Our analysis of national policies (Niner et al., 2022) indicates that they focus on technical solutions that do not address systemic issues, such as discrimination, gender equality, and challenges posed by climate change (SDG 16C, 5 and 13). These limited blue economy policies have legal implications: they give rise to expectations in foreign investors (SDG 17.5), which are protected under international investment law, with the result that national authorities are limited in responding to local communities’ interests that are better aligned with the SDGs (Cotula and Berger, 2020).

We identified four challenges to strengthening sustainable ocean-based economies:

1. avoid reproducing historical and current injustices, by identifying and addressing contextual inequalities;
2. avoid exclusionary and non-responsive processes (SDG 16.7), by paying attention to local, national and global power imbalances that limit people’s abilities to engage in policy development;
3. avoid prejudice against local knowledge systems, by integrating intangible cultural heritage (SDG 11.4) and respecting cultural rights;
4. Accurately valuing blue natural capital, by integrating crucial marine ecosystem services (including deep-sea ecosystem services) on which humanity depends (notably, climate regulation and climate change mitigation, and contributions to human health).

New partnerships between researchers, civil society and small-scale fishers can: address multiple dimensions of poverty, connecting small-scale fishers to markets, contribute to ecosystem management, identify and address data gaps, contribute to de-risking ocean investment, connect capacity for valuating ocean resources, and contribute to strengthen national legal frameworks. These partnerships are informed by four inter-linked approaches:

1) human-rights based approach to empower small-scale fishers to inform decisions on sustainable ocean-based economies based on their values and knowledge systems. Human rights are relied upon to:
   • integrate evidence from the marine and social sciences, and different knowledge systems, to understand equity and sustainability issues at stake;
   • provide procedural standards for participatory processes;
- support policy coherence (SDG 17.14) by identifying solutions to comply with multiple international obligations (ocean, biodiversity, climate change); and
- clarify minimum protection (including for small-scale fishers, women, children).

2) a **standard framework on deep-sea ecosystem services** to include within decision making the benefits that these remote environments provide to society. Equally, this serves to better understand knowledge gaps in the management of supporting ecosystem services such as climate regulation, in order to prioritise new scientific efforts and the application of the precautionary approach in decision-making.

3) **integrating ocean science and historical analysis** of marine dispossession and injustices, which is vital for identifying human right holders who have been displaced from coastal environments and are left out from ocean decision-making processes; as well as supporting the recognition of local knowledge, customary laws, and intangible cultural heritage, and barriers to gender equality.

4) **arts-based approaches** to create more equitable public dialogue platforms to thinking through contentious issues without retreating into polarised positions (*Erwin, 2021*):
   - The **Empatheatre** play titled *Lalela Ulwandle* (*Listen to the Sea*) in South Africa shares the narratives of coastal people and support sconversation with diverse audiences;
   - photography and digital storytelling in Algoa Bay, South Africa, allow Indigenous and local knowledge holders as co-researchers to integrate cultural connections to the ocean in marine spatial planning (*Strand, Rivers and Snow*, 2022).

The integration of these strands of research and methods helps to create **platforms for knowledge sharing and co-development of solutions**, based on better understanding of:
- direct impacts on beneficiaries (e.g. increased resilience of communities);
- direct impacts on the environment (e.g. protection of marine and terrestrial environments);
- improved capacity (involvement of ocean educators). For instance, the **Coastal Justice Network** brings together small-scale fisher leaders, environmental justice organisations and researchers responding collaboratively to unsustainable blue economy initiatives along the South African coastline.

**Innovative finance (including climate finance) is needed for replicating and scaling up “ocean research for development”/ocean knowledge co-production** to support transformative partnerships between coastal communities, researchers and civil society, which at the same time builds capacities, and contributes to marine spatial planning, marine conservation, ecosystem restoration and climate change adaptation, leading to locally grounded and integrated policy and legal reform.

The **UN Decade for Ocean Science** needs to document and share good practices (including necessary funders’ conditions) on ocean knowledge co-production as an pre-condition to develop and implement sustainable ocean-based economies, in collaboration with **IPBES** and the **UN Decade for Ecosystem Restoration**.