

innovative financing for Hong Kong wetlands

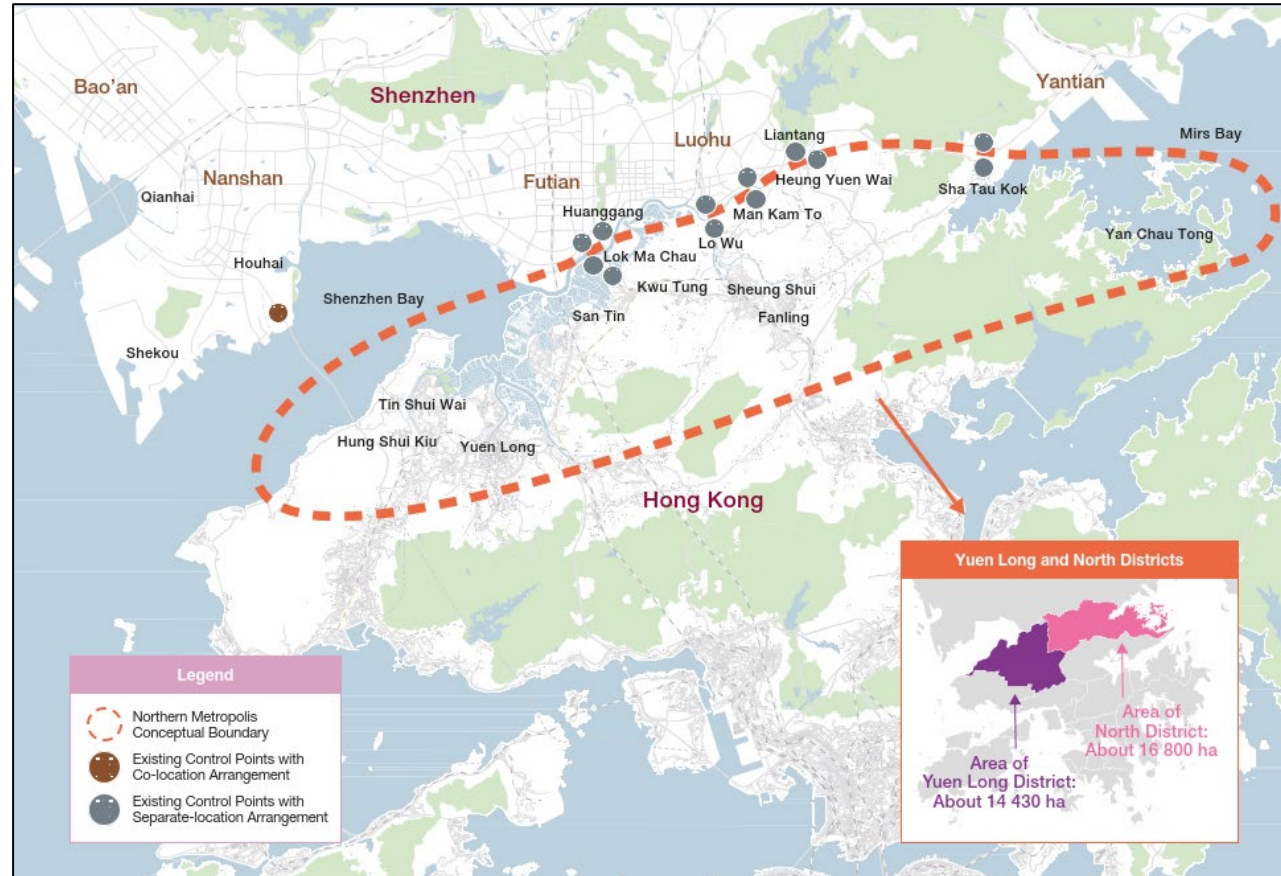
Hong Kong Nature-based Solutions Week 2026

Speaker Session 3: Market-based and blended finance for NbS:
opportunities in the Northern Metropolis, BSAP and the Greater Bay Area

4 June 2026

Hong Kong Northern Metropolis: a new vision for sustainable growth

The Northern Metropolis landscape



Source: HKSAR Government. (2021). Northern Metropolis Development Strategy Report 2021

A Landscape of Duality

- Northern Metropolis spans 30,000 hectares
- Designed as both an economic hub and ecological system

A "Green-Blue" Ecological Matrix

The region's natural backbone is formed by a unique juxtaposition of two keystone ecosystems:

1. **Forests:** Forests (2,500 ha) support climate and watershed functions
2. **Wetlands:** (e.g. Mai Po) are critical for biodiversity and flood resilience

The NbS financing challenges

Why NbS needs new finance

- 1 **Forests, wetlands & coastal ecosystems reduce flood, landslide, and heat risk** — essential for the NM's economic development
- 2 **Investment needs likely exceed USD 1 billion** over the next 50 years — highlights the need for diversified and scalable financing solution
- 3 **Traditional conservation framing limits access** to large private capital pools
- 4 Reframing **NbS as climate adaptation infrastructure** unlocks insurers, developers, and asset owners

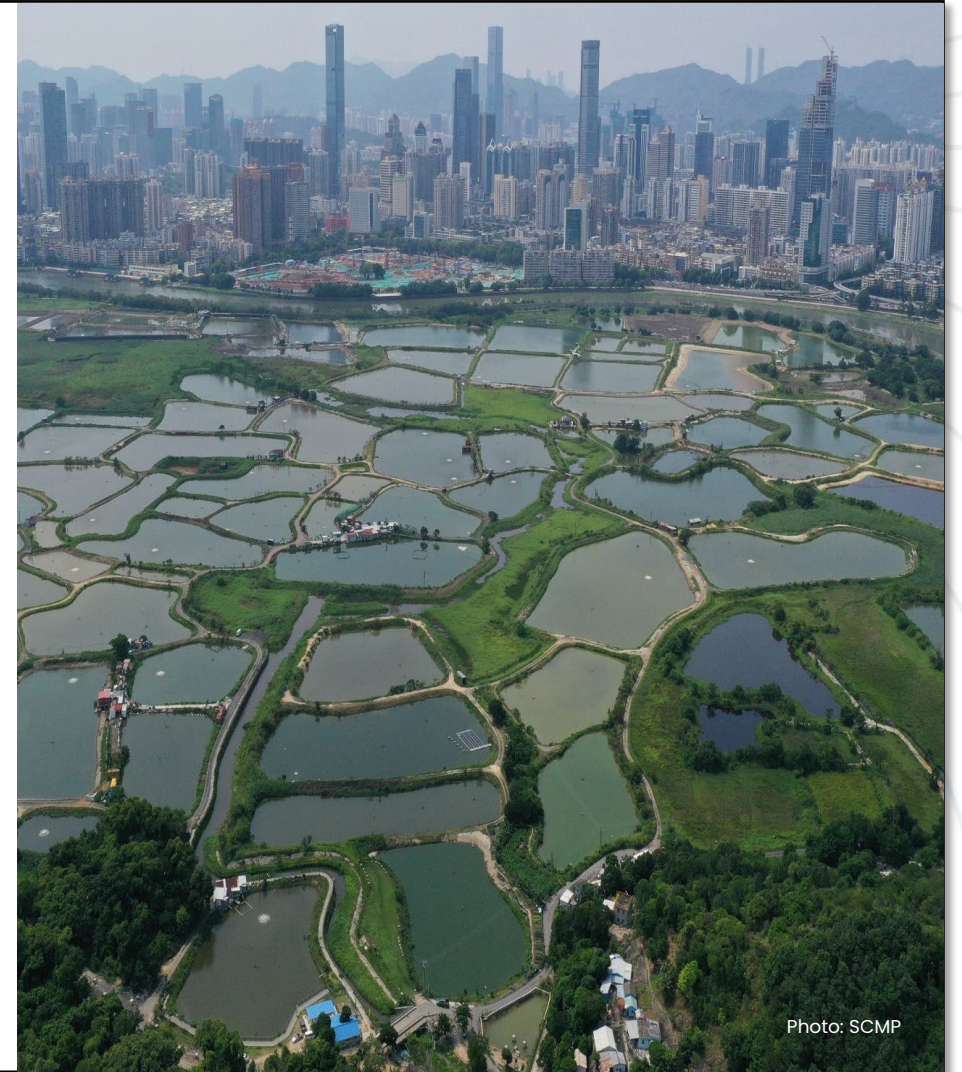


Photo: SCMP

Three financing mechanisms

A complementary set of pathways that align public objectives with private-sector incentives, supported by enabling policies, robust measurement frameworks, and coordinated stakeholder action.

01

Insurance-linked Resilience Financing

EXPECTED OUTCOMES

- ✓ Reduced insurance claims & losses
- ✓ Mobilizes patient private capital
- ✓ Long-term NbS stewardship incentives

02

Developer-led NbS Investment

EXPECTED OUTCOMES

- ✓ NbS mainstreamed into development
- ✓ Lower project risk, higher asset value
- ✓ Reduced public expenditure on grey infra

03

Sustainable Aquaculture with NbS

EXPECTED OUTCOMES

- ✓ Improved wetland & coastal ecology
- ✓ Resilient livelihoods & food security
- ✓ Scalable restoration + economic activity

Mechanism #1: insurance-linked resilience financing

QUANTIFYING RISK TO UNLOCK CAPITAL

1

Quantify Risk Reduction

Hydrological & geotechnical data maps how NbS alter runoff, flood peaks and slope stability

2

Pool Across Insurers

Industry-wide or GBA cross-boundary risk pool — lowers individual capital requirements

3

Scale via Capital Markets

Insurance-linked securities bundle NbS outcomes and distribute risk globally

4

Co-finance NbS Projects

Insurers invest upfront in exchange for expected reductions in future claims

Key Stakeholders:



Property insurers



Global reinsurers / capital markets

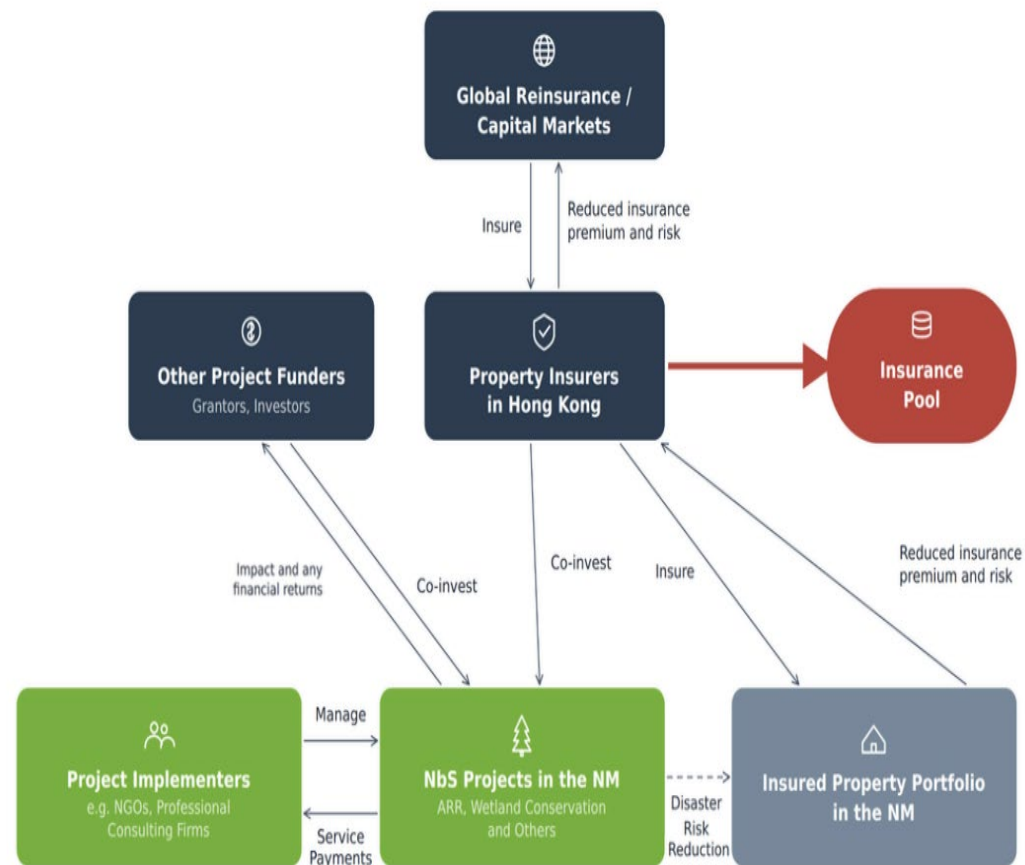


Property developers & other funders



Project implementers

Insurance-linked investment – how the pool works



Mechanism #2: developer-led NbS investment

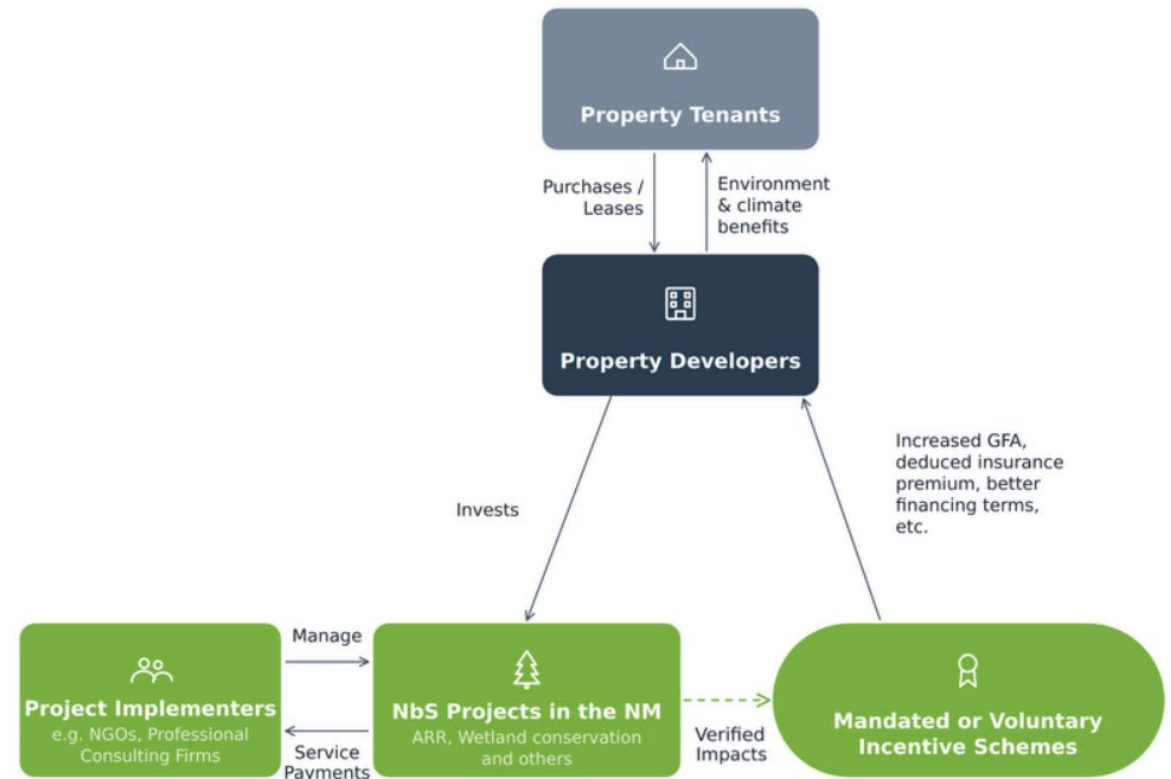
NbS as development infrastructure

- **NbS reduces risk and improves asset value**
Lower insurance exposure, reduced climate vulnerability, stronger long-term returns
- **Enhances project quality and market positioning**
Better microclimate, improved liveability, stronger asset differentiation
- **Incentives drive developer behaviour**
GFA bonuses, expedited approvals, and financial benefits align private decisions with public outcomes

5 Action Steps

- 1 Introduce an NbS incentive scheme in the Northern Metropolis
- 2 Link NbS to better insurance and financing terms
- 3 Require long-term stewardship of NbS assets
- 4 Use public projects to set market standards
- 5 Crowd in private capital through NbS-aligned development finance

Developer-led investment Incentives in. Performance out.



Mechanism #3: sustainable aquaculture with NbS

Opportunity to integrate ecological elements into aquaculture landscape

1,000+ hectares

of existing or restorable fishponds and water bodies in the NM

Key examples:

Mangrove Buffers

Filter runoff, reduce sedimentation, support biodiversity, protect from storm surges and sea-level rise

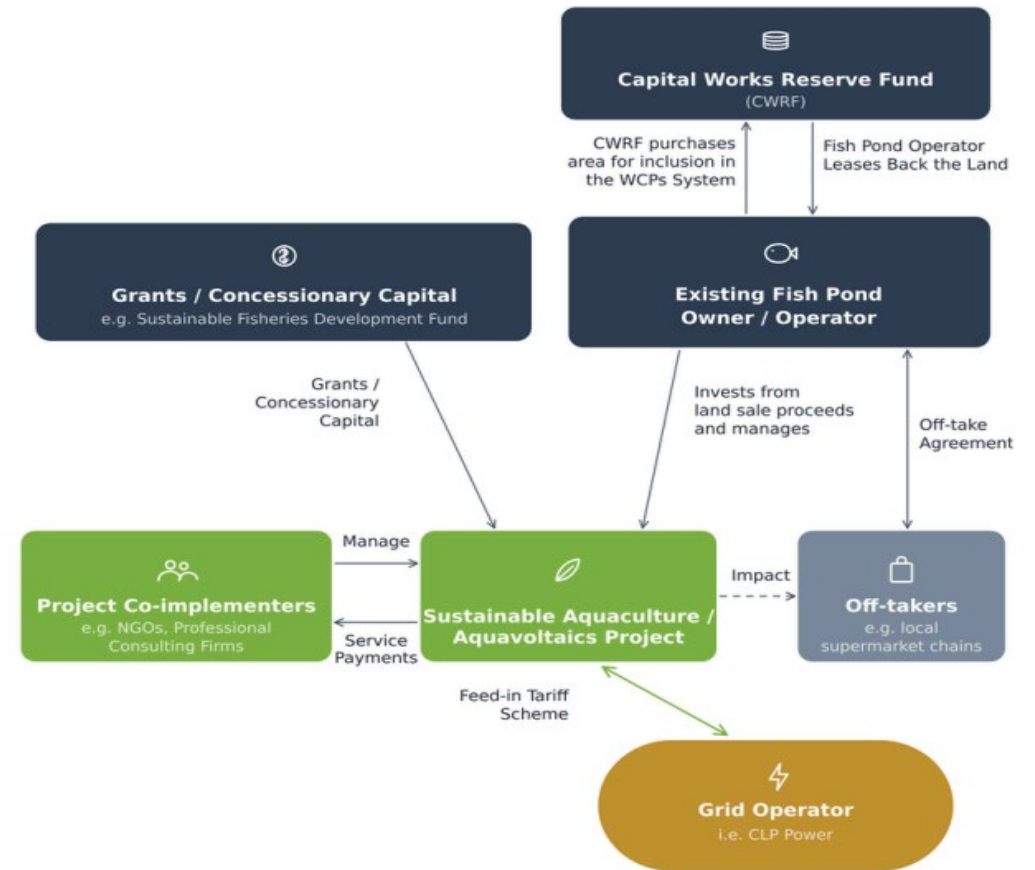
Polyculture Systems

Multi-species cultivation mimics natural food webs, cuts disease & chemical use

Floating Wetlands / Aquavoltaics

Purify effluent + generate renewable energy via solar PV on ponds

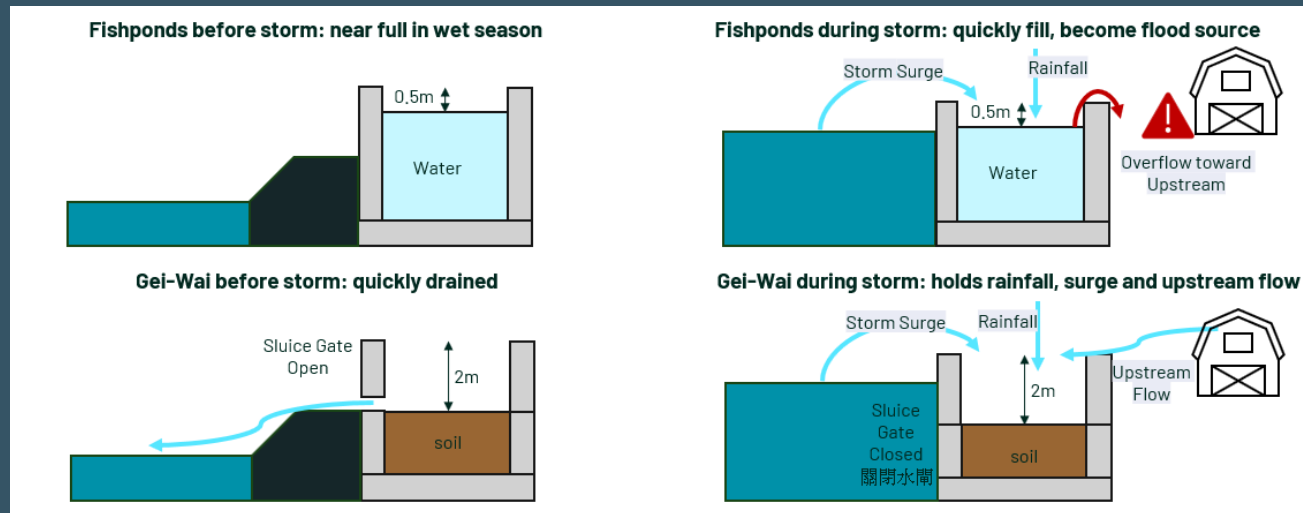
A regenerative pond system – aligning economic productivity with ecological restoration



NbS in action: reducing flood losses

Why Gei-Wai outperforms fishponds

- Fishponds sit near-full in wet season → they quickly overflow during storms, becoming flood sources.
- Gei-Wai are pre-drained before storms → they act as flood buffers, absorbing rainfall, storm surge, and upstream flow.



Source: HKUST x The Nature Conservancy, Dec 2025

Quantified Flood Loss Reduction

~10% reduction in flood losses
(~HK\$54M avoided per event)

Strategy	Area (ha)	Avoided Loss %	Avoided (HK\$M)
Gei-Wai (small)	66	1.8%	10.2
Gei-Wai (large)	1,071	7.1%	40.3
Gei-Wai (small) + Forest	66 + 1,025	4.2%	23.7
Gei-Wai (large) + Forest	1,071 + 1,025	9.6%	54.1

*Modelling a compound extreme event: Black Rainstorm (Sep 2023) + Storm Surge Typhoon Hato (2017)

Enabling conditions: unlocking capital at scale

01

Strategic Awareness & Policy Alignment

NbS positioned on par with housing, transport, flood management

02

Institutional & Financial Readiness

Tools, metrics & mandates that explicitly recognize adaptation outcomes

03

Actionable Engagement & Project Clarity

Standardized structures, clear financing pathways, credible MRV

04

Robust Cost–Benefit Assessment

Transparent valuation of avoided flood damage & deferred infra costs

05

Recognition of Explicit and Implicit Value

Long-term avoided losses often exceed upfront NbS costs

06

Regulatory Incentives to De-risk Investment

Lower capital requirements; favorable prudential treatment for NbS

07

Business & Financial Incentives

Preferential loans, reduced premiums & market advantages tied to outcomes

Conclusions

- 1 Three financing pathways can close the NbS Gap
- 2 Treat ecosystems as critical infrastructure
- 3 Requires policy alignment, incentives, and coordination

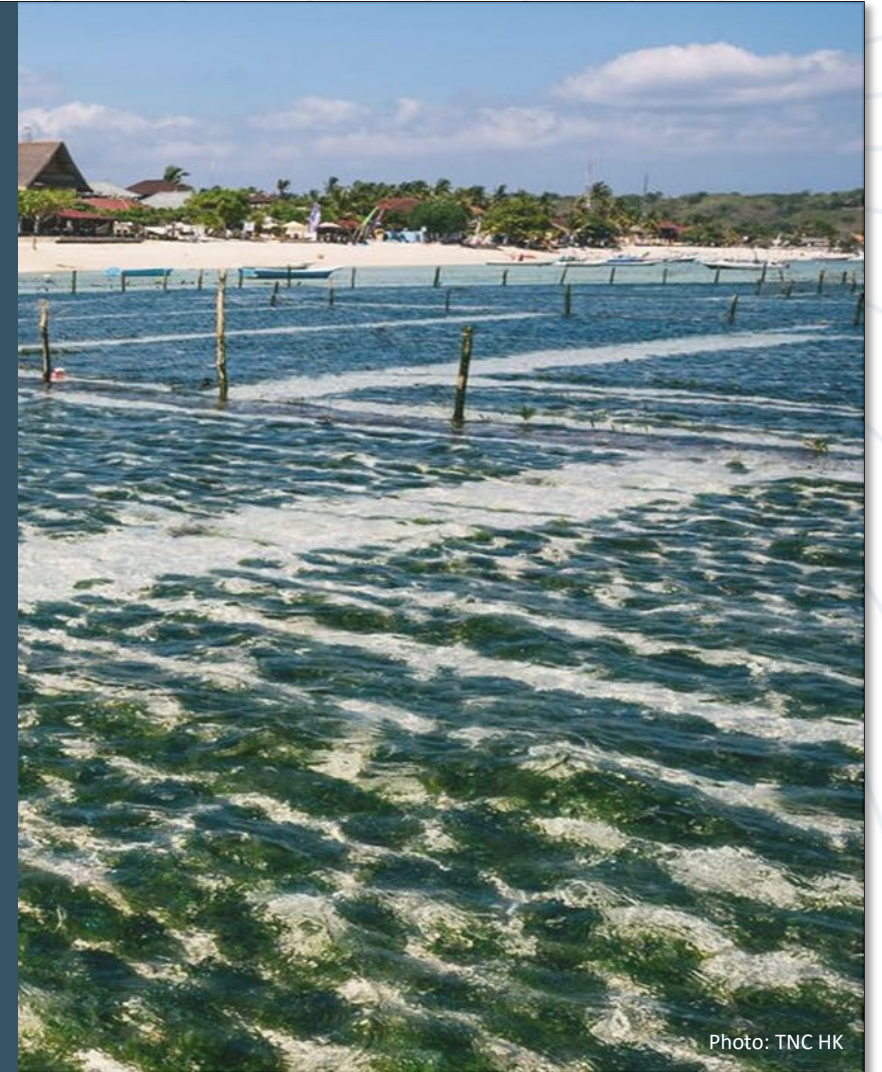


Photo: TNC HK

About Seneca Impact Advisors

Seneca Impact Advisors works with partners to shape and deliver nature-positive investment strategies. As a purpose-driven impact advisory and development organization, we advance innovative financial solutions to scale commercially viable, nature- and climate-positive projects. Our mission is to mobilize private-sector capital to protect and restore the natural world, combining financial expertise with an NGO-level focus on impact.

Seneca was founded to bridge the gap between traditional conservation funding and private investment capital seeking returns. While interest in nature-based solutions is growing, few projects meet the criteria for scalability and commercial viability. We work with leading NGOs, governments, development finance institutions, multilateral

agencies, environmentally driven entrepreneurs, and TNFD-aligned corporates to originate and develop projects that meet funders' expectations for impact and performance.

As public awareness of the climate crisis, biodiversity loss, and resource depletion grows, so does the demand for nature- and climate-positive investment opportunities. Seneca combines a deep commitment to the natural world with financial and technical expertise to shape strategies, design innovative solutions, mobilize capital, and accelerate initiatives that deliver measurable environmental and social outcomes, creating long-term value for investors, communities, and ecosystems.



LAND USE



FOOD SYSTEMS



BIOENERGY



FRESHWATER



COASTAL ECOSYSTEMS



URBAN NATURE

Contact us

Head Office:

Seneca Impact Advisors Limited

21st Floor, CMA Building
64 Connaught Road Central
Central, Hong Kong

+852 3895 0965
impact@senecaimpact.earth

senecaimpact.earth

