



Organization: Diaries of the Ocean

Location: Kharayeb Village, South Lebanon Region, Lebanon

Solution: Restoring sand dune ecosystems using wooden fences and native plants to enhance climate resilience and protect local livelihoods

Factsheet Period: First round of UNDP AFCIA funding (16 months)



In Lebanon, the Diaries of the Ocean team conducts inspections to restore sand dune ecosystems @Diaries of the Ocean

Tourism along Lebanon's 225km coastline is a major contributor to the local economy, contributing around 18-19% of GDP and total employment (Investment Development Authority of Lebanon, 2018). In the southern coastal village of Al Kharayeb, the wellbeing of its 11,000 residents depends on agriculture, beach tourism and their small businesses. Its agricultural plains are currently protected against sea storms with expensive concrete walls that are destructive to the natural environment, and vulnerable to increased wave and erosion. Diaries of the Ocean aims to reinforce and restore natural sand dunes by constructing wooden fences to protect agriculture plains near the beach, and to slow the degradation of sandy beaches that attract beach tourism. The solution uses sustainable, soft engineering techniques to boost the resilience of vulnerable communities to climate change.



Key achievements

- Conducted scientific studies on flora assessment, seed collection, germination, beach profiling, and economic valuation of sand dunes
- Engaged with stakeholders and government officials to obtain official permits and created solution GIS maps
- Constructed a beach safety watchtower and hired two lifeguards
- Collected and nurtured over 3,000 seedlings for future transplantation, with continuous monitoring of sea turtles to prepare for hatching period
- Installed wooden fence covering 520m of beach
- Conducted 2 training workshops on conservation of marine biodiversity and sea turtles, involving 35 local people
- Established a functional plant nursery and conducted GIS and mapping training



Social impact

- Protects communities' livelihoods
- Enhances local resilience to climate change impacts, safeguarding agricultural lands and supporting economic stability
- Builds the capacity of young people and women, promoting their engagement in sustainable activities





Adaptation benefits

- Increased climate resilience through the reinforcement of sand dunes to slow beach degradation, protect agricultural lands and ensure beach tourism livelihoods
- Sand dune systems act as natural defence against sea storms and coastal flooding, preventing coastal retreat



Innovation

- Pioneered a long-term solution in Lebanon that promotes natural processes and ecosystem restoration, serving as a pilot for future initiatives
- Utilizes affordable and sustainable soft engineering techniques, for example upcycling wood to for sand-trapping fences and using native plants to stabilize sand dunes.
- Combines ecosystem restoration with conservation efforts, creating opportunities for small-scale enterprises to promote sustainable beach tourism



Funding snapshot

- UNDP-AFCIA grant: \$60,000 (initial grant)



Replication potential

- Demonstrates a successful, simple methodology that can be applied to similar sites along the Lebanese coastline or other coastlines
- Sand dune techniques are highly effective and easy to implement
- Encourages wider adoption of sustainable coastal management practices by providing a proven model for ecosystem restoration and climate resilience
- The Diaries of the Ocean team is equipped and trained to sustain the solution and replicate them on other sandy beaches

Investability

Sustaining criteria	The implemented work and assets will be handled by the related local municipalities after the period of the initiative.
Financial innovation	Promoted sustainable activities aim to become a direct source of income for locals, who can establish sustainable tourism from the surrounding natural assets.

