3- Co-design and co-develop ocean prediction and ocean observing systems: Working closely with the observing system community to co-design and co-develop observing systems which are fit for purpose and deliver value.

Objective 12: New observations - Engage key-observing and key-end-user-focused partners to evaluate and communicate impact of new ocean observing systems.

Observations impact on the full value chain : how far should we go in this community?
It may not be our role **->** Engage with others and recognize their expertise and value is important

At least 2 step processes: OP can evaluate benefit on their own products but it another step is to assess the impact on (end/intermediate) user applications
-> Partnership with users (intermediaite/end) – can differ per OP centers

Observation networks seek for recognition:

Any **DOI per observation networks** that should be cited by OP centers when reporting/publishing on their systems?
Complex and multiple pathways from observation operator and OP centers is complex and "multiple" (do not rely on the same aggregator): **not all observations are traceable**

- Not a unique "data aggregator"
- Feedback loop from OP center to obs. networks to improve: table of obs is part of it.
- Better guideline when sending data on the GTS

« New » / emerging observations

Observations networks to link with:

- Underwater imagery, acoustic data for fishes, Fishing Vessel Obs. Net., smart cable, citizen sceince data, private low orbit satellites, unscrewed vehicules*,d*ata from the industries, BGC « fluxes »/rate, …
- Engaging with Marine life and MBON for marine ecosystem observations
- *remote sensing reflectance (lower level of processing)*
- old/historical observations data sets « digitalized »
- AI make the old observations new -> impact through reanalyses, things we can't use today but we could be able to use in the future

For assimilation: new data platform type cannot be « blindly »/immediately assimilated in OP forecasting system :

- At least quality/content check need to be done prior to assimilation
- We also rely on upstream data provider to inform on new data and their quality

1) Cross-cutting team activities (2026-2030 and *2031-2040*)

- **Strengthen collaboration** between DA, IV, OSEval TTs, OP centers & Obs. Agencies on systematic assessment for new observations
- ***Maintain sustained expert networks*** *linking obs. agencies, oper. centers & user communities*
- **Improved communication:**
  - establish structured pathways to share results with end users, oper agencies & funding bodies,
  - regular update of OP report on observing system impact,
  - open access to observation impact reports
- *Establish* ***continuous feedback mechanisms*** *between forecast performance and observing system evolution*

2) Leveraging UN Decade Activities (2026-2030 and *2031-2040*)

- Evaluation of new obs. syst. aligned with UN Decade programme, Digital Twins
- Coast Predict
- *Ensure legacy of UN decade activities on new observation evaluation framework*
- *Transition Decade-supported observing pilots into sustained operational practice.*
- *Contribute OceanPredict expertise to future global observing system initiatives.*

3) Key priorities (2026-2030 and *2031-2040*)

- AI/ML tools to optimize use of new observation streams while maintaining transparency and scientific rigor
- Fish-aggregating-devices for measuring ocean currents (crosscutting TT act.)
- BGC observations including Argo BGC (crosscutting TT act.)
- Cost effective/low cost ocean technologies
- Citizen science
- *Promote long-term integration of innovative observing technologies into operational systems*
- *Satellite Ocean current, Magnetic fields, sound originated from earthquakes.*
- *Implement strategy devoted to the acquisition of large set of data with low-quality (i.e. temperature from smartphone ect) -> GOOS / obs. aggregators ?*

4) Partnership required (2026-2030 and *2031-2040*)

- Space agencies, in situ networks, Argo, WMO, IOC, OP DCC to ensure regional representation in impact assessments
- Engage end users (government agencies, marine services, private sector actors) to ensure impact communication is relevant and actionable.
- *Foster durable partnerships with user communities to support effective communication of observation impact.*

5) other:

- Promote open access to assessment tools
- Improved Brazilian **coastal** observing system