

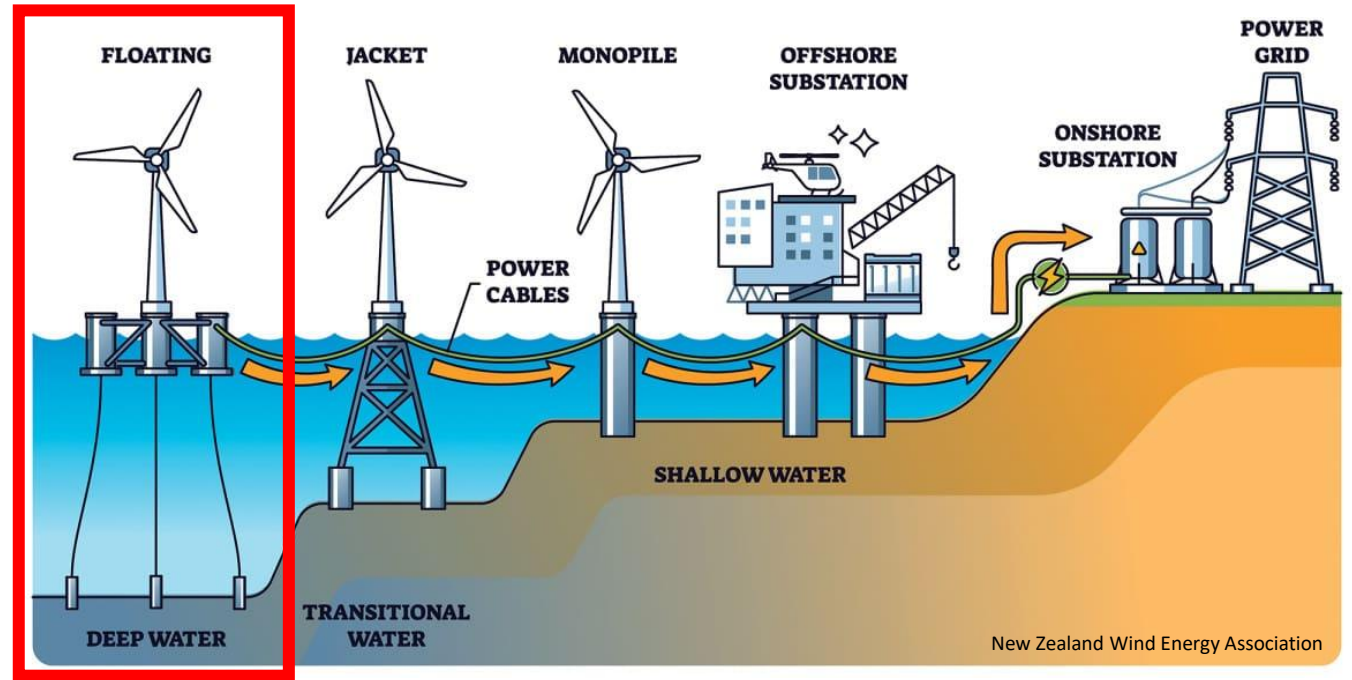
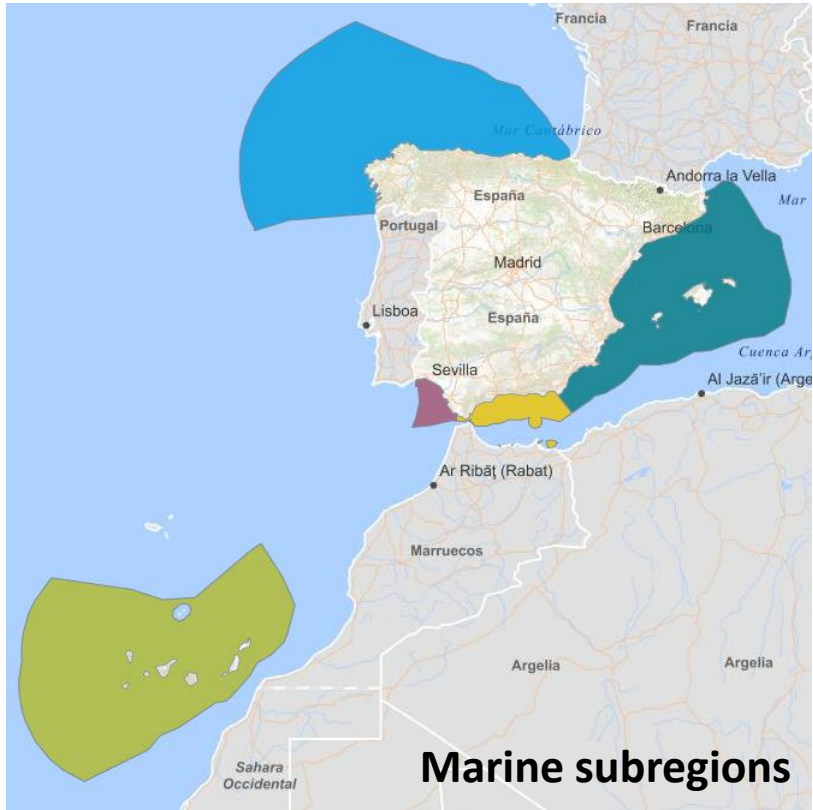
Socio-economic impacts of offshore wind development on the fishing sector in Spain: insights from the literature for Maritime Spatial Planning



Andrea Rivas Navarro

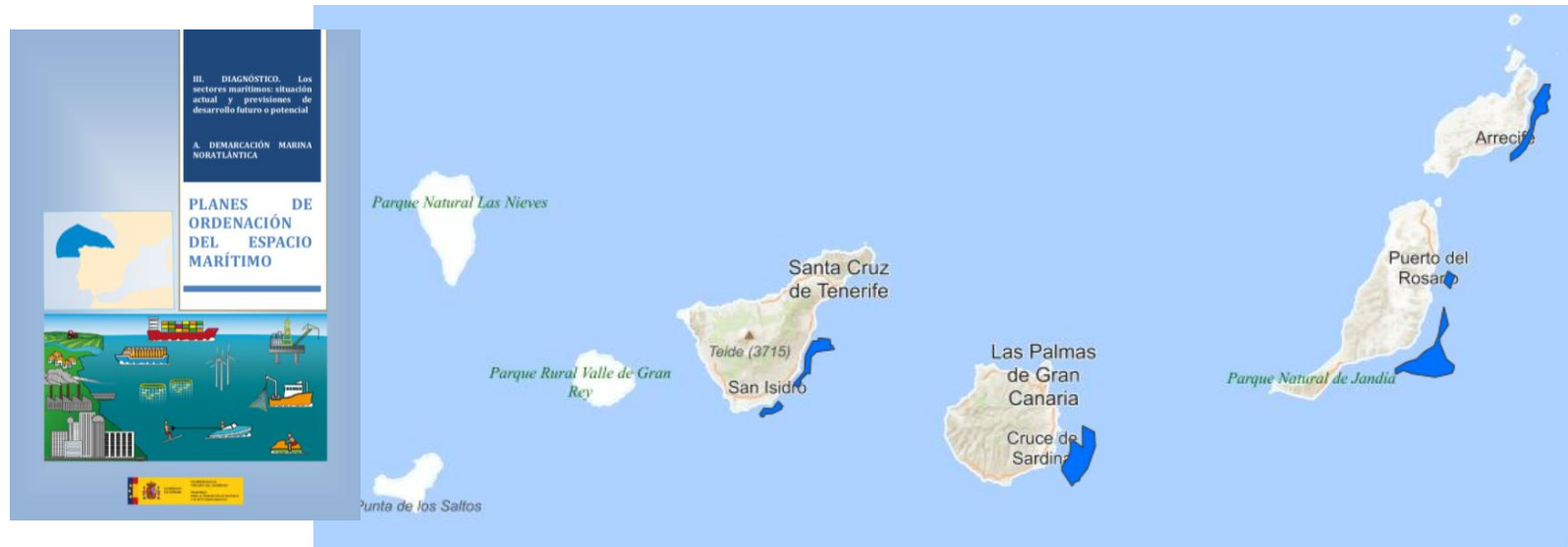
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Spanish context



Spain cannot directly replicate Northern European experiences

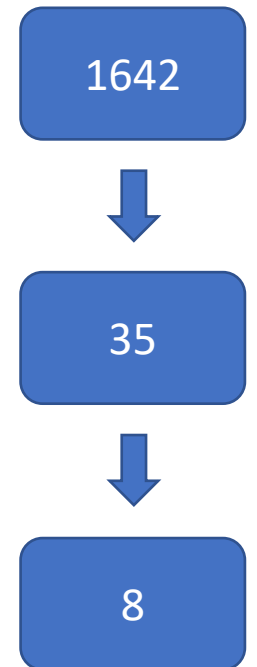
- Narrow continental shelf
- Floating offshore wind
- Coastal and small scale fisheries
- Crowded coastline with multiple uses



Material and methods

PRISMA framework, using a query with three main sections (fisheries, OWF and socioeconomic)

IDENTIFICATION	<ul style="list-style-type: none">Records identified through database searching (TIT-ABS-KEY) (Scopus + WoS): n = 1642
SCREENING	<ul style="list-style-type: none">Records screened (TIT-ABS): n = 1199Remaining after screening: n = 185
ELIGIBILITY	<ul style="list-style-type: none">Records assessed for socio-economic relevance (n = 185)
INCLUSION	<ul style="list-style-type: none">Final analytical sample (direct socio-economic impacts): n = 35Spanish case: n = 8



Scarcity of operational socio-economic evidence

Two analytical levels

This distinction resulted in the identification of two analytical levels:

- (i) structural socio-economic dimensions (governance, MSP, exposure)
- (ii) **direct socio-economic impacts** (measured changes, indicators, or economic effects)
→ focus on Spain

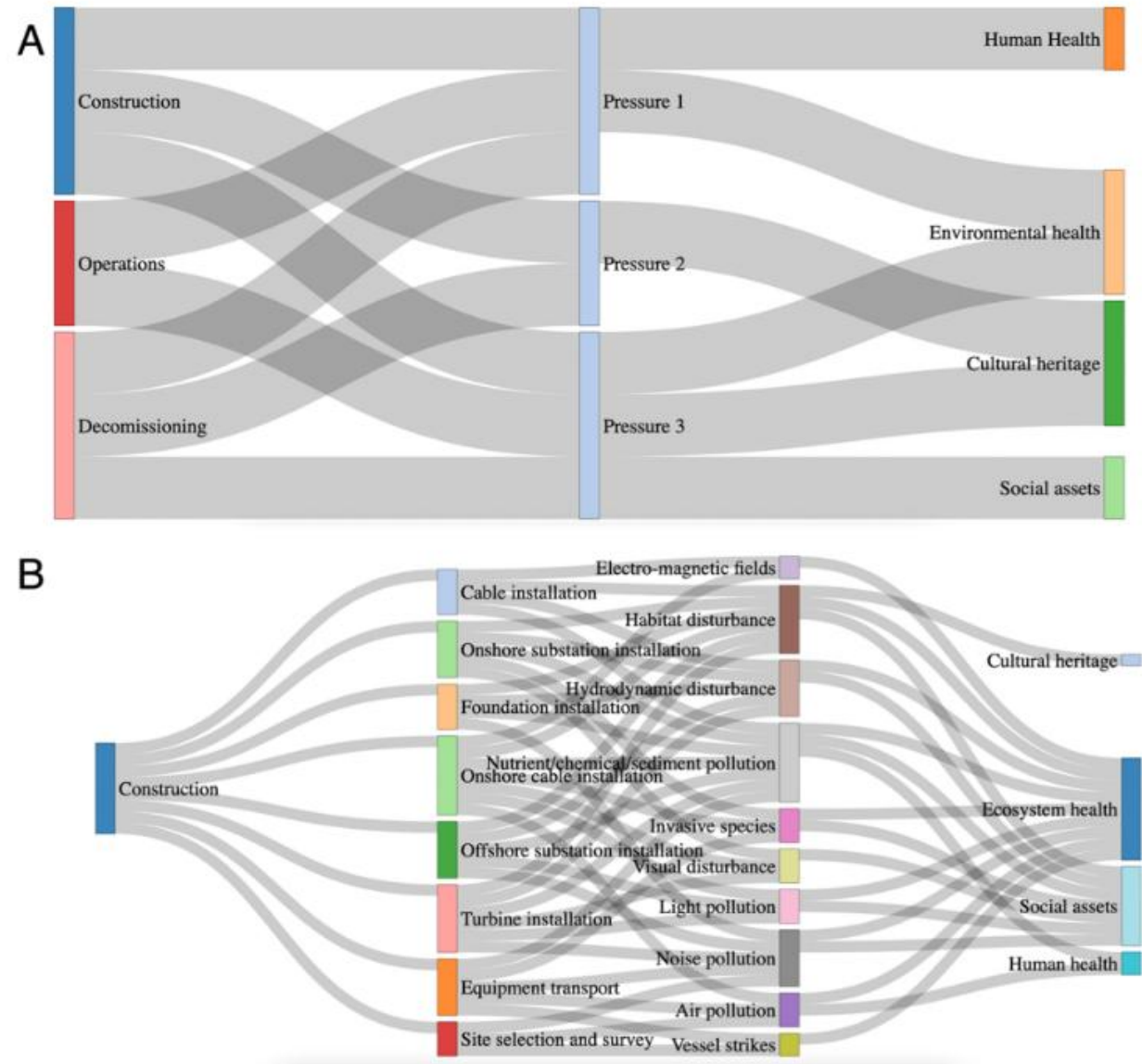


Fig. 1. Schematic demonstrating how a modified DAPSIR framework could be used for offshore wind farm environmental impact assessment. A) Theoretical example of drivers, pressures, and impacts from offshore wind. B) Application of the DAPSIR framework based on information reported in the Greater Gippsland offshore wind farm environmental effects statement considering the Construction phase and its associated activities, broad pressure and impact groups.

OWE → pressures → fisheries impacts → socioeconomic effects

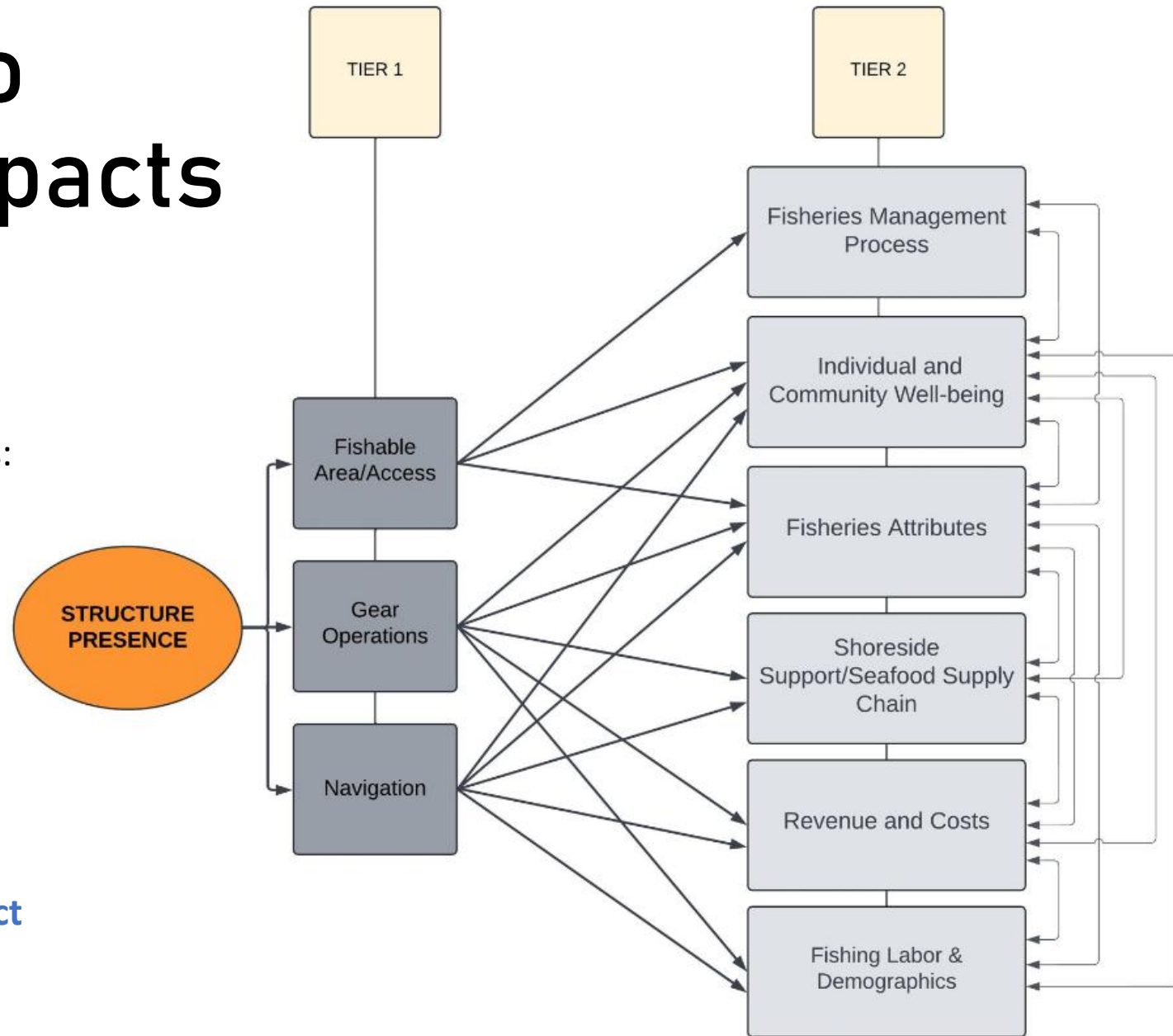
From pressures to socioeconomic impacts

Fishable Area/Access (direct)

does not just mean "less space", it triggers:

- shifts in fisheries attributes
- increases revenue and costs
- impacts individual well-being

Pressure → direct impact → indirect impact

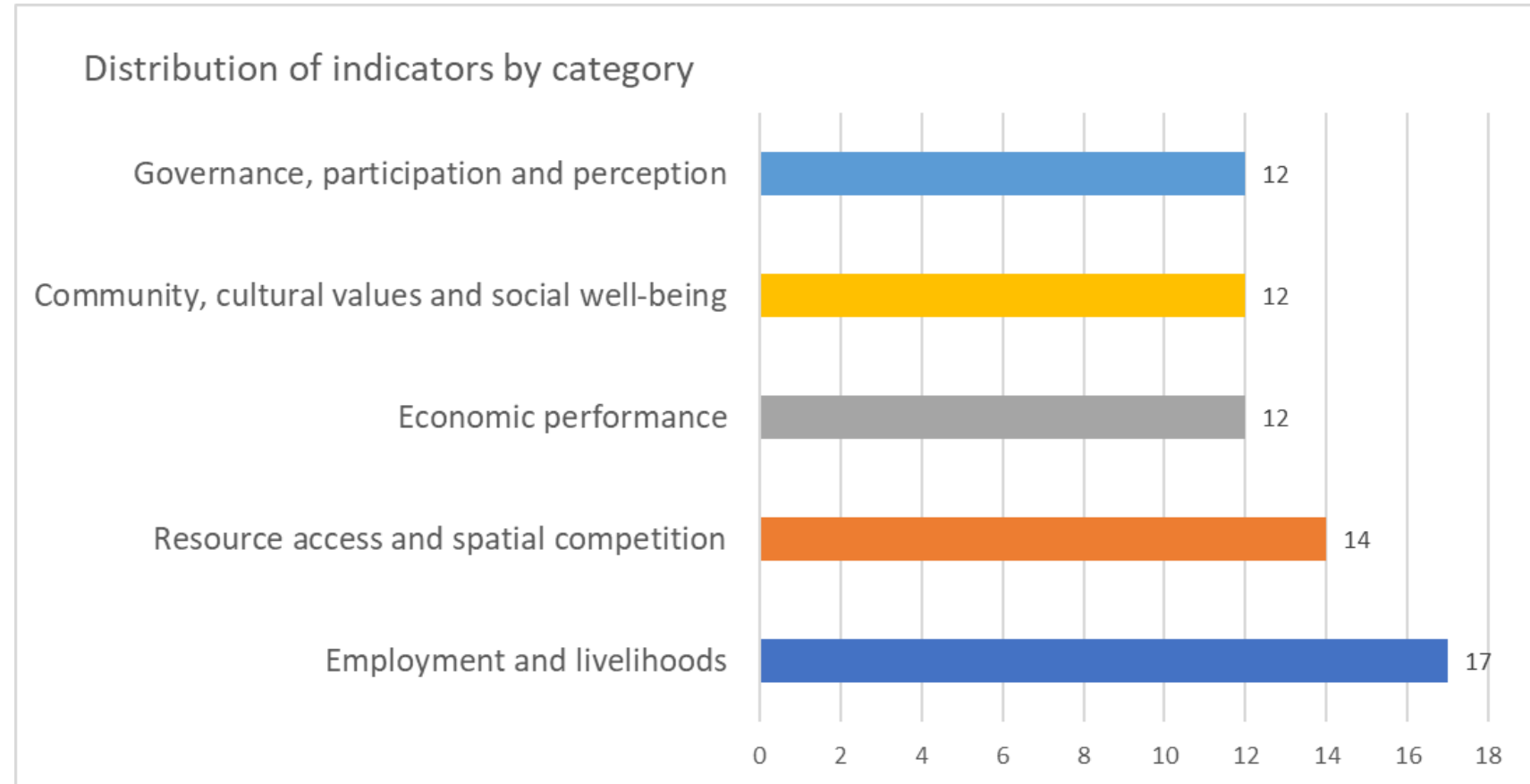


Socioeconomic indicators identified in Spain

- 67 indicators were identified:

34 economic and 33 social

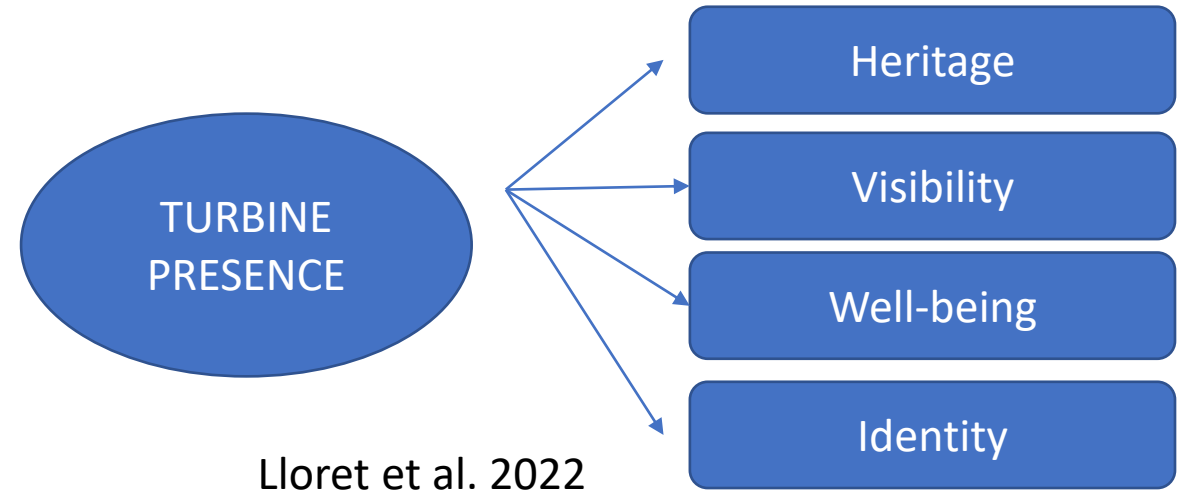
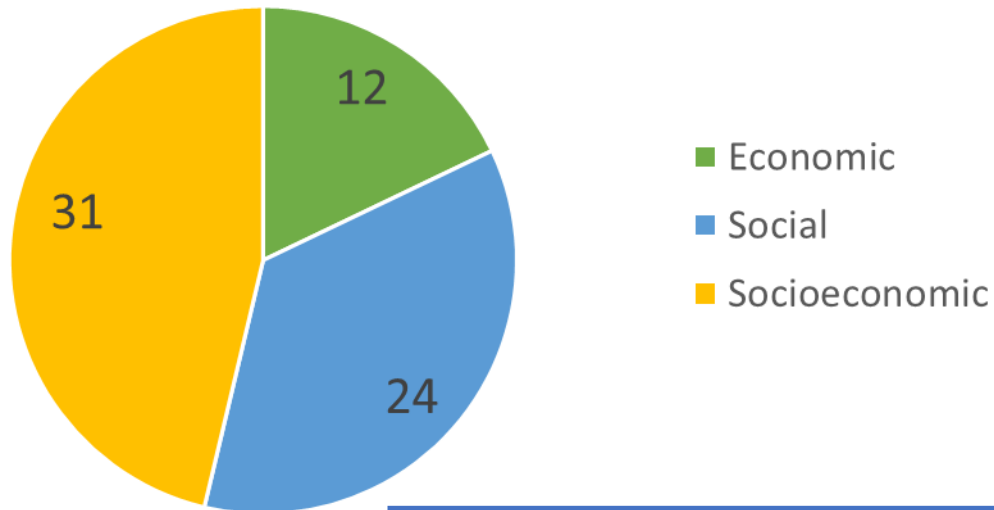
- Many socioeconomic indicators are operationalised through **spatial variables** such as overlap, access restrictions, distance, or space demand.
- These are frequently used as **proxies** to assess socioeconomic impacts.



No common methodological framework was identified

Socioeconomic indicators identified in Spain

Distribution of indicators by socioeconomic nature



Lloret et al. 2022

Category	Dimension
Employment and livelihoods	Socioeconomic
Resource access and spatial competition	Socioeconomic
Economic performance	Economic
Community, cultural values and social well-being	Social
Governance, participation and perception	Social

Why does this matter?

- No operational OWF yet.
- Heavy reliance on proxy indicators.
- Limited validation of indicators.
- No standardised framework.



Current decisions rely largely on assumptions rather than observed impacts.

Conclusions

- Spain remains in a **pre-development phase**.
- Socioeconomic assessments rely heavily on **spatial proxies**.
- A harmonised **indicator framework** is still **missing**.
- **TEG Data for MSP** can help to bridge this gap.

The challenge is not only identifying indicators, but ensuring that they are **comparable, operational and useful for decision-making**.

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Thank you!

Open questions:

- Which **socioeconomic indicators** have been most useful in your countries?
- How are **indirect or cumulative impacts** being monitored?
- Are there existing **standardized frameworks** that could be useful for my research?

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