

Bridging Knowledge & Action for Regenerative Systems

(Tree, Mangrove & Coral Restoration Case Study)



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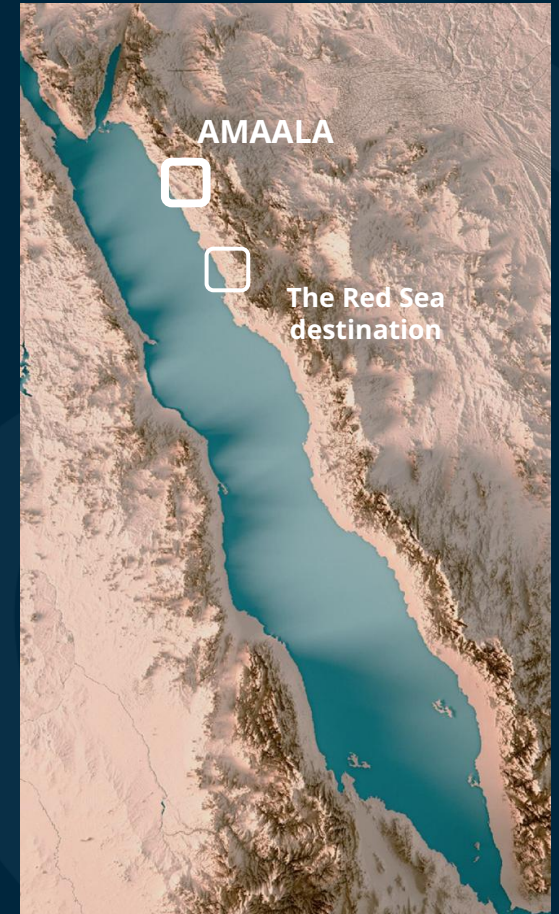
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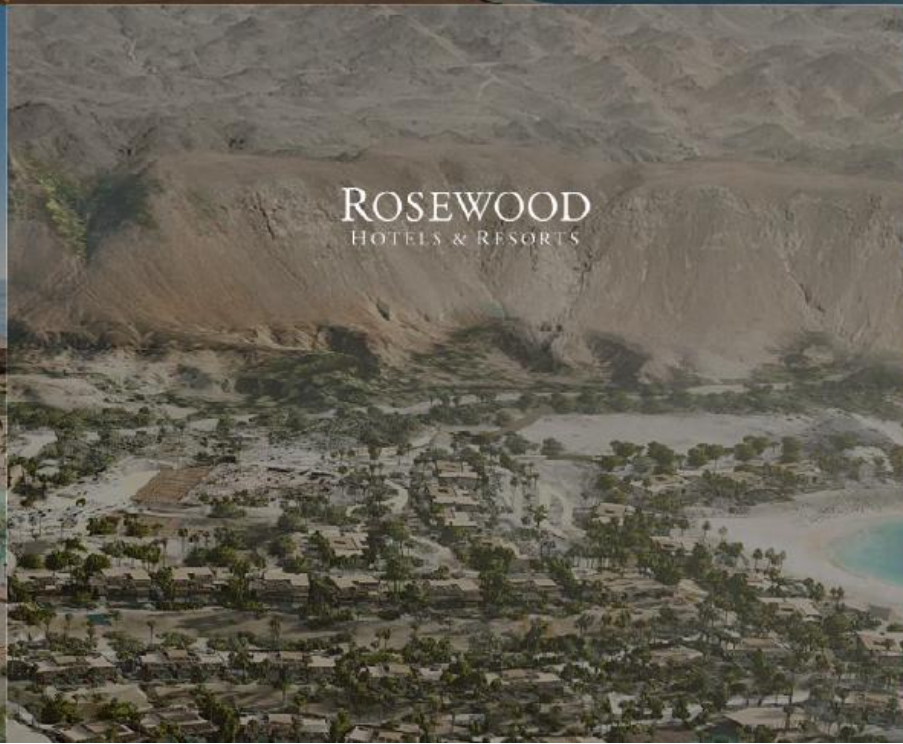
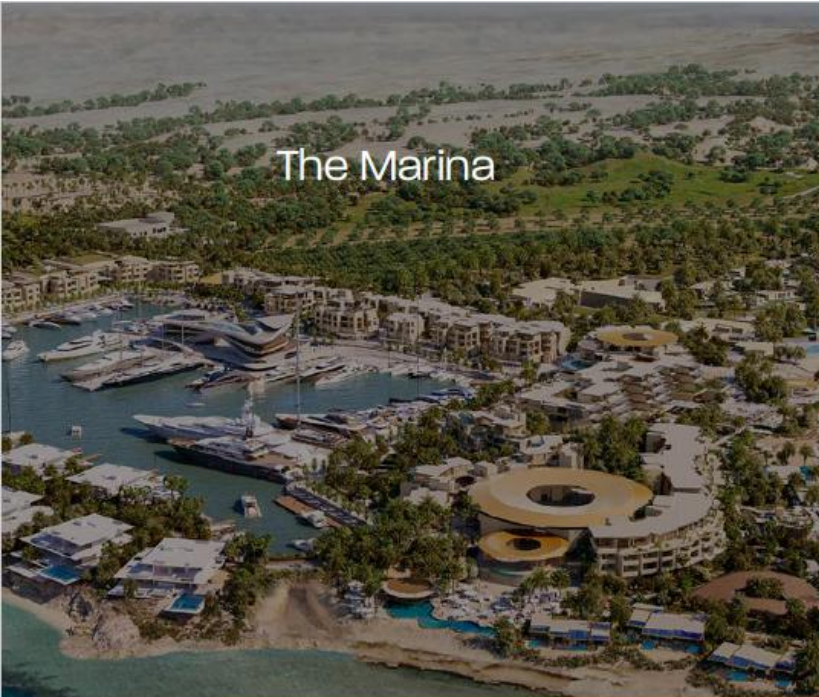
A People Centered & Planet Focused Vision

RSG develops and operates tourism destinations along the west coast of Saudi Arabia, including The Red Sea, AMAALA, and RSI Airport.

Spanning approximately 4,200 km², AMAALA is expected to have nine resorts operational by 2026.

Through the effective application of the mitigation hierarchy and early integration of environmental considerations using GIS tools, RSG aims to enhance evidence-based impact assessments while supporting long-term regenerative and sustainable outcomes





EQUINOX



FOUR SEASONS



JAYASOM



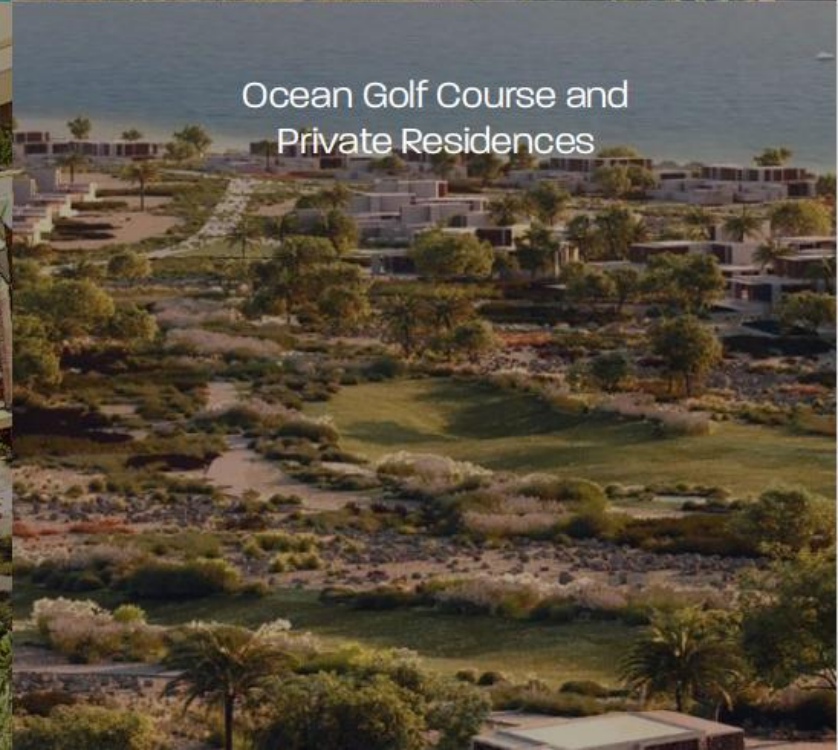
CLINIQUE
LA PRAIRIE



THE RITZ-CARLTON

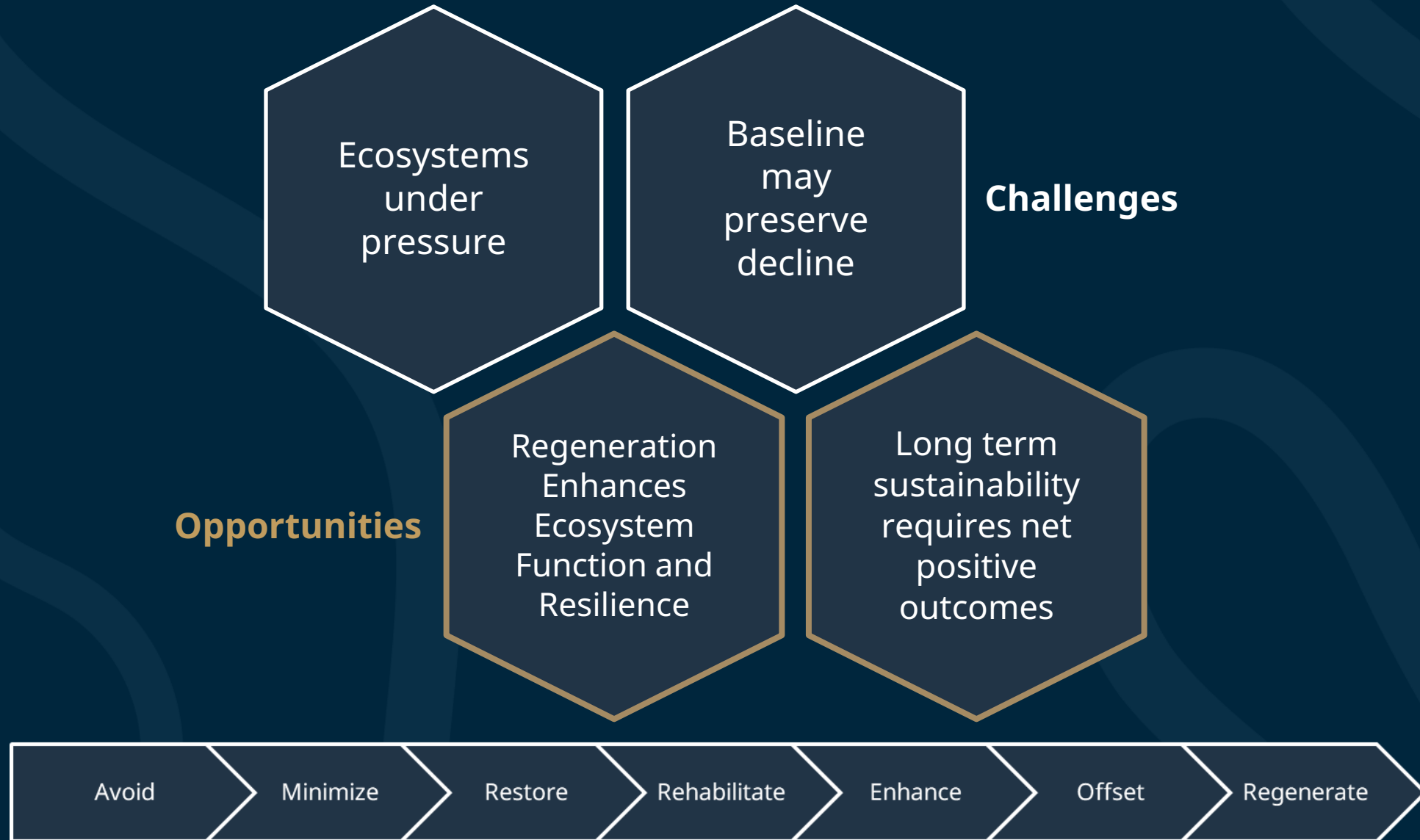


Ocean Golf Course and
Private Residences



Why Does it Matter?

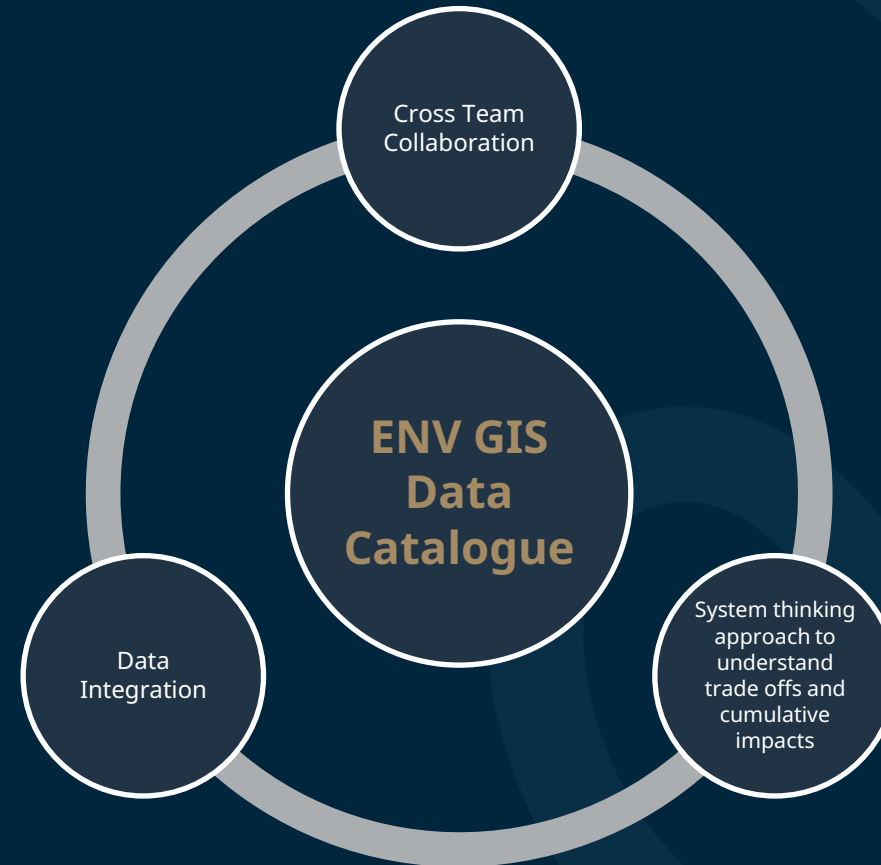
Moving Beyond Baseline through Responsible Development



What is the Challenge?

Identifying Restoration Opportunities from Existing ESIA Data

- Data integration
- Spatial analysis
- Ecological interpretation
- Integration of data within project phases
- Opportunity identification



How was it addressed?

Integrating Data into Restoration Planning



Where was this Applied?

Across Interconnected Ecosystems

Terrestrial

Trees were measured and mapped throughout AMAALA

Data was collected from assessment reports during the years 2023 - 2025

Coastal

The Six Senses Cove area was measured and mapped for Mangroves

Total affected mangrove plants 110

Total planted seedlings 3483

Marine

Affected corals at AMAALA were surveyed, identified, relocated & Monitored

Corallium Red Sea Marine Life Institute (RSMLI) a collaboration platform for blue regeneration

TRIPLE BAY
MASTERPLAN



FOUR SEASONS

THE RITZ-CARLTON

EQUINOX

Yacht Club

Corallium

NAMOS
HOTELS & RESORTS

SIX SENSES

ROSEWOOD
HOTELS & RESORTS

CLINIQUE
LA PRAIRIE

JAYASOM

Within the Coastal Ecosystem

AFFECTED
MANGROVE PLANTS
AND TREES
SURVEYED AND
IDENTIFIED



Within the Coastal Ecosystem

From Lost Plants to Restoring Tidal Function & Habitat Connectivity



Mangrove Loss

- Plot based assessment
- Number of affected plants per plot
- Life stage; seedling, sapling, small or big tree
- Height, structure and maturity



GIS Integration

- Mangrove extent maps
- Tidal flow & Hydrodynamics
- Sediment type and elevation
- Targeting degraded or fragmented areas
- (identify mangrove restoration zones)



Mitigation Measures

- Mangrove replanting
- Hydrological restoration / tidal flow restoration
- Shoreline improvement
- Expansion beyond impacted areas
- (From replacing into restoring ecosystem function)

Within the Terrestrial Ecosystem

From Tree Loss Data into Restoring Ecological Landscapes



Tree Surveys

- GPS location
- Sensitivity / ecological value
- Species, count, condition, etc.
- (Quantify Spatial loss)



GIS Integration

- Introduce into the GIS Data Catalogue along habitat map
- Identify restoration feasibility (screening suitable soils, matching native habitats targeting degraded areas , etc.
- (Prioritize restoration zone)



Mitigation Measures

- Native replanting
- Habitat restoration
- Site specific interventions

Within the Marine Ecosystem

From Impacted Donor Sites to Ecologically Suitable Recipient Sites



Coral Surveys

- Baseline assessment of coral species, health condition, and coverage.
- Identification of sensitive, high-value, and impacted reef areas.
- Quantification of coral colonies within project footprint (size, type, abundance)
- Documentation of environmental conditions (substrate, depth, water clarity)



GIS Integration

- Spatial mapping of coral habitats and impact zones using survey data
- Overlay with project footprint to identify impact hotspots
- Identification of suitable recipient (translocation) sites based on habitat compatibility
- Supports decision-making for avoidance, relocation, and restoration planning



Coral Mitigation & Restoration Plan

- Impacted corals translocated to a suitable recipient site within the wider AMAALA area
- Offsetting measures adopted to compensate for the adverse significant impacts arising from coral loss
- Coral relocation monitoring intervals following relocation

Coral Restoration Implementation and Management



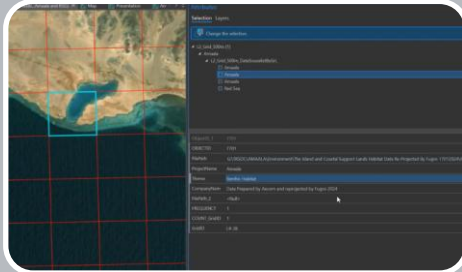
Over 220,000 coral fragments are under active care through ex situ and in situ nurseries and out-planting programs supporting coral compensation and offsetting across the Red Sea destinations.



RSG has implemented structured monitoring and quality-control programs to assess coral health, growth, survivorship, natural recruitment, and fish assemblage associations.

What Changed?

From Impact Management Toward Regenerative Opportunities



Digital tools
enabled better
use of existing
ESIA data



Earlier
ecological
integration



Coordinated
implementation
across project
phases

Initiative Undertaken Across The Red Sea & AMAALA

Red Sea Global Unveils Conservation Blueprint

A science-based framework targeting a 30% net conservation gain by 2040 is being applied across RSG destinations.

The framework will guide environmental management across RSG destinations with the aim to enhance ecosystems.

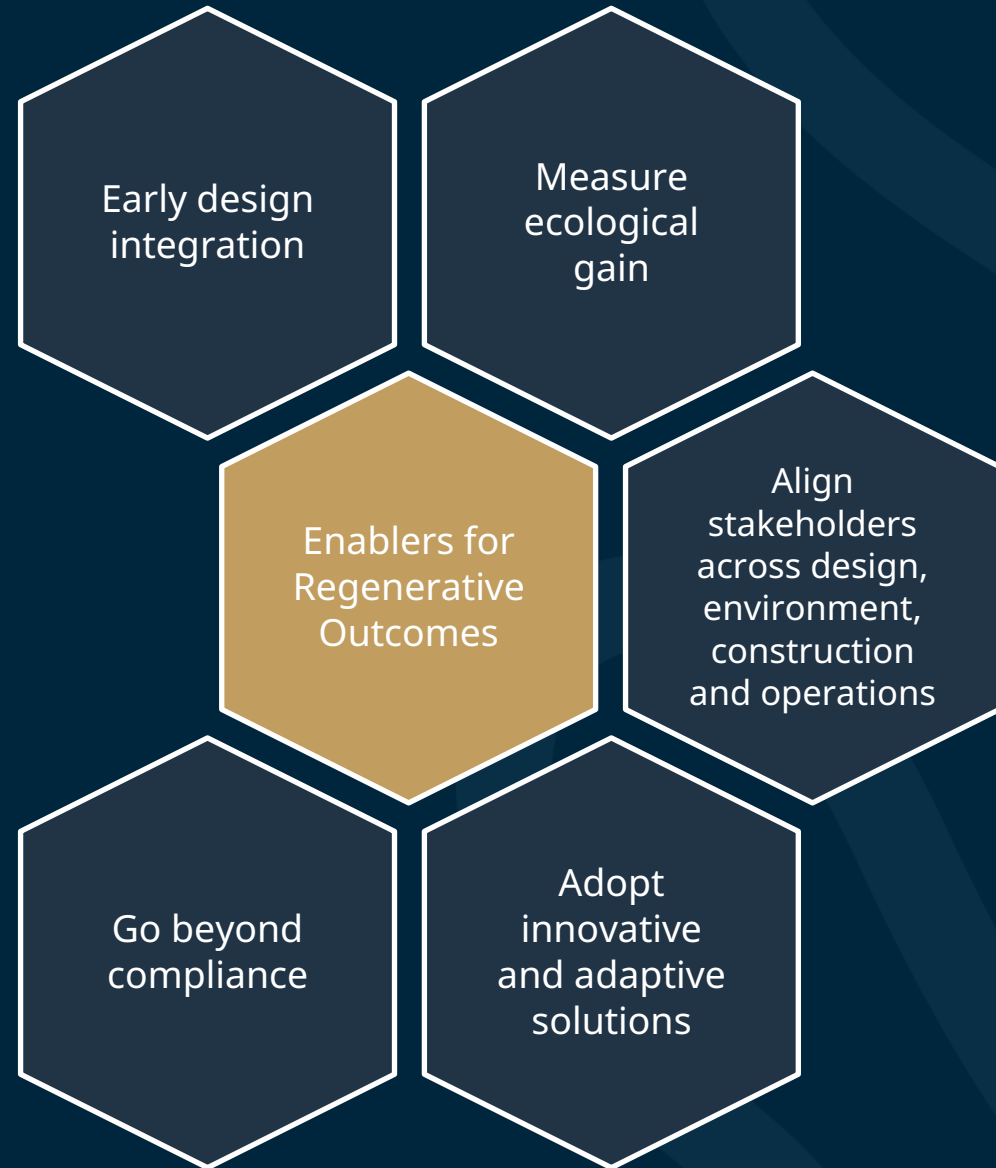
The four-stage framework translates sustainability ambitions into measurable ecological outcomes through a structured cycle of Survey, Identify, Intervene, and Gain known as the **SIIG Model**

One Health Marine Conservation and Forecasting Program	Pioneering innovative approaches towards forming Public-Private Partnership themed collaborations that integrate the development, university and regulatory sectors to validate and scale innovative solutions within ecosystem restoration programs. In support of Saudi Arabia's Vision 2030 through a One Health lens.
AMAALA Messages - Regenerative Development	Commitment to supporting environmental regeneration through sustainable practices, conservation initiatives, and collaboration with local communities.

What are the Outcomes?

Key Takeaways

The effective implementation of mitigation and restoration measures through GIS Data tools, can unlock opportunities for regenerative systems to thrive beyond sustainability.



Thank you

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For People & Planet.

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Let's continue the conversation!

Message me your questions or comments in the IAIA26 app.

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