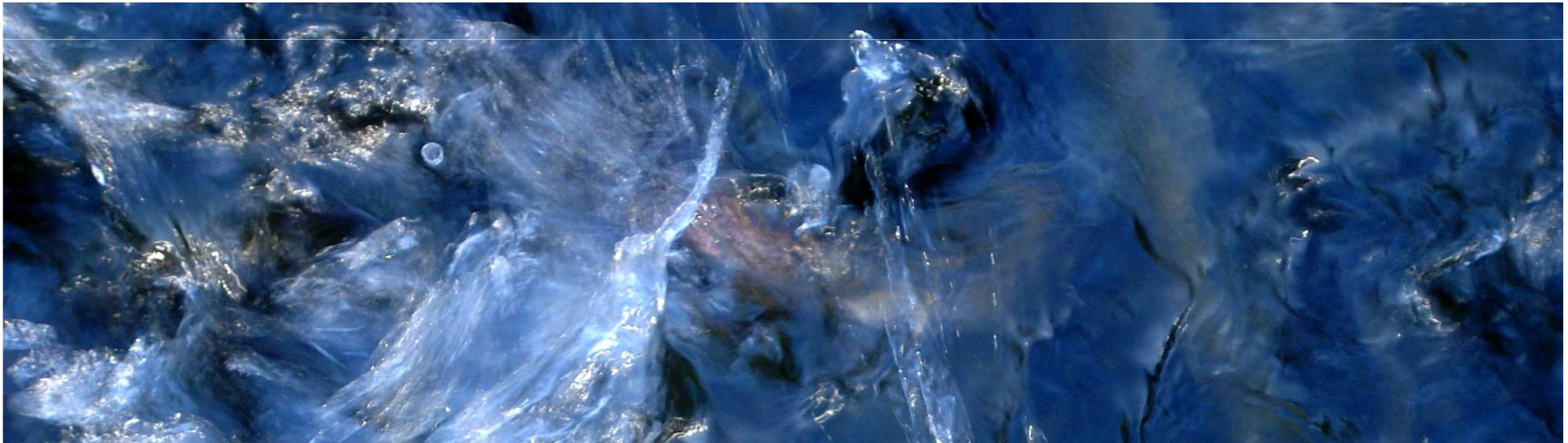




A la recherche d'objectifs communs entre aquaculture et conservation

F. Simard, R. le Gouvello, C. Brugère, ...
E-bAG Ecosystem-based Aquaculture Group

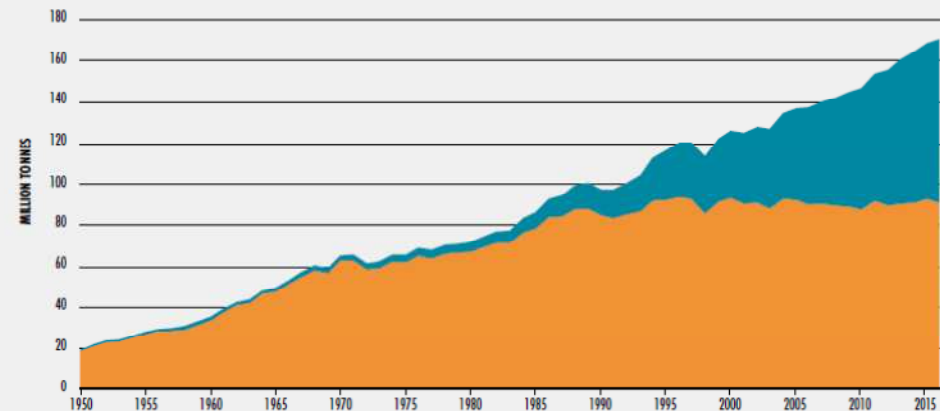


GIS HomMer Février 2020

Looking at synergies between aquaculture and conservation

- ✓ Convention on Biological Diversity's Aichi target 11 on Marine Biodiversity Protection and target 6 on Sustainable Fisheries by 2020,
- ✓ Sustainable Development Goal (SDG) 2 on Food Security and 14 on Oceans, by 2030
- ✓ Aquaculture may meet all SDGs... (cf Hambrey 2017, Brugère et al. 2018)

FIGURE 1
WORLD CAPTURE FISHERIES AND AQUACULTURE PRODUCTION



→ Need to Reconcile Nature Conservation and Sustainable Development, including an aquaculture component



Our current project on aquaculture and conservation :

- 1.Phase 1 (2015-2017): Aquaculture and MPAs**
- 2.Phase 2 (2017-2020):**

**Aquaculture-Conservation-Coastal
communities livelihoods
AquaCoCo project**



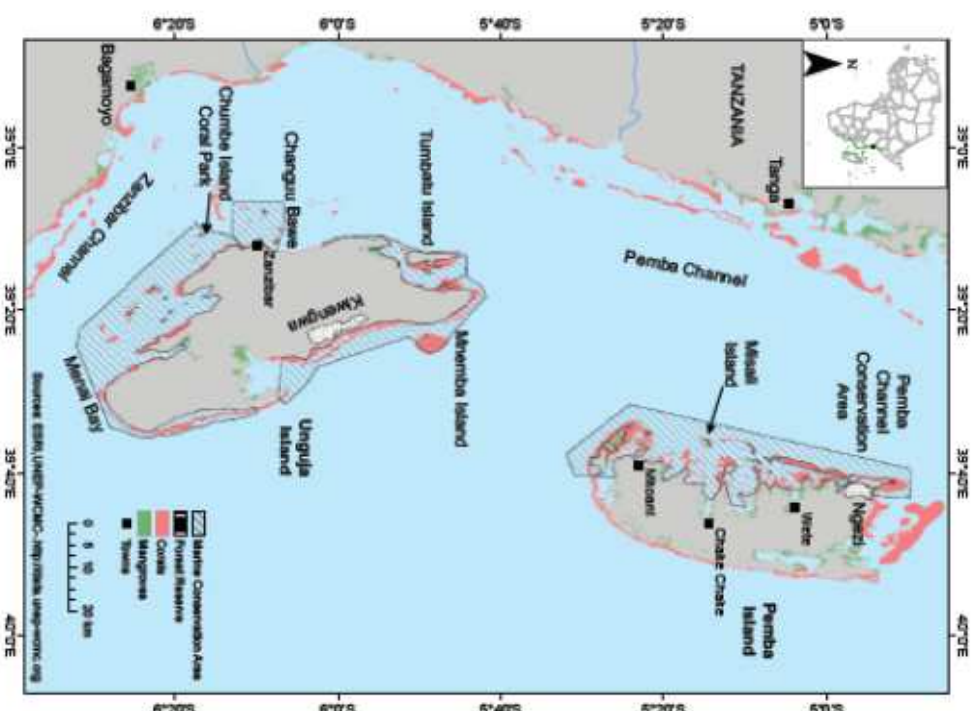
2.Phase 2 (with FDA) : AquaCoCo project

Aquaculture-Conservation- Coastal communities livelihoods

Identifying synergies between sustainable development of coastal communities, aquaculture, and marine and coastal conservation :

- ? How and why aquaculture in marine protected areas is an attractive and sustainable alternative for coastal communities?
- ? How can aquaculture in coastal areas be a “Nature-based Solution” in support of socio-ecological resilience and climate change adaption?

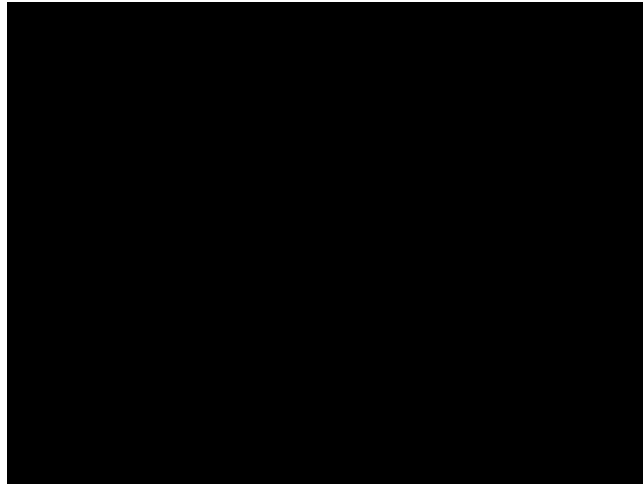
Zanzibar present study case



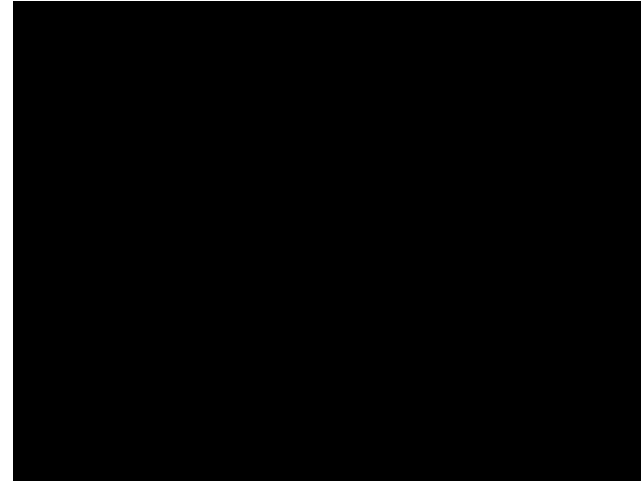
Map in Yahya, in press



court



long



Film : Aquaculture and conservation , a common challenge

Web story sur site de l'IUCN :

<https://www.iucn.org/news/marine-and-polar/201912/new-iucn-film-common-challenge-aquaculture-and-marine-conservation-zanzibar>

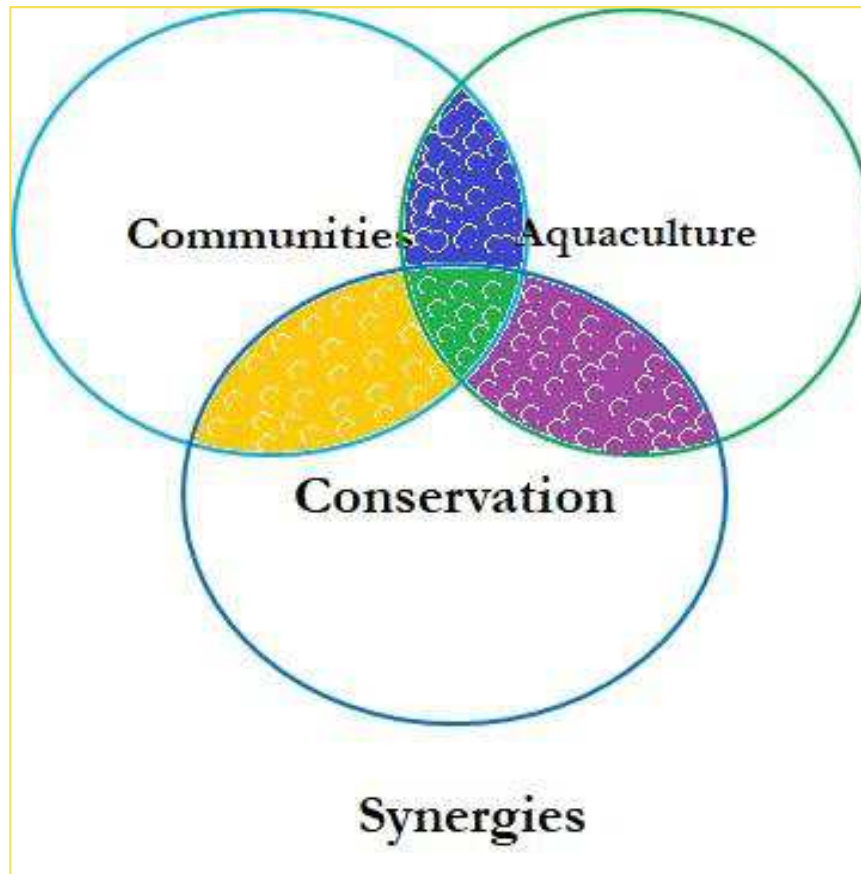
Film 'A Common challenge – Aquaculture and Marine Conservation'

<https://youtu.be/LzGAxRZ2bSw> (short)

<https://youtu.be/BnOf1KXR1FU> (long)



Optimising synergies between marine conservation, aquaculture development and the wellbeing of coastal communities, looking for a common vision ?



Introduction of the Zanzibar workshop using the Theory of change
(by F. Museau, IUCN, Kenya, July 2019)

In Brugère et al. 2020



Stone Town Workshop output

Example of one group



Vision: By 2030 Zanzibar will restore its natural capital and will enhance sustainable development that stays within its social-ecological carrying capacity, with communities fully engaged

C1: Conservation and restoration of coastal resources

C2: Enhance sustainable and inclusive development

C3: Tracking impact

2030	Increase awareness on importance of coastal marine resources 	Harmonising laws and policies	Monitoring benefit sharing
2025	Alternative conservation, livelihoods promotion   Enhance integrated planning and collaborative management	Enable participatory governance Marine Spatial Planning 	Science for tracking impact
2020	Implement habitat protection, restoration and management	EIA enforcement and implementation 	Multi-stakeholder platform for coordination, monitoring and accountability

(Group 1)

Figure 7.a: Group 1's intervention logic: proposed Vision, Components and Actions

Stars indicate prioritised actions : 1st to 5th  , 6th to 10th  , 11th and beyond 

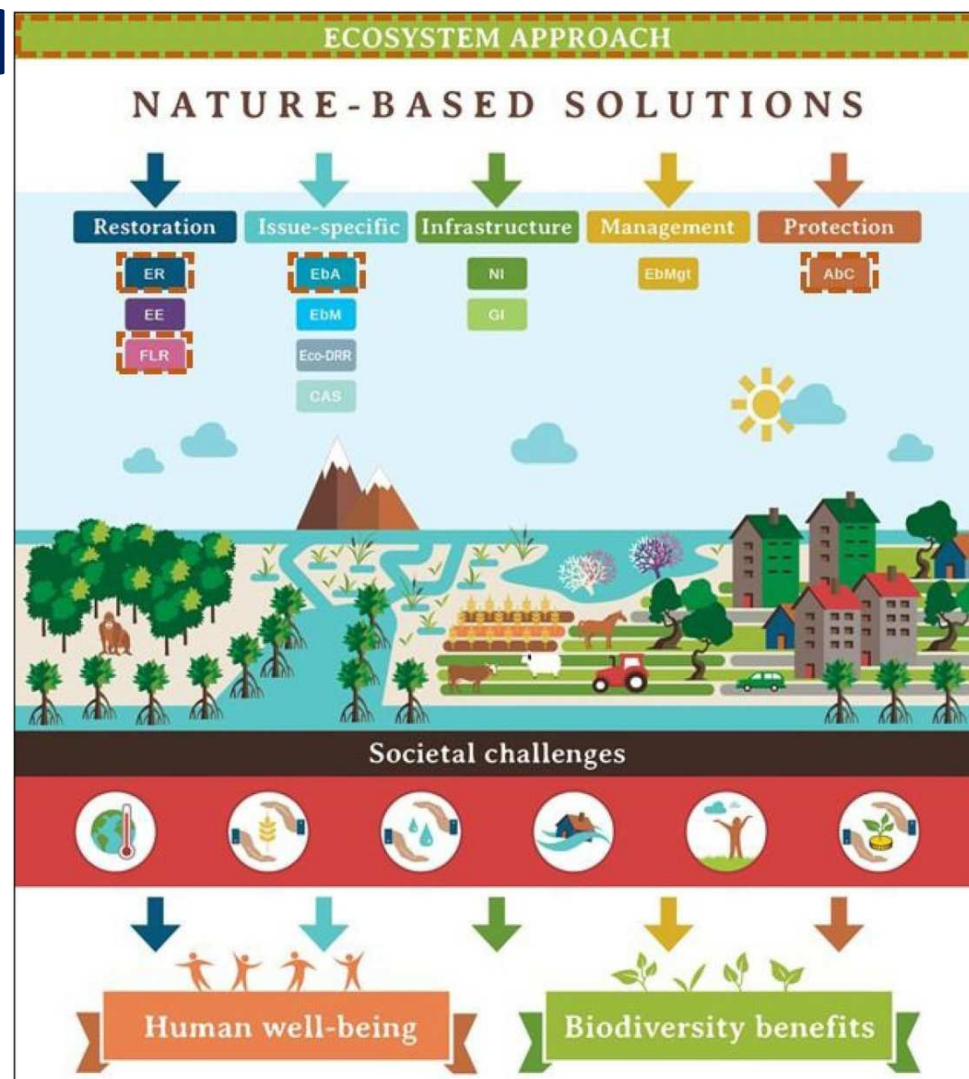
From Brugère et al. 2020

Pioneering aquaculture-related Nature-based Solutions (NbS)

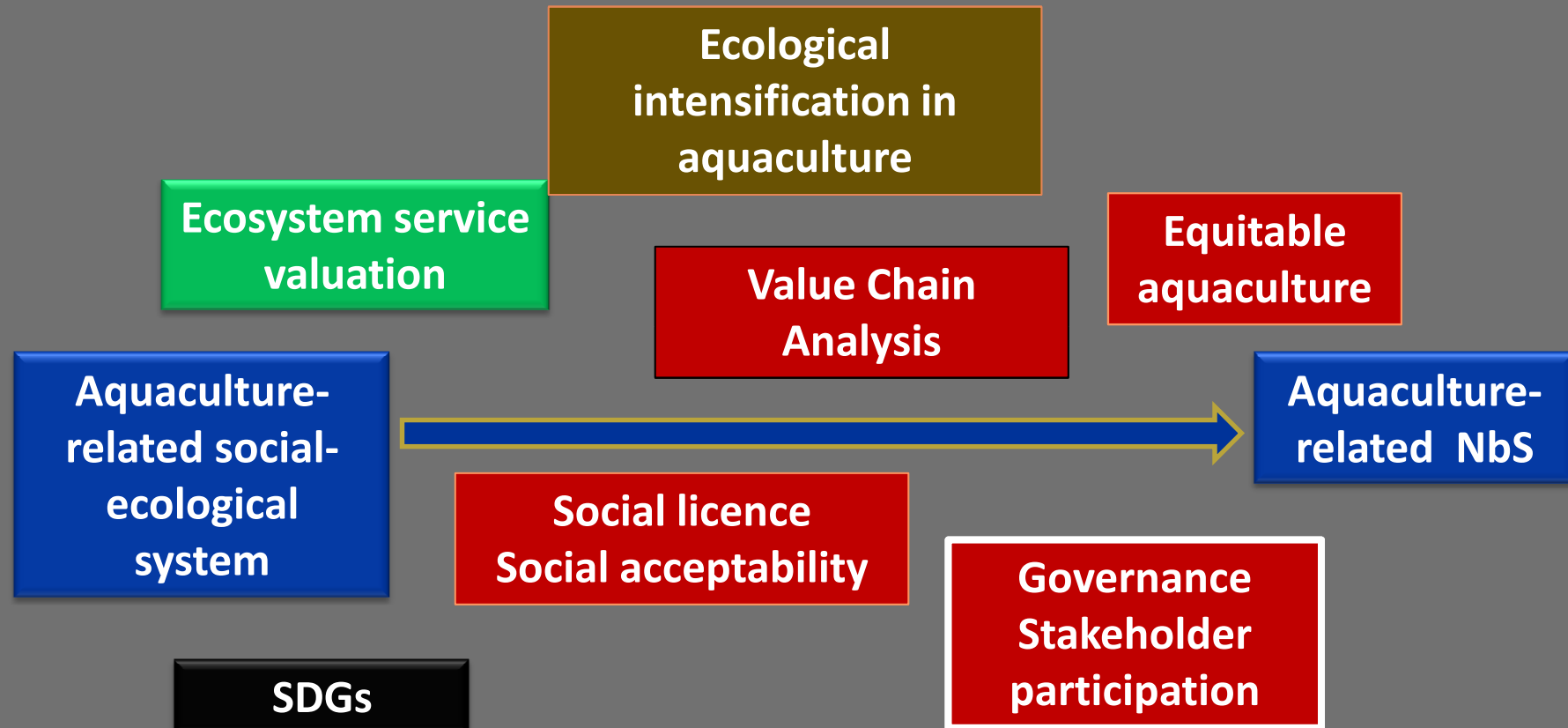
IUCN defines NbS as:

“Actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.”

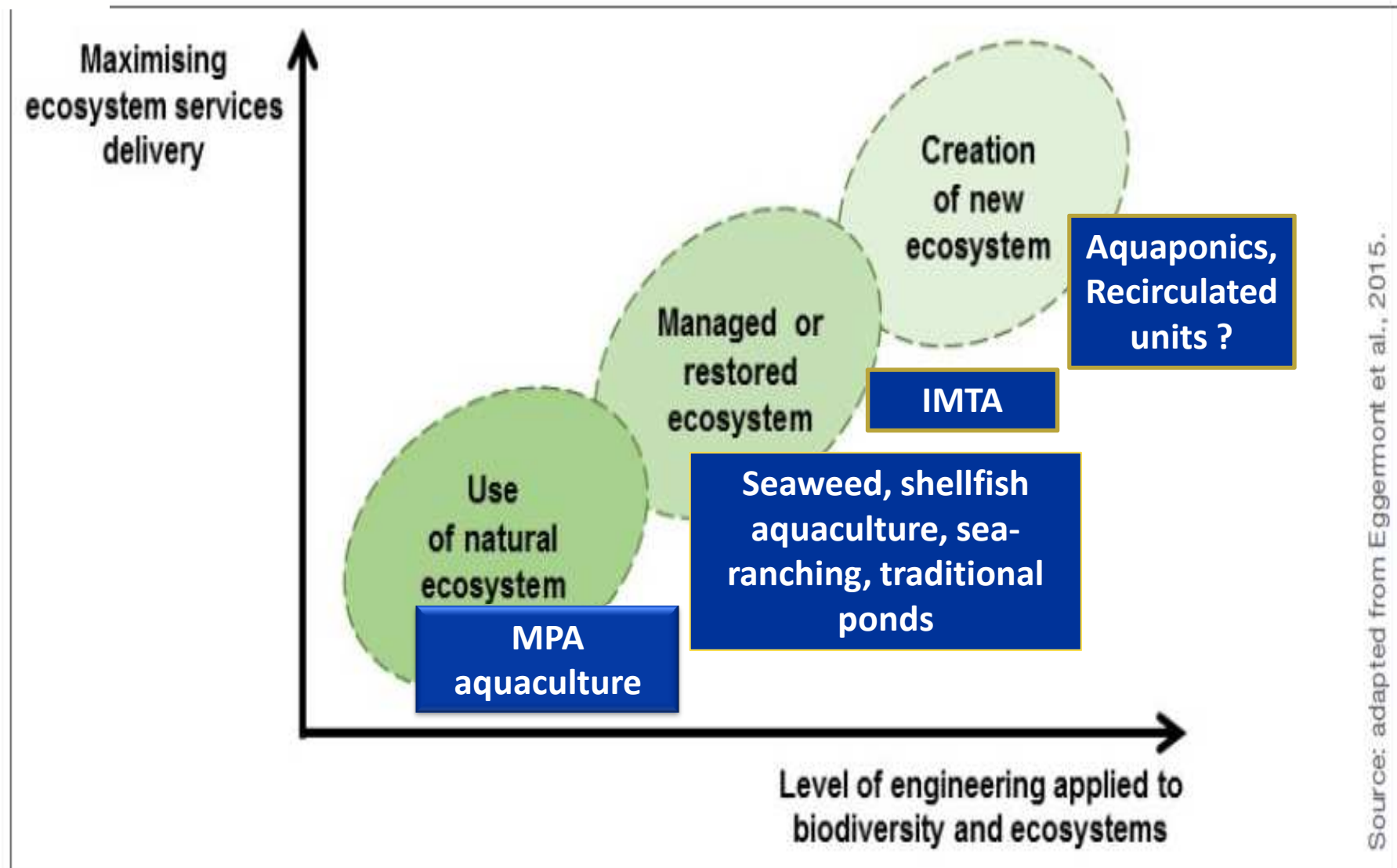
(Cohen-Shacham et al. 2016, 2019).



Ecosystem Approach in Aquaculture



Potential categorization of aquaculture-related NbS



(adapted from Eggermont et al. 2015 and Cohen-Shacham et al. 2016, in Le Gouvello et al. in preparation)



Table: Zanzibar case vs NbS IUCN principles according to Cohen-Shacham et al. (2016, 2019) (in Le Gouvello et al., in preparation)



IUCN NbS principles	Preliminary answer	Potential future actions
1. embrace nature conservation norms (and principles);	As 80 % of the seaweed is practiced in MCAs, they should definitely embrace these norms.	Improvement of practices, MCAs better management and recognition of remarkable habitats, MSP, more education and training (cf results of workshop)
2. can be implemented alone or in an integrated manner with other solutions to societal challenges (e.g. technological and engineering solutions);	As a solution alone, it seems difficult. But as a part of another NbS, e.g. MCA creation and management, or ICZM initiatives, definitely.	Should be integrated in the whole strategic planning as stated in reports.
3. are determined by site-specific natural and cultural contexts that include traditional, local and scientific knowledge;	Although not traditional, the local and cultural contexts are giving strong assets to the proposed NbS.	Strengthening scientific knowledge and local women empowerment?
4. produce societal benefits in a fair and equitable way, in a manner that promotes transparency and broad participation;	Although it is recognized as essential income for local communities, the value creation and transparency in the global value chain are not optimal.	Increase of value creation, at the produced level, increase of transparency in the market chains?
5. maintain biological and cultural	It contributes to maintain cultural	But the biological diversity should



Phase 1 and 2 main findings :

→ **Exploring needs and opportunities for aquaculture and conservation through interlinked concepts and tools,**

Existing : Ecosystem Approach to Aquaculture (EAA), Marine Spatial Planning (MSP) with Integrated Coastal Zone Management (ICZM), Environment Impact Assessment (EIA), Good practices ... certification, Life Cycle Analysis (LCA) or Ecological Footprint, ...

Emerging :

- Sustainable value chain analysis, equity, shared value,...
- Ecosystem services valuation with aquaculture,
- Social-ecological systems, circular economy,
- And Nature based Solution (NbS) ...



Potential research agenda and prospects for « Aquaculture and Conservation »

- New study cases (including in France),
- Exploring specific social-economic issues (indicators, tools): gender, value creation, governance, ...) together with EAA, ecosystem services..
- Further challenging NbS concept to existing ones.



Merci pour votre attention
Thank you for your attention

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