

Balancing Speed and Stewardship: Red Sea Global's Journey



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UNCERTAINTY

The 2030 Vision & Red Sea Global

Saudi Arabia's Vision 2030 aims to increase the economical, social and cultural diversification of the Kingdom.

Red Sea Global is contributing by developing sustainable tourism destinations along the Red Sea coast. This region has pristine and unique ecosystems, species, and natural resources that are at the core of tourism development.

Red Sea Global has developed a regenerative tourism concept, focused on People and Planet, with net gain in biodiversity conservation benefits at its core, to safeguard the delicate marine ecosystems of the Red Sea and foster sustainable development of local communities.



AMAALA

The town of Al Wajh

The Red Sea Project

The town of Umluj

Thuwal Private Retreat

Jeddah



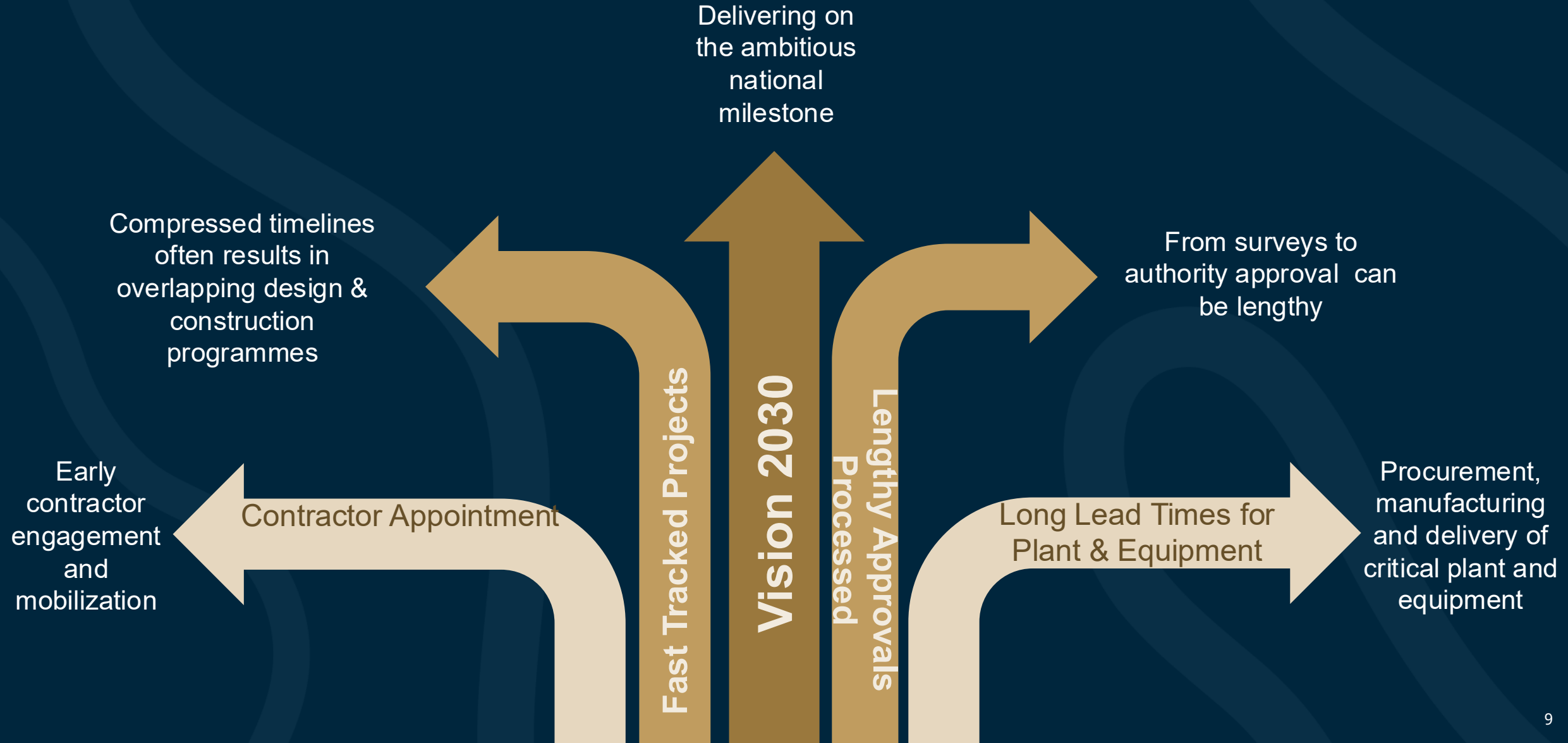
DESERT ROCK



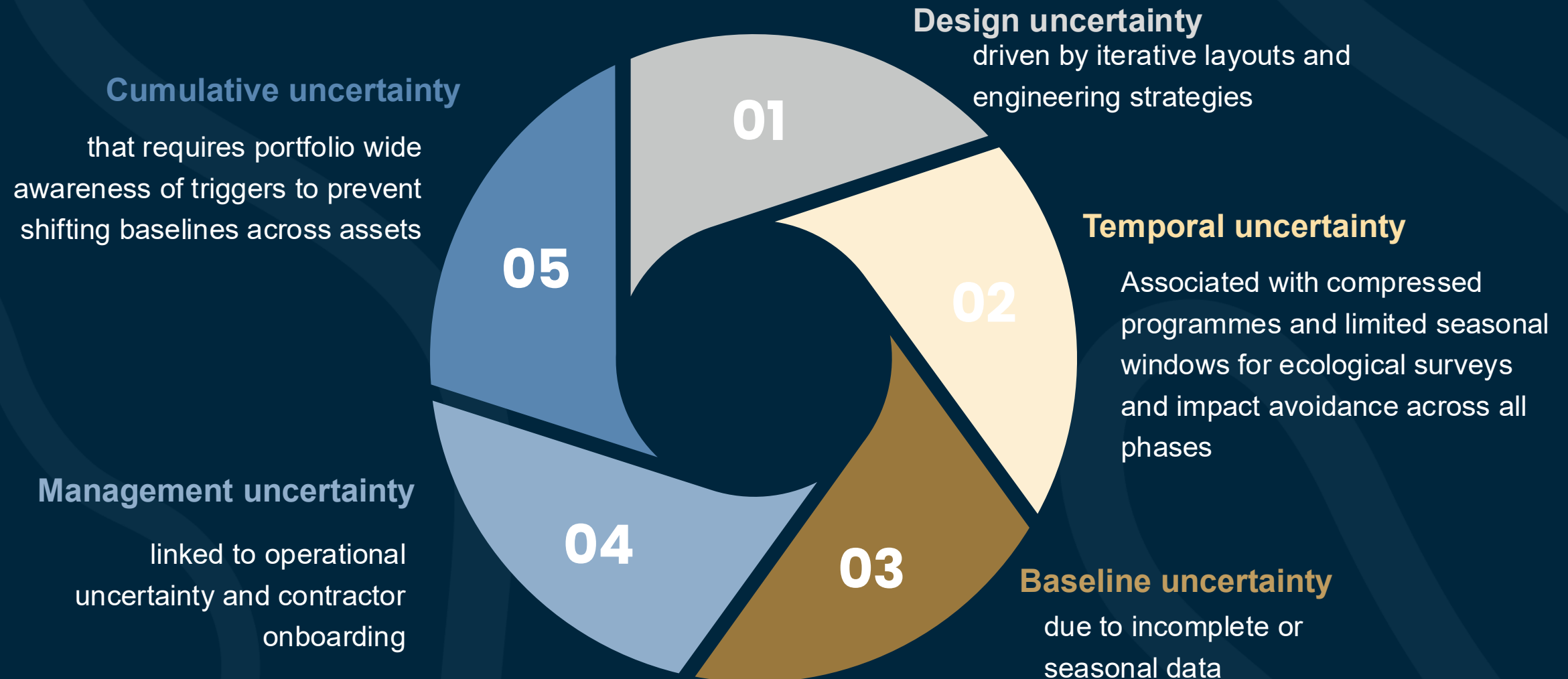




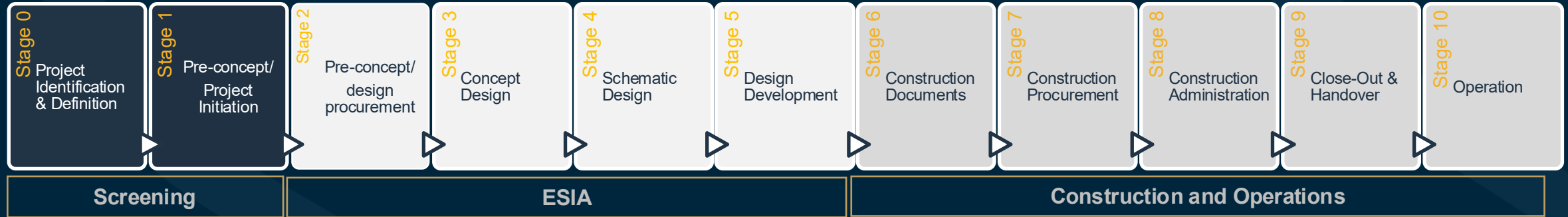
Expedited Decision Making



Five Dominant Forms of Uncertainty



Uncertainty Management Approach



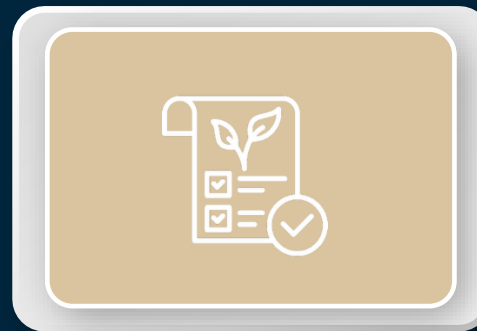
Shape the future “uncertainty envelope” before design freeze



Screening

- Early embedding of environmental and social (E&S) practitioners in concept design.
- RSG Environmental Team integrated within design teams

Convert uncertainty into transparent assumptions & evidence



ESIA

- Detailed surveys inform design and capture Uncertainty Statements (transparency) using Conservative Assumptions
- Define triggers / thresholds / limits of acceptable change for inclusion in CSEMPs / OESMPs

Operationalize uncertainty through governance and adaptive triggers



Construction & Operations

- Implements Adaptive Monitoring Plan through Pause – Optimize – Resume process
- Transferring Lessons Learnt across portfolio

Decision Making Roles Within Management Cycle

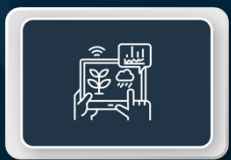
	SCREENING	ESIA	CONSTRUCTION & OPERATIONS
RSG / Design Team	Set project flexibility; commit to early E&S integration; avoid premature design freeze.	Accept binding measurable conditions; provide refinements to reduce uncertainty impacts.	Ensure governance escalation pathways, contractor oversight, and programme flexibility.
Enviro Consultant / RSG Environmental Team	Provide strategic advisory; identify critical gaps and sensitivities; map uncertainty explicitly.	Lead uncertainty analysis and risk logic in ESIA; justify assumptions; quantify ranges.	Verify data quality; update predictions; advise real-time optimization; maintain defensible records
Regulator(s)	Provide early guidance on acceptable uncertainty, seasonality considerations, and data sufficiency.	Test proportionality of assumptions; require clarity on triggers, thresholds, and monitoring expectations.	Audit compliance; require evidence of responses; enforce cumulative considerations.
Contractor(s) & Operator(s)	Advise constructability constraints affecting uncertainty	Provide method statements and quantitative input to noise/plume/footprint modelling.	Execute adaptive controls; pause or modify works when triggers are exceeded.

Case Study – Subsea Fibre Optic Cable



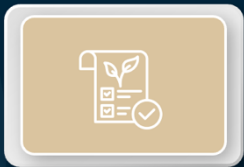
Case Study – Subsea Fibre Optic Cable

The project faced design and method uncertainty, elevated natural turbidity, and a narrow marine installation window



Screening

Avoidance-by-design: Partial HDD option with micro-siting to avoid habitats.



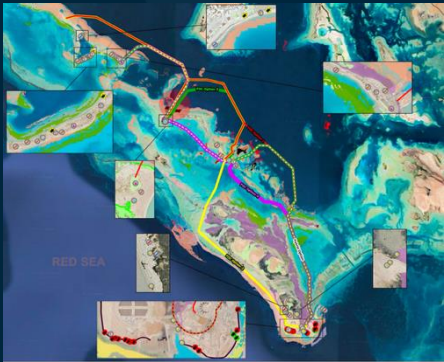
ESIA

Adaptive management: real-time turbidity, noise, & fauna monitoring with pause – optimize – resume triggers.



Construction and Operations

Implementation: Temp. localized impacts, small habitat footprint, full reinstatement, defensible compliance.



Multiple Routes Considered



Multi Criteria Analysis



Two Alternatives Taken into the ESIA



Examples of real-time monitoring bouys and silt curtains during construction

Strengths and Trade-offs – Based on Case Study

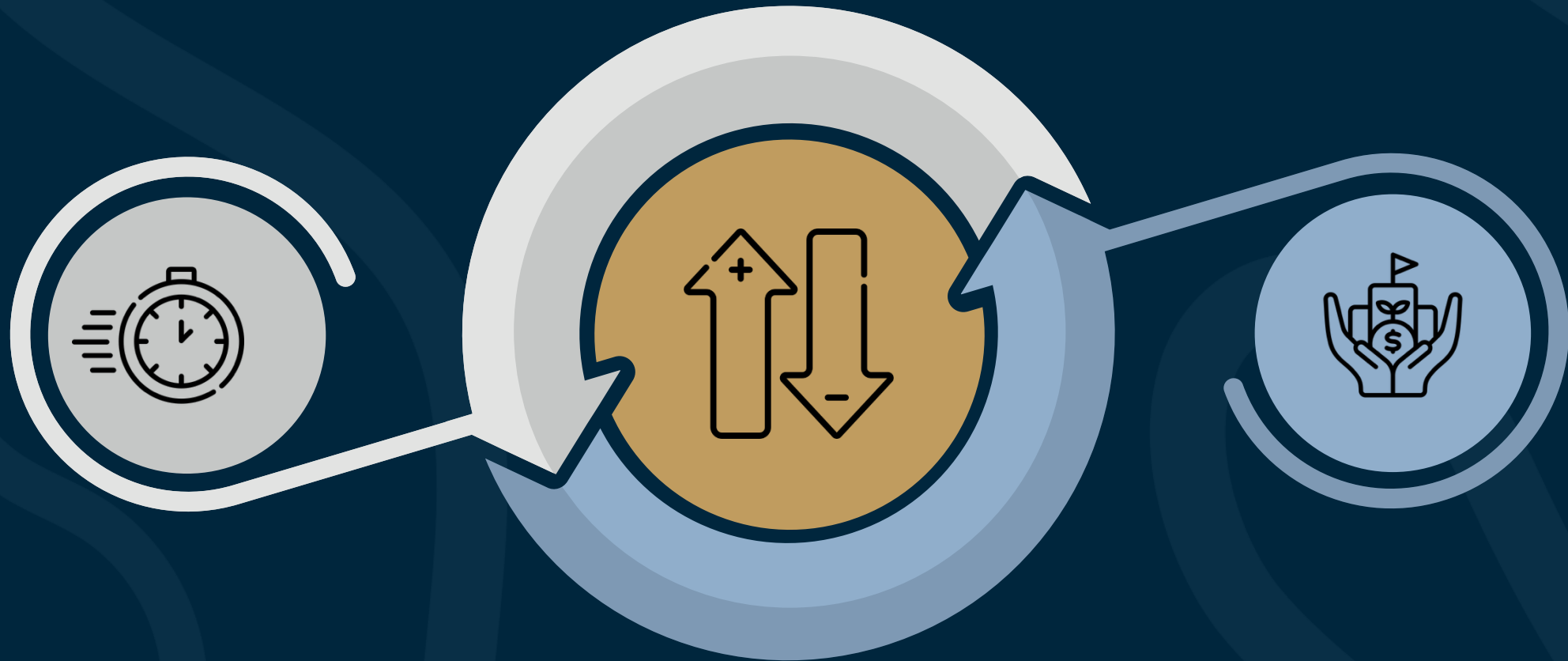
Trade-offs

- ❑ HDD Option most expensive alternative
- ❑ Elevated background turbidity and cumulative metals / nutrients complicate attribution, reinforcing reliance on adaptive management.
- ❑ Adjusting activities seasonally can help lower added pressures on coral reefs, but it cannot stop the broader effects of regional climate change

- ❑ Early avoidance-by-design (HDD, hybrid routing, micro-siting) limited direct footprints.
- ❑ Bubble curtain performance varies with bathymetry and alignment. Employed double curtain approach & positioning was carefully selected.
- ❑ Performance targets replaced generic Business Management Practices.

Strengths

“Balancing Speed and Stewardship”



At RSG we are managing uncertainty through embedding environmental specialists throughout the life cycle which enables informed and defensible decisions, as well as serving to achieve our regenerative tourism goals.



Let's continue the conversation!

Message me your questions or comments in the IAIA26 app.

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