developmental	Seabed damage	✓	?
	Overexploitation	✓	?
No LCA specific methods	Climate change	✓	?
	Ocean acidification	✓	✓
	Invasive species	?	?
	Plastic waste	✓	?

6



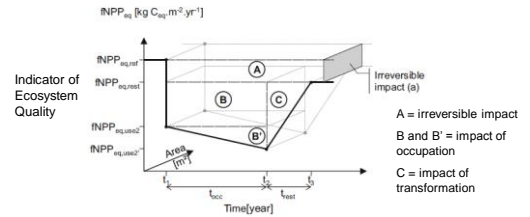
The seabed damage impact category

- Anthropogenic activities:
 - Disruptive fishing techniques
 - Extraction/mining of raw materials
 - Construction on the seabed
- Modes of impact
 - Abrasion
 - Smothering
 - Extraction

7



The seabed damage impact category

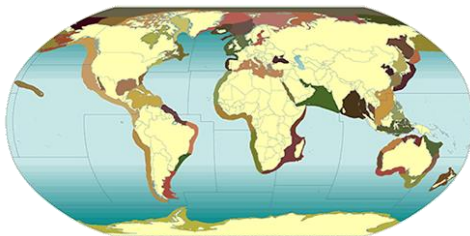


Langlois et al. (2015). Sea use impact category in life cycle assessment: characterization factors for life support functions. *International Journal of Life Cycle Assessment*. 20:970-981.

8



The seabed damage impact category



9



Any questions?

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10