

#SROCC

Ocean-based Mitigation and Adaptation

Jean-Pierre Gattuso



SORBONNE
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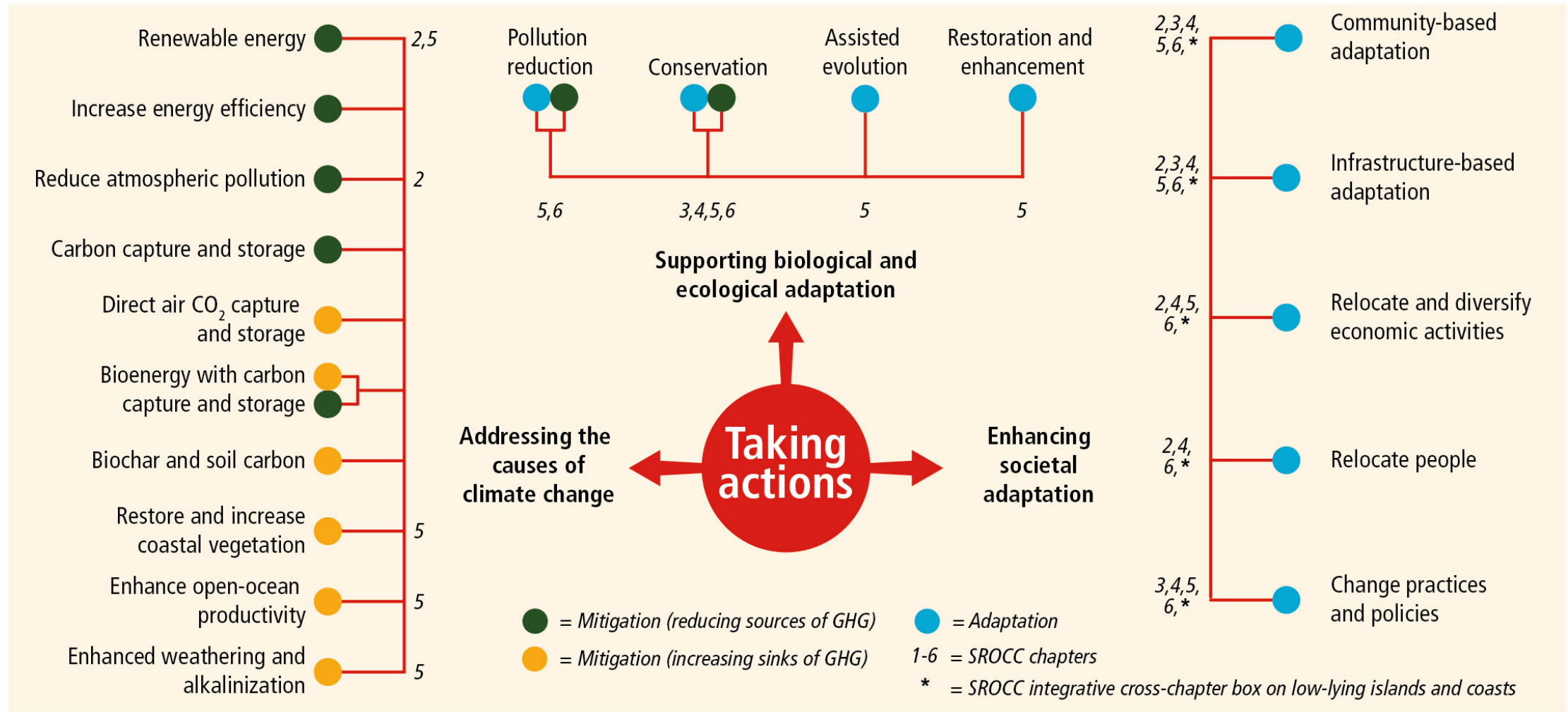
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INTERGOVERNMENTAL PANEL ON climate change

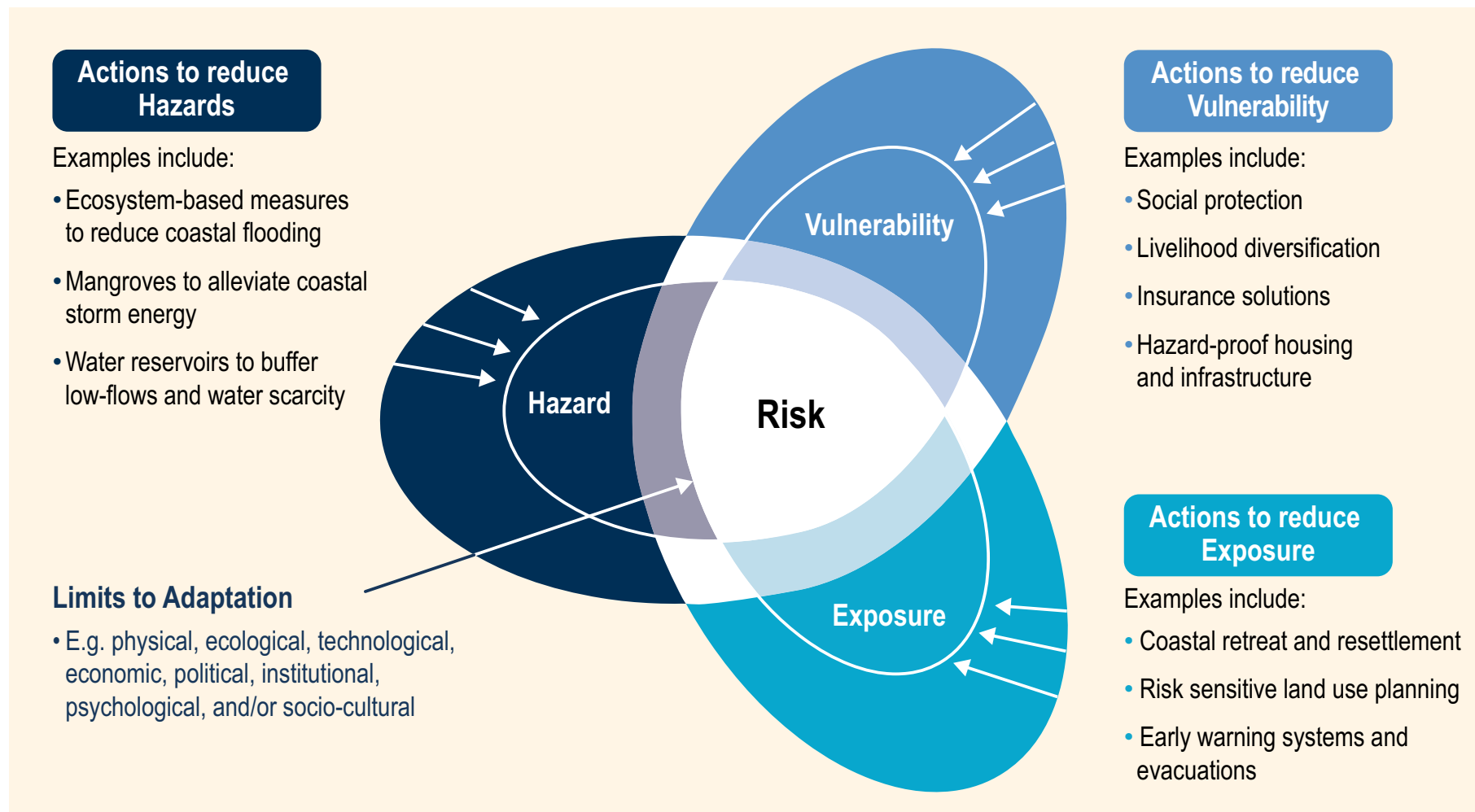


Potential ocean-based measures

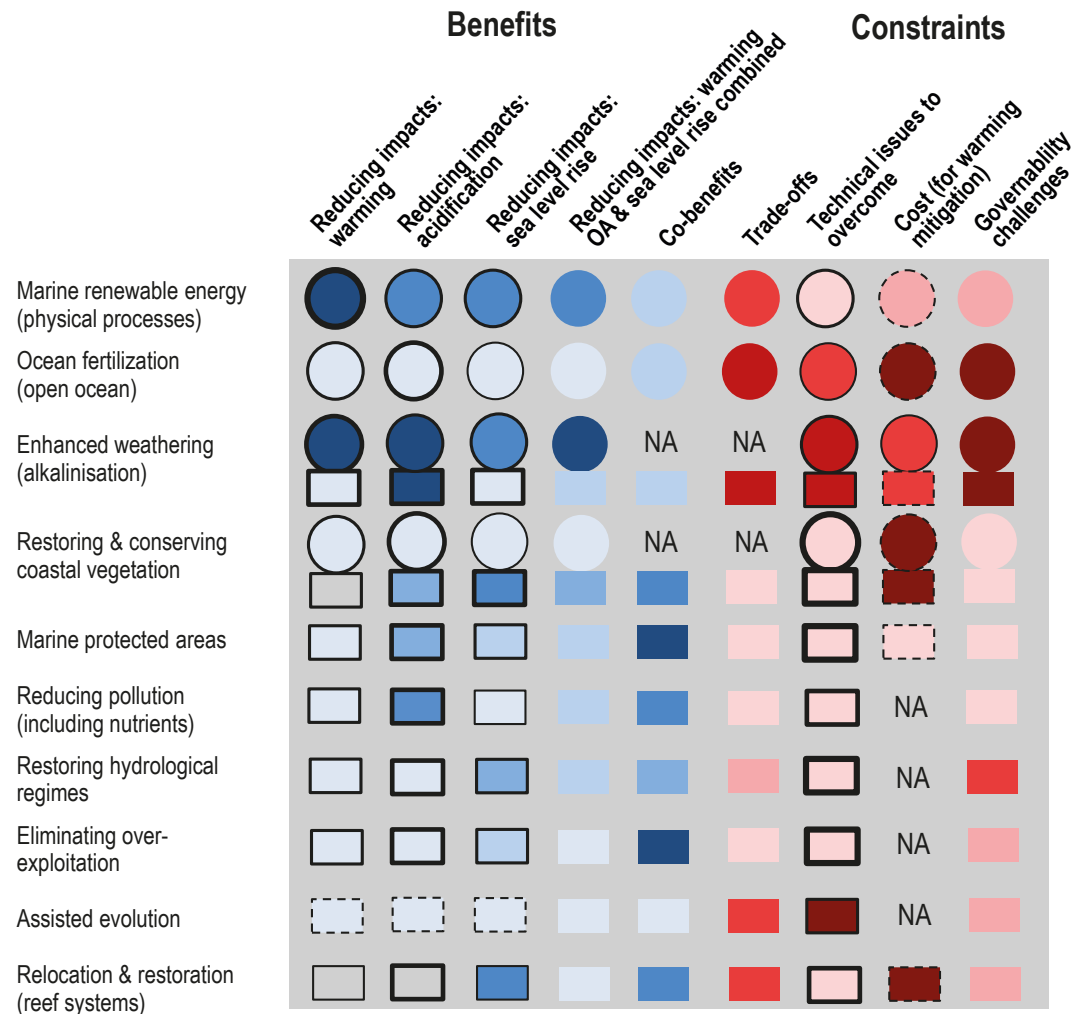


Ocean-based solar radiation
management will be covered in AR6

Reducing risks

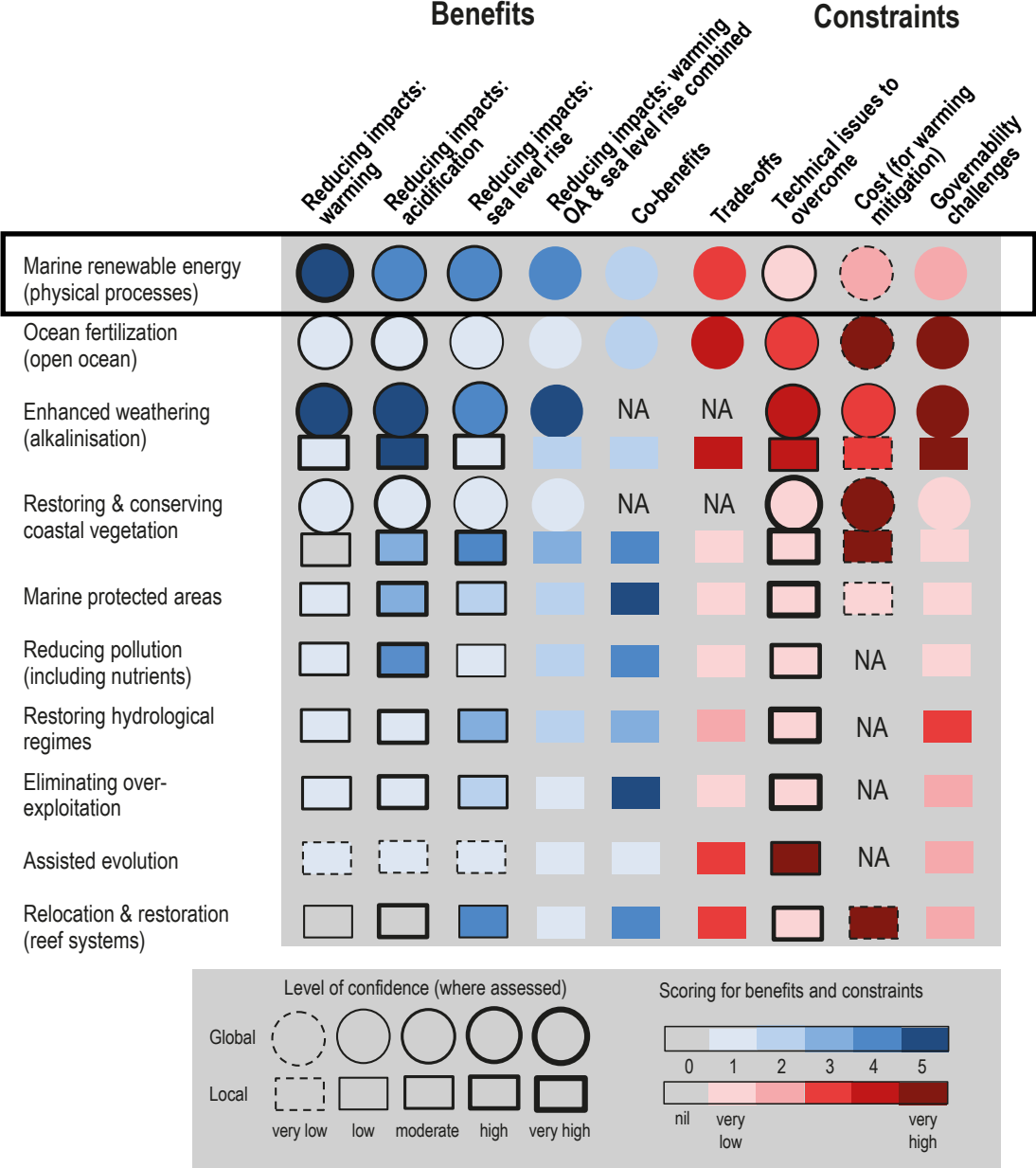


Assessment of ocean-based measures



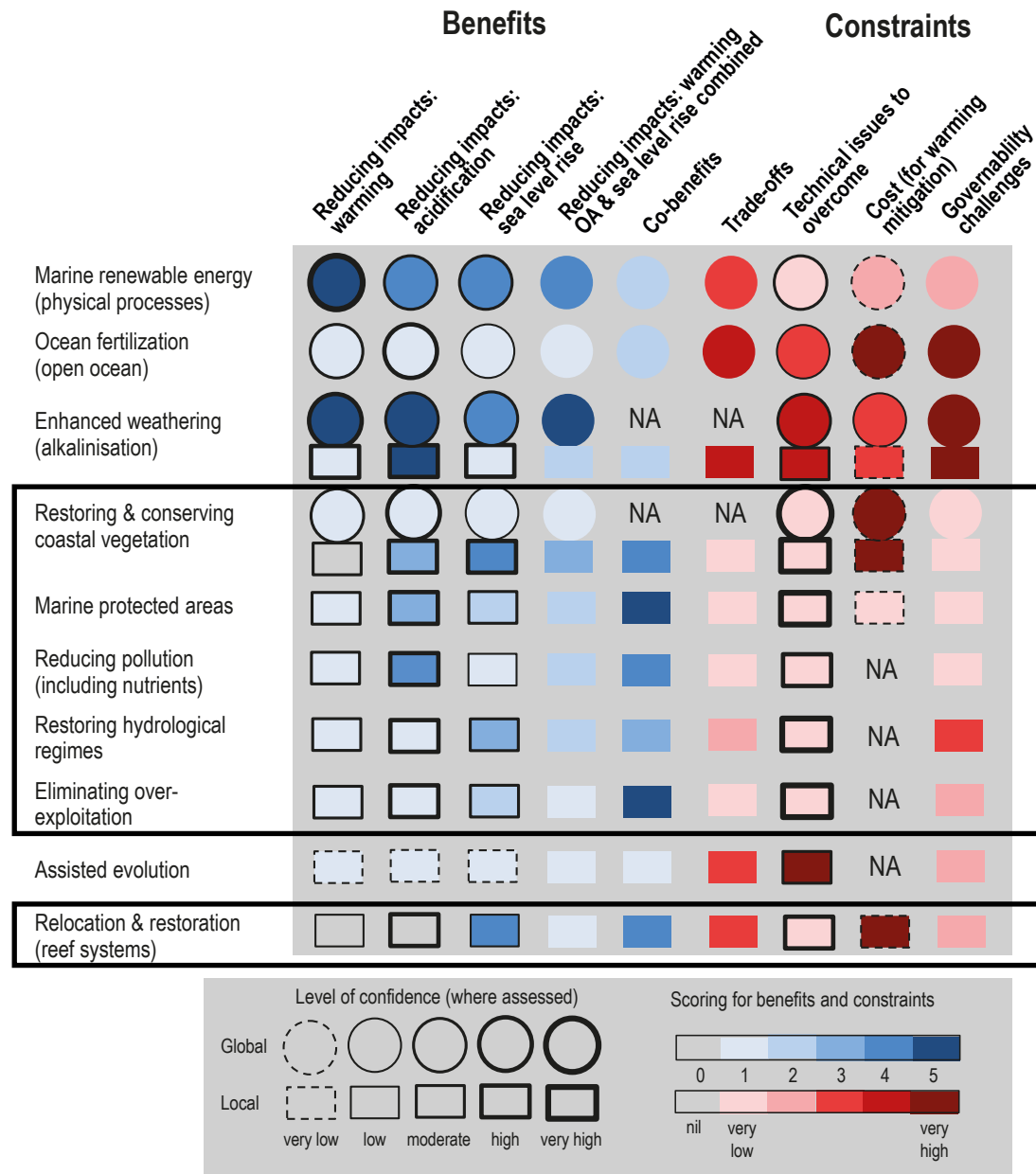
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Assessment of ocean-based measures



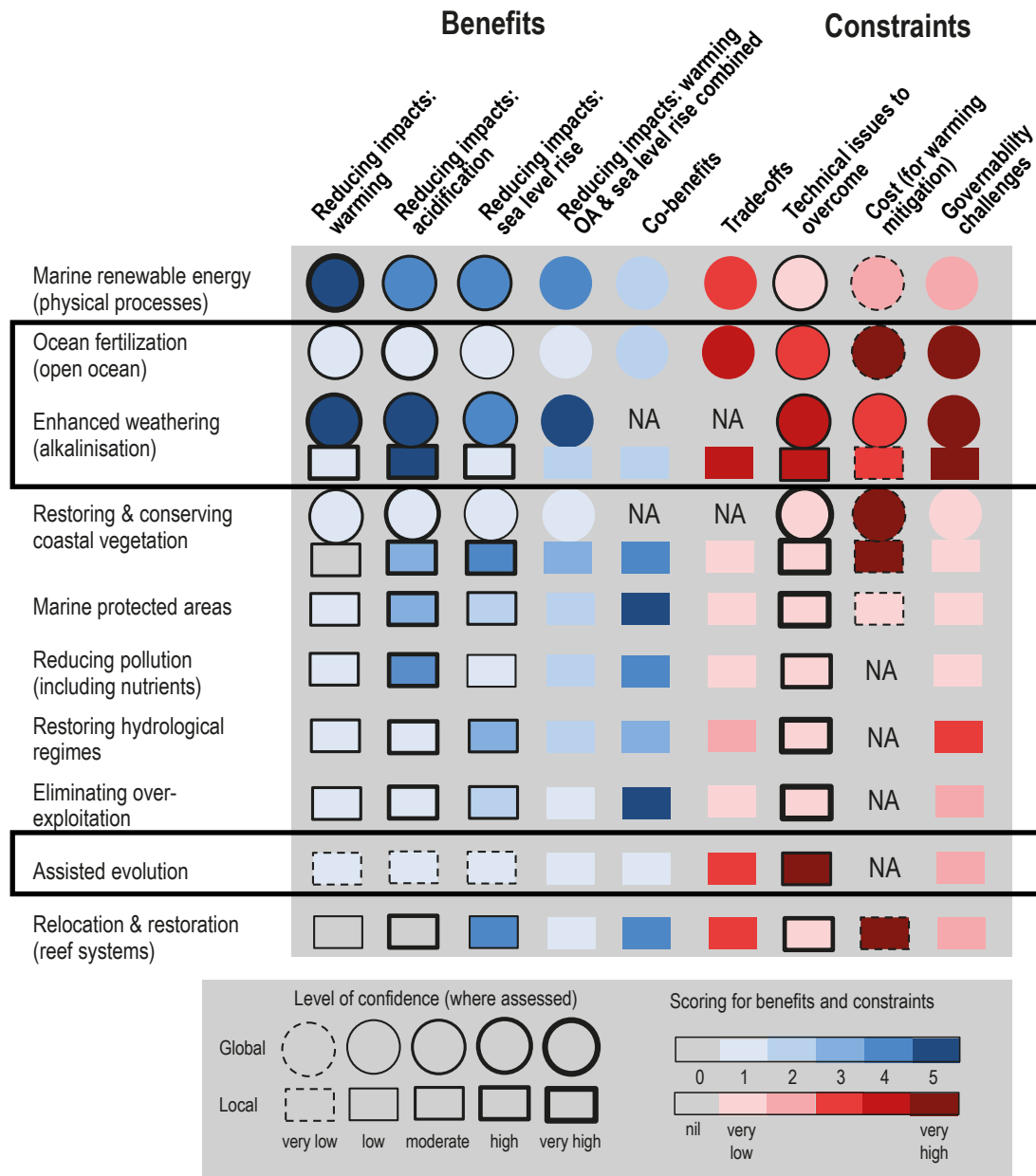
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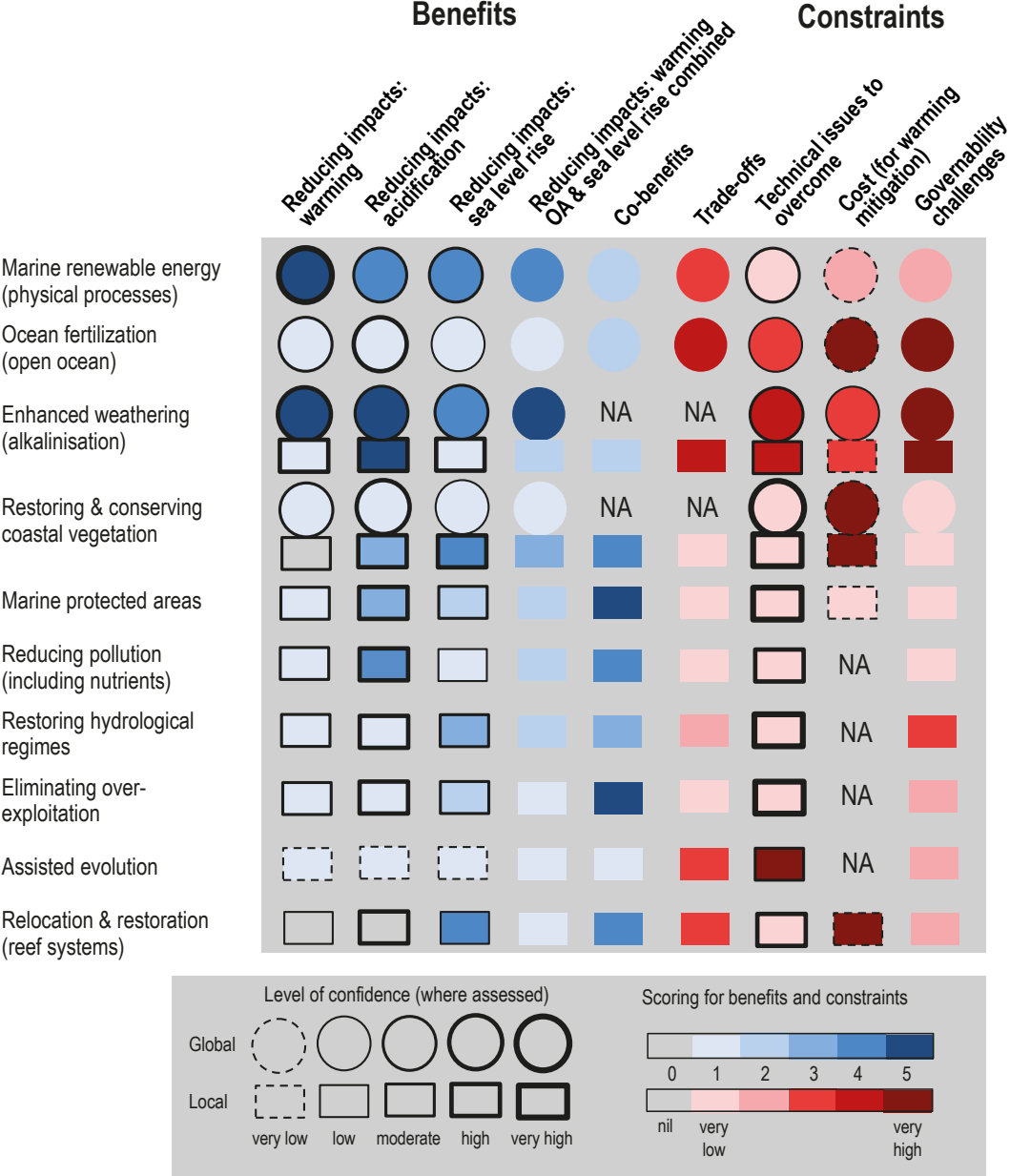
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Assessment of ocean-based measures



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Assessment of ocean-based measures



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(My own) Conclusions and key messages

- Climate change already affects marine and coastal ecosystems and the services they provide
- Paris Agreement has the potential to *avoid the unmanageable* but one must *manage the unavoidable*
- Urgent need for ambitious global mitigation and local adaptation: ocean provides solutions for both:
 - Most global measures (except renewable energy) exhibit too many uncertainties to be recommended for large-scale deployment
 - Local measures are low-regret options with huge co-benefits, can be scaled up immediately (although far less effective to address the global problem)
 - Greatest benefit is derived from the combination of global and local solutions



Opportunities for increasing ocean action in climate strategies

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The global ocean is warming, acidifying and losing oxygen, and sea level is rising. As a result, keystone species and ecosystems such as warm-water coral reefs, seagrass meadows and kelp forests will face high to very high risks by the end of this century even under low carbon dioxide (CO₂) emissions (IPCC, 2019). Moreover, low-lying coastal settlements will face moderate to high level rise risks by the end of the century, even under full and timely implementation of climate change mitigation, unless comprehensive and intense adaptation efforts are undertaken. Taking up efforts towards ambitious mitigation and adaptation.

The ocean offers opportunities to reduce the carbon footprint, globally and locally, as shown by *The Ocean Solutions* and other recent reports (Hoegh-Guldberg et al., 2019; Berenguer et al., 2019). Countries have poorly used ocean-based measures for tackling climate change in their Nationally Determined Contributions (NDCs; Gattuso et al., 2019). The process towards the 5-year revision of NDCs under the Paris Agreement and the UNFCCC, offers an opportunity for countries to develop ocean-based strategies.

Integrating ocean-based measures into climate policies and the revision of NDCs should be a priority. Ocean-related measures should not be considered as a side issue, but as a core element of climate action which must also be strongly pursued for the benefit of the atmosphere and the ocean.

¹ <http://bit.ly/2xj3EV6>.

² Ocean For Climate: Ocean-Related Measures in Climate Strategies, 2019. <https://www.becausetheocean.org/ocean-for-climate/>

KEY MESSAGES

The ocean is a key element of our life support system and provides many services. Ocean-based actions can maintain or increase those services despite climate change.

Ocean-related measures cover both mitigation and adaptation, and range across four clusters (Decisive, Low Regret, Unproven, Risky) that offer a policy-relevant framing for decision and action.

Advancing knowledge on ocean-based solutions is timely ahead of COP25 (known as the "Blue COP" because of its ocean focus); COP26, by which Parties are due to revise and enhance the ambition of their NDCs; and the Global Stocktake in 2023.

The next iteration towards more ambitious NDCs should scale up ocean-based climate action by prioritising Decisive (e.g. *Marine renewable energy*) and Low Regret (e.g. *Conservation and Restoration and enhancement of coastal vegetation*) measures, improving knowledge on the Unproven measures, and very cautiously weighing the Risky ones.

Decisive and Low Regret measures are both key priorities for action because (1) the full implementation of Decisive measures will not completely eliminate coastal risks and (2) the effectiveness of Low Regret measures, especially nature-based solutions, depends on the global warming level.

Considerably expanded:
Policy Brief presented on
Saturday

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