

Under the High Patronage of His Majesty King Mohammed VI



XIX WORLD WATER CONGRESS
International Water Resources Association (IWRA)
Marrakech, Morocco | 1-5 December 2025

Kingdom of Morocco

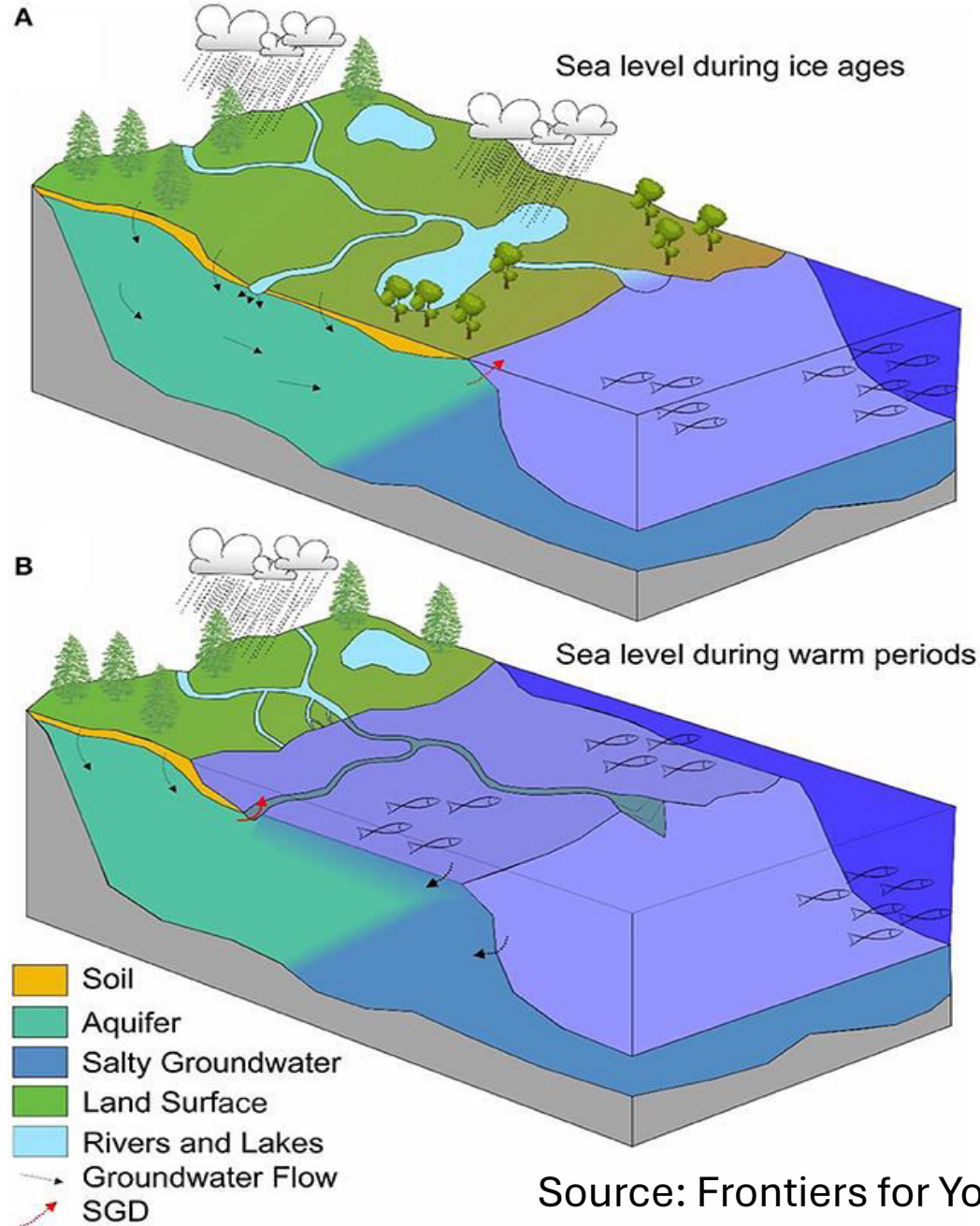


Ministry of
Equipment and Water

Offshore Freshened Groundwater: An Untapped Resource

Renée Martin-Nagle, PhD
A Ripple Effect
3 December 2025

ORIGINS OF OFFSHORE FRESHENED GROUNDWATER



Source: Frontiers for Young Minds



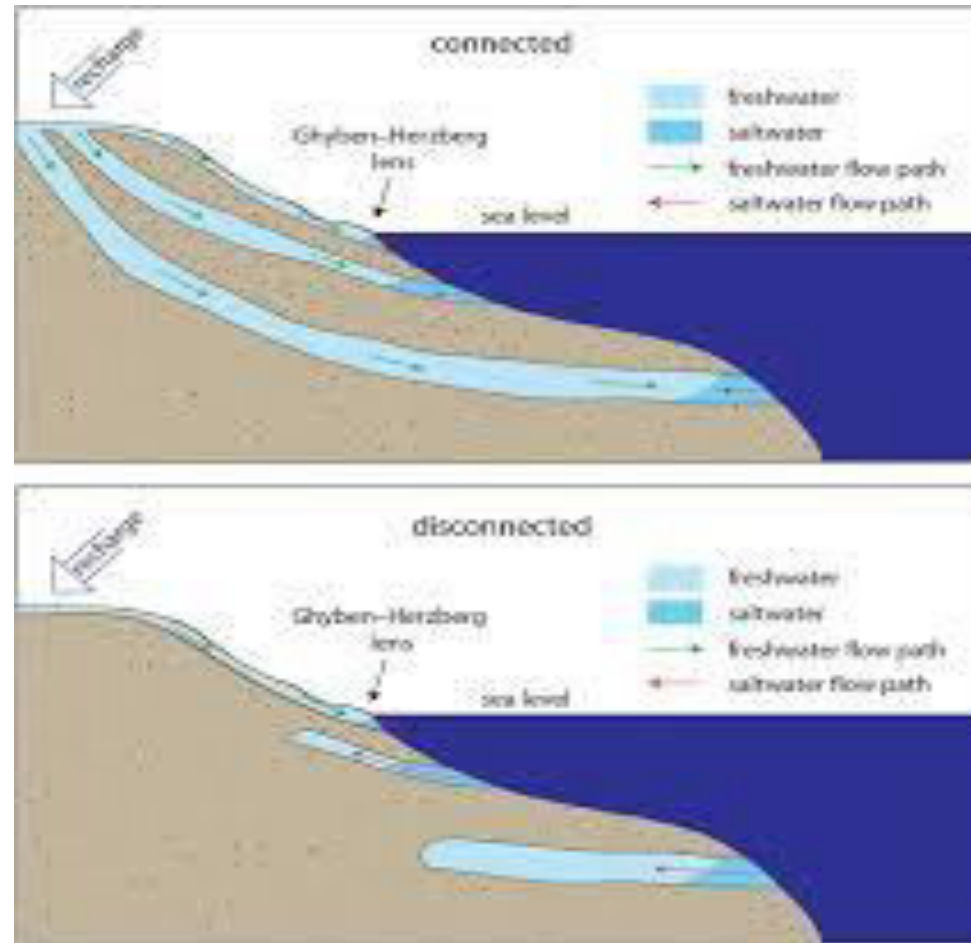
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TYPES OF OFFSHORE FRESHENED GROUNDWATER



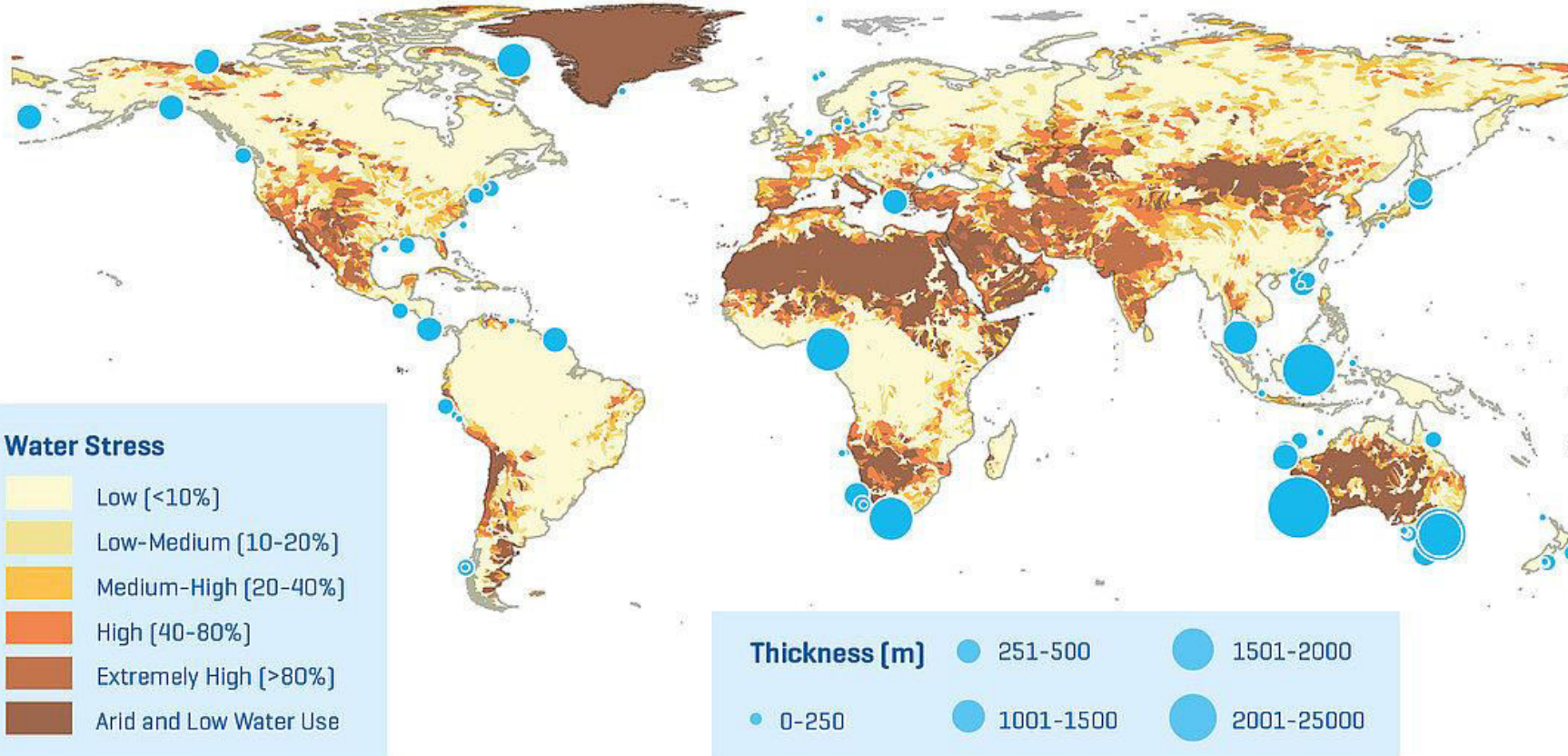
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Source: Weymer et al



Global Distribution of Offshore Freshened Groundwater



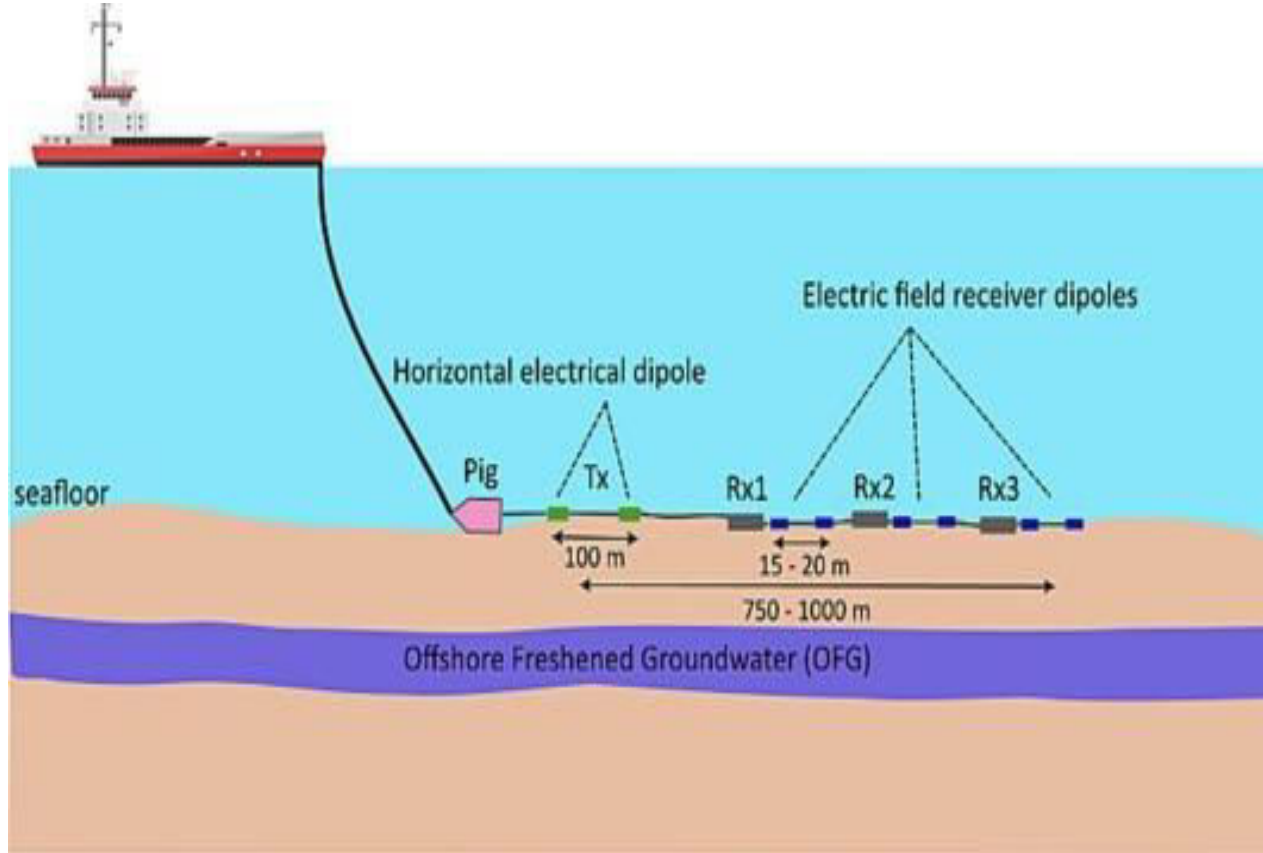
Source: GEOMAR



FINDING OFFSHORE FRESHENED GROUNDWATER



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Source: Faghii et al



Source: Nantucket Current



SALINITY PATTERNS



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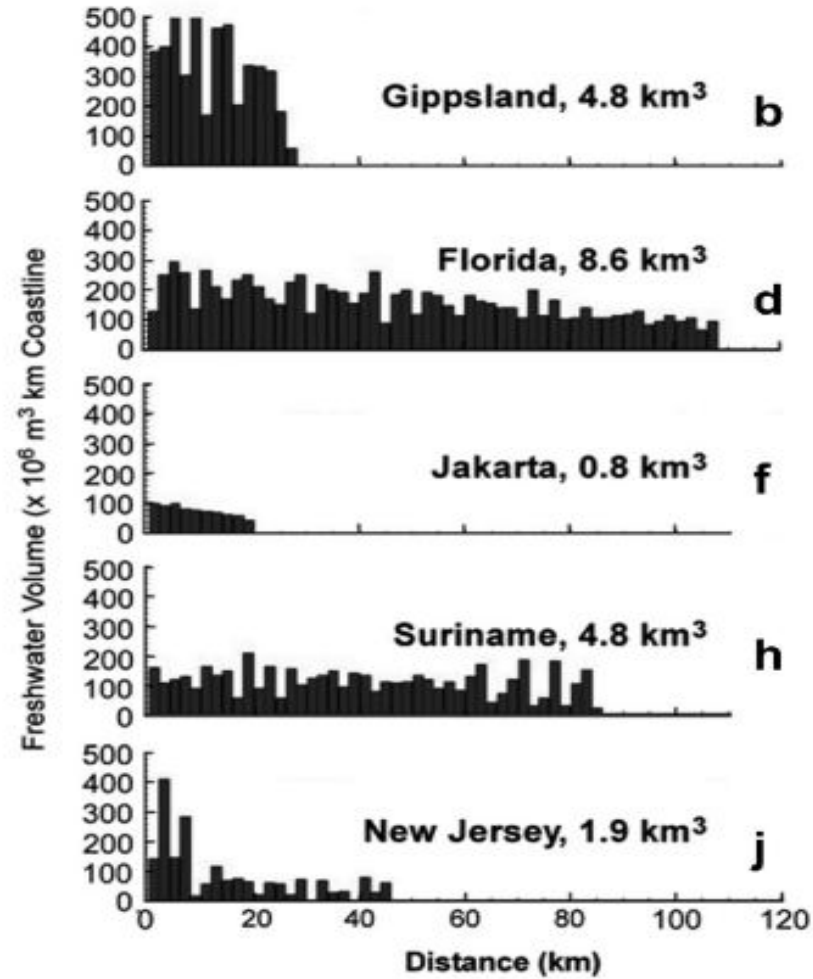
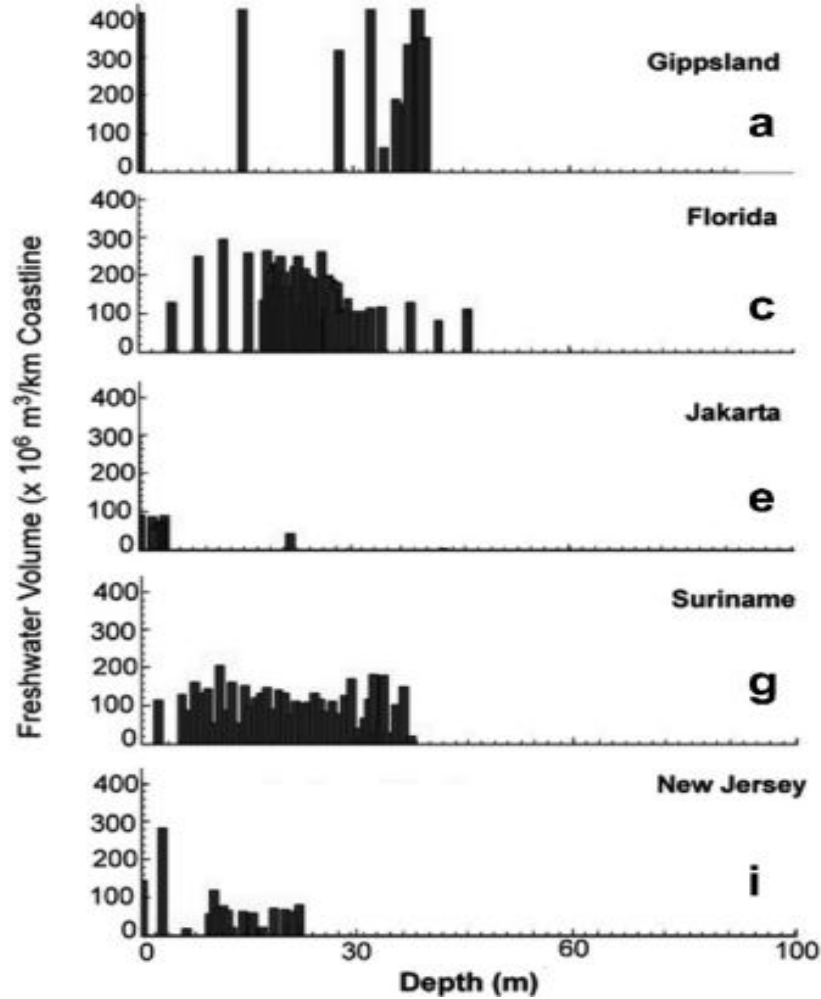
Source: Gustafson et al



DEPTHS AND DISTANCES



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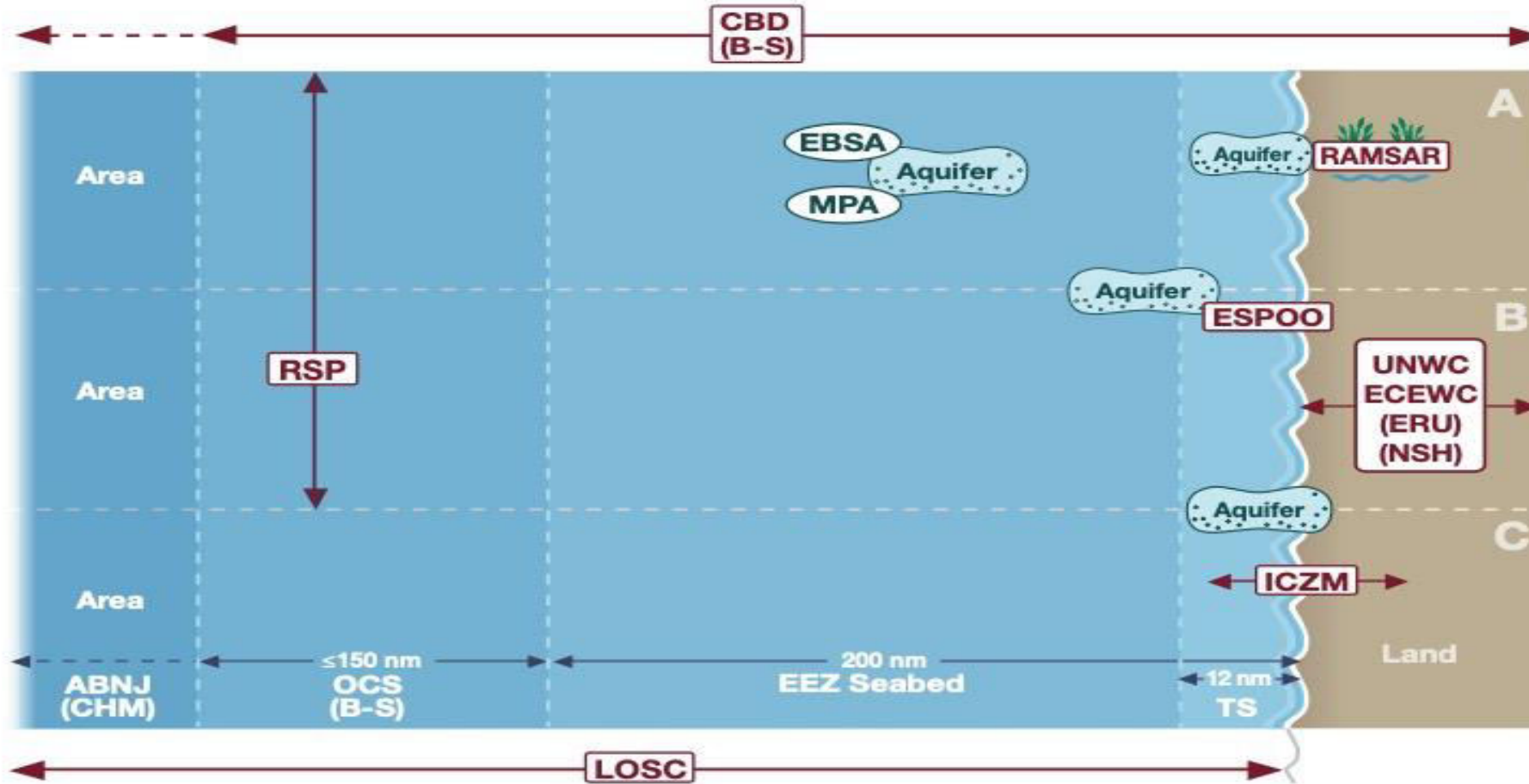
Source: Person & Micallef



OVERLAPPING GOVERNANCE REGIMES



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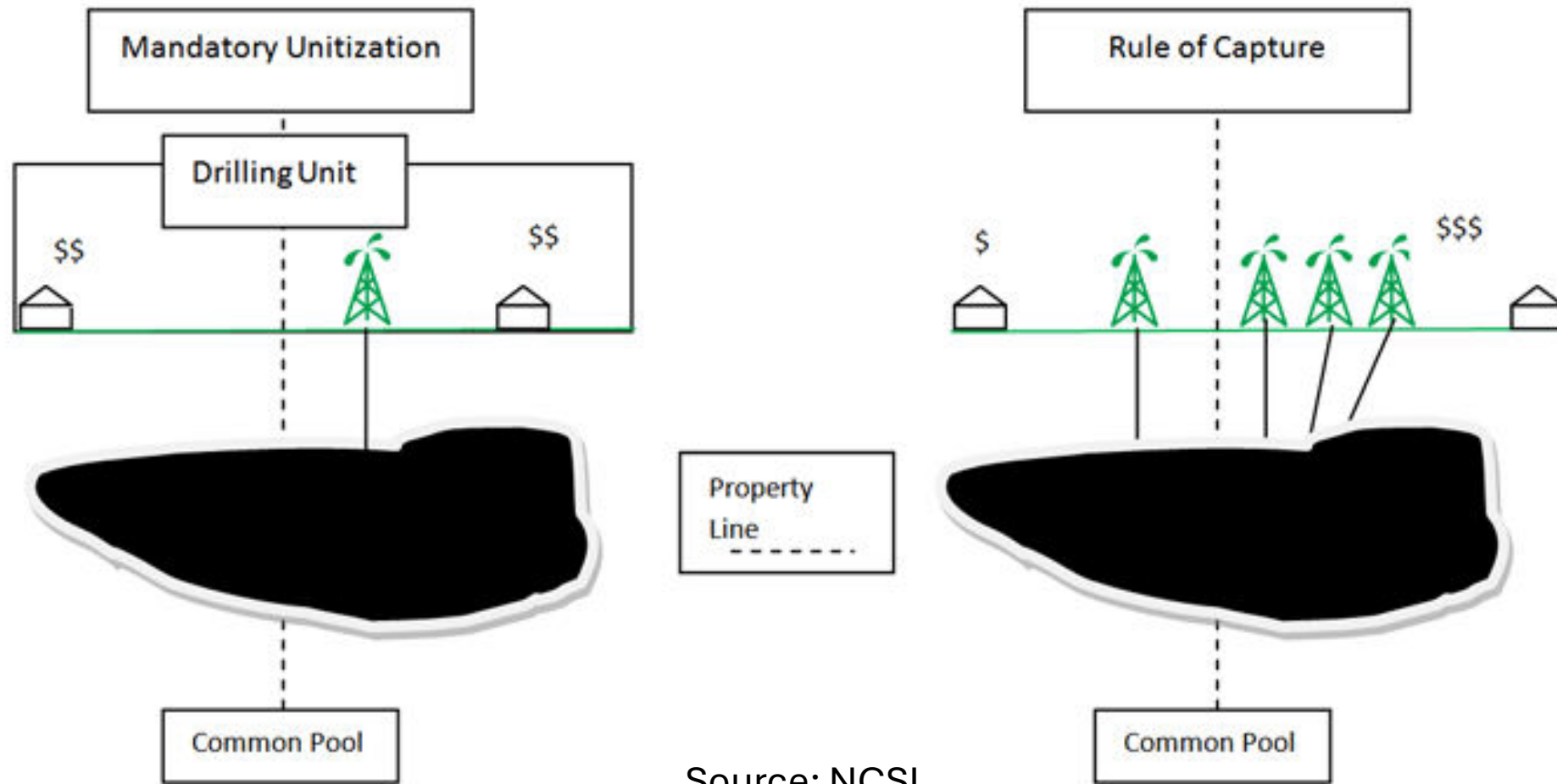
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TRANSBOUNDARY DEVELOPMENT



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Source: NCSL

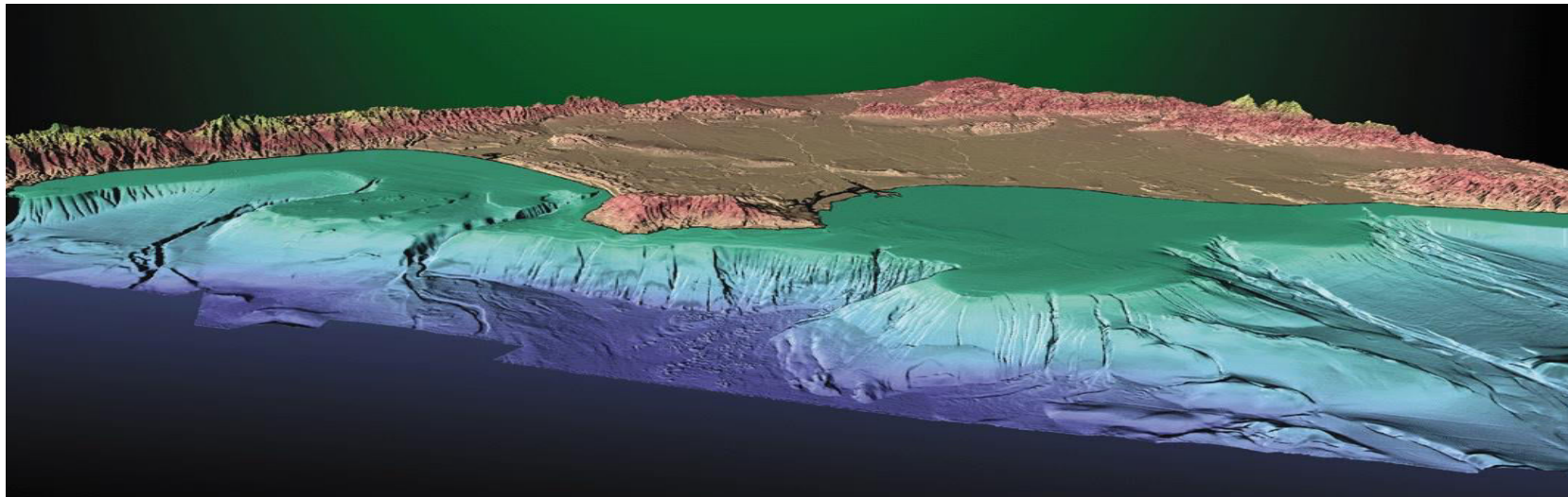


SOME PREDICTIONS



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- OFG will be utilized as a coastal freshwater resource
- No development of OFG until water prices rise
- UN Convention on the Law of the Sea will govern ownership
- Offshore hydrocarbon practices will be used for transboundary OFG



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Thank you!

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Social media

www.worldwatercongress.com