

A Strategy for Resilient & Distributive Atoll Economies: The Case of Noonu Atoll, Maldives

Approaches to strengthen small island economic sustainability

Overview of the Strategy

Resilient and Distributive Economies

The strategy aims to build resilient and distributive economies to address long-term regional development challenges.

Equity and Sustainability Focus

A forward-looking vision emphasizes equity, sustainability, and data-driven planning for inclusive growth.

Cohesive Atoll-wide Governance

Moving from fragmented island development to cohesive governance and economic framework at the atoll level.

Leveraging Natural Capital and Technology

The strategy utilizes natural resources and advanced technologies to create a regenerative economy benefiting all communities.





Challenges of the Current Model

Fragmented and Degenerative Development

Fragmented Development Model

Island-by-island development causes duplication of services and strains financial and social resources in Maldives.

Unequal Opportunities and Brain Drain

Larger islands attract more opportunities, leading to brain drain and aspirational consumption harming ecosystems.

Environmental Challenges

Uncoordinated environmental management worsens erosion and fails to address climate change impacts like rising sea levels.

Vision for a Regenerative Atoll Economy



Principles of Distributive and Regenerative Design

Distributive Design Approach

Focuses on equitable resource distribution and shared value among all communities in the atoll.

Collective Stewardship Mindset

Promotes reciprocal relationships and collective responsibility for people and the environment.

Regenerative Economic Systems

Designs economic activities that support social and ecological renewal and sustainability.

Circular Economy Model

Reinvests revenues from natural assets into community and environmental conservation efforts.

Hub-and-Spoke Framework



Governance Model

Central Hub Island

The hub island provides specialized services like advanced medical care and higher education, attracting diverse businesses.

Spoke Island Connectivity

Surrounding spoke islands connect to the hub via reliable water transport, ensuring easy mobility and access.

Resource Leasing and Sharing

Uninhabited islands are leased for agriculture, aquaculture, and renewable energy, sharing benefits with all islands.

Equity and Sustainability

The framework promotes equitable services and sustainable growth across all atoll islands for residents.

Natural Commons and Capital



Shared Natural Assets

Dry Land Foundation

Noonu Atoll's 1,076 hectares of dry land support homes, cultural activities, and ensure food security for the community.

Reefs as Natural Defenses

The 2,369 hectares of reefs protect the atoll from oceanic threats and provide nurseries for fisheries.

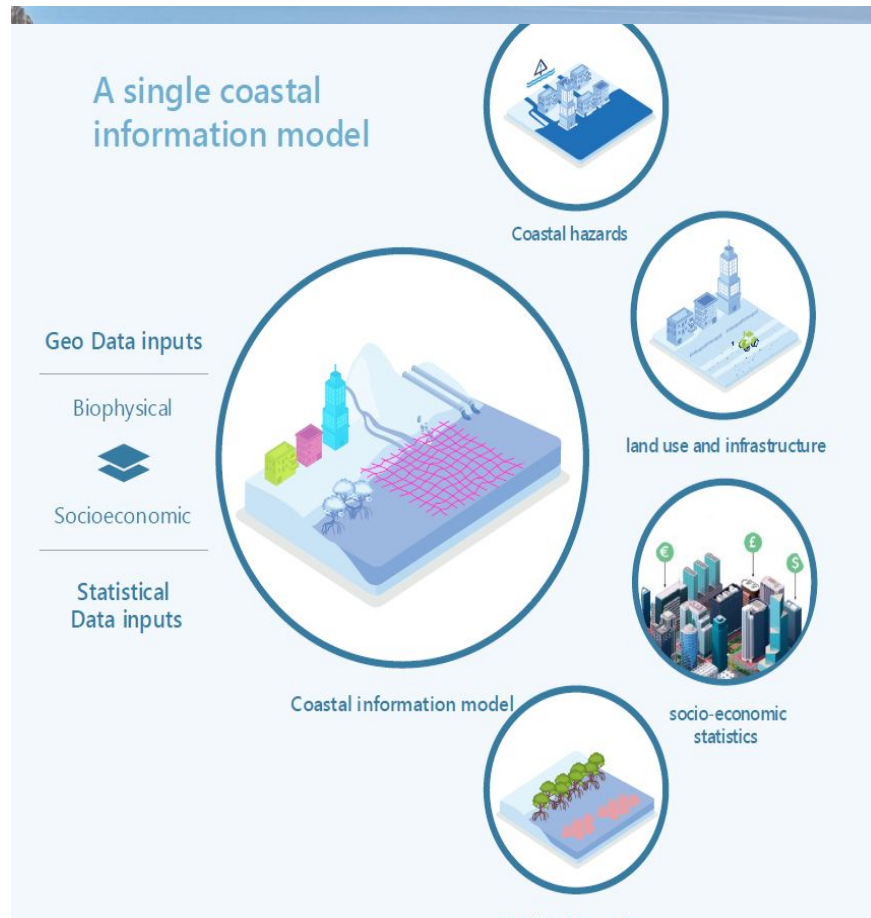
Mangroves as Blue Carbon Sinks

Approximately 75 hectares of mangroves act as carbon sinks, marine nurseries, and coastal shields enhancing ecological resilience.

Collective Stewardship Strategy

The strategy highlights shared management and equitable benefits from natural assets for sustainable development and resilience.

Technological Foundations



High-Resolution Drone Technology

Drones provide centimeter-level accuracy for local planning and infrastructure design with detailed 3D models and maps.

Satellite Earth Observation

Satellites monitor ocean health and track historical climate and shoreline changes from a macro perspective.

GNSS and CORS Systems

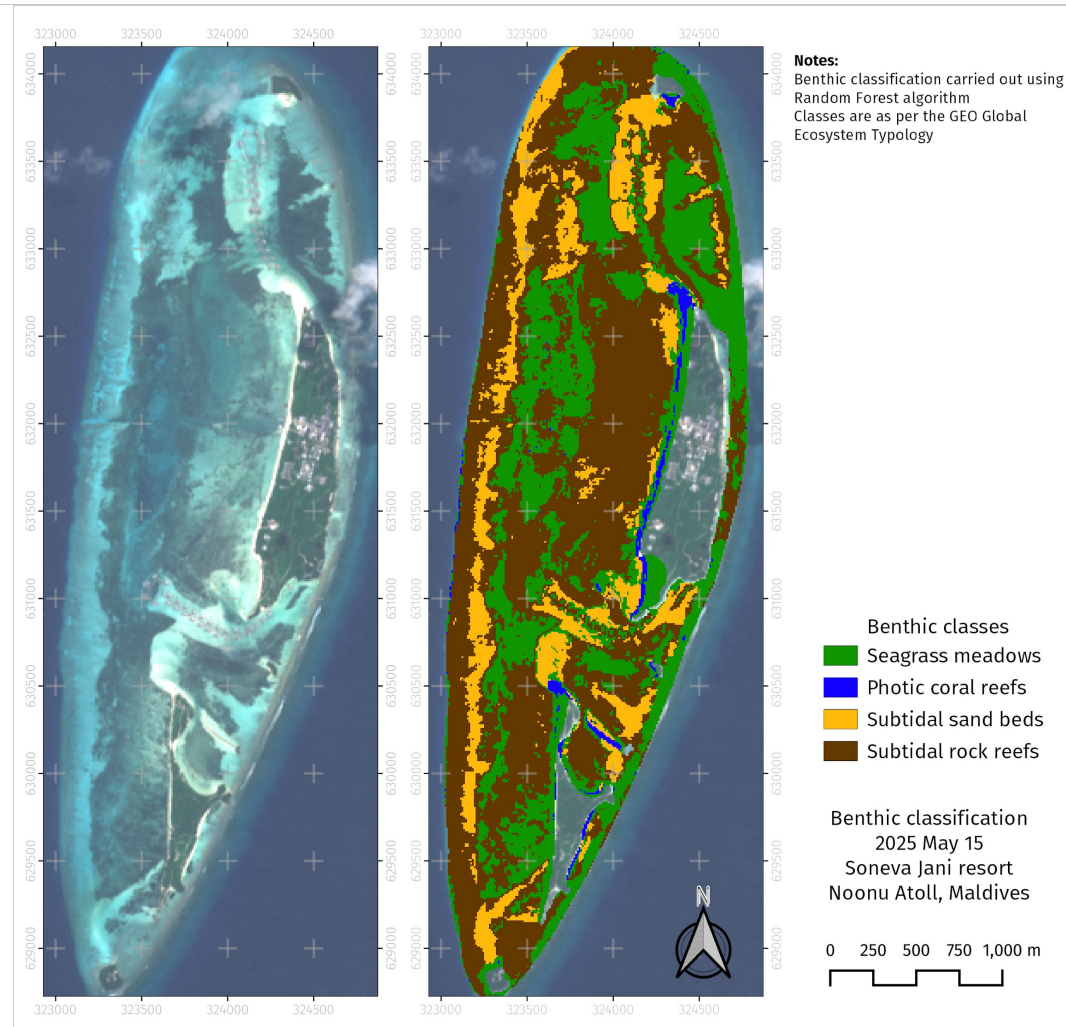
GNSS and CORS deliver survey-grade accuracy, ensuring precise georeferenced data for investment-grade analysis.

Data-Driven Decision Making

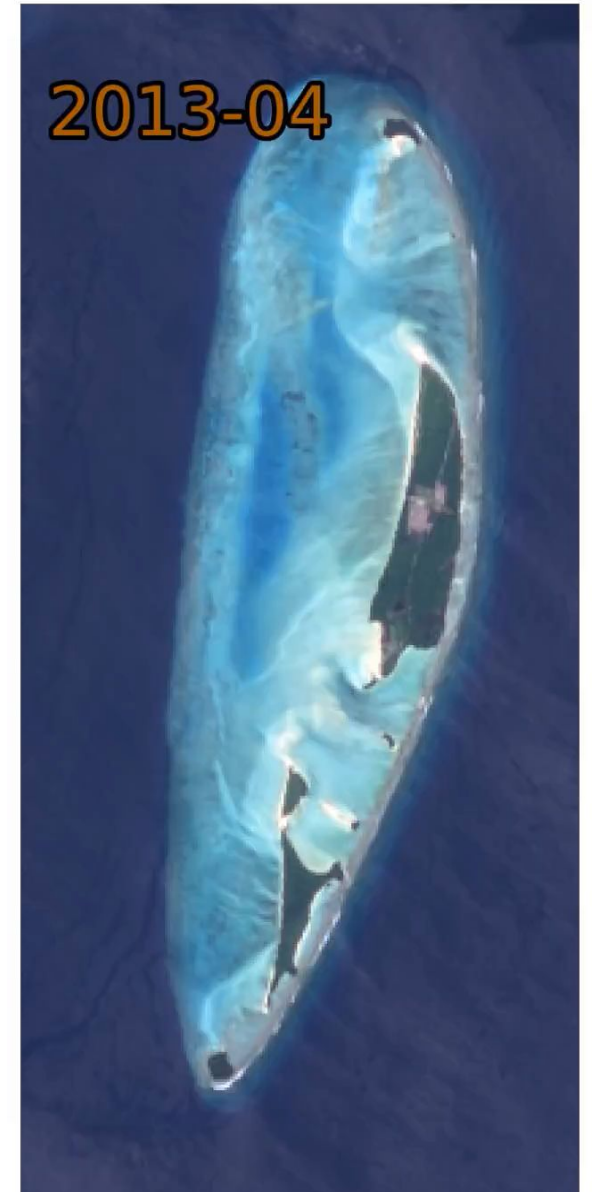
Technological infrastructure enables transparent, evidence-based planning enhancing development effectiveness.

Data-Driven Planning

Case Studies Lessons from Noonu Atoll



Soneva Jani
Seagrass Conflict
Data-driven benthic classification can prevent ecological damage caused by conflicts between seagrass meadows and tourism development.



Case Studies



Huivani Island Instability

Historical geospatial data revealed Huivani Island's morphological instability, preventing costly long-term infrastructure investments.

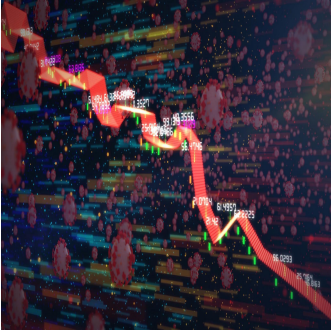
Lessons from Noonu Atoll



Maafaru Land Reclamation Risks

Ad-hoc land reclamation on Maafaru compromised coastal protection, highlighting the need for mandatory Natural Capital Accounting.

Unlocking Value through Data



Natural Capital Accounting

NCA measures economic services from ecosystems, like storm protection valued at MVR 2.4 million per km of healthy reef annually.



Blue Carbon Credits

Carbon stored in mangroves quantified through Blue Carbon Credits attracts private investors to offset emissions sustainably.



Regenerative Financial Cycle

Capital from ecosystem valuation is reinvested in community services like transport, schools, and healthcare for sustainability.

Replicability for Island States

Distributive Governance Model

Shifts development from isolated islands to collective atoll management for shared sustainability and equity.

Digital Twin Infrastructure

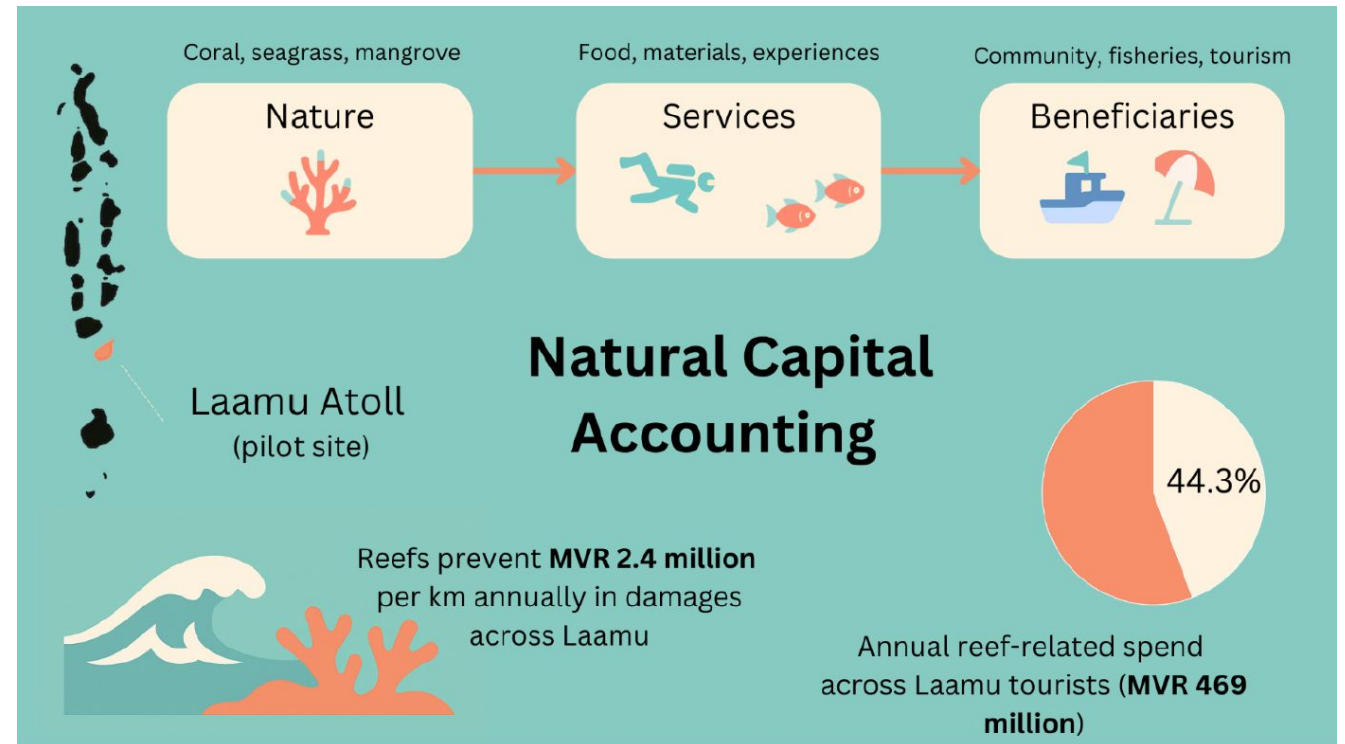
Builds a digital twin for data-driven, transparent, evidence-based decision-making on island management.

Monetizing Natural Capital

Creates regenerative financial loops by valuing and trading ecosystem services to support sustainability.

Global Replicability

Offers a scalable framework for island states worldwide to promote resilience amid the climate crisis.



Join Us and Learn More

Partnership Opportunities

The council seeks partners in technology, finance, and policy to expand its transformative strategy across the atoll.

Vision of Resilience

Collaboration aims to build a resilient and distributive economy benefiting communities and ecosystems alike.

Sustainable Development Model

Stakeholders can contribute to a pioneering model addressing climate challenges while fostering equity and prosperity.

Call to Action

Interested parties are encouraged to engage with the council for partnership and support opportunities.

