Sea bed mining and a Sustainable Blue Economy, never the twain shall meet?

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Ocean Asset Values

The ***yearly*** value of goods and services that flow from coastal and oceanic environments:

US$2.5 trillion

*The overall value of the ocean as an asset

The world's seas and oceans are an extraordinarily valuable resource

Table 1: Global economic output of the world's oceans and seas, per year

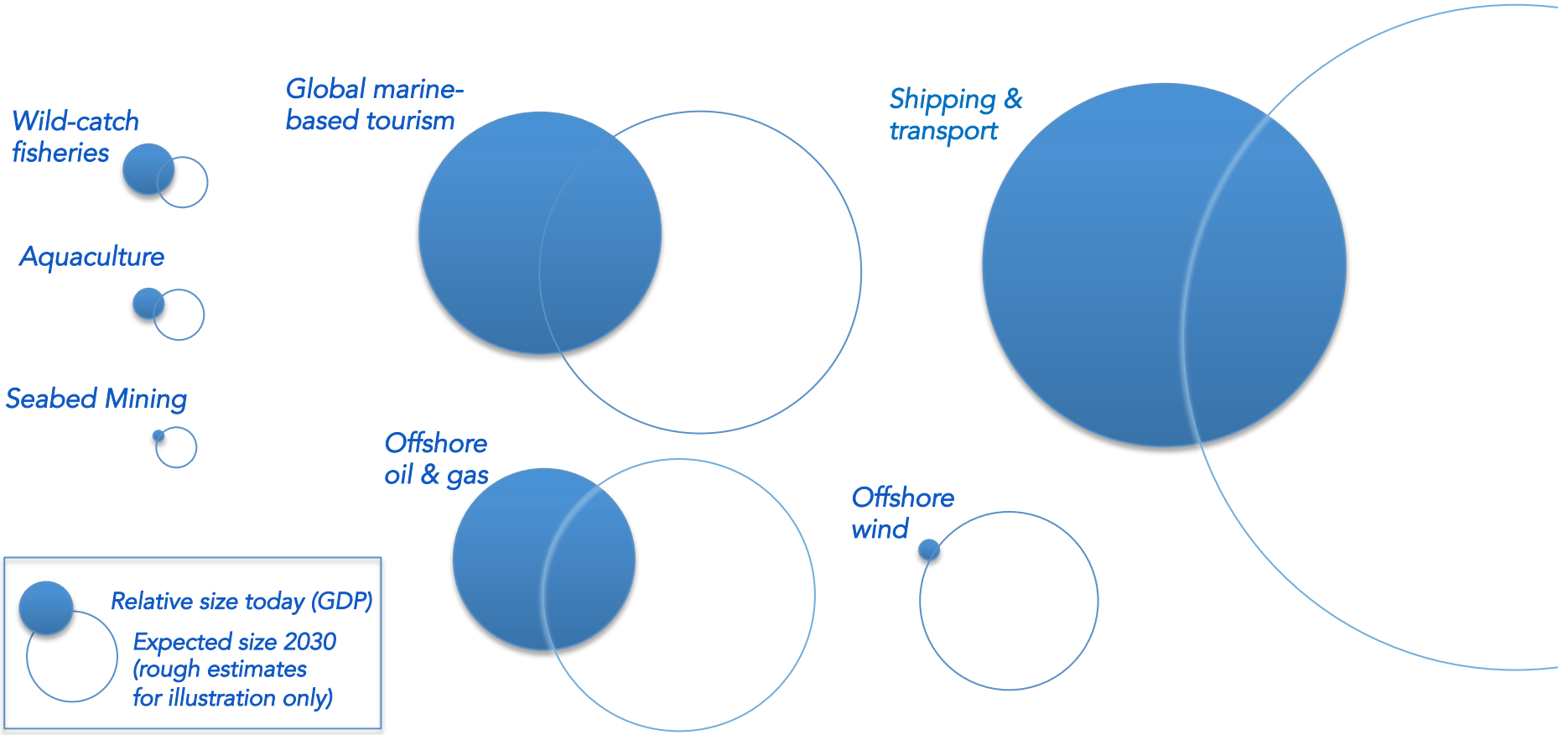
Type of output	Billion US$
Direct output (fishing, aquaculture, etc.)	400 - 420
Services (tourism, education etc.)	365 - 400
Trade and transportation (shipping)	700 - 750
Adjacent benefits (carbon sequestration, biotechnology etc.)	890 – 1,000
Other intangible benefits*	non-quantifiable
TOTAL	**US$2.4 – 2.6 TN**

* "Intangible benefits" includes, for example, oxygen production and global temperature stabilization, as well as spiritual and cultural values.

Source: "Restoring the Ocean Economy – Action Agenda 2015," WWF

The concept of “Blue Economy” is emerging against a global background of rapid economic growth in marine sectors

Relative sizes of marine sectors and their expected growth to 2030 (global estimates)



Data: Douglas-Westwood Limited, 2005 & others

Impacts of Deep Sea mining

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. Loss of habitat;

. Degradation of habitat quality;

. Decreased seafloor and/or water column primary production;

. Modification of trophic interactions;

. Decreased diversity;

. Local, regional, or global extinction of endemic or rare taxa.

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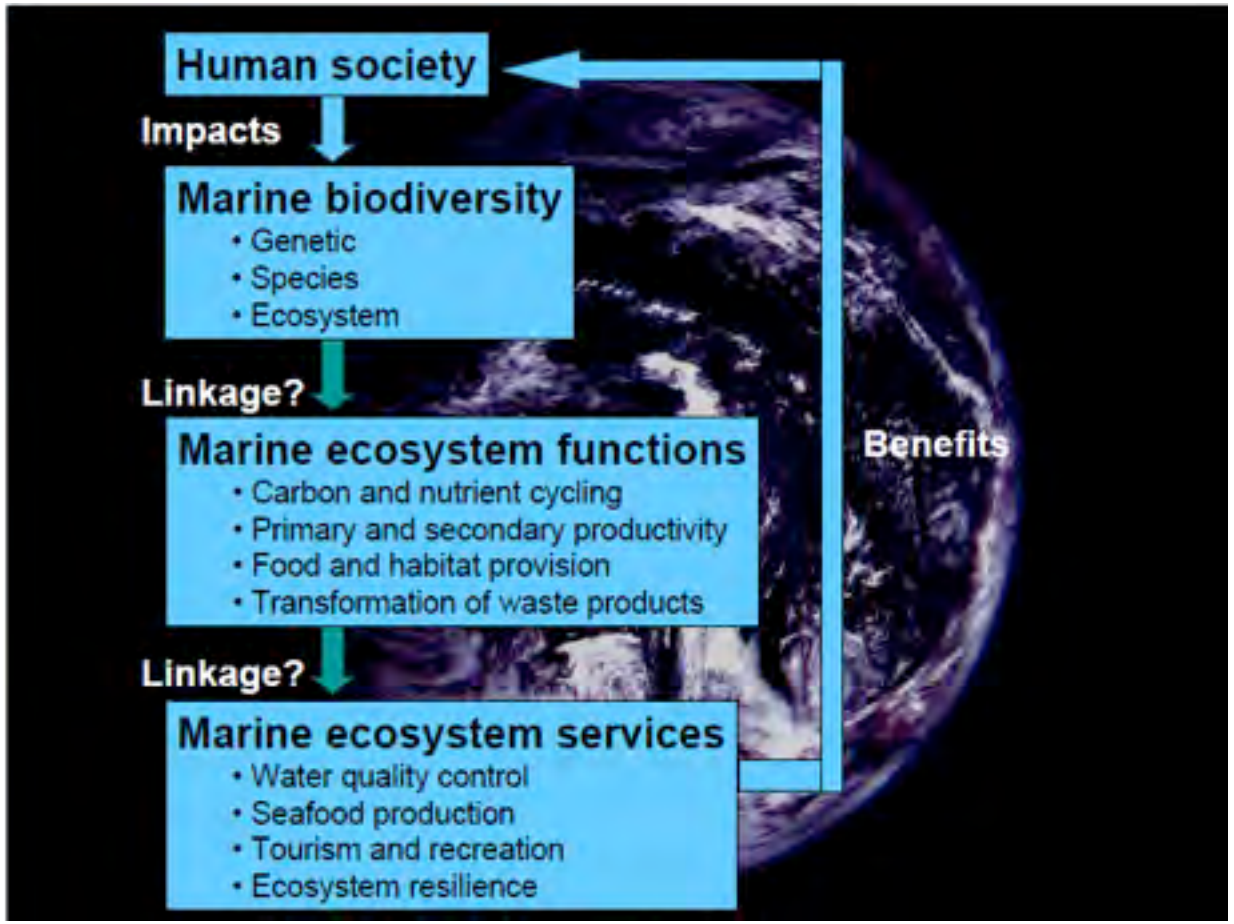
Deep-sea mining - more than loosing biodiversity



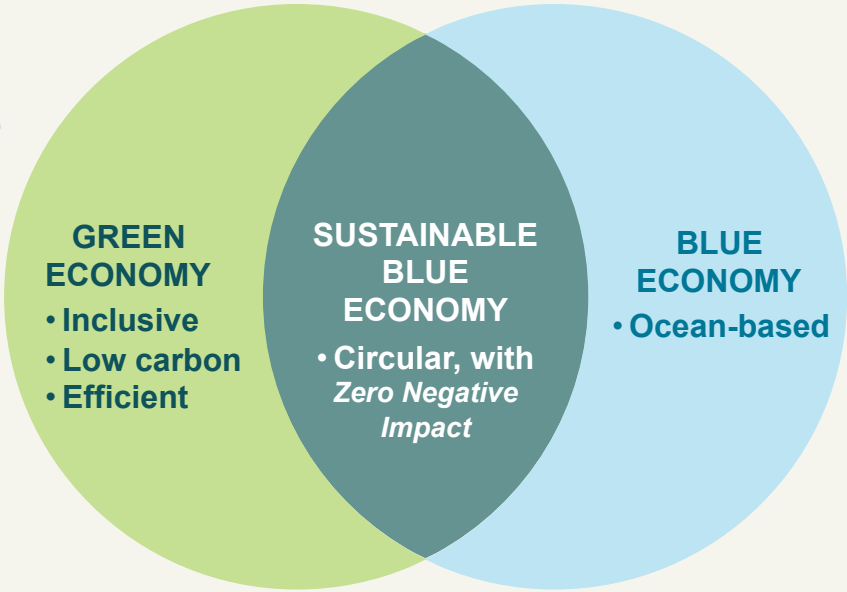
Worm, B., *et al.*, 2006

A Sustainable Blue Economy is both *Green* and *Circular* — creating *Zero Negative Impact*

A Sustainable Blue Economy is part of a **Green Economy,** one that "results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive" (UNEP, 2011)

A Sustainable Blue Economy is also a **Circular Economy** that uses resources in ways that cycle around so that *all* "waste" becomes resource again.

By aiming towards *zero negative impact* on already severely stressed seas and oceans, **a Sustainable Blue Economy combines the critical aspects of both Green *and* Circular**



A Sustainable Blue Economy is a marine-based economy that …

- Provides social and economic benefits for current and future generations.
- Restores, protects and maintains the diversity, productivity, resilience, core functions, and intrinsic value of marine ecosystems.
- Is based on clean technologies, renewable energy, and circular material flows.

WWF General DSM Recommendations

Openly and transparently considered alternatives to mining deep-sea minerals, taking into account ecological, social and economic perspectives, including:

a. Conserving natural and mineral resources;

b. Increasing the recycling of minerals; and

c. Exploiting land based mineral resources with much greater efficiency and more stringent environmental regulation

WWF DSM Recommendations

Strategic Environmental Assessment/Strategic Environ Mgt Plan.

Consult with other international bodies.

Collect adequate baseline information/transparency data and decisions

Networks of well-managed protected areas;

Adopt a precautionary approach

Define/adopt multi-stakeholder derived standards for environmental protection around any deep-sea operation.

Environmental Impact Assessments/long term monitoring post decom

Assign liability (“polluter pays”), incl a mechanism to cover clean up

Establish contractor-independent public assessment and monitoring of the permit conditions and potentially impacted ecosystems.

MIDAS discussion points.

. Provision of baseline data is difficult but essential, there has been a suggestion to measure Ecosystem function, would this be a way forward/mixture of approaches, biodiversity/EF?

. Delivery of a fit for purpose ISA data mgt strategy. Access vs confidentiality. Plus Art 154 review.

. Research on Pelagic faunal impacts, in particular from return waste plumes.

. Bioavailability, Ecotox in particular early life stage/larval dispersion

. Light/noise impacts in particular on the ocean floor

. Synergies of all the above with temp/PH changes.

. Criteria for defining IRZs and PRZs.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