THE MALDIVES

NOO RAAJJE

Blue Economy Strategy

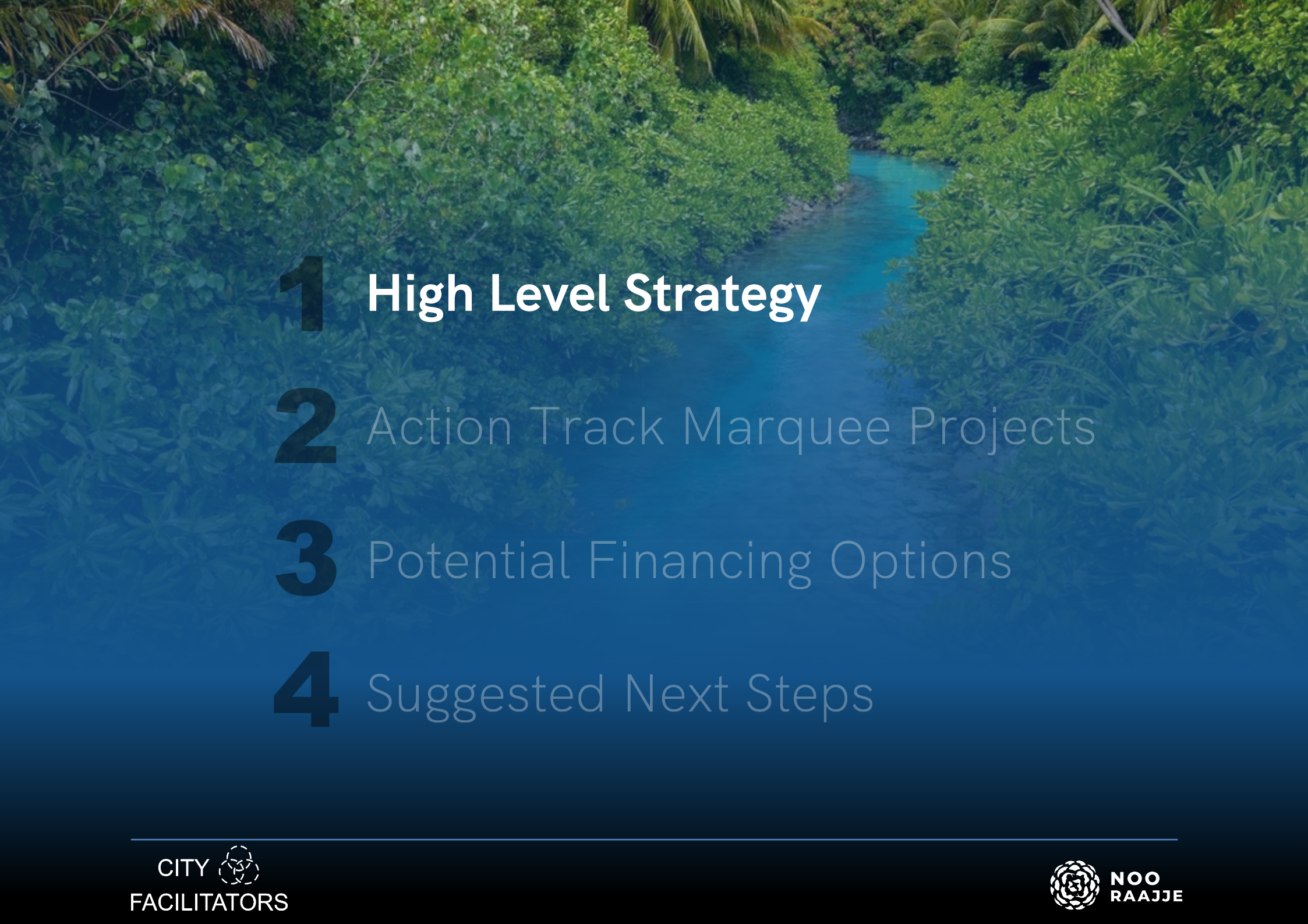
Governance Committee Meeting

23RD February 2022

WAITT INSTITUTE

BLUE PROSPERITY COALITION

CITY FACILITATORS



1 High Level Strategy

2 Action Track Marquee Projects

3 Potential Financing Options

4 Suggested Next Steps

Blue Economy Strategy Process

1 **Scope**: The What

2 **Shape**: The How

3 **Accelerate**: The Who & When

Outcome is not a document but a set of **partnerships** that provide economic, social, environmental and financial **benefits**

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Blue Economy Strategy Process

1 Scope: The What

- **PRELIMINARIES:**
- **Blue Assets Scoping:**
- **Government Plans Etc.,**
- **Scenarios & SWOT Analysis**

2 Shape: The How

We are here

- **Selecting** the #1 "ONE THING" Narrative. And HEADLINES
- **Blue Print 1:** Trunk & Branch Strategy / Roadmap
- **Blue Print 2:** Deep Dive
- **First Domino:** Making it Happen. Government Signals.

3 Accelerate: The Who & When

- **BLUE HUB IGNITION** Teams, Partnership Mechanism, Incubation, Finance, Implementation.
- PR
- Program Roll-Out HAND OVER Milestones, Rewards, and Check-ins
- Monitoring, Evaluation & Feedback

DELIVERABLES

- **NARRATIVE:** The "ONE THING" Narrative.
- **SUPPORT PROGRAM:** Prospectus, Partnership Forum, Finance Syndication
- **Mini Documentary:** Communication Strategy for Project Champions and Successes

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Phase 1: Strategy Development:

Based upon the Maldives National Strategic Action Plan (NSAP), a scoping exercise carried out by UCLA and strategic assessments carried out by the Waitt Institute and City Facilitators, four (4) action tracks were identified :

The Natural Capital Track

harnesses the massive EEZ of the Maldives

The Island Food Track

which includes fisheries

The Clean Energy Track

identified by the World Bank as a key risk for the Maldives

The Sustainable Tourism Track

the backbone of the economy

Four tracks merged into a single narrative…….

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Program Framework

level 3 HUMAN CAPACITY

TEAMWORK

level 2 FINANCE MECHANISM

level 1 THE ONE BIG NARRATIVE

Build a Solid Foundation & Strong Pillars for Smart Sustainable Marquee Projects

Program Framework

The One Thing Narrative

To get and keep the attention of the global audience, it is key to focus on those projects that fit a compelling narrative where the Maldives has, or can build, a global competitive advantage.

level 1

ONE THING NARRATIVE

THE ONE BIG NARRATIVE

The Maldives is the World's First Smart Ocean State

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Finance Mechanisms

Program Framework

Access to predictable finance will be critical for engendering confidence in the overall strategy. Its vital to harness existing mechanisms while developing creative financing options for the Maldivian context.

level 2 FINANCE

Sovereign Fund

Carbon Trades

Other Sources

level 1 ONE THING NARRATIVE

Finance Mechanisms

Over $1 Billion USD could be generated for Environmental, Economic, and Social developments for a resilient and sustainable Maldivian nation, the World's First Smart Ocean State.

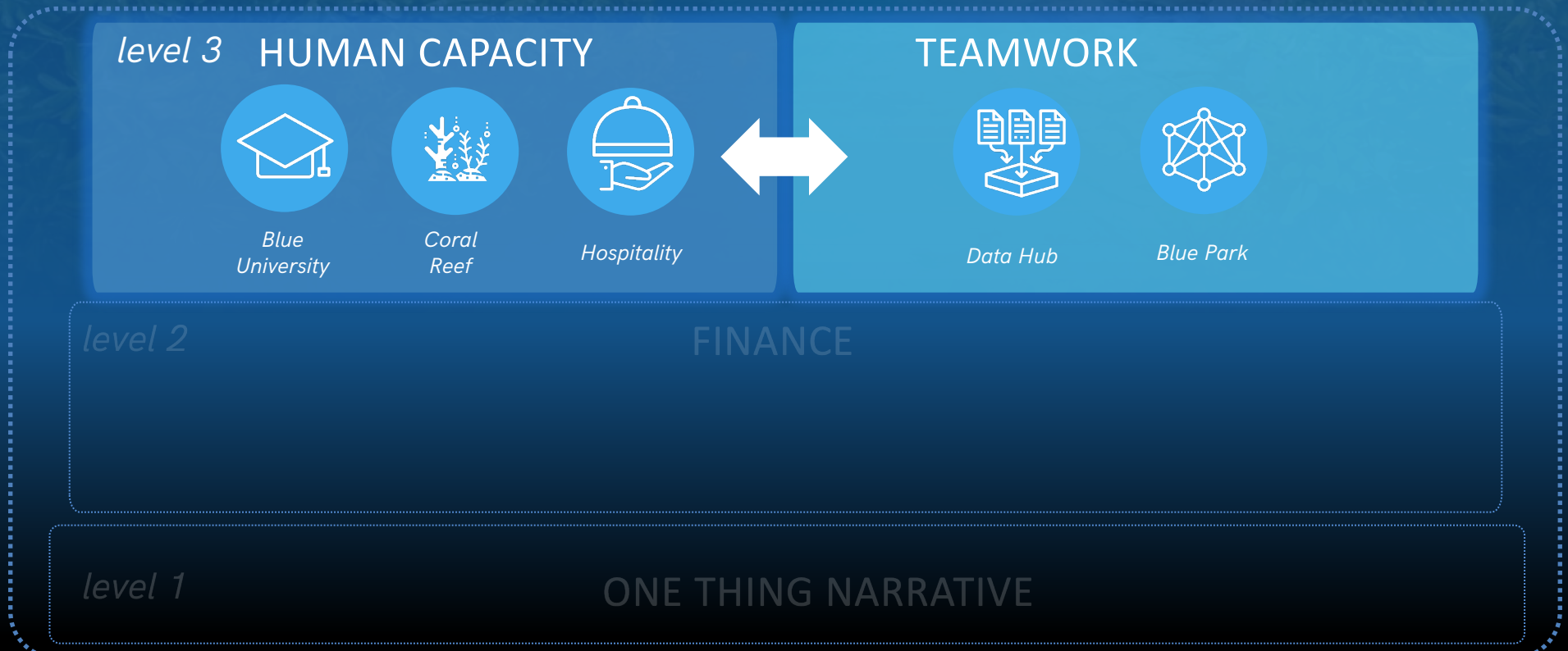
This could finance blue strategy projects as well as other government priorities.

Capacity & Teamwork

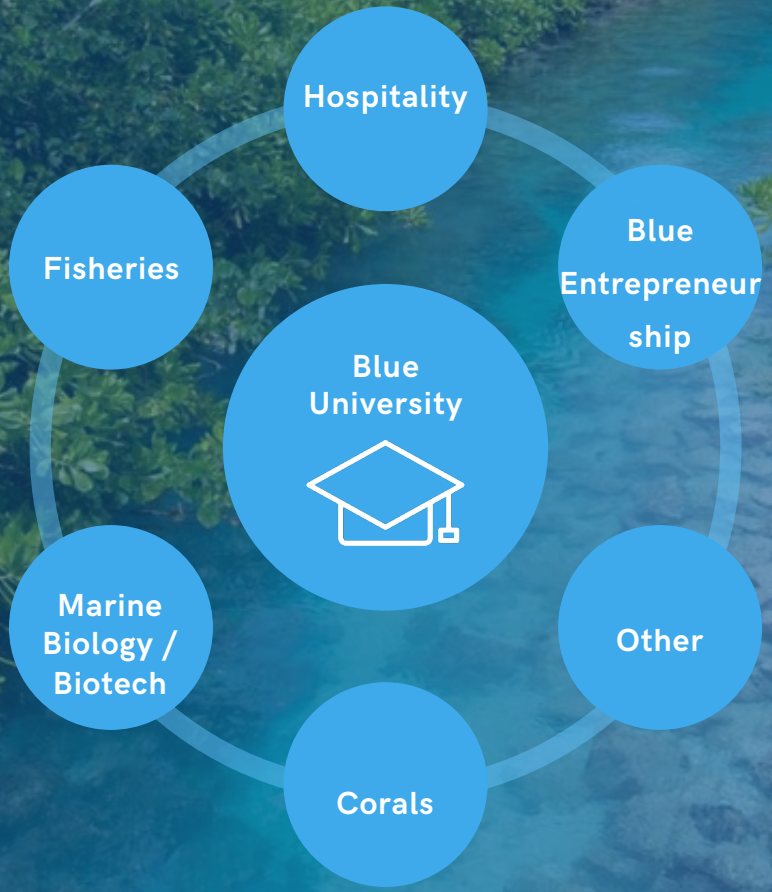
Program Framework

Human Capacity is also a key foundational layer for the Smart Ocean State. New technologies require new skills and knowhow.

Ensuring **teamwork** using the existing human capacity is also critical. This could be informal cross institutional teamwork and collaboration or more formal institution to institution collaboration



Human Capacity



Blue University Program

An accredited program of short courses could markedly improve human capacity for hundreds and thousands of Maldivians in areas related to the Blue Economy, including tourism and fisheries. This could be achieved in cooperation with the Maldives University and international universities

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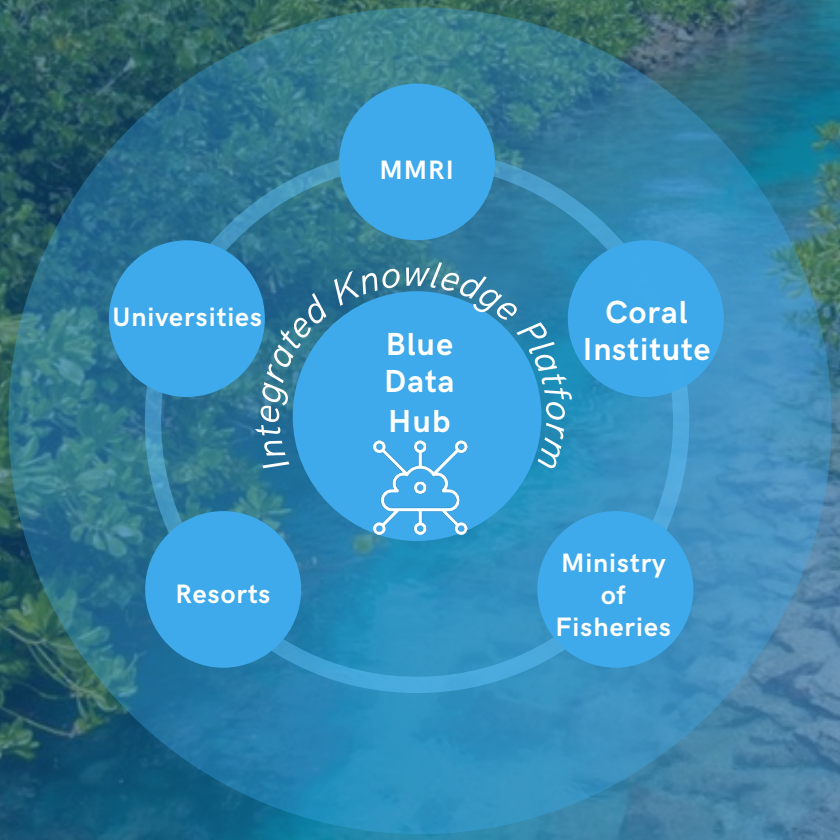
Teamwork

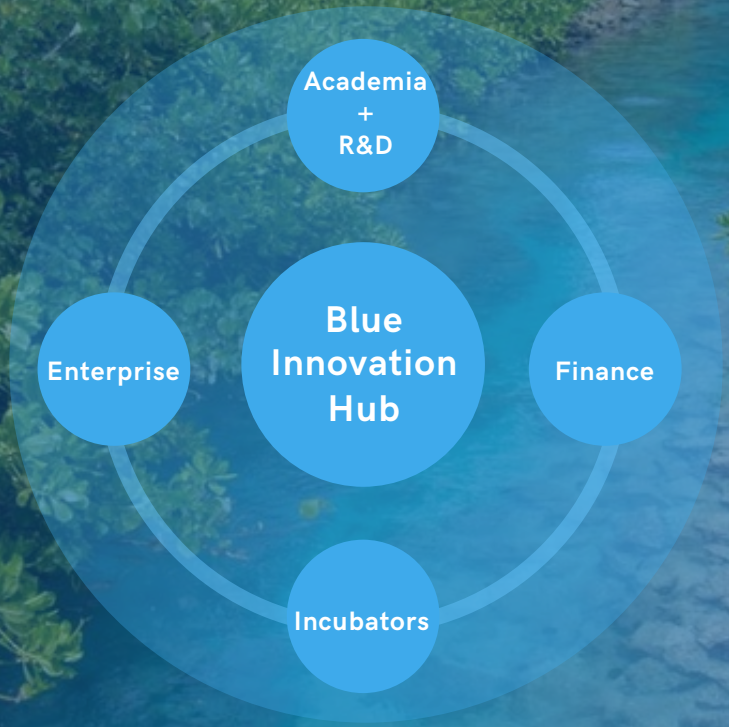


Blue Data Hub

Currently, there are many repositories of ocean related data and ocean-related knowledge, including privately held information on island resorts.

The Noo Raajje program could become a forum for the sharing of knowledge and eventually, for sharing of data. This could be aided by an off-the-shelf data, knowledge and teamworking platform, accessible online.

Teamwork



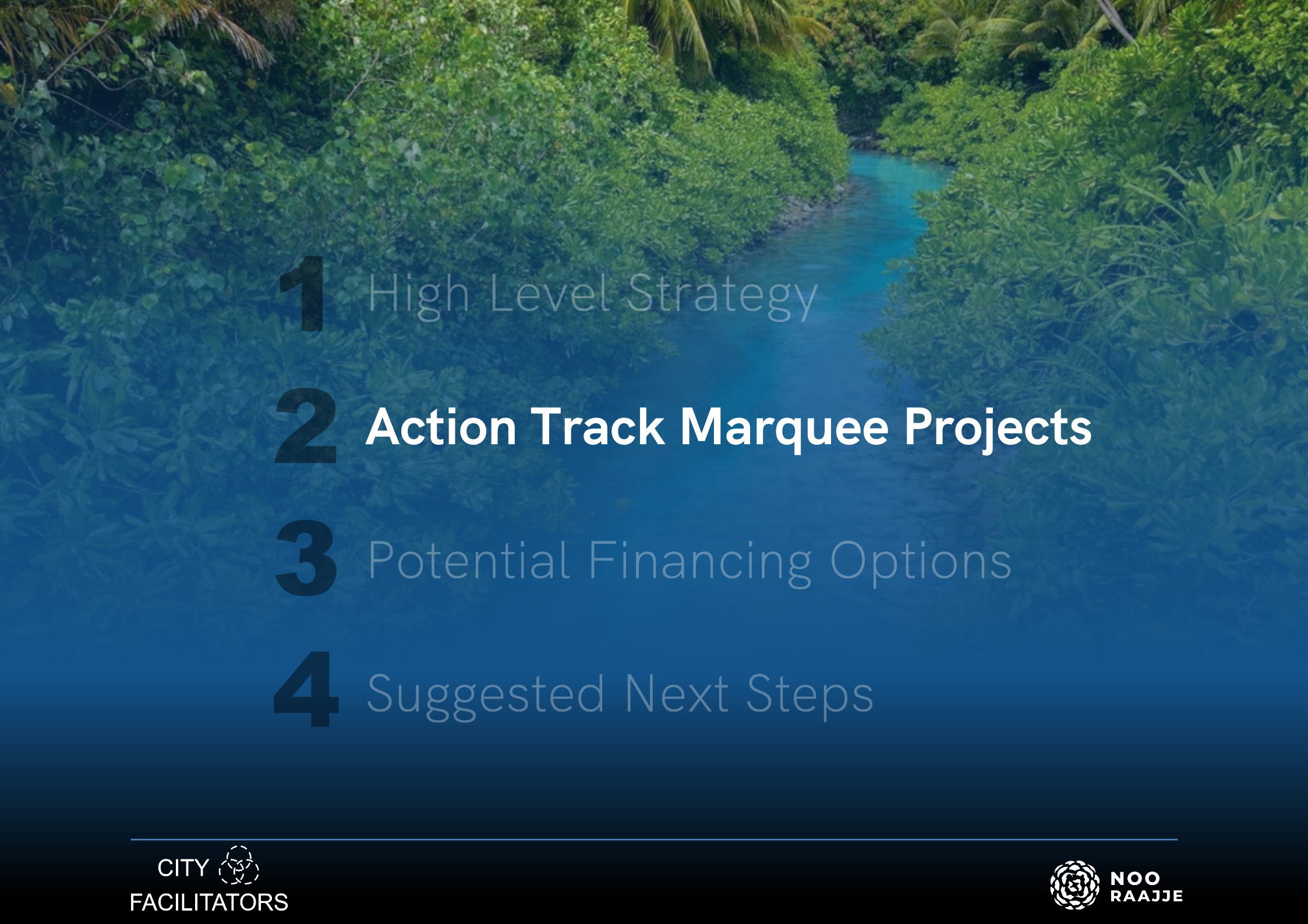
Blue Innovation Hub

As exemplified by Silicon Valley, the clustering of innovators in close proximity has a multiplier effect that spurs innovation, business creation, jobs and economic growth.

This is especially marked when academic institutions, finance and an ecosystem of government R&D and commercial corporations are also nearby.

Examples of Clusters & Innovation Hubs

San Francisco - "Silicon Valley"
Cambridge
Tel Aviv
Bangalore
Singapore



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Marque Projects

A number of projects have been identified and filtered in the four action tracks, which would help to bring the strategy alive and help to ensure the Maldives vision of becoming the World's First Smart Ocean State.

Program Framework

NATURAL CAPITAL

FOOD

ENERGY

TOURISM

level 3 HUMAN CAPACITY

TEAMWORK

level 2 FINANCE

level 1 ONE THING NARRATIVE

Trading Ecosystem Services (Carbon offsetting)

Turning nature restoration into a financial asset

- Trading environmental quotas and ecosystem services enables revenue generation for protecting fragile biospheres, especially marine life.
- The most traded ecosystem service is CO2-offsetting.
- Companies and individuals can compensate for GHG emissions by buying carbons credits from certified activities.
- To the Maldives this represents a huge economic opportunity to leverage the Natural Capital found in its close to 1 million sq. km EEZ.
- I.e., CO2-broker South Pole has an avg. project size of approximately 30M USD and could have several projects in the Maldives.

An example of a blue carbon project in Muskita from South pole

30 million USD avg. per project

50-100 jobs per project

20 M T CO2 captured

Coral Reef Restoration and Protection

Coral Reef Restoration and Coastal Protection using BioRock

- Maldivian stakeholders estimate 70%-90% of the Maldivian economy depending on coral reefs.
- BioRock has been successfully installed in the Maldives before.
- BioRock corals had 15x - 50x better survival rates than other coral reefs.
- BioRock installations protects better than grey infrastructure against coastal erosion and cost around 30% less
- BioRock can bring back life to coral reefs where they are otherwise dead. Useful for i.e., phase 2 of Hulhumale.

Picture from the 1996 Ihuru Barnacle BioRock project (photo is from 1997)

20-40 million USD for 5 km green seawall

Trains Maldivians in BioRock technology

15-50x Coral Survival Rate during bleaching

Vertical Farming

Vertical Farming decreases food import and prices

- Vertical farming in the Maldives addresses key challenges of over-reliance on imports, food security, and job creation.
- In 2019 the Maldives imported around 300 million USD worth of food.
- Food prices look to become more volatile due to extreme weather events and supply chain issues.
- The fluctuation of global food prices is further accentuated by fluctuation in fuel/transport cost.
- Vertical farming can drive high-wage job creation (when using controlled environments) and unskilled job creation in the case of permaculture.

Example of a controlled environment vertical farm (by BySpire)

5 million USD

1.5 jobs per 1m USD invested

50x produce per m^2

Mariculture

Aquaculture and Mariculture in the Maldives

- The Maldives has experimented with aquaculture for two decades.
- Early experiments with i.e., pearl farming showed promise.
- Lacking commercialization led to focus being turned towards sea cucumbers and groupers.
- Other parts of the mariculture value chain has been developed by the Mariculture Enterprise Development Project (MEDeP).
- A demonstration project close to the Blue Innovation Hub in Hulhumale could supply food to the Greater Malé region and attract finance to mariculture ventures.
- Job creation potential is huge.

Aquaculture hatchery being established in Maanaagalaa island

10 million USD

+1000 jobs

Reduces reef fishing for bait

Maldivian Tuna: Brand Premium and New Markets

Enter new markets to increase profitability of tuna

- More than 22.000 are employed in the fishing industry in the Maldives.
- Maldivian tuna have a hard time competing in European markets due to tariffs.
- The Maldives has some of the most sustainable types of fishing in the world.
- There is an opportunity to increase the profitability of the tuna industry by addressing other high-end markets in the world.
- The Maldives could enter markets where the sustainability of the Maldivian practices earn a price premium rather than be blemished by the actions of other actors in the Indian Ocean.

Pole-and-Line Tuna Fishing In the Maldives

Increase profit margins of tuna

Secure +22.000 jobs

Address high-end markets

Marine Floating Solar PV (10 MW) in Hulhumale

Floating Solar enables technologies in all sectors

- Floating solar company SwimSol estimates that a floating solar installation would cost around 1800 USD per kWh peak.
- The rest is the cost of batteries to store excess generated energy.
- 3M USD for a 2MW facility without batteries.
- Estimated tariffs around 15-18 USD cent per kWh with financing at an interest rate 8%.
- Current production cost of a kWh is around 25 USD cents.
- The tariff price includes a 15% energy loss in battery and excess energy loss of 5-15%.
- Floating Solar enables Vertical Farming, Hydrogen production, etc.

Swimsol installation at Baa Atoll, Maldives

22 million USD project

25 jobs per 1M USD invested

99% CO2 reduction per kWh

Electric Vehicles and Alternatively Fueled Vehicles

Reduce operational costs and emissions

- Transitioning to EVs in the Maldives would increase quality of life in the Maldives.
- EVs pollute less, even with electricity generated by diesel.
- EVs reduce operational cost with up to 95%.
- Kerala State Water Transport Department showed the electric ferry generated almost zero emissions and was 30x cheaper to run than its diesel counterparts.
- The Maldives is looking for financing for 13 out of 15 electric buses as part of an electric public transport pilot (see icons below).
- Hydrogen can be used for heavier vessels and long-distance transport.

Yanmar Holdings Co have conducted a field demonstration test for the maritime fuel cell system on March 24, in Oita, Japan.

2.3 million USD – 13 buses

80-90% reduced fleet OPEX

No operational CO2

Wellness and Health Tourism

Premium services and specialization drive profits

- The Maldives boasts one of the tourism sectors in the world with the highest price premium.
- Price premium is currently based on the outstanding marine biodiversity of the Maldives and the outstanding levels of hospitality
- By adding high-value services and products such as health and wellness tourism, the Maldivian tourism sector can safeguard and maybe expand its price premium
- Using tourism to power other sectors generate good jobs in the health and wellness sector.
- This requires exploring and enabling synergies between the tourism, health, and educational sectors.

Wellness practice on a beach in the Maldives

Maintain tourist price premium

Increase jobs in health and wellness

Reduce CO2 per $ earned

Hospitality Academy

World class hospitality academy leads to good jobs

- Tourism is the economic driver of the Maldives
- Maldivians are underrepresented in higher management positions in the tourism sector.
- A world-class Hospitality Academy, the Maldives can overcome this underrepresentation and provide great jobs to Maldivians.
- Partnerships and exchange programs with other top tourism training facilities worldwide can build reputation.
- A Hospitality Academy in the Maldives is also bound to attract affluent long-term visitors in the shape of teachers and students.

Students from Vatel's International Hotel Management Course (Bachelor's Degree)

15 million USD investment

Maldivians in top management

Environmental awareness in tourism

Educational Tourism

Educational tourism provides talent and revenue

- As the World's First Smart Ocean State, the Maldives can attract world-class talent in marine sciences and hospitality training in the shape of students and professors.
- The rich marine biodiversity represents a treasure trove of discoveries yet to be made.
- An exchange partnership with the Maldives would be a competitive advantage to any marine university.
- The leading universities in Marine Biology are all in countries with very high spending power (USA, Norway, and Switzerland).
- The educational tourism would extend to hospitality training.

Students increasingly look to pick up experience and knowledge through exchanges

5 million USD investment

Build Blue Economy Expertise

Support export industries

Putting it all together....

An ecosystem of people and Smart Marquee Projects linked to Blue University, Blue Data Hub and the Blue Ignition Hub in Hulhumale

Blue Innovation & Data Hubs

Hulhumale could be an excellent location for the development of the Blue Innovation Hub given that real estate has already been planned to be used for a knowledge center.

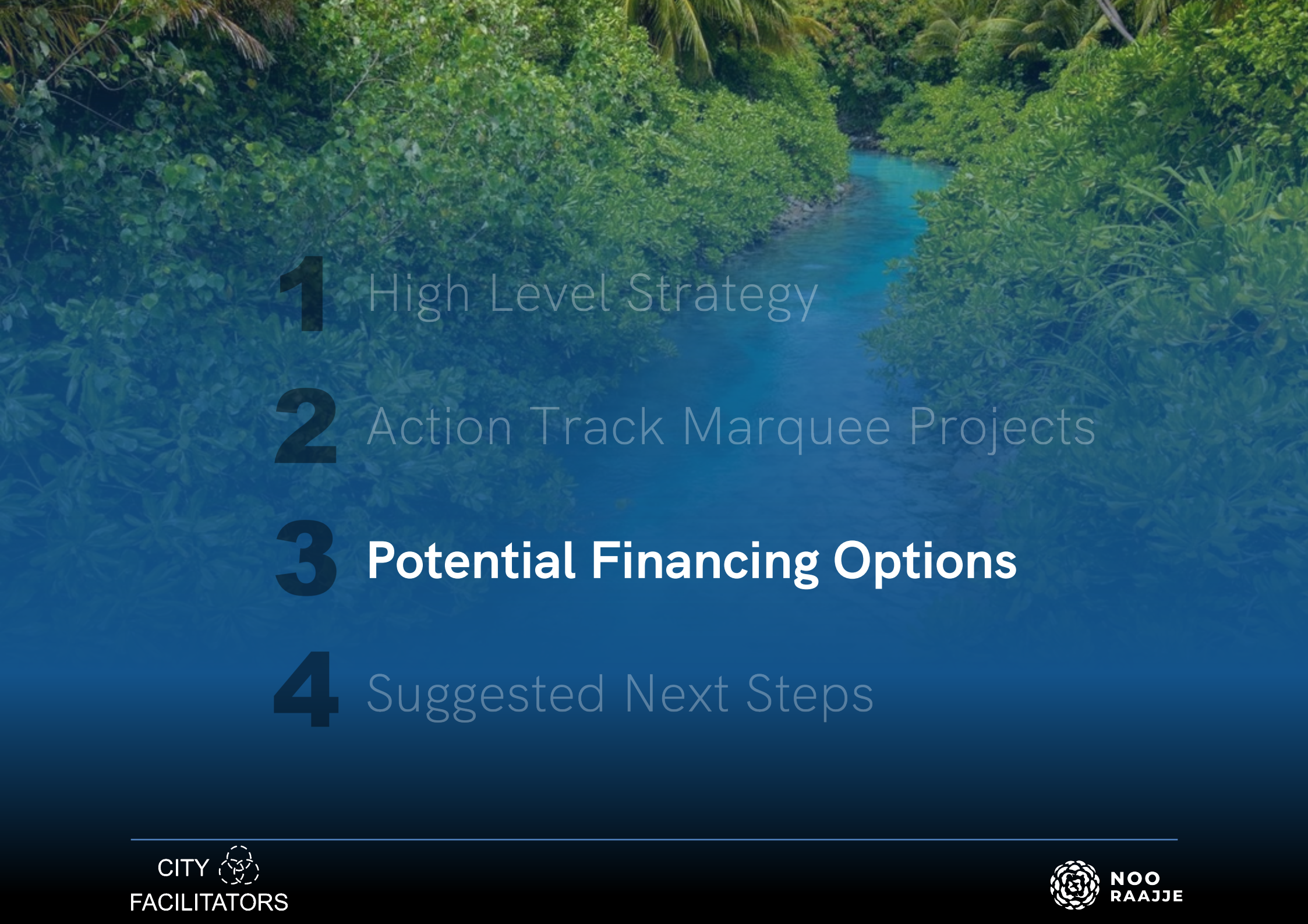
This physical Blue Hub would be aided by the electronic blue hub and could be the progenitor for several blue related projects as part of the Maldives diversification strategy.

The virtual hub (Noo Raajjee Blue Data Hub) could be developed in parallel and could show early results.

Key steps could include

(a) firming up plans for the hospitality training center in Hulhumale

(b) Considering the benefits of co-locating MMRI and the Coral Institute in close proximity on Hulhumale; where each institution would retain its own space, identity, and institutional arrangements



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Finance Mechanisms

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This could finance blue strategy projects as well as other government priorities.

Pricing the Unique Maldivian Environment

The unique environment of the Maldives is underpriced.

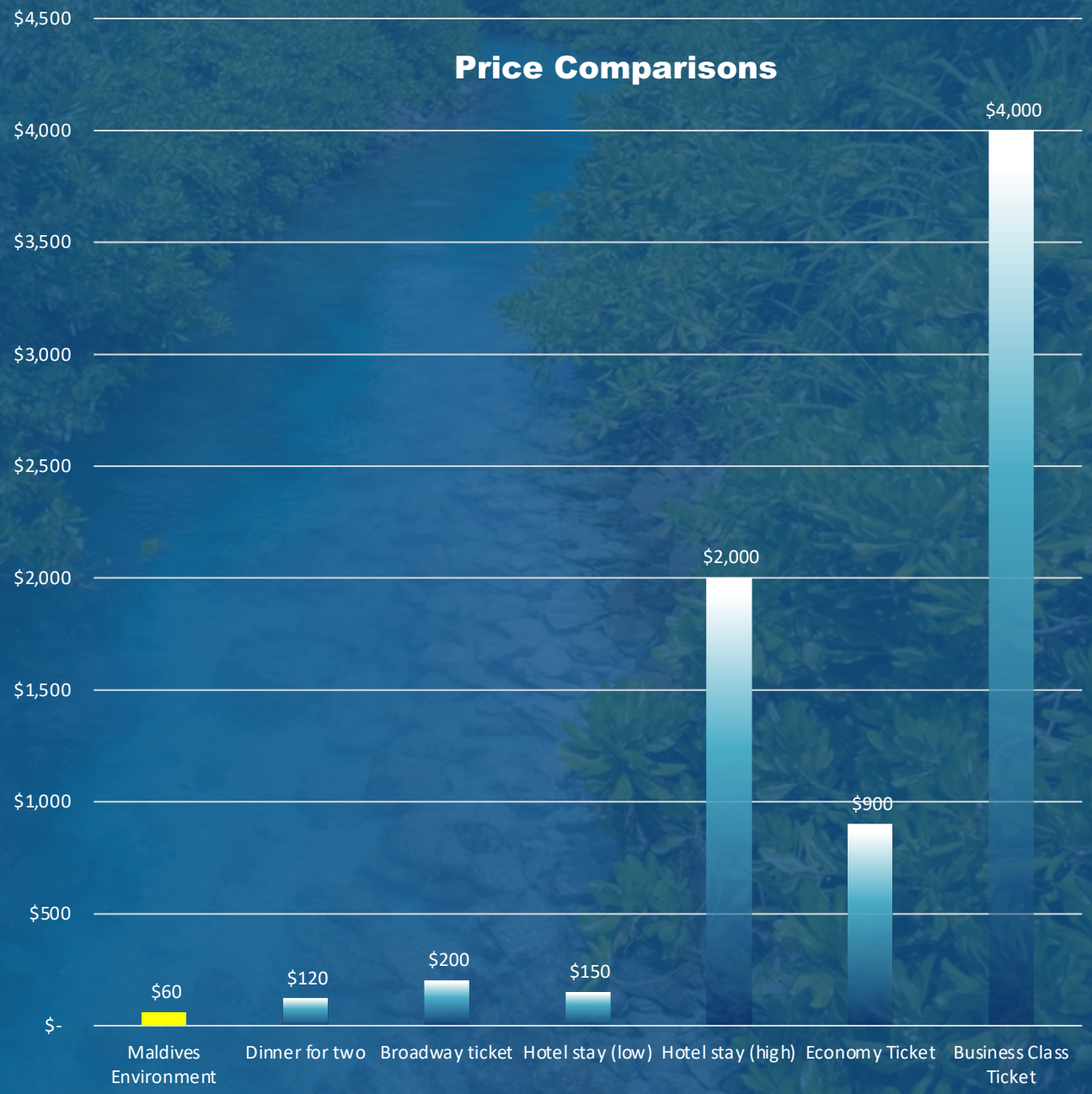
$60 USD to dive with Manta Rays is a low price leading to oversubscription of users for Manta Rays and Whale Sharks. This could be detrimental to the environment.

Compare this with other experiences. These comparisons make a strong argument that the Maldives environment is underpriced.

Already there is:

- a green tax ($3 – 6/day)
- An Airport tax ($30 - $240)

The airport tax charged to tickets provides single collection point (via IATA)



Revenue Generation through Airline Ticket Fees

Conservative estimate: 2021 arrivals in Year r1 (900,000); reaching 2 million by Year 7 and

Securitizing revenues to get cash up front; in 2022 or in 2023

Fee	Discount Rate	Net Present Value
$ 20	7.5%	$226,791,084
$ 50	7.5%	$566,977,710
$ 100	7.5%	$1,133,955,420

Instead of receiving monies annually, one option is to securitize the income stream in the form of a blue bond or a resilience bond. Effectively, it means paying the financial markets an interest for receiving the money upfront rather than over time.

These potential income streams could have a net present value of between $200 million and $1 billion dollars, based on a ten-year bond structure with a coupon of 7.5%. If the coupon (or the discount rate) is lower, then the NPV will be higher.

How it works (example)

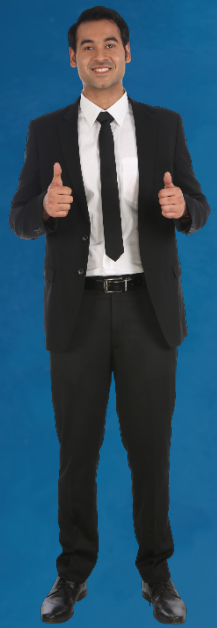
Jauza has a contract to get $1 dollar per day from Moosa for the next 20 days.

But she needs $12 now to buy 12 coconuts.

Moosa can't give her $12 today, only $1 per day for the next 20 days.

How it works (example)

Moosa is not worse off by switching the contract to Mohammed.

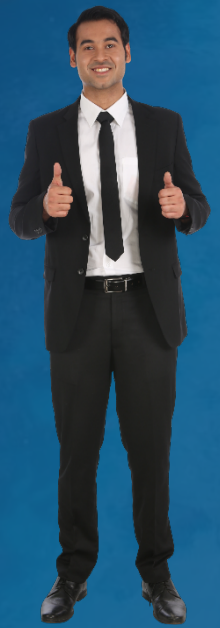


Mohammed knows Moosa is good for the money and is prepared to take over the contract for $1/day for 20 days. And he will give Jauza $15 today and pocket the $5 for himself

How it works (example)

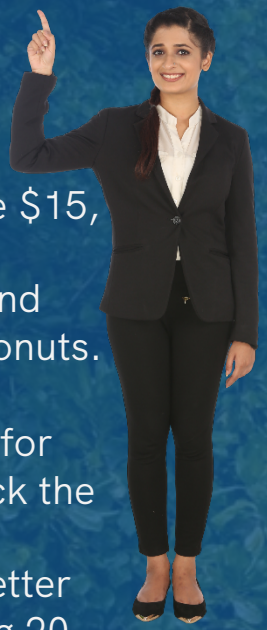
Jauza took the $15, used $12 to to buy 12 coconuts which she then sold for $60.

Jauza has tripled her money from $20 to $60.



Mohammed is $5 richer.

How it works (example)



Jauza used the $15, to borrow $45 (3x leverage) and bought 60 coconuts.

She sold them for $300, paid back the $45 and made $255. Much better off than waiting 20 days for $20.

Leveraging up to billions of dollars

	NP Values @ 5.0%	Leverage x 2	Leverage x 5
$20	**$ 487,000,000**	$ 974,000,000	$ 2,435,000,000
$50	$ 1,217,000,000	$ 2,434,000,000	$ 6,085,000,000
$100	$ 2,435,000,000	$ 4,870,000,000	**$ 12,175,000,000**

For example, a lower discount rate of **5%**, could yield between $400 million and $2 billion.

Moreover, these monies could be further **leveraged** by a factor of 2 to yield almost $1 billion (assuming a fee of $20), or by a factor of 5 factor to yield $12 billion (assuming a $100 fee). There are many permutations in between.

Note: that not all investments would attract co-financing, so $12B is a hypothetical extreme. However, note also, that some projects could be leveraged even higher than 5, to attract co-financing at a ratio of 19.

Acceptability of Fees

Contextual information will be needed to improve the acceptability of such fees

Key Arguments could include:

1) Maldives is highly vulnerable to Climate Change, access to climate funds has been difficult and COP-26 gave no new assurances that the Maldives could access climate funds more easily. Fees will be used as a catalyst to attract available finance for increasing resilience and decarbonizing the Maldivian economy.

2) The Maldives wishes to diversify its economy. This takes investment which is not readily available from traditional sources

3) The Maldives wishes to protect its environment. Tourism is the backbone of the economy, and with this fee structure, tourism becomes the solution for diversifying the economy and protecting the environment.

4) Funds from these fees could go through the sovereign development fund that could be used to attract co-financing, thereby leveraging up the value of the fund and its impact in the Maldives.

Structure

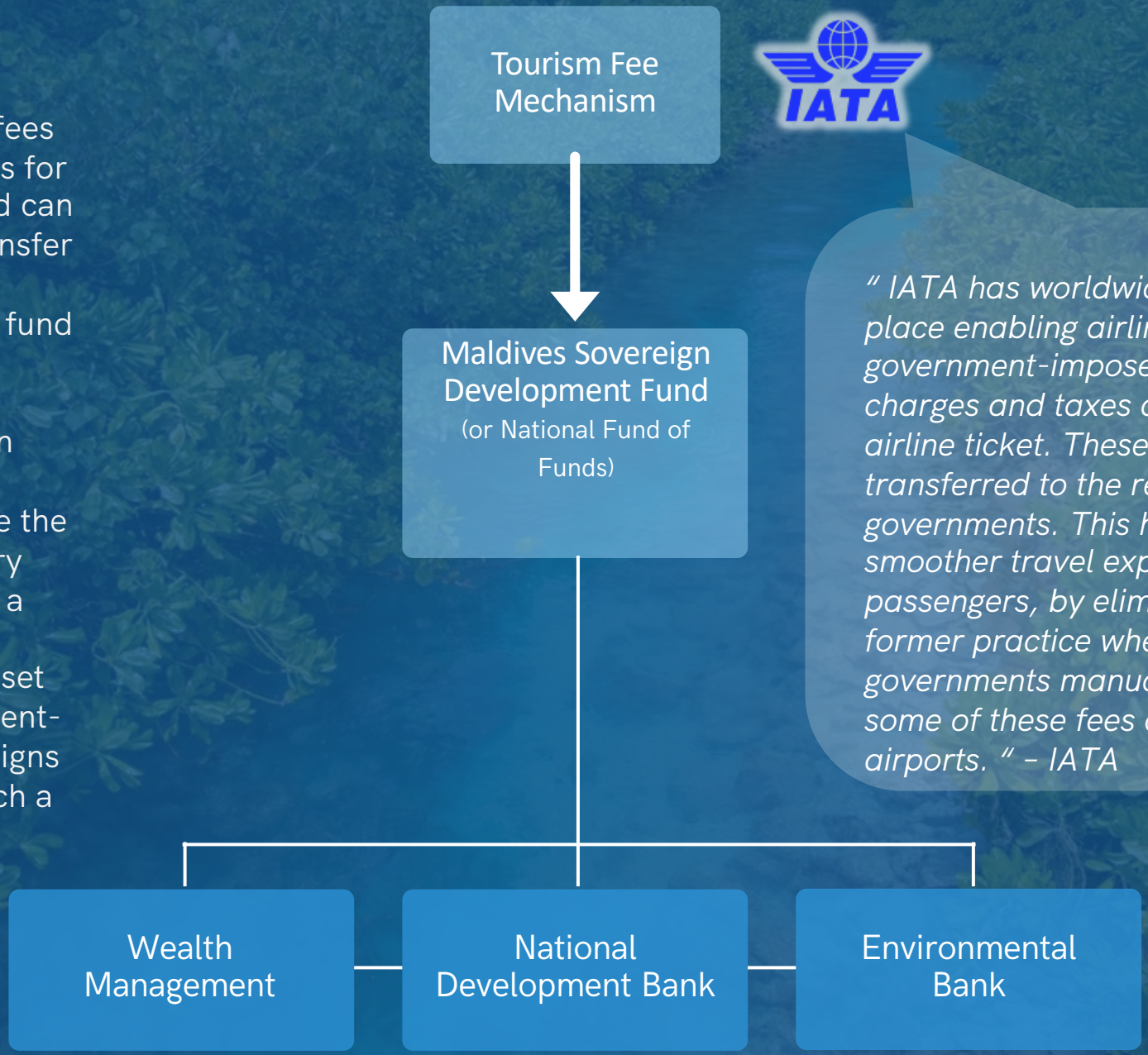
The following slides show how the mechanism could be structured so as to:

1) Support overall economic and social development
2) Safeguard environmental investments and benefits
3) Maximize leveraging opportunities
4) Improve SME Financing
5) Ensure coordination between SME financing and related project development financing
6) Ensure ongoing societal / social needs are met such as housing and training
7) Invest for a “rainy day”
8) Ensure independence, while working cooperatively with the President’s Office, the Ministry of Finance, the Ministry of Economic Development and the Ministry of Environment

Structure of Finance mechanisms

IATA could collect fees on tickets (as it does for other countries) and can be instructed to transfer these fees into the Maldives sovereign fund mechanism.

This mechanism can then act a "fund of funds" and disburse the funds into subsidiary banks / agencies in a transparent and prescribed ratio as set out by the government-of-the-day that designs and implements such a mechanism.

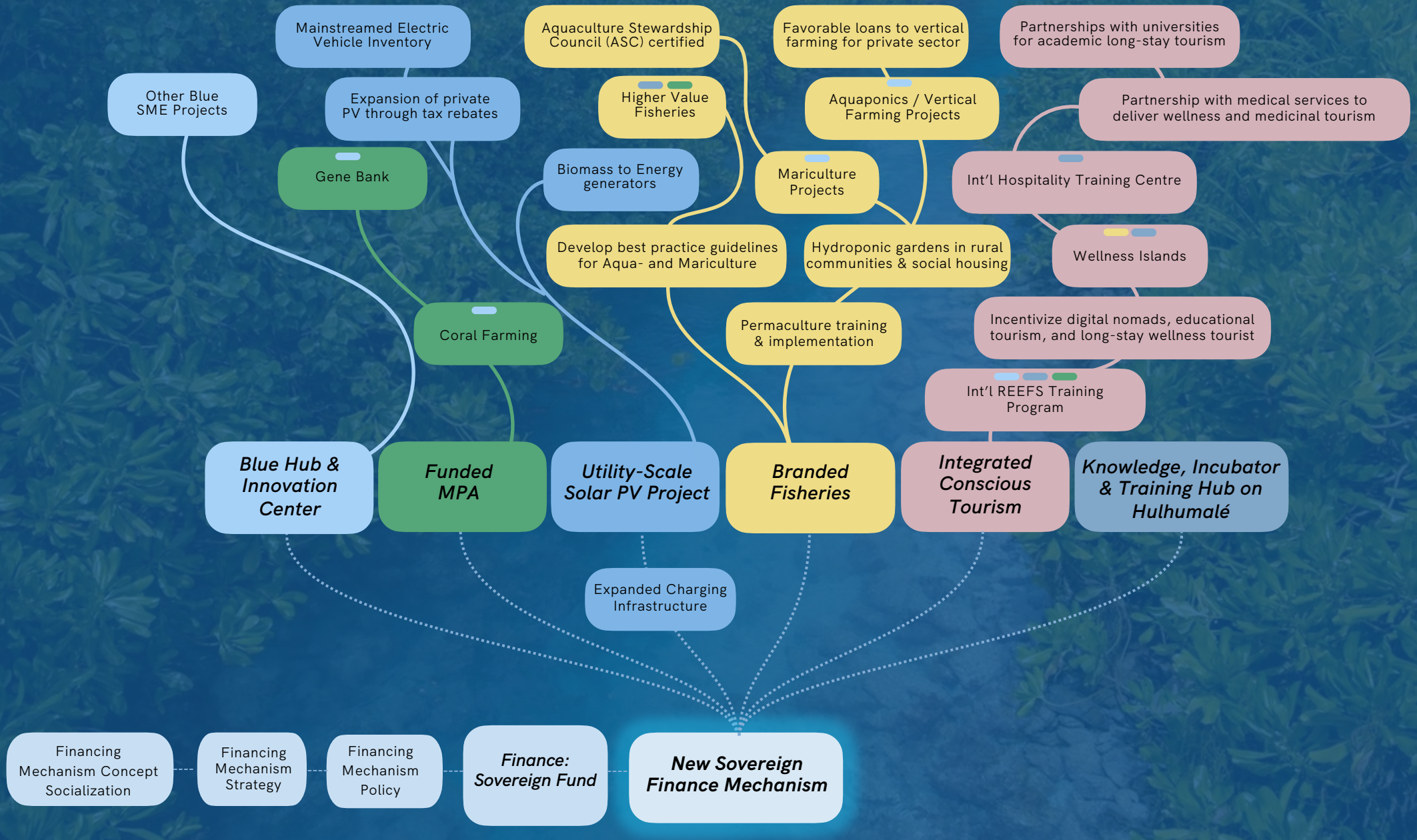


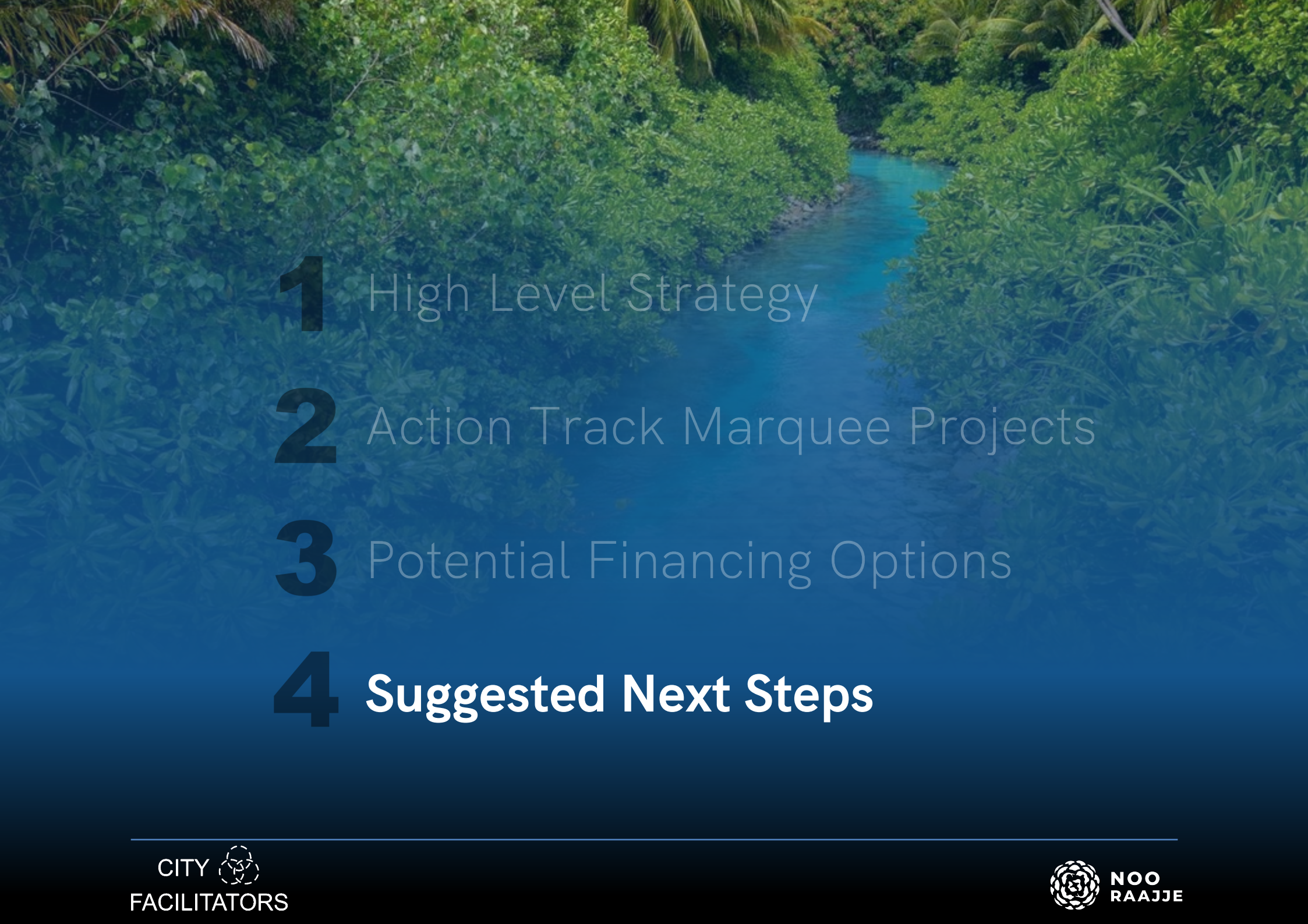
IATA

" IATA has worldwide standards in place enabling airlines to collect government-imposed fees, service charges and taxes as part of an airline ticket. These are then transferred to the respective governments. This has provided a smoother travel experience for passengers, by eliminating the former practice whereby many governments manually collected some of these fees and taxes at airports. " – IATA

Billion Dollar Sovereign Fund

The integration of these ideas with the existing Sovereign Development Fund (or through a stand-alone entity) could be a major signal and potentially one of the first dominoes to catalyze a cascading sequence of events in the blue economy strategy to deliver on a range of blue economy projects that would help to diversify the Maldivian economy.





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Suggested Next Steps

1. **Choose Projects for implementation [now]**: Give go/no go to Noo Rajje on Funding Mechanisms and Marquee Projects to be developed.

2. **Fund Mechanism**: Consider merits of suggested sovereign funding mechanism and seek guidance and alignment with key Ministries. Develop more detailed concept & strategy.

3. **Narrative & Communications**: Firm up the Narrative around the Smart Ocean State; develop comms strategy

4. **Trunk & Branch**: Consider (and revise as needed) timelines on the trunk and branch strategy; socialize with Noo Raajje and align with key ministries

5. **BE Working Group**: Establish BE working group to take responsibility for mission critical deliverables

6. **Towards Investment**: Finalize Prospectus, Plan Roadshow and Partnership Forum

Polling: Funding Mechanisms and Marquee Projects

https://forms.gle/AY6zzRV1cTxdnDeV8

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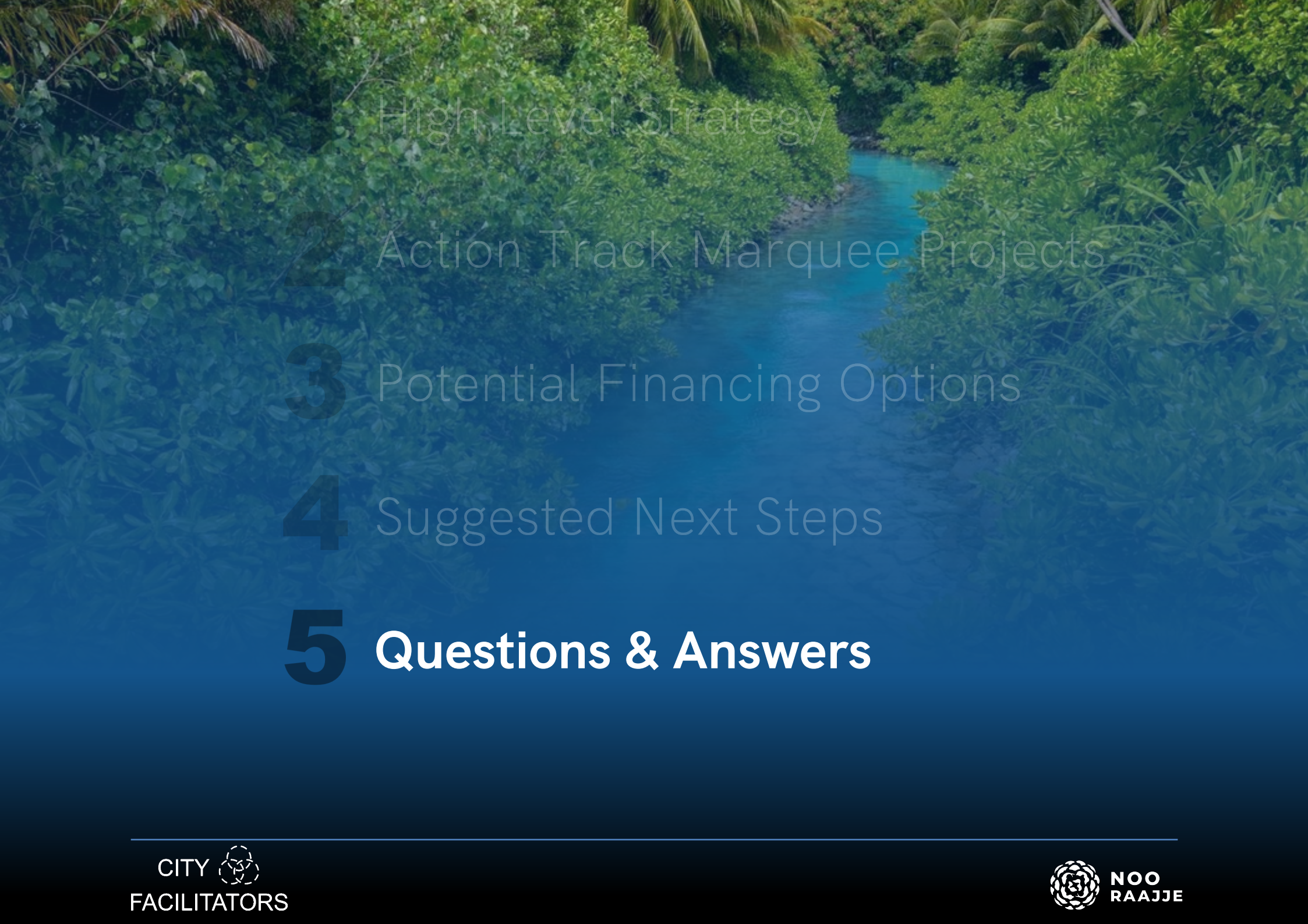

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5 Questions & Answers

Revenue Generation through Airline Ticket Fees

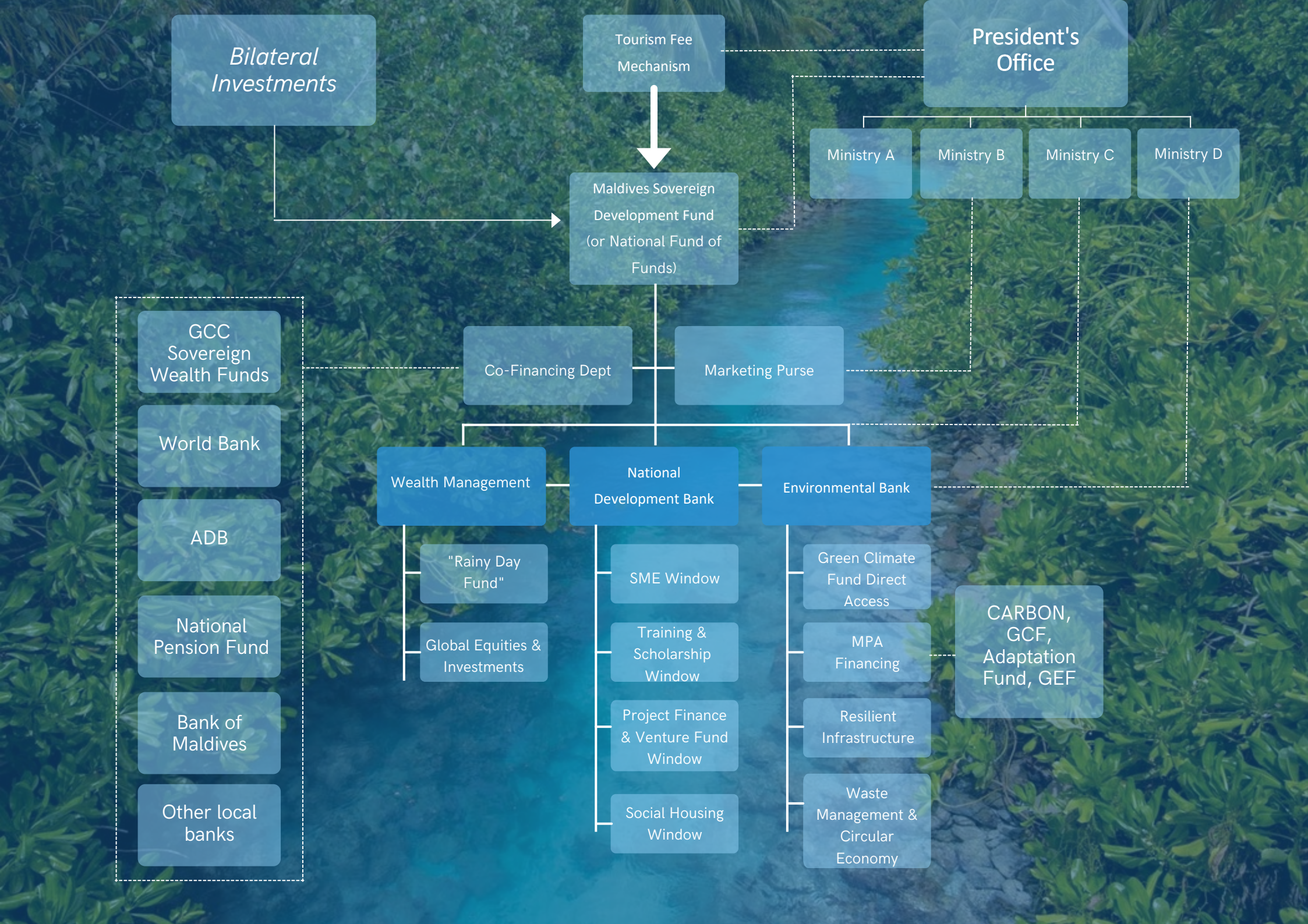
	2021 numbers Year 1	Year 2	Year 3	Year 4	*2019 numbers* Year 5
Tourism Numbers	**900,000**	1,080,000	1,296,000	1,555,200	**1,866,240**
$20 Fee	**$ 18,000,000**	$ 21,600,000	$ 25,920,000	$ 31,104,000	**$ 37,324,800**
$50 Fee	$ 45,000,000	$ 54,000,000	$ 64,800,000	$ 77,760,000	**$ 93,312,000**
$100 Fee	$ 90,000,000	$ 108,000,000	$ 129,600,000	$ 155,520,000	**$ 186,624,000**

	Year 6	Year 7	Year 8	Year 9	Year 10
Tourism Numbers	1,959,552	2,057,530	2,160,406	2,268,426	2,381,848
$20 Fee	$ 39,191,040	$ 41,150,592	$ 43,208,122	$ 45,368,528	$ 47,636,954
$50 Fee	$ 97,977,600	$ 102,876,480	$ 108,020,304	$ 113,421,319	$ 119,092,385
$100 Fee	$ 195,955,200	$ 205,752,960	$ 216,040,608	$ 226,842,638	**$ 238,184,770**

A fee collected on airline tickets could help the Maldives to invest in the economic, environmental and social dimensions of its blue economy. Revenues that could be generated on $20, $50 and $100 USD are shown here.

Based on recent arrivals of around 900,000, this could yield $18 million USD per year. Alternatively, a fee of $100 could yield around $170 million USD, based on 2019 arrivals.

The table above takes a conservative estimate regarding the Maldives' return to the 2019 arrivals volume over 5-year period and projects further growth thereafter. This shows that by year ten, between $47 million and $238 million could be generated annually.


Bilateral Investments
Tourism Fee Mechanism
President's Office
Ministry A
Ministry B
Ministry C
Ministry D
Maldives Sovereign Development Fund (or National Fund of Funds)
GCC Sovereign Wealth Funds
World Bank
ADB
National Pension Fund
Bank of Maldives
Other local banks
Co-Financing Dept
Marketing Purse
Wealth Management
National Development Bank
Environmental Bank
"Rainy Day Fund"
Global Equities & Investments
SME Window
Training & Scholarship Window
Project Finance & Venture Fund Window
Social Housing Window
Green Climate Fund Direct Access
MPA Financing
Resilient Infrastructure
Waste Management & Circular Economy
CARBON, GCF, Adaptation Fund, GEF

Roots, Trunk, and Branch Strategy. Progress can be made each quarter

The Roots, Trunk, and Branch Strategy takes its name from the sustainable economic development approach.

It shows the key logical steps for each track.

This provides a roadmap for tracking progress quarter by quarter in 2022, 2023 and beyond.

The bars indicate which other tracks form part of the given project.

- *Knowledge, Incubator & Training Hub*
- *Funded MPA*
- *New Sovereign Finance Mechanism*
- *Island Food*
- *Blue Hub & Innovation Center*
- *Utility-Scale Solar PV Project*
- *Integrated Conscious Tourism*

The colored lines indicate the development of projects within a given implementation track.

- *Natural Capital*
- *New Sovereign Finance Mechanism*
- *Island Food*
- *Supporting Tracks*
- *Clean Energy*
- *Integrated Tourism*