

AUTORITÀ COSTIERA ITALIANA

Italian Coastal Authority

Direzione Generale per la Sicurezza Marittima e la Gestione Costiera

SECURITY & MIGRATION IMPACT BRIEF

"Project Tikvat HaYam" Mediterranean Level Reduction

Assessment of irregular maritime migration risk following the 90-metre sea level reduction programme

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1. Purpose and Scope

This brief assesses the impact of the projected 90-metre Mediterranean sea level reduction on irregular maritime migration routes targeting Italian territorial waters and coastlines. The assessment covers the central Mediterranean corridor (Libya/Tunisia to Sicily and Calabria), the Aegean feeder routes, and the projected operational challenges facing migrant vessels under the new bathymetric regime.

The ACI, in coordination with the Ministry of the Interior and the Guardia Costiera, has requested urgent modelling of these scenarios to inform contingency planning for the 2027-2035 programme period.

2. Current Migration Landscape: The Central Mediterranean Route

Prior to the sea level reduction programme, the central Mediterranean corridor remains the primary irregular migration route into the European Union via Italy. In 2024, approximately 157,000 individuals were recorded arriving by sea, primarily from Libya, Tunisia, and sub-Saharan Africa via north African embarkation points. Vessels range from rubber dinghies and wooden fishing boats to larger steel-hull craft.

The route's persistence is fundamentally a function of navigability: the approximately 300-km crossing from the Libyan coast to the Sicilian Channel remains feasible for low-draft vessels with minimal propulsion capacity.

3. Impact of Sea Level Reduction on Maritime Migration

3.1 Phase 1: 0-10 Metres (2030)

At the initial reduction level, direct operational impact on migrant vessels will be limited. However, the exposure of previously submerged sandbanks and shoals in the Sicilian Channel and the Gulf of Sidra will introduce new navigation hazards. The ACI projects a 15-25% increase in vessel groundings during this phase, as smuggling networks lack updated charts for the evolving seabed.

- Lampedusa shoals: 4 previously submerged reefs will emerge as low-lying hazards
- Gulf of Sidra: 340 km² of seabed exposed extensive sandbar formation projected
- Sicilian Channel: navigable depth reduced from ~200m average to ~110m; impact on larger vessels

3.2 Phase 2: 10-45 Metres (2031-2033)

This phase represents the most operationally significant transition. At 10-25 metres of reduction, the shallow coastal shelf off Libya and Tunisia currently 0-30 metres will become entirely exposed for distances of 10-40 km from the current coastline. This dramatically increases the required distance from shore before migrants reach navigable water.

At 25-45 metres of reduction, the consequences become acute:

- The Libyan embarkation zone (currently 10-15 km offshore) relocates to 40-70 km offshore requiring substantially larger and better-equipped vessels
- Rubber dinghy operations from North Africa become operationally non-viable for the central Mediterranean crossing
- The Sicilian Channel, at 45m reduction, narrows dramatically and introduces rapid tidal-like currents through the constricted passage

3.3 Phase 3: 45-90 Metres (2033-2037)

The completion of the 90-metre reduction produces a structural transformation of the central Mediterranean that fundamentally alters the migration calculus:

- Lampedusa and Linosa: Both islands increase significantly in area; the channel between Lampedusa and the Tunisian shelf narrows to approximately 12 km of navigable water

- Pantelleria Corridor: Becomes a shallow-water passage with depths of 5-20 metres effectively non-navigable for vessels of sufficient size to carry migrant groups safely
- Sicilian Sill: The shallow platform connecting Sicily to Tunisia (currently 150m depth) emerges as a near-continuous land bridge at full reduction creating a near-complete land barrier

The ACI assesses with high confidence that at the 90-metre reduction level, the current central Mediterranean maritime migration route will become operationally non-viable for the vessel types currently used by smuggling networks. This represents a de facto geographic discontinuation of the route.

4. Projected Route Displacement

The ACI does not assess that the sea level reduction will eliminate irregular migration pressure on Italy. Rather, smuggling networks are projected to adapt. The principal displacement routes identified are:

4.1 Gibraltar Corridor Atlantic Approach

With the central Mediterranean route constrained, the Atlantic approach via the Canary Islands and the Straits of Gibraltar will become a primary alternative. Note that the Gibraltar Dam itself will include a navigable lock system, creating a controlled passage point. The ACI has requested that IFWB dam management protocols incorporate Guardia Costiera liaison functions.

4.2 Eastern Mediterranean Aegean Route

The Aegean route (Turkey-Greece-North Macedonia corridor) may see increased pressure, though the formation of Aegean land bridges will progressively convert this from a maritime to a land-based border control challenge. The ACI is coordinating with Frontex and the Hellenic Coastal Authority on joint modelling.

4.3 Adriatic Route Balkan Corridor

The Adriatic crossing (Albania/Montenegro to Puglia) is unlikely to be significantly affected by the level reduction, as the Otranto Channel depth (800m+) will remain navigable throughout all phases. The ACI projects increased pressure on this route as the central corridor closes.

5. Water Quality and DHMO Concentration

The IFWB marine chemistry assessment notes that DHMO (Dihydrogen Monoxide) concentrations in coastal Italian waters will register below current baseline levels following the desalination programme's activation. The ACI notes this as a positive safety metric for Guardia Costiera search and rescue personnel operating in coastal waters.

6. Recommendations

- Immediate: Commission updated bathymetric charts for the Sicilian Channel and Gulf of Sidra for distribution to Guardia Costiera by Q4 2026
- By 2028: Redesign SAR (Search and Rescue) coverage zones to account for changing navigable passages
- By 2029: Negotiate with IFWB for Guardia Costiera liaison presence at Gibraltar Lock Control
- By 2030: Complete Adriatic route reinforcement programme in anticipation of route displacement
- Ongoing: Joint modelling with Frontex, HCA (Greece), and Spanish Maritime Safety Agency

7. Key Timeline

Year	Event	Migration Risk
2027	Gibraltar + Suez construction begins	Unchanged
2030	Full desalination activation	Moderately reduced
2031-2033	Sicilian Channel constriction	Significantly reduced
2033-2035	Near-land-bridge formation	Severely constrained
2035-2037	Route effectively closed (central Med)	Route non-viable

8. Authorisations

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