

CITY 
FACILITATORS

Positioning Maldives as Global Blue Economy Leader

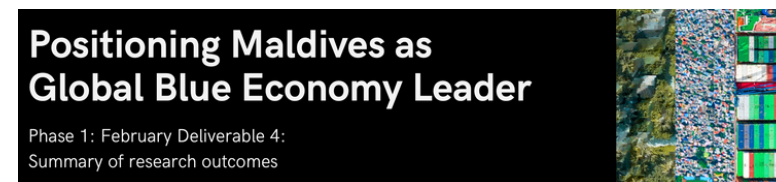
Phase 2: Government Workshops

August 2021

Maldives as a Global Leader on Blue Economy by becoming the World's First Smart Ocean State

PHASE 1

A: Summary of Research Outcomes



B: Workshop with 4 Development Scenarios



C: Government workshop Scenario X The Smart Sustainable Ocean State



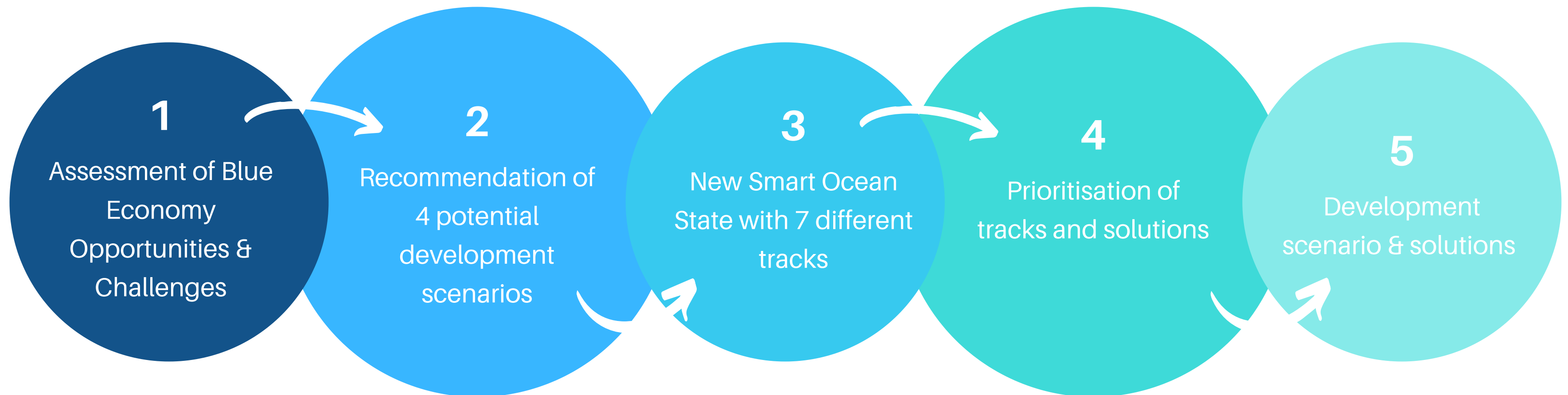
PHASE 2

A: Blue Economy Matrices

B: Government Workshop

C: **Blueprint 1: Trunk & Branch strategy/roadmap + Blueprint 2: Deep Dive Economic Plan, Business Plan, and Financial Plan**

THE PATH SO FAR



The New Smart Ocean State

To the right are the Tracks & Solutions prioritized according to the Government Workshop Votes.

Across 2 days, the government representatives discussed each of the seven tracks in separate workshops before voting for a prioritization of the different implementation tracks.

1



Smart Ocean Nature

Coral Reef Restoration and Preservation, Nature-Based Solutions, and Nature Conservation

2



Smart Ocean Food

Agriculture and Permaculture, Aquaculture, and Vertical Farming

3



Smart Ocean Tourism

Wellness Tourism, Remote Education, and Remote Working

4



Smart Ocean Energy

Biomass to Energy, Floating Solar to Energy, and Waste to Energy

5



Smart Ocean Transportation

Electric Ferries, Electric Public Transport, and LPG Boats

6



Smart Ocean City

Green Buildings, Seawalls and Dikes, and Nature-Based Solutions (in the following marked as a Smart Ocean Nature-Solution)

7



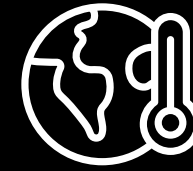
Smart Ocean Transshipment Port

Special Economic Zone, Transshipment Port, and Floating Constructions

Challenges



The economy of the Maldives is based on rich biodiversity. Especially biodiversity related to coral reefs, which contributes 71% of employment, 89% of the GDP, and 98% of exports in the Maldives today.



With a 1.5°C temperature rise, 70-90% of coral reefs die. With a 2°C temperature rise, nearly 99% of coral reefs will bleach. The current global trajectory leads to approx. 3°C by 2100, meaning almost all coral reefs will be extinct by 2050.

Solutions

Coral Reef Restoration

Coral reef solutions include supportive policies, biorock, and genetic engineering of coral reefs to survive global warming.

Nature-Based Solutions (NBS)

NBS is green infrastructure that also increases biodiversity and provides ecosystem services.

Nature Conservation

The goal is to turn 30% of Maldivian territory into nature reservoirs by 2027.

Challenges



According to the World Bank, since 2018, 17% of all Maldivian imports consist of foodstuffs.



In 2019 those imports totalled around \$300 million USD.



Relying on imported food makes the Maldives vulnerable to food price fluctuations, food shortages, and extreme weather conditions.

Solutions

Aquaculture

Aquaculture decreases/eliminates the need for coral reef fishing by supplying fish for bait or consumption.

Agriculture & Permaculture

Permaculture is top-soil friendly, space-efficient, affordable and improves biodiversity.

Vertical Farming

"Every square meter of vertical farming produces approximately the same as 50 square meters of conventionally worked farmland" - UN's FAO



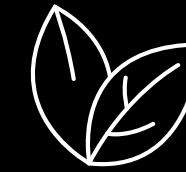
Challenges



Short-stay 3S tourism drives global and local pollution. International visitors in 2019 in the Maldives contributed 95% of the islands' tourism-related emissions. Tourists visiting the Maldives produce 3.5 kg waste/day/person on average.



The COVID-pandemic showed the dangers of relying on 3S (sea, sand, and sun) tourism.



Diversifying into different types of long-stay tourism protects the environment and it protects the economy.

Solutions

Wellness Tourism

Wellness Tourism seeks to leverage the strong Maldivian brand and high level medical services to create a new tourism product.

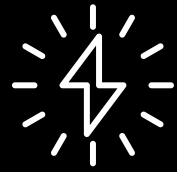
Remote Working

By 2025, an estimated 70% of the workforce will be working remotely at least five days a month. COVID has proved that new forms of working are emerging and evolving.

Remote Education

Remote Education can be used to provide decentralised high-quality education.

Challenges



Energy is the #1 cost driver in the Maldives when looking at direct and indirect effects combined. Transitioning to solar panels offers a kWh cost reduction of between 5 and +60 US cents. The World Bank estimates 58 USD M in savings on subsidies.



IRENA estimates that each \$1M invested in renewables creates at least 25 jobs, while each million invested in energy efficiency creates about 10 jobs.

Solutions

Waste and Biomass to Energy

Waste to energy helps the Maldives get rid of end-of-life waste and generates homegrown energy that reduces fuel imports.

Floating Solar

Floating Solar produces clean energy while circumventing the challenge of land scarcity in the Maldives.

Offshore Wind

The Maldives is uniquely positioned to take advantage of offshore wind.



The Infrastructure Track: Transport, City, and Port

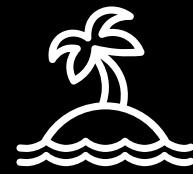
New Smart Ocean State

Transport was voted #5, City #6, and Transshipment Port #7 Priority during Workshops with Government Representatives

Challenges



The #1 import is fuel. By cutting fuel transportation costs, the cost of goods and services will be reduced by up to 70%.



Over 80% of the total land area of the Maldives lies <1m above the sea-level. The Maldives spends an est. \$10 M USD on flood protection/year, but \$8.8 bn USD is needed to protect from flooding with a 2°C rise.



Warning: waste streams from ships have recently been linked to Stony Coral Tissue Loss Disease. Noise, movement, shading, and waste streams from infrastructure can have other adverse effects.

Solutions

Alternative Fuels

For short distances, 1 electric ferry saves 650 T of CO2/year (=1,400 cars) + 3,000 l. diesel/year and 95% operating costs. The Maldives can export alternatively fuelled boats and seaplanes.

Floating Structures

Floating designs make infrastructure resilient to extreme weather and other climate change effects and lower costs of construction and maintenance. Floating designs can be exported.

Transshipment Port

A transshipment port will drive job creation and FDI. 3,300 jobs will be created by a transshipment port w/ a capacity of 220,000 containers. The port can also lead to lower import prices.

Vote!

From 1 (least) to 5 (most) which track is the most highly prioritised?



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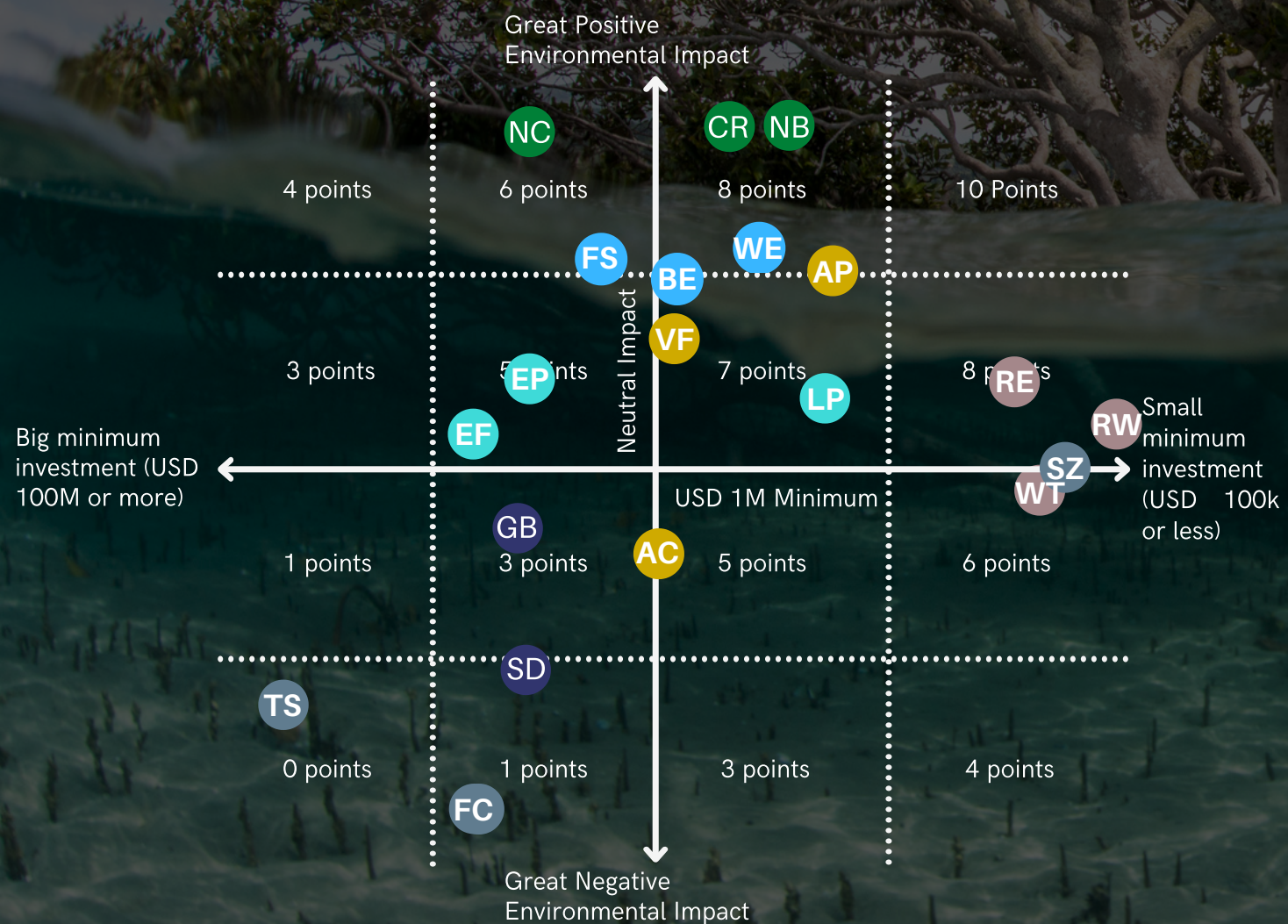
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IDENTIFYING LOW-HANGING FRUIT THROUGH MATRICES

Waitt Institute and City Facilitators have identified the solutions across all 7 tracks with lowest minimum investment compared to impact on job creation, return on investment, and environmental impact.

The matrix below is an example of mapping all the solutions based on environmental impact.

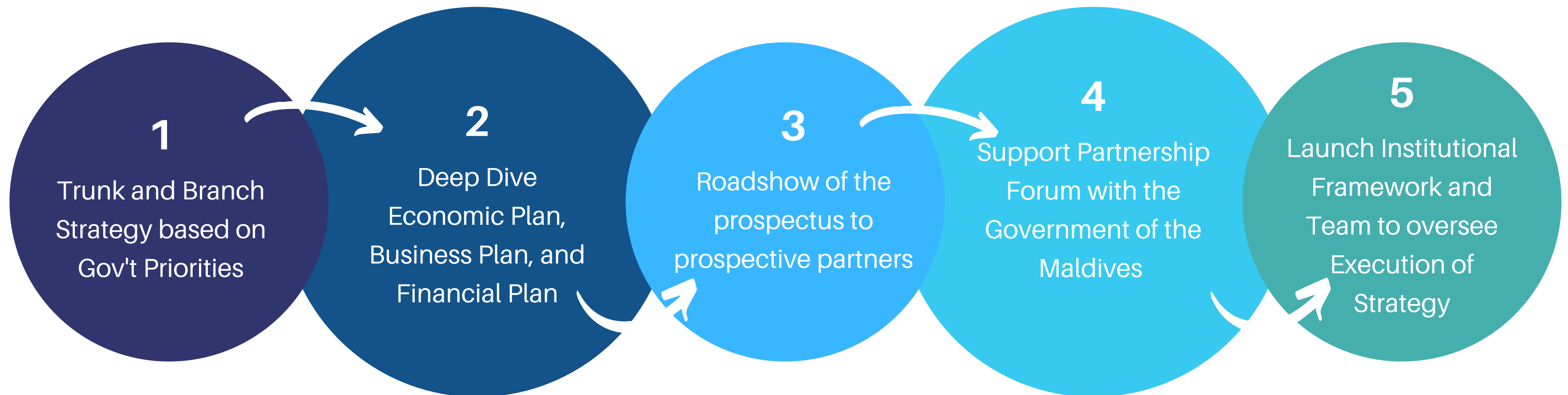


LOW HANGING FRUIT - TOTAL SCORES

Top Scorers

- 1) Remote Working = 28 pts
- 2) Wellness Tourism = 26 pts
- 2) Remote Education = 26 pts
- 3) Special Economic Zone = 25 pts
- 4) Waste to Energy = 23 pts
- 5) Vertical Farming = 22 pts
- 5) Biomass to Energy = 22 pts
- 6) Aquaculture = 20 pts (BPC)
- 7) Floating Solar = 19 pts
- 8) LPG Boats = 19 pts
- 9) Coral Reef Restoration = 18 pts (BPC)
- 9) Agriculture and Permaculture = 18 pts
- 9) Electric Public Transport = 18 pts
- 10) Nature-Based Solutions = 17 pts (BPC)
- 10) Electric Ferries = 17 pts
- 11) Nature Conservation = 13 pts (BPC)

NEXT STEPS ONCE GOVERNMENT PRIORITIES ARE CLEAR





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Phase 2- August - 2021