Nature-Based Investment in the Asia-Pacific Region

Scoping Study June 2021

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The development of this scoping study was led by Brad Kerin and Georgia Cox, with external contributions provided by Daniel Lund.

Disclaimer

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Chapter 1: Executive Summary

Nature-based solutions to climate change, also known as nature-based solutions (NbS) constitute actions that protect, manage, conserve and restore natural ecosystems. As aquatic, coastal and land-based environments provide essential habitats, ecosystem services, carbon emissions sinks, sources of food, income and livelihoods to humans and animals, nature-based solutions have the potential to deliver environmental, social and economic benefits. NbS will play a key role in driving adaptation to, and mitigation of, climate change.

This study, consisting of 20 stakeholder consultations and desktop research, seeks to ascertain the business appetite for innovative pathways for funding nature-based solutions to climate change; particularly those market-based and non-market pathways that can draw out new ways of near-term valuation, conservation and regeneration of natural ecosystems in the Asia Pacific region.

The global community has acknowledged that one degree Celsius of atmospheric warming is already locked in (possibly 1.5 degrees), and that we have a decade to avoid the most critical '<u>tipping points</u>' that will push parts of the Earth system into abrupt or irreversible change. NbS activities are now broadly recognised as a critical component of the response to this trajectory and there is a growing sense of urgency within governments, non-government organisations and the private sector to use NbS as an important tool to drive the scaled emissions reductions required to mitigate this crisis.

To date, the majority of NbS activity has been financed by countries' grant funding, but in the last decade has increasingly been funded through both compliance and voluntary carbon market activity. With the advent of the Paris Agreement, the potential role of markets was propelled into the spotlight through the demand signal created by Article 6 – the 'sustainable markets mechanism'. However, as negotiations on the final rules, procedures and modalities of Article 6 have stalled through the United Nations Conference of Parties (COP) process, there are questions as to whether the mechanism will be decided in an immediate enough timeframe to enable markets to incentivise NbS activities at a sufficient scale and pace.

The timely answer to this question has been unfortunately impacted by the emergence of COVID-19 in early 2020, which pushed back United Nations Framework Convention on Climate Change (UNFCCC) negotiations until November 2021, delaying any clear outcome on how carbon markets will specifically drive emissions reductions in the post-Kyoto Protocol era.

Despite this looming question, this study has determined some encouraging results that underscore the value of nature-based solutions in our current global environment as recognised by private sector actors, and the important role that carbon markets will continue to have as a primary driver for their investment and expansion in the short to medium term. These results can be summarised as follows:

Nature will play a critical role in Asia Pacific climate action.

The significance of NbS for carbon sequestration, ecosystem services, and livelihood benefits in the Asia Pacific (APAC) region, and particularly for Pacific Island countries is unrivalled due to a combination of climate vulnerability, developing country contexts, subsistence livelihoods and rich biodiversity. Forests and soils are the most recognised for their carbon sequestration potential, with increasing interest in "blue carbon" aquatic ecosystem abatement potential in mangroves, coral reefs, and seagrasses. All of these ecosystems are significant for Pacific Island countries, where the agriculture and forestry industries account for between 20%–30% of GDP.

To facilitate further investment in the region, a raft of factors including political intent, legal frameworks, institutional readiness, stakeholder engagement, partnerships, resources and capacity building are critical to creating 'enabling environments' for NbS initiatives to successfully be established and expanded. The contexts of these factors are distinct across the region, particularly noting the diversity of land tenure and natural resource legislation for Pacific Island countries.

The desire for non-carbon benefits is growing but not yet a primary investment driver.

There is a growing desire to fully unlock the value of non-carbon outcomes, including the additional positive social, cultural, environmental and economic 'co-benefits' to communities that often emerge through NbS. Whilst these benefits can assist other corporate social responsibility (CSR) and reputational goals, investment is still primarily carbon-driven. Carbon as a commodity has traditionally underscored the financial return of these projects as it enables compliance needs and emissions targets to be met, can yield a financial return from carbon credits traded, and provides measurable and reportable greenhouse gas (GHG) emissions reduction and sequestration.

The demand for non-carbon outcomes is presently focused on the valuation and commoditisation of natural capital and other socio-cultural and economic co-benefits, so as to create new environmental markets that can complement and replicate the success and growth of carbon markets. However, the tools, frameworks and systems required to measure, report and verify these co-benefits are still in early stage development. Those tools that have been developed and adopted have seen uptake in local or regional contexts, and so have not received the homogenised and widespread recognition required by the international market to drive investment at scale (as has taken place in carbon markets).

There is an ongoing role for carbon markets.

This study has found that the pace of growth and sophistication of compliance and voluntary carbon markets is now at its highest historical levels and expanding. As at June 2021, 21.5% (11.65gt) of global GHG emissions were covered by carbon pricing instruments in operation, representing a significant increase on 2020, when only 15.1% of global emissions were covered. Globally, credits for nature-based projects within carbon markets constitute an estimated 9.42% of total credits across eight schemes analysed. However, interest in NbS in the APAC region is prevalent – of over 271million nature-based credits, over 84.6 million (31%) have been from the APAC region (inclusive of Australia). This interest in NbS is growing annually – for example, credits issued from forestry projects grew by 38% from 2020 to 2021, and by 908% from 2016 to 2021¹.

This formal carbon market activity is being supplemented by expanding voluntary market activity. The most visible increase in NbS investment is through voluntary carbon markets, driven by an increase in: neutralising emissions from consumer products, services and organisations; sub-national and corporate net-zero commitments; the establishment of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA); and emissions-intensive trade exposed (EITE) companies' preparation for an inevitable policy response from nations and markets that are transitioning to a carbon constrained future under the Paris Agreement. In 2017, some 44 MtCO₂e worth of carbon credits were retired voluntarily, doubling to 95 MtCO₂e retired in 2020. Depending on different price scenarios and their underlying drivers, the recent Taskforce on Scaling Voluntary Carbon Markets (TSVCM) estimates the voluntary carbon market size at stake

¹ Ecosystem Marketplace Insights Brief, Closing the Carbon Offsets Issuances and Retirements Gap, April 2021, pg 3.

in 2030 could be between \$5 billion and \$30 billion at the lowest end of the spectrum, and up to over \$50 billion at the highest end.

The private sector is diverse in its approach to climate change and NbS.

With regards to climate action, the private sector cannot be counted as a sector of identical operators. There is diversity in the levels of organisational knowledge, ambitions, and risk-appetite – factors that impact the sophistication of any one private sector organisation's approach to climate action.

It is only those private sector entities sophisticated enough to understand climate action that have the ability to go one step further and understand the value proposition and business case for investment in NbS. For those engaged, or looking to invest in NbS, there is no one simple approach. Again, depending on organisational, financial and CSR strategies (among others), the role that private sector entities play in the NbS investment cycle will differ from organisation to organisation – as will the financial and/or non-financial returns that entities require from their engagement.

Private sector entities have varying risk/return thresholds for investment in NbS given the myriad approaches taken, however there is commonality in the need for appropriate and detailed due diligence to be undertaken. This of course includes financial risk/return and product due diligence, but it also requires a deep understanding of the in-country enabling environments (including legal, legislative, regulatory, and land-tenure frameworks that govern NbS activities); as well as project-specific factors (including whole-of-project management, community engagement processes, ongoing creditability of abatement/co-benefit measurement, reporting and verification).

Asia Pacific nations require localised approaches to climate change and NbS.

Similarly, with regards to climate action, countries that undertake climate action are multifaceted in their approaches, or their ability to enable, fund, support and undertake nature-based activities. There is certainly a desire from the part of private and public sector stakeholders for NbS activities to be undertaken at scale in the Asia Pacific region, noting the incredible biodiversity and carbon abatement potential of ecosystems in the region. However, given the range, maturity and institutional capacity of different national governance environments, there is no single clear pathway to scaling up these opportunities across the region.

Scaling up NbS requires a localised approach to, and understanding of, the abatement potential, the expanded co-benefits created by nature-based activities, and the capacity of any one country to enable these activities. It is clear there are communities that are already facing climate impacts, and NbS represent an opportunity to not only support emissions reduction goals, but to provide resilience and other co-benefits that support the longevity and protection of local communities. Countries have varying levels of institutional capacity, and some may require more institutional strengthening than others to create appropriate enabling environments that can support early stage and scaled private sector investment.

Private sector entities are willing to engage in near-term Asia Pacific NbS activities.

There is a high degree of nuance between different private sector entities and different countries in the region. There is also a range of both public and private organisations that are willing to work collaboratively, pool funds, and aggregate project activities across jurisdictions. There is general consensus however, that the role for the private sector should be in engaging in project-related and investment activity, and that incountry institutional strengthening should primarily be left to national governments to support each other – whether that be through direct bilateral engagement or through regional partnerships.

Private sector entities, proponents of market-based initiatives and industry representative organisations have shown a strong willingness to engage in the development of both NbS opportunities at scale, but also to support the development of the market conditions that will enable these activities to take place. As outlined further in this study, there is a range of sophisticated private sector entities that have shown a strong interest in collaborating with governments and partnerships to:

- provide an understanding of the practical and commercial implications of NbS market-based policy approaches; and
- play a leading role in outcomes-focused NbS activities (including co-financing models and early-stage Article 6 pilot projects) that enable shared learnings, a range of investment returns and a low-risk environment through which to develop in-country experience and capability.

There is opportunity for regional partnerships, and appetite for private sector investors, to catalyse nature-based activities particularly in the Pacific.

It has been recognised through stakeholder consultations that Pacific Island countries are of particular interest and present ample opportunities to actively drive greater development and scaling up of NbS activities. The abatement potential, and the additional co-benefits of NbS realise significant social, cultural, economic and environmental value to local Pacific communities, given the immediate climate (and other) impacts that many of these communities are already facing.

There exists an opportunity for countries and regional partnerships to support early stage, and scaled NbS activities by leveraging the financial, technical and institutional strengthening support of other more advanced regional nations; and the capital, technical, risk-management and project development resources of sophisticated, credible and experienced private sector entities.

Regional partnerships can leverage private sector engagement to drive investment in NbS.

The willingness of the private sector to invest in NbS at scale can be leveraged by a range of regional partnerships, particularly those that bring together national government actors, NGOs, IGOs and scientific experts to promote NbS activities in the Asia Pacific region. Such regional partnerships could access the existing resources of knowledge, capital, expertise and experience in deploying technologies and solutions at scale, by engaging in the following ways:

- 1. Enhance formal and informal interactions between the private sector, government policy makers and scientists to create better understanding of the needs of different private sector entities.
- 2. Build support for, develop, and implement a private-sector engagement strategy for existing partnerships that includes material, time-bound and action-oriented goals.
- 3. Further leverage options 1 & 2 by working with the Carbon Market Institute, using its networks, expertise and private-sector knowledge in the development, funding and operation of successful nature-based solutions.
- 4. Seek private-sector funding as part of private-sector partnership development, to supplement existing funds, at a scale to effect market-enabling progress and change.
- 5. Re-establish and enhance the capability of existing partnerships to work with public and private sector partners on various market development and education initiatives.
- 6. Work with public and private sector partners to support the development of NbS-relevant financial tools, markets and products.
- 7. Select and convene a project taskforce, that engages a small, committed group of public and private sector partners to undertake specific in-country nature-based activities.
- 8. Consider the role that nature-based activities could play in Pacific and Asia Pacific countries, as a tool to support COVID-19 economic recovery.

Study Scope and Methodology

This study seeks to gauge private sector appetite to play a part in catalysing investment in nature-based solutions to climate change in the Asia Pacific region. A full list of those countries within the APAC region that were considered can be found in Appendix 1. Some countries (specifically, China, Mongolia and North Korea) were excluded due to the scope and availability of information.

This scoping study was comprised of desktop research and stakeholder consultations, undertaken against the following research methodology.

Desktop research was conducted to inform the background of the report, including the state of activity around NbS, carbon market- and non-carbon market-based approaches to driving nature-based activities (expanded on in Chapter 2). This research informed a background paper which was then provided to consultees for the second component of the research.

A series of 20 consultations were held with stakeholders between June–July 2020. Stakeholders broadly fit into at least one of the following categories, for which definitions are provided in Chapter 4 and the Glossary of this report:

- Institutional investors;
- Institutional (investment) banks;
- Emissions-intensive trade-exposed (EITE) companies;
- Other corporate entities; and
- Project developers.

Consultees were asked a series of questions regarding:

- Current state of investment in nature-based solutions globally and in the APAC region;
- Their organisation's current investment activities;
- Key drivers for investment and key risk/return considerations;
- Countries of interest for investment;
- The role of regional partnerships in supporting NbS; and
- The willingness of private sector entities to engage in NbS activities at scale in the APAC region.

Consultee data was disaggregated for the purpose of anonymity and confidentiality, before being analysed by the Carbon Market Institute, and synthesised into Chapters 3 and 4 of this report.

Finally, further desktop research was undertaken to gain additional country-specific information on the countries listed in Appendix 2, due to the level of stakeholder interest in investing in those countries. The strong view from stakeholders was that whilst there was potential in other APAC countries, the mitigation and co-benefit opportunities across Pacific Island nations were both underdeveloped as compared to other locations, and also critical in assisting adaptation measures for populations currently impacted by climate change.

One limitation of the study was that, while this allowed for greater detail to be presented on these Pacific Island countries, time and resourcing constraints meant that it was not within the remit of this report to conduct detailed research on each country in the APAC region.

Chapter 2: State of Play for Investment in Nature-Based Solutions

This Chapter explores the current state of investment in nature-based solutions globally and in the APAC region, as well as specific enabling environments in Pacific countries. It is primarily based on desktop research, and informed by stakeholder consultations.

2.1 International Market Overview

2.1.1 Global State of Compliance and Voluntary Carbon Markets

The Paris Agreement, ratified by 189 nations and trading blocs worldwide, calls for "an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge". Best available scientific knowledge conveys that achieving net-zero global greenhouse gas (GHG) emissions by 2050 is fundamental to ensuring that planetary warming of global average temperatures is limited to 1.5°C above pre-industrial levels.

As a means of catalysing global efforts to reach this target, at least 65 market-based mechanisms² have been adopted to date at sub-national, national and regional levels. These mechanisms, including emissions levies, emissions trading schemes, carbon offsetting frameworks and carbon crediting schemes have been deployed as policy tools since the 1992 Kyoto Protocol³ to create incentives and valuations of the avoidance, abatement, and sequestration of emissions. This serves to commoditise those activities, projects and technologies that contribute to climate change mitigate on efforts. Of these mechanisms, one is regional (European Union), 37 are national, and 27 are sub-national, as shown in **Figure 1**. In 2021, at least 21.5% (11.65gt) of global GHG emissions are covered by carbon pricing instruments in operation, representing a significant increase on 2020, when only 15.1% of global emissions were covered.⁴



² Data source: <u>https://carbonpricingdashboard.worldbank.org/map_data</u> – with the addition of Australia's Emissions Reduction Fund scheme which is not included in the World Bank's data.

³ The Kyoto Protocol is based on a principle of countries holding "common but differentiated responsibilities" for reducing GHG emissions. It binds industrialised countries to set and achieve emissions reductions, with two commitment periods: 2008-2012; and 2013-2020.

⁴ World Bank, Global State and Trends of Carbon Pricing Report, May 2021

⁵ Data source: <u>https://carbonpricingdashboard.worldbank.org/map_data</u>

Extending beyond the *incentivisation* to limit emissions (as seen in voluntary markets), compliance schemes *mandate* emissions reductions by eligible industries and/or organisations. As the era of the Kyoto Protocol – which obliges Annex 1 (or industrialised) countries to achieve emissions reduction targets – concludes, and is replaced by the global Paris Agreement, carbon compliance markets are growing in scale, sophistication and in number. Increasingly, links are being made and explored between existing schemes, across national and subnational jurisdictional borders as well. This includes for example the California-Quebec market linkage, in force since 2014, and the Swiss-European Union linkage which commenced in January 2020. A linkage between the newly formed UK emissions trading scheme (ETS) and the EU ETS is also expected. 2019 saw the largest number of carbon pricing initiatives being launched in a single year with ten initiatives entering into force – equal to the total number of carbon pricing initiatives being launched in the previous three years combined.

As these schemes' remits expand, so too do their revenue generation– revenue from carbon pricing mechanisms increased by 18% in 2020 to USD\$53bn (from USD\$45bn)⁶. This has been funnelled to government budgets, support for small and mid-sized companies (as seen for example through South Korea's scheme), assistance to address household welfare gaps particularly for energy and transport costs (South Africa), provision of assistance, subsidies and grants for voluntary emissions reduction efforts and adaptation measures (Taiwan), and further climate change mitigation measures (Colombia, Quebec, and others)⁸.

Additional compliance markets in Brazil, Chile, Colombia, Austria, Turkey, Ukraine, Thailand, Vietnam, Japan and Indonesia are currently under development or consideration, which will see further expansion of the scope and revenue generation of emissions pricing schemes.

In recent years, voluntary markets for carbon credits have grown substantially. In 2017, some 44 MtCO2e worth of carbon credits were retired, allowing the purchasers of these carbon credits to claim to have compensated emissions though the financing of emission reductions elsewhere. Over twice as many credits, 95 MtCO₂e, were retired in 2020 compared to 2017⁹. As the Taskforce on Scaling Voluntary Carbon Markets recently noted, "a liquid voluntary carbon market at scale could allow billions of dollars of capital to flow from those making commitments, such as carbon neutral or net-zero, into the hands of those with the ability to reduce and remove carbon."¹⁰ Depending on different price scenarios and their underlying drivers, the Taskforce estimates that the market size in 2030 could be between USD\$5 billion and USD\$30 billion at the lowest end of the spectrum, and potentially over \$50 billion.

2.1.2 Economic, Investment and Corporate Drivers

A broader range of organisations and industries covered by these compliance and voluntary schemes has seen corporate interest in carbon market opportunities spike. Whether for current compliance, perceived future liabilities, or the commitment to reach carbon neutrality, private sector actors' engagement in carbon markets has meant that the rate of voluntary market growth is beginning to rival compliance activity.

Drivers of carbon market participation vary between markets and corporations, and this is reflected in a range of market engagement behaviours. The primary driver in compliance markets is to avoid financial penalties for non-compliance. As such, spot trading of carbon units for immediate delivery and usage has

⁸ <u>https://www.ieta.org/carbonmarketbusinessbriefs</u>

⁶ World Bank, Global <u>State and Trends of Carbon Pricing Report, May 2021</u>

<u>9 Taskforce on Scaling Voluntary Carbon Markets https://www.iif.com/Portals/1/Files/TSVCM_Report.pdf, p42</u> <u>10 https://www.iif.com/Portals/1/Files/TSVCM_Report.pdf p51</u>

been commonplace in compliance markets, with many entities engaging in this trading behaviour with the intention of building a bankable 'strategic reserve' of units that they can access when a compliance liability needs acquittal.

Mitigation of future compliance risk is another key driver, particularly amongst corporates with substantive emissions profiles. Companies already covered by carbon compliance mechanisms for some time, as well as those aware of potential future emissions liabilities, increasingly engage in longer-term offtake agreements with carbon project developers. These activities enable companies to directly invest in carbon activities and secure abatement at an agreed price, for development and delivery at some future point.

These same trading behaviours have been adopted by voluntary market participants, who understand that in an increasingly carbon-constrained economy aligned with the Paris Agreement, the ability to meet carbon neutral claims, and deliver carbon neutral products or services to the market depends on a secure supply of offsets at predictable prices. In addition to the rapid increase in net-zero corporate claims aligned to the Paris Agreement, companies are becoming more sophisticated in their approaches to markets. Many are now taking a 'portfolio' approach to investment in a range of offsets, units and project types; investigation and/or development of internal project development capability (capital allocation, balance sheet and risk profile allowing).

2.1.3 Private Sector Interest in Nature-Based Solutions

Nature-based solutions (NbS) constitute actions to protect, manage, conserve and restore natural ecosystems. As aquatic, coastal and land-based environments provide essential habitats, ecosystem services, sources of food, income and livelihoods to humans and animals, nature-based activities have the potential to deliver environmental, social, cultural and economic benefits.

Serving as a further catalyst in scaling up climate mitigation, the potential to draw down emissions through nature-based solutions (NbS) is gaining attention in corporate spheres. Emissions reductions through industrial, renewable energy and energy efficiency methods are important to achieving compliance with legislated emissions schemes, at the same time as potentially reducing financial costs of energy usage, and improving corporate reputation. However, investments in NbS that can: enable compliance needs and emissions targets to be met; potentially yield a financial return from credits traded; return carbon to nature for sequestration and deliver positive additional social, economic, and cultural benefits to communities in the process – will be key to scaling up efforts for rapid economy-wide decarbonisation.

2.1.3.1 Offsets

As carbon markets develop around the world, the imperative for corporates to consider and adopt decarbonisation pathways continues to expand. The encroaching remit of compliance markets to a broader range of sectors, with lower emissions thresholds, and across wider jurisdictions, is a primary driver for carbon market engagement. With their expansion comes an increasing number of corporations obliged or strongly incentivised to reduce their net emissions outputs. While the ultimate goal of carbon market mechanisms is to price emissions in order to decrease their presence in the atmosphere, they also allow for offsets (or carbon credits) to be created where reductions are not immediately viable.

As such, the growing scale and number of carbon markets, and the subsequent economic incentive to reduce net emissions, as well as mounting public and shareholder pressure to improve corporate social

responsibility (CSR) functions, have all contributed to a groundswell of emissions reduction commitments. These commitments often necessitate an element of carbon offsetting in any given corporate climate strategy, due to the challenges in meeting a net-zero emissions goal within a specified period. Purchasing of carbon offsets allows for ambitious targets to remain achievable where policy conditions may be unfavourable and technological advancements for emissions reductions are still in development. Offsets are currently available for trading in at least 28 of the 65 jurisdiction-based carbon market schemes. Six of these generate credits for nature-based activities. These are:

- Australia's Emissions Reduction Fund (ERF);
- The US-based Regional Greenhouse Gas Initiative (RGGI);
- The British Columbia Greenhouse Gas Industrial Reporting and Control Act (GGIRCA);
- The New ZealandETS; and
- The Alberta Technology Innovation and Emissions Reduction (TIER) scheme;
- Japan's Saitama ETS.

However, it must also be noted that three of the jurisdictional schemes (the New Zealand ETS, Japan's Saitama ETS, and RGGI) have been excluded from this study due to lack of publicly available data at present. Additional international crediting schemes that reward nature-based projects are: Gold Standard, Verra, Clean Development Mechanism (CDM), Climate Action Reserve and the American Carbon Registry. These have hence been included in this analysis. Another five schemes were actively investigating the generation of nature-based offsets at the time of writing.

Within these schemes, the amount of nature-based activities and their credits issued to date has been analysed using available data¹¹. Of the 8 schemes analysed for this paper, 812 nature-based emissions reduction projects have been implemented to date globally¹². At the time of writing, these projects had collectively abated (or, where scheme data is limited, were estimated to abate) over 271 million tonnes of emissions, representing an average 9.42% of the credited abatement within those schemes to date, as shown in **Table 1**. However, there is a large discrepancy between those schemes for which a significant proportion of total credits are derived from NbS, and those schemes with less than 10% of total nature-based credits.

¹¹ Data sources used throughout this document for each of the schemes are as follows: <u>Alberta TIER</u>; <u>American Carbon Registry</u>; <u>Australia ERF</u>; <u>BC GGIRCA</u>; <u>CDM</u>; <u>Climate Action Reserve</u>; <u>Gold Standard</u>; <u>Verra</u>. N.B Australian data refers to carbon credits *issued* for projects, the ERF has *contracted* 205 million tonnes of abatement with 167.2 million tonnes from vegetation, agriculture or savanna burning.

¹² Noting that schemes were implemented in different years: American Carbon Registry (1996), Gold Standard (2003), Climate Action Reserve (2005), Alberta TIER (2007), CDM (2007), Verra (2009), Australia's Emission Reduction Fund (2016), BC GGIRCA (2016).

TABLE 1: Credits or Abatement* for Nature Based Climate Activities as a Proportion of Total Emissions Offsets			
Scheme	Credits or abatement for nature-based activities	Credits or abatement for all projects	Proportion of credits from nature-based activities
British Columbia GGIRCA	5,553,195	7,467,228	74.40%
Australia ERF	62,605,482	94,775,777	66.06%
American Carbon Registry	73,985,208	166,887,152	44.30%
Verra	118,879,961	364,136,614	32.60%
Climate Action Reserve	5,268,549	71,686,060	7.30%
Gold Standard	1,973,611	66,549,370	3.00%
Alberta TIER	798,645	58,833,677	1.40%
CDM	2,232,923	2,049,180,123	0.10%
TOTAL	271,297,574	2,879,516,001	9.42%

*Note: Where data on credits issued, registered or retired was not available, data on estimated or actual tonnes of emissions abatement was used (e.g. Verra)

2.1.3.2 Climate Repair

Those carbon market schemes that include the crediting of nature-based projects may exceed the impact those schemes that do not, in terms of their potential to contribute to Paris Agreement targets. For example, the aim of global peaking of emissions as soon as possible and reducing atmospheric emissions concentrations thereafter necessitates not only avoiding future emissions, but reducing the concentration from historical emissions that remain present in the atmosphere. As such, the quantity of GHG removals will be a fundamental factor in reaching Paris targets. This narrative of balancing emissions stems from the scientific consensus that Earth has a limited capacity (or a 'carbon budget') to sustain cumulative GHG emissions, as well as the awareness that anthropogenic climate change has already begun to harm natural environments. Avoiding further biodiversity loss is an additional intended consequence of nature-based protection and restoration.

Consequently, discourse around environmental 'tipping points' has recently drawn attention to 'climate repair' within corporate spheres. In the absence of large-scale, commercially viable technologies to draw out emissions from the atmosphere, nature remains the most efficient and cost-effective way to do this.

2.2 Regional Market Overview

2.2.1 Importance of Nature-Based Solutions Globally

The importance of nature to planetary health and life on Earth is immeasurable. However, the way in which natural landscapes are used – particularly from agricultural and forestry practices – <u>contributes significantly</u> <u>to global emissions</u>. It is therefore unsurprising that nature-based activities are estimated to hold the potential to contribute to <u>37% of the cost-effective climate change mitigation</u> deemed necessary in the Paris Agreement, by 2030 – using a combination of improving the efficiency of emissions-intensive land-based practices and investing in restoration and conservation projects. Long-term sustainable land use practices also have the potential to create climate-positive or climate-neutral environments.

On land, these solutions include afforestation, avoided deforestation, avoided ecosystem degradation, and soil carbon sequestration. Additional to the carbon capture potential, they are known to contribute to

species protection, climate regulation, rainfall generation, water and soil protection, and other ecosystem services including food supply. At local scales, nature-based activities can also <u>significantly contribute to</u> <u>adaptation efforts</u> essential to improving climate resilience. The <u>IPCC reports</u> that in coastal areas, conserving and restoring natural ecosystems can help slow impacts of climate change such as flooding, saltwater intrusion and sea level rise.

The growing acknowledgement of the vital role for nature in absorbing and storing emissions has been manifested through the popularity of nature-based carbon credits. Ecosystem Marketplace's global <u>State of the Voluntary Carbon Markets 2019 Report</u> showed that year on year, significantly more private investment is being funnelled into nature-based carbon sinks than ever before. Recent data from the Report's April 2021 Insights Brief noted that credits issued from forestry projects for example grew by 38% from 2020 to 2021, and by 908% from 2016 to 2021¹³. In voluntary markets, investment in NbS projects is now far outstripping the nearest renewable project competitors. Ecosystem Marketplace posits this as a consequence of the strong endorsement by communities, NGOs, UN agencies and media outlets of scientific evidence (like that of the Intergovernmental Panel on Climate Change (IPCC) in 2018) highlighting the climate mitigation potential from nature-based activities.

2.2.2 Importance of Nature-Based Solutions in the APAC Region

The private sector is becoming increasingly aware of the value of NbS to the Asia Pacific region, however the opportunities for investment, and risks associated with these activities differ from country to country. The success of these activities is heavily dependent on a range of localised environmental, economic, and political factors.

There is arguably significant abatement opportunity and investor interest for each country in the region, hence this study does not intend to dismiss abatement potential or interest in any country in the region. However, stakeholder consultations undertaken for this study have found that, while financial return is the primary investment factor, investor interest is impacted by additional considerations such as: scale of impact; current extent of environmental degradation; investment leverage; geopolitics; political will; history of collaboration between countries; and strength of regional institutional bodies to support an enabling environment. These drivers inevitably inform where investments in NbS are channelled – albeit to varying degrees depending on the investing organisation. Due to these factors, many (but not all) consultees expressed interest in Pacific countries including Fiji, Vanuatu, PNG and others for NbS opportunities. As such, this Chapter focuses on the current status of, and opportunities to enhance and leverage, these enabling factors within Pacific countries.

The Pacific environment is unique not only in its susceptibility to climate impacts but also in its potential for nature-based climate change mitigation. The world's oceans absorb 20-35% of anthropogenic CO₂ emissions and <u>produce 50-80% of the world's oxygen</u>. As the world's largest ocean, the Pacific's carbon sequestration potential is unrivalled. The 12.5 million people of the Pacific countries and territories considered by this study, scattered across an area that comprises 15% of the Earth's surface and equivalent in size to all of Eurasia, are custodian over a higher ratio of carbon sequestration potential per capita than any region of comparable size. Therefore, not only do these jurisdictions contribute the least to global emissions, they could arguably be said to contribute the most (per capita) towards reducing the cumulative impact of global emissions.

¹³ Ecosystem Marketplace Insights Brief, Closing the Carbon Offsets Issuances and Retirements Gap, April 2021, pg 3.

Of the 12.5 million people, 8 million are from Papua New Guinea – which is also home to 5-7% of the world's biodiversity, one of the world's largest original rainforests, and a coastline that hosts 70-75% of the region's mangroves. For these reasons, the Pacific region provides a convincing example of the untapped opportunities in valuing ecosystem services and natural capital in its un-extracted form.

TABLE 2: APAC Nature-Based Activities*			
Country	Credits or abatement for nature-based activities	Number of nature- based projects	
Australia	62,605,482	394	
Indonesia	14,067,253	5	
Cambodia	5,877,442	4	
Papua New Guinea	1,032,650	1	
India	713,008	30	
Laos People's Democratic Republic	138,813	3	
Malaysia	138,013	1	
Timor-Leste	22,949	1	
New Zealand	5,970	1	
Vietnam	2,665	1	
Republic of Korea	621	1	
TOTAL	84,604,866	442	

*Excluding China

To date, the eight market mechanisms listed in Table 1 have provided a pathway for the funding of naturebased emissions reduction projects in the APAC region. Within the region, the spread of projects from the schemes has been concentrated in a few countries, dominated by forestry¹⁴ and revegetation activities. Shown in **Table 2**, the majority of the abatement in the APAC region has been generated in five nations: Australia, Indonesia, China¹⁵, Cambodia and Papua New Guinea. Interest in NbS in the APAC region is prevalent – of over 271 million tonnes of nature-based credits, over 84.6 million (31%) have been from the APAC region (inclusive of Australia). This suggests that there is significant existing expertise and potential for nature-based carbon sequestration project development in the region. However, the limited amount of crediting and sequestration from carbon projects in many countries in the region suggests that there may be significant untapped potential – from environmental and commercial investment perspectives. In order for nature-based projects to be effectively scaled up and for this potential to be leveraged, Pacific enabling environments (particularly in island countries) must be better understood and enhanced.

2.2.2.1 Natural Ecosystems: Sequestration and Services Potential

The natural ecosystems with significant emissions sequestration and ecosystem services potential within the region comprise forests, mangroves, seagrasses, coral reefs, coastal plankton, oceans and soils. The following is a summary of the known sequestration potential and associated services they provide in Pacific nations (noting that there are limitations to the availability of sequestration potential data).

¹⁴ The broad concept of reducing emissions from deforestation and forest degradation is referred to as **'REDD'**, with a broader remit including conservation, sustainable forest management, and enhancement of forest carbon stocks referred to as **REDD+**.

¹⁵ Note this study does not include China due to its scale.

Terrestrial Forestry

For the majority of reference to forests made in this study, the United Nations Framework Convention on Climate Change (UNFCCC) <u>parameters for defining a 'forest'</u> have been used. The definition parameters are:

- Minimum area: 0.05-1.00ha
- Minimum canopy cover: 10-30%
- Minimum potential height: 2-5m

The Melanesian countries and neighbouring territories – Fiji, Papua New Guinea, the Solomon Islands, Vanuatu, New Caledonia and Timor-Leste – have the highest cumulative carbon sequestration potential and resulting incentive to engage with carbon trading initiatives due to their large forested areas and expansive Indigenous mangroves.

Polynesian and Micronesian countries and territories including French Polynesia, Samoa, Micronesia, and Palau have smaller yet similarly biodiverse terrestrial and coastal environments which are crucial to local livelihoods and the physical resilience of coastal environments and communities. Over 10% of the land area in Micronesia and Palau is mangrove forest.

The smaller island groups such as American Samoa, the Cook Islands, Guam, Niue, the Northern Marianas, Tonga, Wallace and Futuna and Pitcairn each have forest cover ranging from 0-300km² and comparatively small mangrove and seagrass ecosystems. For these contexts, the conservation and protection of existing ecosystems is an increasingly vital climate change adaptation and disaster risk reduction consideration. However, the potential to enhance and grow these ecosystems are limited due to the geomorphic and spatial constraints of these smaller islands.

For the atoll nations and territories – Nauru, Kiribati, the Marshall Islands, Tokelau, and Tuvalu – the potential for ecosystem enhancement is limited while at the same time the risk of ecosystem degradation and loss (non-permanence) is heightened in these highly climate vulnerable contexts.

Mangrove Forestry

Mangrove forests are one of the world's most economically valuable ecosystems due to the range of ecosystem services they provide (e.g. carbon sequestration, fish nurseries, coastal protection).

Pacific Islands are home to approximately <u>3% of the global mangrove area with 70% of the regional total</u> <u>found in Papua New Guinea</u>. In many Pacific countries the extractive use of mangroves for construction materials and traditional medicines, the clearing of mangroves for coastal development, agriculture, and aquaculture, and growing negative impacts of climate change-induced rainfall variation and sea level rise on mangrove forests have together placed great pressure on these important ecosystems.

Over the last decade a growing number of climate adaptation and 'blue carbon' related initiatives have promoted mangrove restoration programs across Pacific countries and data on Pacific mangroves, as well as new national policy commitments to protect and enhance these ecosystems, has increased.

Papua New Guinea's <u>4800 km²</u> of mangrove forest is comprised of the <u>highest mangrove species diversity</u> <u>in the world</u>. Mangrove conservation work in PNG has been the most extensive with both provincial and local-level governments involved with replanting schemes. In Fiji, the total area of mangroves found across the nation's five largest islands has recently been recalculated at 578km² following support from the UK-funded *Common Sensing* project which has increased national remote sensing capacity. A

national marine ecosystem service valuation of 385km² of Fiji's mangroves conducted <u>in 2015</u> valued the ecosystem services of these mangroves at \$147.67m USD per year.

If also considering the array of indirect and interlinked co-benefits that mangroves provide in Pacific small island states, the annualised value of these resources would also be much higher. Similar ecosystem services assessments have also been conducted in the Solomon Islands, Vanuatu, and Tonga.

Seagrasses

Efforts to map and quantify carbon sequestration potential of seagrass meadows have been limited across the countries in question – the extent of this limitation is illustrated in Table 3, below.

Seagrasses are important for coastal fisheries and invertebrates and sustain ecosystem services which are closely interwoven with the inter-tidal zone, mangrove forests and nearshore coral reefs. Seagrasses, like mangroves and tidal saltmarshes, <u>sequester and store more carbon per unit area than terrestrial forests</u> but can be more difficult to protect and conserve due to their fragility and associated non-permanence risks. <u>New Caledonia is home to the most expansive seagrass habitats</u> (936km²) in the region which are home to dugongs (a rare marine mammal classified as 'vulnerable'). Based on the limited available knowledge on expanse of seagrass coverage in the region, PNG is the second most prominent home to seagrasses, with 117.2 km².

Note on salt marshes:

Salt marshes sequester and store more carbon per hectare than seagrasses and slightly less than mangroves. Tidal salt marshes do not offer high carbon sequestration potential in the countries considered for this report and are considered out of scope for the purposes of analysis.

Coral Reefs, Coastal Plankton and Oceans

The maritime jurisdictions of the Pacific Islands are expansive and contribute directly to the largescale carbon sequestration services of the Pacific Ocean.

The dynamic coastal zones of small islands provide important habitats for fish and invertebrates that contribute to coral health and ocean nutrient cycling. These ecosystems support oceanic plankton and broader oceanic carbon sequestration services. These services are understood as a common good and not directly attributable to national carbon balance calculations. However, the benefits to these macro-ecosystems services are assumed when considering the policy and actions taken within Pacific jurisdictions.

Soils

Soil composition varies across the region's volcanic, composite, limestone, and reef-based islands and atolls, as shown in Table 3.

Pacific soil is threatened on various fronts from issues such as deforestation, saltwater intrusion, erosion, land clearing, unsustainable agricultural practices, and livestock grazing. While the small islands have limited land available for scalable carbon farming activities, the larger forested Pacific countries have more potential to contribute to soil sequestration potential through sustainable forestry and climate adaptation through sustainable agricultural practices.

TABLE 3: Ove	rview of E	cosystem Coverage by l	Pacific Count	ry			
Country / Island Group	Number of Islands	Geomorphic Profile	Total Area of Islands (km ²)	Exclusive Economic Zone (km ²)	Forest (km²)	Mangroves (km ²)	Seagrass (km²)
Papua New Guinea	439	Volcanic high, limestone, composite and reef islands	67,757 ¹⁶	2.4m	287,260	4,000- 5,000	117.2
Solomon Islands	413	Volcanic, reef, limestone and composite islands	29,672	1.59m	22,130	525	66.3
New Caledonia	29	Continental, reef, volcanic, and limestone islands	21,613	1.74m	7,170	205	936
Fiji	211	Volcanic high islands, reef, limestone, composite islands	20,857	1.29m	10,140	578	16.5
Timor- Leste	3	Limestone, continental, and composite islands	14,919	70,326	7,420	130	? ¹⁷
Vanuatu	81	Volcanic, reef, limestone, composite islands	13,526	663,251	4,400	25	?
French Polynesia	126	Volcanic high, composite, reef	3,940	5.03m	2000	40	28.7
Samoa	7	Volcanic high islands	3,046	120,000	1,710	7.5	?
Kiribati	33	Reef islands, limestone island	995	3.4m	121	2.6	?
Tonga	124	Volcanic, reef, limestone, composite islands	847	659,558	90	13	?
Micronesia	127	Volcanic high islands, reef islands, limestone island	799	2.99m	641	85.6	44
Guam	1	Composite island	588	N/A	260	0.7	31
Northern Marianas	16	Volcanic, reef, composite, and limestone islands	537	N/A	330	0.07	6.7
Palau	33	Composite, limestone, volcanic, and reef islands	495	603,978	403	47	80
Niue	1	Limestone high islands	298	390,000	182	0	?
Cook Islands	15	Reef and composite islands	297	2m	142	0	?

 $^{^{\}rm 16}$ The total land area of the country is debated between 452,860 - 462,243 $\rm km^2$ $^{\rm 17}$ Figure unknown

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Marshall Islands	34	Reefislands	286	1.99m	130	0.03	?
American Samoa	7	Volcanic high Islands, reef islands	200	N/A	180	0.5	?
Wallis and Futuna	14	Volcanic, reef, limestone islands	190	300,000	47	0.2	24.3
Pitcairn	4	Volcanic high, reef, limestone islands	49	836,000	35	0	?
Tuvalu	10	Reefislands	44	749,790	10	0.4	?
Nauru	1	Rock island	21	308,480	0	0.01	?
Tokelau	3	Reefislands	16	318,990	0	0	?

2.2.2.2 Climate Resilience and Adaptation

Climate resilience and adaptation – which can be partly supported through NbS – are influenced by socioeconomic, sustainable development, and climate variability contexts, as explored below.

Socio-Economic Contexts

In the Pacific, development progress has been inconsistent across countries, and historically has led to international aid dependencies. Pacific Island countries and territories <u>have narrow economic bases</u>, <u>limited export potential</u>, and most are unsuitable for many large-scale economic growth activities such as <u>large-scale manufacturing</u>. physical remoteness has reduced the effectiveness of historic efforts to increase trade integration and improve economies of scale.

Agriculture and forestry account for between 20%-30% of the GDP of Pacific Island countries. As well as having a high degree of dependence on natural resources and agriculture, countries such as Fiji, Samoa, Tonga, and the Cook Islands also derive a sizeable portion of their GDP from tourism activities designed around the features of their respective natural environments and biodiversity. Papua New Guinea – by far the largest economy considered – demonstrates very low levels of economic complexity and economic diversity due to the nation's high dependence on natural resource extraction-based activities. Conversely, the nation demonstrates some of the highest cultural, linguistic, and biological diversity in the world.

Owing in part to the intrinsic (non-monetary) value of ecosystem services, and subsistence-based economies, there has been greater acceptance and value attributed to the areas of the Pacific in which environmental integrity, biodiversity, and natural assets have remained unadulterated by large scale economic infrastructure development. <u>Pacific leaders have continually emphasised</u> that, in the face of climate change and environmental threats, Pacific Islands must now better 'leverage the ecological value' of the Pacific and reduce the pressure to sacrifice environmental integrity for economic growth.

The ecosystems of remote tropical islands and atolls are often fragile and defined by interwoven dependencies between people and the environment and close ecological interlinkages between ecosystems. The long-term habitability of these remote environments by humans has been largely dependent on the sustainable relationship with, and the exploitation of, localised ecosystem services. The <u>mesophytic index</u> calculated by multiplying average annual rainfall by land area, has been used as a metric for assessing crop production potential of atolls and used in the explanation of historic colonisation patterns of atolls and islands. The mesophytic index measures the carrying capacity of islands as a ratio between environment and society, and suggests that on islands the prioritisation of balance over growth

and the dependency on practices and traditions that create methods for living within limits is not a choice but a necessity. Today, the ability of island countries to support growing populations with imported food and resources through inter-island trade, reduces the relevance of the mesophytic index as a metric for assessing the carrying capacity of islands in modern times. However, this index remains a key conceptual framework for assessing the basic resources required to support growing populations in contexts where land is limited, and climatic change impacts are prevalent. The indirect-use/non-use value derived from these ecosystems is often un-monetised yet highly valued and intrinsic to cultural and traditional practice.

Irrespective of the mode and approach to development in the past, many socio-economic challenges in the Pacific have been exacerbated by climate and disaster risks. Revised thinking around the Sustainable Development Goals (SDGs) and the challenge of better contextualising approaches for achieving them in island states has suggested the need to better account for the realities of highly integrated socio-ecological contexts. Pacific Island countries provide strong case studies as contexts where an increased emphasis on sustainability is required. These challenges and considerations are likely to continue to shape the Pacific's pursuit of nature-based solutions and efforts to achieve the SDGs.

Sustainable Development Contexts

In relative terms much of the Pacific environment has remained intact due to low levels of industrial development. However, the economic development that has occurred, and the resulting pressure from growing urban populations in many Pacific Island countries as well as the impacts of climate change and disaster events, has dramatically increased the rate and scale of land degradation. Limited economic opportunities have often brought forward extractive activities that produce short term gains that ultimately come at a high cost over the long term. In some cases, in relation to activities such as mining and deforestation, the impacts and costs will have intergenerational implications due to the scale of environmental degradation they have caused.

Across many of the Pacific countries considered, deforestation from the logging industry, land clearing for cattle rearing and intensive agricultural practices such as sugar cane production, have increased soil erosion rates, led to a loss of soil carbon, reduced nutrient levels and crop yields, increased flood risk, and produced run-off that damages reef fisheries. Limited land resources have been heavily impacted by new urban developments and changing lifestyles leading to increasing rates of land degradation in the capital cities of Pacific Island countries and territories. General population pressure has driven up both demand for housing and land-use change while also increasing pressure on agricultural land and water resources. In Samoa, for example, <u>87% of the nation's land area</u> has been converted for agricultural practices.

In other cases, in countries such as Nauru, the Marshall Islands, and New Caledonia – the confluence of colonial legacies, profitable extractive industries, and military histories have drastically altered their environmental profile and ecosystems, increasing the vulnerability to climate change and disaster risks. Land tenure issues have both contributed to and in some cases reduced rates of land degradation. In cases where access to land is limited by customary and private ownership, this has placed greater pressure on other areas available for development. This leads to increased population density and accelerated land degradation, disproportionately prevalent in those areas. In other cases, traditional land ownership and cultural laws have prevented and slowed land-use change and infrastructure development, suppressing land-use change and land degradation to some degree.

Alongside these factors, increasing demand for appropriate climate risk management-related activities (mitigation and adaptation) in small island states has further increased the rationale and impetus to promote sustainable land management and improve national environmental protection frameworks.

Climate and Disaster Vulnerability Contexts

Pacific Island countries and territories are highly vulnerable to the impacts of climate change due to the exposure of low-lying atolls and islands to sea level rise and flooding, intensity and frequency of disaster events, and variability of rainfall in and around the *South Pacific Convergence* zone. Small island states in the Asia-Pacific are expected to experience <u>average annual losses equivalent to 4% of their GDPs</u> as a result of climate change and disaster-related impacts over the course of the 2020-2030 period.

In the case of the smaller island states, extensive and expensive physical, governance, systems-based, and socio-behavioural interventions are required to reduce the extent of highly disruptive climate change impacts. In some cases, sea level rise alone is likely to have implications that range from highly disruptive to catastrophic. The Intergovernmental Panel on Climate Change's (IPCC) <u>Special Report on 1.5 °C</u> illustrates the urgency of identifying and applying large-scale adaptation interventions in small island states in the immediate term. <u>Climate change will test the resilience</u> of staple food crops, export commodities, high-value horticultural crops, livestock, and forestry sectors across the Pacific, and in each case, careful adjustments to agricultural practice and resource management activities will be required.

2.2.3 Value of Co-Benefits for Pacific Island Countries

The potential for using afforestation, reforestation, environmental protection measures, and other naturebased enhancements to maintain or increase natural carbon-sequestration potential is increasingly well understood and qualified. Conversely, the array of interlinked co-benefits that can be attributed to ecosystem restoration, protection and enhancement are often under-recognised, unquantified and unmonetised. A greater focus on the need to better understand the closely interlinked socio-ecological systems in the Pacific (and elsewhere) has increased the demand for new valuation methods to help to integrate scientific data and behavioural and socio-economic information in ways that help to improve the design of development and risk reduction-related activities.

The societies and environments of Pacific Island countries are considered particularly relevant contexts through which to exemplify the added social, economic and cultural co-benefits, or 'core benefits' of nature-based solutions and investments. This assertion assumes the following generalised assumptions:

- a) **Structural dependency:** A relatively high proportion of Pacific societies and cultures are highly integrated and dependent on the ecosystem services of their immediate environments.
- b) **Integrity of natural assets:** Many Pacific Island countries and territories have large areas of natural environment that have not been significantly altered or developed and that remain in a state worthy of protection or enhancement.
- c) **Vulnerability and fragility:** Tthe vulnerability of Pacific Island countries to climate and disaster events results in heightened pressure to make investments that effectively serve multiple environmental objectives (such as those listed in **Table 4**, below).

The impact of a changing climate on Pacific environments, economies, and societies must be understood at an increasingly granular level in order to better anticipate and influence the way in which these codependent systems will evolve. This means that in order to be well-calibrated, Pacific NbS activities will need to be designed in relation to current science and evidence and be flexible to suit changing environmental parameters and risks.

Traditional methods of valuing the services of forests and mangroves involve the consideration of direct use values, indirect values, and non-use values. Some of the key types of benefits derived from mangroves and

forest can be more broadly summarised and categorised under the service categories in **Table 4**. In each Pacific Island, the value attributed to each function will vary depending on the specific environmental and socio-economic context in question. For instance, in a particular region of Samoa where mangroves provide a major source of protection on the wind-ward side of the islands to seasonal trade winds and hydro-meteorological hazards, mangroves are particularly recognised and valued for their role as a wind barrier.

TABLE 4: Examples of Key Co-Benefits			
Services	Mangrove (benefit examples)	Forest (benefit examples)	
Livelihood services	Livelihood support through provisioning medicine, shade for livestock, fishe	g services, wood, fuel, food, traditional ries, tourism value, cultural value	
Risk management services	Coastal protection, erosion control, wind barriers	Water retention, natural aqueducts	
Ecosystem services	Water filtration	Soil protection, nutrient cycling, cooling	
Biodiversity protection services	Habitat for various terrestrial and marine species	Habitat for majority of terrestrial biodiversity	
Climate regulation services	Carbon sink and reservoir		

Over the last decade, the understanding of the potential to use nature-based solutions to restore and enhance ecosystem services, protect biodiversity, reduce and buffer the impacts of climate change and disaster events, and bolster development gains has improved in the Pacific region. The understanding of the complex relationships, feedback loops, and dependencies that exist across Pacific environments can be said to have been improved to some degree by default through the range of recent initiatives and projects that have required greater emphasis on methods that help anticipate the impacts and future dynamics of climate change in the Pacific. One such example is the case of REDD+, as outlined below.

Case Study: The REDD+ Approach to Co-Benefits

REDD refers to reducing emissions from deforestation and forest degradation, and REDD+ includes a broader remit of forest conservation, sustainable forest management, and enhancement of forest carbon stocks.

While carbon markets and carbon trading allow for the exchange of carbon units, REDD+ initiatives and programs are often designed to create co-benefits related to economic development, poverty reduction, biodiversity protection, land rights, governance, and infrastructure improvements. REDD+ projects can help to protect or enhance carbon stocks, yet they are often similarly positioned to conserve and enhance social welfare.

However, in most cases the potential to create and finance co-benefits remains highly dependent on the scale of the carbon sale in question. As such, despite the focus of REDD+ on co-benefits, the co-benefits remain secondary to the carbon benefit. Consequently, a given project's degree of success or failure in meeting co-benefit targets is acceptable, <u>as long as required minimum safeguards are met</u>. The value proposition of the benefits of REDD+ shows connectivity with the broader principles of nature-based solutions, however in practice, <u>most instances of REDD+ pilots in the Pacific</u> have lacked the scope to leverage a diverse array of additional direct and indirect benefits. <u>Recent studies</u> have suggested that the impact of tropical forests on the water cycle and cooling potential may be more pronounced than their carbon sequestration impact and that the role of forests must increasingly be understood through a greater understanding of the synergy of environmental services that they provide.

<u>A recent study</u> which took into account a range of experience, perspectives, and case studies around efforts to address adaptation challenges in the Pacific concluded that the vast majority of Pacific adaptation interventions needed to be "better aligned with the nature of island environments and the communities that occupy them". For example, the need to better tailor interventions to suit Pacific contexts has been evident in relation to coastal risk management activities. The dynamic nature of coastal zones on small islands and atolls has meant that <u>there are many examples</u> of 'hard' coastal protection measures that have created unforeseen negative impacts and have often been cited as instances of maladaptation. These approaches have increasingly been <u>reconsidered and replaced</u> by methods to both directly and indirectly strengthen coastlines through 'soft' nature-based and ecosystem adaptation-related activities¹⁸.

Further studies have emphasised <u>the important cooling potential of forests on tropical islands</u>, traditional socio-cultural value of natural assets, <u>high sensitivity of island biodiversity to land-use change</u>, instability of <u>altered coastal developments</u>, <u>close interaction</u> between island interior waterways and coastal fisheries, and <u>long term effects of mono-cropping</u>. Such findings have increasingly been reflected in revised environmental objectives and priorities in many Pacific policies and plans.

A greater understanding of what constitutes effective climate adaptation in small islands states is needed to enable the measurement and quantification of adaptation benefits. The indirect social and economic gains they can facilitate has been referenced in <u>recent literature</u> which suggests that <u>greater efforts are required</u> to improve knowledge transfer and lessons learned between contexts and programs.

2.3 Factors Impacting Enabling Environments

The review of Pacific 'enabling environments' in relation to NbS has been structured around five areas of consideration. Together with the aforementioned 'market drivers', these enabling environments may in part determine the scope of the ability of specific countries to engage with carbon markets and increase investment in nature-based solutions. These enablers have been summarised and compiled based on general consensus across the literature and consultations on the key factors that determine the attractiveness and suitability of investment in nature-based solutions and are:

- 1. **Policy intent and alignment:** the degree to which NbS and carbon market engagement aligns with national policy intention.
- 2. **Legal frameworks:** the existence of appropriate legal frameworks to enable market engagement and support investment activities,
- 3. **Institutional and regulatory readiness:** the degree of institutional and regulatory readiness to support the oversight of such projects, including access and availability of the data and assessment/analytical capacity required to verify projects,
- 4. **Stakeholder engagement and social safeguards:** the existence of appropriate avenues for, and methods of, transparent and participatory stakeholder engagement,
- 5. **Partnerships, resources, and capacity building support:** the ability of different jurisdictions to use partnerships and support mechanisms to access the resources and capacity building required to increase market engagement.

2.3.1 Pacific Policy Intent and Alignment

Pacific governments' engagement with climate action frameworks has demonstrated the degree of political intent in the region to leverage carbon markets and NbS. National policies and plans, including 'Nationally

¹⁸ E.g. restoration of Indigenous coastal vegetation, beach nourishment, marine protected areas, mangrove replanting, coral farming, aggregate mining bans, relocation of human settlements, etc.

Determined Contributions' ('NDCs') under the Paris Agreement also provide insight into the extent to which governments may support NbS projects. These are explored below.

2.3.1.1 Regional Frameworks

The following regional declarations, positions, and frameworks have demonstrated the general intent to integrate natural resource management practices with national development and risk management agendas.

REDD and REDD+: Not surprisingly, as major forested nations, <u>Papua New Guinea and Costa Rica were the</u> <u>first countries in the world</u> to propose the concept of 'reducing emissions from deforestation' to the UNFCCC on behalf of the Coalition of Rainforest Nations in 2005 at COP11 in Montreal.

While many Pacific Island countries and forested island nations like Timor-Leste have been strong supporters of the benefits and opportunities offered by REDD+, it is important to recognise the concern that has historically been voiced by the smallest island nations – such as Tuvalu – that carbon market mechanisms may offer a means for industrialised countries not to scale back their own domestic emissions reductions.

Pacific Islands Framework for Action on Climate Change 2006-2015 (PIFACC): Members of the Pacific Islands Forum demonstrated early intention to proactively engage in carbon markets through the PIFACC. This framework put high emphasis on ensuring member countries had 'enhanced ability to engage in carbon market mechanisms including REDD+ as measures to reduce greenhouse gas emissions' by 2015.

Pacific Islands Regional Policy Framework for REDD+: In September 2012, the Pacific Agriculture and Forestry Ministers adopted the framework and in 2013, it was launched. In addition to detailing specific objectives, policy guidance, and parameters for shaping national engagement with REDD+, the framework sets out key principles which include a focus on establishing a 'no-regrets' approach to REDD+ that takes into account both existing and potential future instruments and options.

Framework for Resilient Development in the Pacific 2017–2030 (FRDP): The Framework calls for an 'integrated approach' to climate and disaster risks recognising the highly interlinked nature of socioeconomic development, climate change mitigation and adaptation, and disaster risk management issues in Pacific Island countries. This framework encourages members to:

'... Conserve and sustainably manage forests, coasts, oceans and other natural ecosystems in ways that maintain and enhance carbon uptake and stocks in terrestrial and marine ecosystems and, for relevant PICTs²⁰, identify and manage the drivers of deforestation and both coastal and forest degradation; ensure that the results of these and related actions are measured, reported and verified, and incentivised...'

Fijian Presidency of COP23: The Pacific has also pressed for greater recognition of the potential to enhance and protect 'blue carbon' sinks and reservoirs, and promote natural coastal protection and ecosystem-adaptation measures. These issues are of key interest to Pacific Islands due to the nature of their environments, high vulnerability to climate change, and high coastline-to-land area ratios.

²⁰ Pacific Island countries and territories

During the Fijian Presidency of COP23, Pacific Island countries and small island states advanced efforts to improve the recognition of the 'climate-ocean nexus' and championed efforts to increase multi-lateral efforts to protect blue carbon, enhance marine protected areas, and reduce plastic pollution.

Kainaki II Declaration for Urgent Climate Action Now: Endorsed in 2019 by Pacific Leaders at the 50th Pacific Islands Forum in Tuvalu, the Declaration set out a strong position on the need to ensure that the Pacific environment is valued and enhanced in the face of climate change threats.

2.3.1.2 National Strategies

A useful insight into the status of national consideration and conceptualisation of nature-based solutions can often be found within national policies and plans. Overall, strong intention features throughout the environmental policies of the countries in question, although with different degrees of specificity as to the actions and commitments involved.

Vanuatu

<u>Vanuatu's National Sustainable Development Plan 2016-2030</u> and <u>Climate Change and Disaster Risk</u> <u>Reduction Policy 2016-2030</u> strengthened the synergies between the protection of the environment and socio-economic development objectives through a greater emphasis on sustainable resource management practice and ecosystem-based adaptation. Vanuatu's national policies demonstrate strong recognition of the social and societal benefits involved with a holistic approach to low-carbon transition, sustainable development, disaster risk management, and climate change adaptation.

Fiji

Fiji's National Climate Change Policy 2018-2019 references a vision for 2030 in which ecosystem-based adaptation and carbon reservoir and carbon sink enhancement have become a 'distinct sector' within Fiji's economy. The policy is oriented around the concept of a 'woven approach to resilient development' which represents Fiji's intention to adopt and promote strategies that leverage environmental, social, and economic co-benefits and strategically manage difficult trade-offs.

In 2019, Fiji's Prime Minister Frank Bainimarama announced an intention for Fiji to plant 30 million trees in 15 years and the Fijian Government recently committed to protecting 30% of Fiji's exclusive economic zone by 2030. At the time of writing Fiji was in the process of developing *National Guidelines for Reforestation Measures* and a national Climate Change Bill

Solomon Islands

<u>Solomon Islands' National Climate Change Policy 2012-2017</u> sets a directive to increase the nation's ability to engage in carbon markets through policy strategies intended to support the establishment of carbon trading legislation, awareness raising, regulation, and capacity building.

Papua New Guinea

Papua New Guinea faces challenges relating to changing agricultural practices, large informal logging industry, expansive mining operations and interests, and general complexity of national natural resource governance. As a result, Papua New Guinea's <u>National REDD+ Strategy 2017-2027</u> introduces the concept of 'responsible development' in reference to the need to identify economic development activities that do not threaten national biodiversity or compromise the future wellbeing of Papua New Guinean citizens. Papua New Guinea, Solomon Islands, Fiji and Vanuatu have all developed pilot sites to

test the feasibility of REDD+ projects and have either completed or mapped out fundamental elements of a proposed national REDD+ policy, strategy, or plan.

Samoa

Pacific Island countries with much lesser carbon sequestration potential, such as Tonga and Samoa, <u>have</u> <u>recognised</u> that the ecosystem services and carbon sequestration potential of national forests and coastal ecosystems are of much greater value to the national interest than extractive activities.

<u>Samoa has cited interest</u> to explore potential carbon trading arrangements since 2007, and has progressed a number of studies to improve national understanding of the socio-economic value of mangroves and forests. Samoa's <u>*Climate Change Policy 2020*</u> reinforces a strong emphasis on governance, climate adaptation, sustainable finance, and an integrated approach to climate change within other policy frameworks.

Federated States of Micronesia

The Federated States of Micronesia's <u>Blueprint for Conserving the Biodiversity of the Federated States of</u> <u>Micronesia</u> highlights intention to progress widespread conservation of the nation's environment and biodiversity, highlighting critical threats, data gaps, and multi-stakeholder conservation strategies.

Timor-Leste

In Timor-Leste the <u>National Biodiversity Strategy of Action Plan</u> provides a comprehensive strategy and linked actions for mobilising a multi-stakeholder approach to protection of the nation's biodiversity assets. *Strategic Action 2* of the Plan is to 'promote nature-based and community-based sustainable tourism and ecotourism' while Action 7 calls for the intensification of 'massive tree planting including mangrove reforestation to rehabilitate critical and damaged habitats and ecosystems and degraded water sheds'. Timor-Leste's National Strategy Plan calls for the establishment of an extensive network of land and marine national parks so that by 2030 the link between the people of Timor-Leste and their environment has been restored.

Cook Islands

While the adaptation potential of NbS may occupy the focus of national policy design in smaller island countries, the mitigation potential is often noted in tandem with adaptation benefits. For instance the Cook Islands' <u>Second Joint National Action Plan for Climate Change and Disaster Risk Management 2016-</u><u>2020</u> tasks the Office of the Prime Minister with responsibility 'to conserve and sustainably manage forests, coasts, wetlands, lagoons and other natural ecosystems to enhance carbon uptake'.

2.3.1.3 Nationally Determined Contributions

Many of the current nationally determined contributions (NDCs) submitted by the autonomous Pacific Island countries considered in this study include ambitious emissions reduction targets.

The way in which countries have articulated their NDCs under the Paris Agreement is useful for assessing the extent to which natural solutions have been considered within national climate change strategies from both an adaptation and mitigation perspective. **Table 5** provides an overview of the treatment of nature-based concepts within Pacific Island country NDCs.

TABLE 5: Sum	mary of Pacific Nationally Determined Contribu	itions as Relevant to Nature-Based Solutions
Country	References to Nature-Based Mitigation Options	References to Nature-Based Adaptation Options
Cook Islands	N/A	Coastal protection, water security, agriculture, forestry, marine conservation, waste, tourism, land management
Fiji	Stipulates that more data on mitigation potential of Fiji's forestry sector is needed	Reference is made to the planting of mangroves as a form of adaptation
Kiribati	Mangroves, coastal vegetation, seagrass enhancement	Mangroves, coastal vegetation, seagrass enhancement
Marshall Islands	Mangrove and agriculture rehabilitation programs	Mangrove and agriculture rehabilitation programs
Micronesia		N/A
Nauru		N/A
Niue	Aims to maintain and enhance current agriculture, forestry and other land use (AFOLU) sequestration capacity	Mention of developing adaptation responses and enhancing adaptive capacity, to protect livelihoods, natural resources and assets, and protecting vulnerable areas from the impacts of climate change
Palau		N/A
Papua New Guinea	Reducing deforestation and increased engagement with REDD+	N/A
Samoa	Recognises potential to reduce emissions with greater assistance/support for agriculture and forestry sectors	Recognises the need to adapt agriculture and forestry practice
Solomon Islands	Recognises carbon storage in forest and ocean ecosystems. Contribution includes land-use, land-use change and forestry (LULUCF). Solomon Islands will consider use of market-based mechanisms to support the National Climate Change Trust Fund	Considers carbon levies as a means to fund adaptation
Timor-Leste	Includes consideration of mitigation through changes to forestry, land-use, and agricultural practice. Sets out interest in REDD+ and Forest Carbon Partnership Facility (FCPF). Specifies options to reduce emissions through the rehabilitation of degraded lands, customary forestry, mangrove plantations, protected areas, afforestation and reforestation	Land management, integrated agroforestry, watershed management, increased soil fertility, reforestation, forest management awareness all recognised as key adaptation actions
Tonga	 Sets out concept of resilience (mitigation an actions: Halting deforestation and degradati Maintaining national parks, reserves 	nd adaptation) and highlights the following key ion of indigenous forests; s and protected areas;

TABLE 5: Summary of Pacific Nationally Determined Contributions as Relevant to Nature-Based Solutions			
Country	References to Nature-Based Mitigation Options	References to Nature-Based Adaptation Options	
	 Establishing and managing forest re Promoting reforestation and rehabil climate change resilient, and ecolog Promoting integrated agroforestry i Discouraging tree removal on tax all Encouraging tax allotment holders to 	serves; litation of cleared and degraded forests with ically and socially appropriate tree species; n areas earmarked for agriculture; otments; o plant and manage trees on their properties.	
Tuvalu	Suggests an intention to reduce methane emissions from agriculture	N/A	
Vanuatu	Forestry sector measures to reduce deforestation and promote good land care to accepted mitigation practices according to REDD+	Promotes an ecosystem-based approach to adaptation recognising the need for sustainable forestry, carbon sink enhancement, integrated water management, conservation and protection of vulnerable habitats and ecosystems. Recognises the need to quantify and budget for the value and benefit of ecosystem services when planning adaptation while also minimising impacts of adaptation on the environment. Intention to develop targeted advocacy and education programs on ecosystem-based adaptation. Recognises importance of land-use planning for adaptation and mitigation objectives.	

While general references to financial constraints is found across the NDCs, the importance of technical support and capacity building specifically in relation to agriculture and land-use aspects of Pacific NDCs is the most referenced barrier in relation to agriculture and land-use adaptation objectives, with <u>85% of the NDCs specifically referencing</u> technical support needs and skill deficits in relation to these areas. <u>69% of Pacific NDCs</u> reference institutional and organisational barriers to land-use and agriculture related objectives while 46% make reference to the specific legal and regulatory issues involved. It is also worth noting that Pacific NDCs also demonstrate very low coverage and reference to the problem and associated solutions involved with the impacts of climate change on biological diversity, ecosystem services, soils and the role of and risks to these factors in relation to adaptation and mitigation.

Overall, of the 15 sovereign states assessed, 11 made explicit reference to the potential use of nature-based solutions as a form of mitigation while 10 referenced adaptation-focused NbS. In most cases, these references were broad with unquantified commitments. This lack of specificity, especially in relation to the mitigation potential of NbS activities is in part indicative of a lack of available baseline data as well as general uncertainty at the time of NDC compilation (2015) as to the degree to which carbon markets would be able to support such commitments. Analysis finds that 6 of the current Pacific NDCs explicitly reference the social development and mitigation-related co-benefits of land-use/agriculture related adaptation policies. While a differing level of commitment and degree of specificity in relation to nature-based solutions, there is general consensus amongst Pacific countries and territories around the importance of defining and concluding negotiations on Article 6 of the Paris Agreement. Pacific countries agree that the conclusion of negotiations

on Article 6 will help to better define and incentivise activities to protect and enhance carbon sequestration services. There is also a call by Pacific Island countries for further capacity-building support to enable Pacific engagement with Article 6.

2.3.2 Pacific Legal Frameworks

The ability for Pacific countries to engage with carbon markets, incentivise private sector investment, and increase the sustainability and scale of Pacific-based programs and projects is dependent on sound legal frameworks for defining property rights, managing natural resources, controlling land-use, and protecting foreign investment. Though access to voluntary markets is not always contingent on the existence of specific legal standards, fit-for-purpose legal frameworks are important for incentivising and enabling large-scale investments and will be required to engage with many existing pilot programs and future compliance-based market instruments.

2.3.2.1 Property Rights, Land Tenure and Associated Legal Frameworks

Clarity of land tenure is a key pre-requisite for considering, designing, and implementing projects that seek to enhance, monitor and protect carbon sequestration services.

The <u>majority of countries in the Asia-Pacific region</u> do not have specific legislation that defines carbon sequestration property rights or any law that more broadly references the ownership of sequestered carbon. In most cases, the ownership and rights to carbon sequestration is understood to be inextricably linked to, and indivisible from, existing land ownership arrangements.

Indigenous people and local communities <u>own and manage a higher proportion of land in the Pacific</u> than any other region in the world. Customary land tenure can create additional complexity when it comes to defining carbon sequestration property rights. The prevalence of customary land tenure and differences between the nature of traditional laws and institutional arrangements between countries in the Pacific means that the design of nature-based activities must take into account these systems at design stage. Customary land arrangements <u>can make it difficult to determine</u> land boundaries and identify rightful landowning group.

This is especially true in the case of Melanesian countries where the majority of land is 'held' in trust by community groups rather than 'owned' in the legal sense of the word. In the Solomon Islands <u>86% of land</u> is held under customary tenure and is unregistered and un-surveyed (as is the case in Papua New Guinea and Vanuatu). In these contexts, land disputes can be common and complex. Often parcels of land can be held by multiple groups as well as individuals who over time have used pieces of the land for different activities. The history of these arrangements can be complex and multi-layered and often will require significant consultation to ascertain a full picture of the various claims and uses that need to be understood in relation to the land in question.

Vanuatu

In Vanuatu, <u>close to 99% of land</u> is owned by Ni-Vanuatu Indigenous custom holders. Vanuatu's land tenure system is complex and makes it difficult to consider projects that cover a large area of land due to the fact that various customary groups would need to be consulted with and engaged with collectively to confirm any terms. Vanuatu was the first Pacific Island country to pass legislation that defines carbon property rights. Vanuatu's *Forestry Rights Registration and Timber Harvest Guarantee Act 2000* defines carbon property rights but is only applicable in relation to leased land, meaning this legislation is not applicable to the majority Vanuatu's forests and land.

Papua New Guinea

In Papua New Guinea, approximately 97% of land is held under customary tenure with systems of rules which vary between clans and provinces. Approximately 99% of forested land in Papua New Guinea is owned by customary groups. Customary land 'ownership' is established under the *Land Act 1996* which recognises customary law. Papua New Guinea does not have legislation which specifically defines carbon property rights or creates the legal framework under which REDD+ activities would operate. A further barrier to the development of the required legal framework for REDD+ <u>has been attributed to the complexities involved</u> with the inter-ministerial implications of REDD+ and difficulties in coordination between the *Office of Climate Change and Development* and the national *Forest Authority*.

Fiji

Similar complexities exist in Fiji where 89.75% of land is held under customary (iTaukei) land ownership. However, unlike in the other Melanesian countries, in Fiji the majority of this land is registered and managed on behalf of land holding groups by the *iTaukei Land Trust Board* established under *the iTaukei Land Trust Act*. The need for greater clarity in relation to carbon trading issues is being addressed through the development of a *National Climate Change Bill* and revised *Forest Bill* (both in draft) which, when passed, would legally define carbon sequestration property rights and set out a legal framework through which Fiji can engage in carbon markets.

Timor-Leste

Land tenure may be the most complex in Timor-Leste which has faced an ongoing land tenure security issue due to the overlap between titles issued by the Portuguese colonial administration and those issued by Indonesia. These discrepancies have caused years of conflict. Local customary law (*Tara Bandu*) is recognised in Timor-Leste's *Environmental Basic Law* through which the state recognises Tara Bandu custom as the traditional mechanism for regulating interactions with the land. Timor-Leste's legal system seeks to create alignment between law and customs in the interest of conserving the environment.

Republic of Marshall Islands

The land tenure and land use issues vary in the smaller island countries where space is in high demand and each kilometre of land is often relied on for a number of different purposes. For instance, the Republic of Marshall Islands' (RMI) *Planning and Zoning Act 1987* calls for the 'harmonious interrelationship of land use'. Land, in its scarcity, becomes a key currency in decision making. RMI's land-use decisions seek to reduce additional 'land-use expenditure' by combining functionality, such as RMI's Airport runway which doubles as a rainwater catchment, or coastal adaptation measures that protect land in the long-term. These must be prioritised over singular private usages of land area. Land-use planning is also further complicated by the land-tenure system in RMI. All land ownership is controlled by traditional land-owning families rather than the State. Investment in advocacy and interaction with landowners is therefore required to create and maintain an enabling environment for investment in NbS.

Tonga and New Caledonia

In contrast to all other Pacific Island countries, in Tonga, no customary land tenure or freehold land exists, and all land is owned by the King.

New Caledonia provides yet another example of a similar yet different set of land tenure issues. Land tenure remains a sensitive issue and various land disputes continue to create a challenge and source of tension between the French government and customary landowners. It has been a key influencing factor and driver of the national independence movement.

Land tenure issues are a significant challenge in the Pacific as the basis to land tenure is often subject to various layers of law and custom that require significant flexibility and time to navigate. Unregistered land is often subject to challenge and can be a source of tension and dispute when new opportunities to derive financial benefit from land arise. However, should the potential to leverage greater investment in NbS be further clarified and demonstrated, there is potential to increase the political will and public support for land reform.

While the definition of carbon property rights within legislation is useful for clarifying the way in which these rights can be understood in relation to existing land tenure arrangements and land types, in the absence of such legislation, in most cases in the Pacific, the default understanding is that those with the rights to the land also hold rights to the carbon sequestration services it encompasses.

2.3.2.2 Natural Resource-Related Legislation

The legal basis for natural resource management in the Pacific, established through different pieces of legislation such as sector-specific acts (e.g. forestry acts), environmental management frameworks, and land-use planning laws vary significantly between the countries and territories considered. This is summarised in **Table 6** below. Natural resource-related legislation in the Pacific is likely to continue to change as a greater maturity around environmental management priorities and climate change mitigation and adaptation objectives begin to prompt legislative reform. In some cases, there is opportunity to use examples of NbS to help inform and support emerging efforts to revise legislation.

Instances of the challenges faced in relation to the ownership and management of areas with marine and terrestrial forests are outlined below, as well as examples pertaining to the currency and relevance of various jurisdictions' legislations.

TABLE 6: Examples of	Natural Resource-Related Legislation Challenges and Opportunities
Coastal ecosystem management and recognition	 In Samoa, mangroves are often perceived to be owned by customary land holders, despite the fact that the Constitution clarifies that land below the high-water mark is public land. In Tonga, there is no legislation on mangroves, and existing environmental management legislation does not define these ecosystems.
	In Fiji there is no specific legislation on mangroves.
Community forestry management	Vanuatu's <i>Forestry Act 2001</i> regulates commercial forestry operations and does not recognise community-based initiatives.
Perceived need for laws to be updated	In the Solomon Islands the <i>Forest Resources and Timber Utilization Act</i> , despite amendments, has ultimately struggled to establish a sustainable framework for the management of forests and been unable address informal logging activities.

	Papua New Guinea's <i>Forestry Act 1991</i> created the legal basis for sustainable forest management and as well as a largely localised regulation framework overseen by <i>Provincial Forest Management Committees.</i> These committees as well as provincial and local laws oversee forest sector planning and determine 'sustainable harvest yields'. Though this decentralised approach helps to incentivise oversight which is familiar with PNG's differing customary laws and cultural traditions, there remains systemic issues with forestry management and illegal logging in PNG.
	In Fiji , a new Forestry Bill that creates specific facility to engage in carbon markets and institutionalise REDD+ is due to be passed by 2021 and updates previous legislation which focused on the management of extractive activities.
Evidence of Legislative updates	New Caledonia has been recognised by the Food and Agriculture Organisation of the United Nations (FAO) for having a more advanced forest conservation regime that most other Pacific Islands and territories. This is mostly due to New Caledonia's efforts to establish an extensive forest reserve, as well as various provincial parks, flora, fauna, and botanical reserves. These reserves and conservation measures have been instituted in part to help rehabilitate a natural environment that was greatly damaged by years of open cast nickel mining.

2.3.2.3 Business Law and Foreign Investment-Related Legislation

Business law reform and modernisation may be required across many Pacific countries in order for investment in NbS to be effectively scaled up. The Asian Development Bank's '*Pacific Private Sector Development Initiative*'(PSDI) has supported reform efforts and helped bring about improvements to national business environments since 2007 with the support of the Australian and Zealand Governments. The following issues and reform priorities have been documented as trends across the countries considered:

The Enabling Environment for Business

- Limited strength of institutions and ability to scale financial markets has stifled financial market development.
- Regulatory burden creates delays and additional costs for businesses.
- Costly and complex administrative requirements create barriers to starting a new business.
- Absence of effective competition laws and consumer protection frameworks.

Foreign Investment

- Legal frameworks for foreign investment in Pacific Island countries can require potential investors to undertake complex approval processes.
- Many Pacific countries have (or have had) large minimum capital investment requirements for foreign investors.
- Many Pacific countries lack standard investor protections and have legislation which imposes penalties and process that can disincentivise some forms of investment.

These challenges are also reflected in the 2019 '<u>Ease of Doing Business Rankings</u>', as shown in **Table 7**. These challenges have increased efforts to explore innovative public-private sector partnerships to help improve the ability of governments to cooperate meaningfully with the private sector. In Fiji and Papua New Guinea reforms are underway to improve foreign investment legislation and increase the attractiveness of the investment environment.

TABLE 7: Extract from the Ease of Doing Business Rankings 2019				
Country	Rank (of 190)	Country	Rank (of 190)	
New Zealand	1	Palau	145	
Australia	14	Marshall Islands	153	
Samoa	98	Micronesia	158	
Fiji	102	Kiribati	164	
Tonga	103	Timor-Leste	181	
Vanuatu	107	Nauru	N/A	
Papua New Guinea	120	Tuvalu	N/A	
Solomon Islands	136			

2.3.3 Institutional and Regulatory Readiness

While legislation and law create the basis for the way in which countries manage their natural resources, the ability of institutions to implement policies, regulate and enforce the rule of law, and effectively coordinate new investments, projects, and opportunities is of great importance when considering the potential to progress nature-based projects that involve a range of actors and stakeholders.

TABLE 8: World Governance Indicator Snapshot 2018			
Country	Government Effectiveness Rank	Regulatory Quality Rank	
New Zealand	93.8	98.6	
Australia	92.8	98.1	
Samoa	73.6	49.0	
Fiji	62.5	44.7	
Tonga	58.7	37.5	
Palau	52.4	55.8	
Nauru	50.5	52.9	
Micronesia	48.1	14.9	
Kiribati	41.4	22.1	
Vanuatu	34.6	34.1	
Papua New Guinea	24.0	31.3	
Tuvalu	23.1	30.3	
Timor-Leste	15.9	21.2	
Solomon Islands	13.5	18.8	
Marshall Islands	6.3	10.1	

The World Bank's World Governance Indicator

(WGI) in relation to 'government effectiveness' and 'regulatory quality' provides a basic overview of global policy implementation performance, as shown in **Table 8**. The majority of countries considered in this review have negative scores in relation to both indicators. This is a particular concern in relation to the majority of the large forested nations – namely Papua New Guinea, Solomon Islands, Timor-Leste, and Vanuatu. These indicators reflect a similar trend amongst other countries in which the capacity of governments is constrained. They also provide further rationale to find new innovative ways to supplement and support government capacity.

The division of ministerial portfolios and departmental mandates within many Pacific governments can be problematic for the interdisciplinary and cross-sectoral considerations involved with nature-based solutions. Climate change issues have challenged the structure of Pacific governments – some of which have established climate change departments or

ministries which are additional to pre-existing ministries of environment, forestry, disaster risk management agencies, et cetera. In most cases, climate change departments, ministries, or units in the Pacific are expected to play a coordinating role in relation to line ministries.

Mangrove management is also an issue that is often not directly managed by a single ministry and can often be split between the institutions that oversee fisheries, environment management, forestry, and land-use

planning functions, as demonstrated in **Table 9**. While this fragmentation in part reflects the cross-sectoral importance of coastal management issues in small oceanic states, it also reflects a historic under-valuation of mangroves and under-recognition of their role as a form of national capital similar to that of forests.

TABLE 9: Examples of Inter-Departmental Management of Mangroves in the Pacific			
Country	Management Bodies		
Fiji	Fiji National Biodiversity Strategy and Action Plan Steering Committee		
	Itaukei Lands Trust Board		
	Mangrove Management Committee		
	Ministry of Fisheries		
	Ministry of Forestry		
	Ministry of Lands and Mineral Resources		
	Ministry of Waterways Environment, Agriculture		
	National Climate Change Coordination Committee		
	National Environment Council		
	Protected Areas Committee		
Solomon	Ministry of Agriculture and Livestock		
Islands	Ministry of Development Planning and Aid Coordination		
	Ministry of Environment, Climate Change, Disaster management and Meteorology		
	Ministry of Forestry and Research		
	Ministry of Lands, Housing and Surveys		
	National Disaster Management Office		
Vanuatu	Department of Environmental Protection and Conservation		
	Department of Fisheries		
	Department of Forests		
	National Advisory Board on Climate Change and Disaster Risk Reduction		
	National Advisory Committee on Climate Change		
	National Biodiversity Strategy Committee		

2.3.4 Access to Data and Technical Capacity

Support to develop forest reference levels and scenarios, conduct ecosystem service assessments in relation to forests and mangroves, and map mangroves and key biodiversity hotspots in the Pacific has been forthcoming in recent years through the support of international organisations and financial support from key donors. While there have been issues in the past with the accuracy of data used, methods of assessment, and presentation of data, in many cases the accessibility and quality of data has improved.

All Pacific countries and territories covered in this report have some form of general data on the size and distribution of their forest and mangrove assets. However, the basis and detail of this data varies significantly. Defining who is responsible for monitoring and data collection and storage is an ongoing issue across various thematic areas in Pacific countries.

Papua New Guinea has progressed a number of measures required under the World Bank's Forest Carbon Partnership Fund. They have submitted a technical assessment of its Forest Reference Level (FRL) in 2017 – the FRL is based on a 2001-2013 reference period. Papua New Guinea has also established a National Forest monitoring System (NFMS).
Fiji has forest area change assessments for the reference periods 2006-2012, and 2012-2016. Fiji's last National Forest Inventory was conducted in 2006 with the assistance of the South Pacific Community (SPC) Geoscience Division. Fiji received support to establish a national REDD+ resource database in 2008. On an annual basis, plantation and logging data is provided by Fiji Hardwood Inc. and Fiji Pine Inc. and compiled by the Ministry of Forests. Fiji has produced a recent FRL for the purposes of engagement with the Forest Carbon Partnership Fund and has developed general capacity to coordinate and produce the required data products for such initiatives.

2.3.5 Stakeholder Engagement and Social Safeguards

The scale-up of private sector investments into nature-based solutions is highly dependent on effective engagement with local communities and groups. Experiences to date with REDD+ in the Pacific have helped to increase experience and lessons related to benefit sharing arrangements, community consultation approaches, and the development of relevant social safeguards for guiding interactions with local communities.

It has been clear that processes for engaging local groups and traditional communities must be defined locally and calibrated specifically in relation to cultural norms and traditions. From the perspective of the private sector and voluntary carbon trading initiatives there are some key entry points and prerequisites for enabling effective engagement with Pacific governments and communities. These are outlined below.

- <u>Awareness and Locally Informed Design</u>: Due to the various dimensions of NbS and the inherent multistakeholder implications of projects involving communities in the Pacific, significant awareness building, consultation, and participatory dialogue is required to enable and formulate projects. This aspect of project design should not be underestimated and where possible, partnerships on the ground and agreements with project developers should detail arrangements for facilitating awareness raising workshops and consultations.
- <u>Recognising Traditional Environmental 'Stewardship' and Community-based Management Plans:</u> In some cases, NGOs and local environmental coalitions work directly with communities to support their capacity as stewards of environmental assets. Community-based management plans have been developed in countries like the Solomon Islands, Fiji, Tonga, and Vanuatu in partnership between communities, academia, and environmental organisations. These plans can provide a useful entry point and access to the relevant coordination arrangements to identify suitable projects and sites, and can provide a streamlined way to work with key biodiversity hotspots directly.
- <u>Local Project Development and Management Capacity</u>: Project development will require strong linkages with the context in question and local capacity to help support both design and implementation. While voluntary markets and private sector carbon offset programs remain in their infancy in the Pacific, local and international environmental NGOs with demonstrated community engagement capacity and experience may remain the most appropriate brokers for these projects.
- <u>Social Safeguards and Dispute Resolution:</u> Many Pacific Island countries, through development bank programs and funding agreements with multi-lateral funds, are facing heightened pressure and requirements to develop locally-defined environmental and social safeguards for national projects. These efforts may help to support the development of the safeguards required for NbS which involve close interaction with vulnerable communities. REDD+ readiness initiatives and Pacific engagement with the Forest Carbon Partnership Facility (FCPF) are also expected to help produce social safeguards that are directly applicable to a greater range of NbS approaches and programs.

- Environmental Safeguards and Leakage: Results-based or performance-based payments for naturebased carbon projects are usually contingent on the assessment and confirmation that carbon leakage²¹ has been avoided. This and other environmental management criteria must be clarified early with stakeholders to help manage the way in which projects can change dynamics between communities and groups. Outside actors such as informal logging companies in the Pacific can be a negative influence on those who are not direct beneficiaries of the carbon project. REDD+ strategies in the Pacific have largely addressed this through efforts to create additional employment benefits and increase community-based enforcement, monitoring, and reporting. The methods for controlling leakage are less developed and understood in relation to carbon management and emerging opportunities, such as blue carbon. Due to the various benefits of mangroves including extraction-based value, in most cases agreements will need to be made with communities to help meet basic material demand and specify sites and methods for managing extraction.
- <u>Benefit Sharing</u>: Benefit sharing agreements in the Pacific context will need to define the payment agreement, financing model and business model in a way that clearly defines the roles, requirements, and prerequisites involved with facilitating payment.

2.3.6 Partnerships, Resources, and Capacity Building Support

Pacific Island countries have to date received support to progress NbS from a range of organisations and stakeholders. The following organisations have been the most common actors cited in relation to implementation and capacity building support across the literature reviewed for this assessment. Donors, development banks, and multilateral funds (not cited in **Table 10**) have been the main source of resources for supporting carbon-market readiness.

TABLE 10: Organisations Providing Support for Nature-Based Solutions in the Pacific		
Regional Organisations	International Organisations	
Pacific Islands Forum Secretariat	Conservation International	
Secretariat of the Pacific Community	Forest and Agriculture Organisation	
Secretariat of the Pacific Regional Environment Programme	International Union for the Conservation of Nature	
South Pacific Tourism Organisation	The Nature Conservancy	
University of the South Pacific	Wildlife Conservation Society	
	World Wildlife Fund	

²¹ Carbon leakage refers to the displacement of emissions in one country as a result of emissions reductions in another, leading to no net emissions reduction.

Chapter 3: Investment Trends in Nature-Based Solutions

This Chapter is based on stakeholder consultations, and details key areas of interest from private sector stakeholders in relation to: deriving economic benefits from carbon units and co-benefits; risk management approaches; and investment options, products and structures.

3.1 Deriving Varied Economic Benefits from Nature-Based Solutions

Investment in nature-based solutions is driven by a range of factors, but relies in the first instance on securing a return on investment. Corporate commitments to reducing net emissions, building climate resilience, growing alignment of business to the SDGs, and mounting pressure from internal and external stakeholders are all contributing to the increased corporate valuation of the benefits of NbS. As this trend continues, and as carbon market schemes grow in coverage and prominence across the globe, the carbon and non-carbon benefits of these investments are becoming strategic for the private sector.

However, the valuation of such environmental, social and economic benefits is contingent on the ability to measure their impacts – which remains an ongoing challenge in scaling up investments in NbS projects in the APAC region and globally. Nevertheless, there are recognised opportunities for public and private sector actors to collaborate in the development of carbon and non-carbon environmental markets.

3.1.1 Carbon as a Driver of Investment in Nature-Based Solutions

As many companies face challenges in meeting their climate action commitments, the acquisition of carbon credits is increasingly a driving force behind corporate investment in nature-based solutions. The value of the global carbon market grew by 20% from 2019-2020, reaching USD \$272bn and marking the fourth consecutive year of growth. As such it is attracting interest from all actors in the carbon market value chain.

Institutional investors note their increasing openness to such investments, while sustainability-minded financial institutions are beginning to consider carbon as a commodity and a source of potential revenue. Further, the financial investment potential coupled with the added corporate social responsibility and reputational benefits from nature-based projects, is garnering increasing support from high profile, and often high-emitting, corporates aiming to improve their net emissions profiles. Internationally, this is particularly so amongst companies operating in the land sector with the added incentive of managing land sustainably and provide critical commodities to the global market.

The price of a carbon unit is a key consideration for the stakeholders driving the investment in, development of, and purchasing of credits for nature-based projects. <u>On average, carbon credits were priced at an estimated USD\$2 in 2019</u>, although there are major discrepancies between schemes (with credits on the Australian market trading at AUD\$19 in June 2021, and credits in the UK ETS above £50). All actors in the chain of carbon credit generation and procurement consider securing a commercial (financial or tradeable carbon credit) return on investment to be a fundamental driver, as well as a primary risk. This is particularly true for institutional investors averse to the risk inherent in any emerging asset class – and considering fiduciary responsibilities, securing the expected return is non-negotiable.

Depending on the structure and size of the organisations investing, investment may need to be in the scale of millions to billions of dollars in order for the abatement scale to be of impact and rate of return to be worthy of investment. Part of securing the return is therefore the volume of emissions to be abated or sequestered, which in turn defines the volume of carbon credits and financial return to be received.

Increasingly, corporate net-zero and emissions reductions commitments are providing assurance to market participants that the demand for credits will increase to 2050 (and presumably, beyond). This is true for an increasing number of emissions-intensive multi-national organisations with voluntary climate targets beyond the realm of compliance obligations. This is illustrated by the fact that, whilst companies await the finalisation of the Paris Agreement, many private sector actors have committed to investing in emissions reductions and carbon offsets into the future. Given the widespread necessity for such organisations to use carbon credits to offset a proportion of their emissions where it is not possible to otherwise reduce absolute emissions, these corporate climate commitments will continue to drive investment in carbon projects.

Therefore, with return on investment, and emissions reduction commitments the primary drivers, it is clear that carbon crediting will remain a fundamental pathway to developing large-scale NbS in the future. Growing corporate willingness to take action on climate change, the continued growth of public and shareholder pressures, increased awareness of climate risk, and interest in climate-related financial disclosures, are also contributing factors. While these factors expand and are brought further into the public's attention, the private sector is seeing the long-term strategic value in investing in NbS.

If nature-based solutions are to constitute much of future voluntary market as anticipated by some emissions-intensive trade-exposed (EITE) organisations for example, this investment is indeed strategic for leveraging a return – be it a direct financial return through the investment and later trading of credits, or indirect return through CSR and brand improvements. Although, it is not implied that this kind of progressive strategic forethought is the status quo within the broader private sector.

3.1.1.1 Organisation and Industry Perspectives on Carbon-Based Investments

Growing private sector interest in carbon as a source of emissions abatement and revenue does not imply that the level of awareness and interest is mounting at the same rate. Actors currently engaged in carbon markets stress that the private sector is not monolithic, and motivations and drivers therefore vary. However, for those investing in NbS – including project developers, conservationists, industry, EITE corporations, institutional investors, and financial institutions – obtaining carbon credits is a primary driver of investment in NbS. While initial incentives to invest may vary, there are commonalities between them that point to a convergence in investment interests, approaches and trends.

Firstly, demand for credits is a key factor for each of these types of organisations. Demand stemming from voluntary and compliance-based purchasing of credits creates the market confidence that allows project developers to continue originating projects. In a cyclical manner, the increasing demand for credits tends to further incentivise some (particularly emissions-intensive) organisations to invest, as it becomes more strategic for the long term as the value of those credits can be expected to increase. For institutional investors and financial institutions, ROI and demand factors are the fundamental carbon investment drivers. Hence, long-term market assurance of the cost-effective supply of units stimulates the market to ensure that this cycle continues.

For each of these market stakeholders, the need to ensure a financial return means that accurate measurement and valuation of the investments is crucial. The volatility and vulnerability of natural ecosystems creates some inevitable level of uncertainty of the investment. While the market matures and measurement and valuation systems become increasingly accurate and reliable, the level of uncertainty can be diminished. However, this unavoidable risk profile of natural ecosystems tends to add to the risk aversion on the part of the investors that leads them to avoid being driven by any non-carbon benefits of NbS. Therefore, carbon credits are expected to remain the primary driver of investment in natural climate solutions for the foreseeable future, from the perspectives of the institutional investors, financing entities, project developers, and EITE organisations alike.

Carbon projects with additional social, economic, environmental and cultural benefits (often referred to as co-benefits) are attracting attention. For example, the Aboriginal Carbon Foundation sells 'community credits' and 'farmer credits' from projects that create benefits such as the sharing of local Indigenous knowledge, supporting local employment aligned with the values of Traditional Owners, and rewarding responsible environmental stewardship. These more charismatic projects are also often aligned to corporate social responsibility strategies – in the case of Aboriginal Carbon Foundation's projects, these have proven <u>attractive to Commonwealth Bank of Australia</u> particularly due to the benefits to local communities.

The prioritisation of credits with such co-benefits is vastly different across industry and between organisations. This ranges from the spectrum of institutional investor – where the co-benefit is merely an added bonus to the carbon credit – to some EITE companies where credits with co-benefits are in fact prioritised. Such charismatic projects are known to be driving a premium, which in turn could serve to widen the gap between the investment activities of those investors looking for lowest cost abatement and those eager to improve CSR performance, and appease public, consumer, and shareholder interests. However, it has been highlighted that, despite the growing interest in co-benefits, private sector companies would generally not invest in the co-benefits alone.

The fact that projects are developed with the carbon credit return as the focus is illustrative of this. For some project developers, co-benefits are an inevitable aspect of a given nature-based project, yet they are not actively marketed because the valuation of those co-benefits is not distinguishable from the project itself. Ultimately, co-benefits are often embedded within the project, and cannot be separated from the carbon return.

3.1.1.2 Market Maturity and Factors Influencing Market Development

Worldwide anticipation of the market developments to be facilitated under the Paris Agreement has played a role in encouraging private sector investment in nature-based projects. However, the repeated stalling of the finalisation of the Paris rulebook has also likely hindered carbon market growth and prevented a notable amount of investment, according to market participants. It has been noted that the maturity of carbon markets globally (with the possible exception of the EU ETS) is at such a level that most markets require additional support for their development in order to rapidly increase market participation.

Across various jurisdictions, national policy stability and regulatory certainty are also considered essential in providing market confidence to drive investment at the rate necessary. In the meantime, emissions intensive industries and project originators themselves express some reluctance to scale up their current investment activities in carbon markets and nature-based projects. It is also recognised that carbon markets can play a role in valuing and incentivising environmental repair through projects that protect and enhance ecosystem services, but that the current levels of market maturity are a barrier to this. Development of new nature-based methodologies such as blue carbon methodologies are crucial to this.

Despite the unprecedented momentum in the growth of carbon markets and nature-based developments within those markets, provision of further clarity from national governments and from the Paris Agreement on cross-jurisdiction carbon credit fungibility is needed. The pace of market development and investments in NbS can be expected to be further mobilised through these policy and price stability signals. Moreover, current policy uncertainty is expected to linger during the transitional phase of the Paris Agreement as it becomes operational, from 2021. This creates additional need for market development that can further drive investment in nature-based projects.

3.1.1.3 Future Potential and Emerging Opportunities

Despite these challenges, large and small private sector actors have been able to derive financial benefits from investments in nature-based carbon projects to date. Market actors across the spectrum of carbon

credit origination and procurement invariably see opportunity in cross-industry, intra-industry, and publicprivate collaborations to increase the rate and scale of investment in NbS in the APAC region. These options will be explored further in this report.

3.1.2 Non-Carbon Benefits as Drivers of Investment in Nature-Based Solutions

Nature-based projects that demonstrate added social, environmental and economic benefits are becoming more attractive for investment. Corporate offsetting strategies are deemed to be more authentic and credible if co-benefits from projects can be demonstrated and communicated. Organisations supporting such activities also notice the increase in business engagement resulting from their support of projects with a multitude of benefits.

Indeed, co-benefits are often intrinsic to any nature-based project – as they tend to channel finance from urban to rural centres, and from multi-national organisations to communities and small businesses. However, as noted above, non-carbon benefits such as biodiversity protection and provision of employment opportunities rarely constitute a standalone driver of investment in NbS.

Investors recognise that, for many countries in the APAC region, improving climate adaptation and resilience is just as crucial as climate mitigation. When developers design a project, and when buyers decide on which projects to purchase credits from, the ability to weave adaptation and resilience aspects into the carbon sequestration or abatement project is therefore a consideration of growing importance. Mangrove conservation projects for example that also serve to protect communities and ecosystems against coastal inundation and sea level rise are increasingly gaining attention. It has been stated in consultations that, "the highest quality offsets in the world are the ones that save lives", however, current NbS investment activity overall remains weighted towards mitigation.

For sellers and buyers who do consider co-benefits, these benefits are a secondary consideration, due to the need to reap a return on their investments. The marketing of a carbon project may include mention of the potential additional benefits complementary to the carbon rewards, yet they are seldom a focus in the pitching of a particular project. Although, depending on the organisation, up to 95% of a project developer's projects can include embedded co-benefits by default – "it's part of doing a good carbon project."

Nevertheless, without a monetary value ascribed to any given environmental, economic or social benefit, direct investment in additional benefits is currently viewed as a risk. For institutional investors, for example, if carbon credits are considered an alternative asset class, non-carbon benefits are even more obscure to be considered as an investment driver. Until co-benefits become accurately quantified, valued and monetised, investors do not see the possibility to commercially and legally invest funds into non-carbon benefits – "we really appreciate the idea of co-benefits, but we are not in a position to actively pay for it."

Developers have and continue to create impact funds in the scale of multiple billions of dollars, with various combinations of carbon crediting plus biodiversity, food security, and social impact metrics as key components. From the perspective of these project developers, a project's impact correlates with the depth and variety of the benefits it provides, although this does not always correlate with the scale of financial return.

3.1.2.1 Current Schemes and Initiatives Driving Investment in Non-Carbon

Corporate alignment with ESG performance metrics is becoming more mainstream, and the Sustainable Development Goals (SDGs) are commonly used as a guiding framework for this. As the SDGs provide clear, universal indicators and targets, corporate stakeholders often reference them when making investment decisions or developing sustainability-related strategies or products. Interlinking select SDGs that are aligned to an organisation's overarching strategy and branding is widely accepted as a logical pathway to achieving those goals. Carbon projects that can demonstrate their contribution to any number of those 17 goals are therefore growing in importance for many organisations. SDG-based bonds, for example, are entering the market, and the Verra SD-vista program is an example of attaching SDGs to carbon projects.

Increasingly across Asia, the SDGs are being embedded into investment policies and frameworks. Within the region, awareness and engagement with ESG metrics within corporate strategies, funds and the like are growing. In recent years, the SDGs have been a further catalyst of this. It is understood that, with a lack of clear primary, or secondary, markets to drive investment in non-carbon benefits, the widespread adoption of the SDGs has been fundamental in bringing attention to the added benefits of carbon projects.

There are instances of schemes and initiatives incentivising support for co-benefits, often hinging on a specific national or sub-national jurisdiction. The Queensland Land Restoration Fund for example has been established to leverage the national carbon market to drive project development, placing a premium on those with co-benefits. This is bolstered by the Fund's 'Co-benefits Standard', serving as a basis for measuring and monitoring the co-benefits of projects.

Mitigation banking is another avenue for offsetting environmental impacts, particularly to biodiversity. In the USA, biodiversity and natural ecosystem degradation caused by infrastructure projects is monitored by the EPA, US Fish and Wildlife Service, National Marine Fisheries Service, and the US Army Corps of Engineers. To mitigate and/or offset impacts on biodiversity and ecosystems, the organisation having caused that damage is required to purchase 'mitigation banking' credits, the proceeds of which are used to restore part of that natural environment. Mitigating banking is considered a successful method of valuing and channelling finance toward localised nature-based projects beyond carbon credits. Similar schemes exist in Australia, such as the Victorian Native Vegetation Clearing Regulations. However, the scale of these markets is completely dependent on policy and regulation at either a national or sub-national level, and so in a regional context will be difficult to scale to a level that will achieve climate-related goals across multiple smaller jurisdictions in the APAC region.

3.1.2.2 Organisation and Industry Perspectives on Non-Carbon Investments

It is broadly agreed that there is a need, as well as an opportunity, to develop pathways of valuing the protection of natural environments. Typically, those organisations with an immediate commercial interest in protecting the environment are of the view that there is a fundamental need to value ecosystem services. Emissions intensive organisations may be less inclined to hold such a strong position, yet there is recognition that the ability to demonstrate a project's co-benefits can support the business case for investment in NbS. Institutional investors in the region are becoming increasingly open to investing in nature-based activities – although there is concurrently a high level of interest as well as a lingering awareness gap on opportunities and risks associated with non-carbon benefits from the part of investors. A common understanding between stakeholders, however, is that without a monetary value on a specific benefit, the case for investing in NbS will likely remain dependent on carbon benefits.

3.1.2.3 Market Maturity and Factors Influencing Market Development

Accurate and reliable monitoring, reporting and verifying non-carbon benefits is crucial for the commercial viability of projects. Lack of maturity of non-carbon valuation frameworks is currently prohibitive to market growth. This currently presents a barrier to the credibility of, and subsequent interest in, non-carbon benefits. This is the case for the ability to obtain baseline data as well as ongoing measurement, from the perspective of various market stakeholders from financial, project development, institutional investor, EITE,

and legal services organisations. The aforementioned Queensland LRF Co-benefits Standard is an indicator that developments are being made in this area, although it remains a challenge to quantify the monetary value of natural environment factors such as ecosystem services, or species protection. Amplifying this complexity, projects that reap co-benefits such as biodiversity for example, tend to be site-specific, making it inherently difficult to scale co-benefit crediting systems.

Assessments of climate adaptation and resilience benefits in line with frameworks such as the SDGs tend to depend on the amount of people impacted by a project. Typically, indicators relating to factors such as human health and social equality can only be accurately assessed over long periods of time. With many organisations looking to invest in projects and initiatives that obtain demonstrable benefits in the near-term, long yield timeframes are perceived to be a barrier to leveraging investment of scale.

While the development and maturity of non-carbon markets may not yet be sufficient for widespread investment, key stakeholders are interested in the growth of these markets. There is increasing investor openness to exploring new products, alongside the trends in aligning business practices to the <u>Sustainable Development Goals</u> (SDGs), the <u>Taskforce on Climate-related Financial Disclosures</u> (TCFD) and other environmental, social and corporate governance (ESG)-related frameworks. More recent examples of initiatives led by or involving private sector actors include the <u>Taskforce on Nature-related Financial Disclosures</u> (TNFD), and the <u>Taskforce on Scaling Voluntary Carbon Markets</u> (TSVCM).

The global investor community's new focus on the nexus between nature, corporate finance and markets shows an increasing willingness of the global investor community to better engage with environmental markets, and define common language around natural environments. Similarly, the <u>Markets for Natural</u> <u>Climate Solutions Initiative</u>, launched at COP25 in 2019, is bringing international corporate actors together to align efforts on how to engage and collaborate on scaled investment in NbS. There is also appetite for market leadership in the development of new investment products to support sustainability outcomes. An Australian-based branch of this Initiative was recently established by the Carbon Market Institute and the International Emissions Trading Association (IETA), bringing together a consortium of private-sector actors looking to support investment in NbS in the APAC region (albeit with a stronger focus on carbon than non-carbon benefits).

3.1.2.4 Future Potential and Emerging Opportunities

Each of the above-mentioned factors influencing the development of non-carbon environmental markets have also been identified as presenting opportunities for exploration. Forward-looking corporates are looking for emerging, credible markets capable of generating credit supply. As such, the expansion of initiatives such as mitigation banking, and development of methodologies such as blue carbon, may receive interest from private sector actors.

The rapid growth of carbon markets across the globe and subsequent interest in new methodology development could also be used as an opportunity to integrate co-benefit metrics within the methodologies. The <u>Plastic Waste Reduction Standard</u> being piloted by Verra for example integrates environmental and social responsibility requirements and is undergoing consultation to ensure its applicability for corporates' sustainability goals. This is furthermore supported by the widely held stakeholder perspective that existing carbon market schemes that hold integrity should be leveraged in the development of co-benefit initiatives. The assurance provided by such schemes, including Australia's Emissions Reduction Fund and Climate Active carbon neutral certification program, would reduce the likelihood of private sector aversion to investing in co-benefits.

Stakeholders have expressed that within these kinds of opportunities, co-benefits pertaining to direct ecosystem services, such as water and food services, present the most viable means of measuring and valuing co-benefits. Investigating opportunities for measurement of such services could be a starting point, upon which further co-benefit measurement systems could be built. Once overarching frameworks (such as the LRF Co-Benefits Standard) have been established, it is expected that it will become more commercially viable over time to invest in non-carbon credit related environmental projects. It has been recognised that there is opportunity for public and private sectors to jointly establish such co-benefit measurement, reporting and verification (MRV) systems to ensure that they are fit-for-purpose.

Complementary to the concept of linking ecosystem services with environmental markets, there is potential to develop projects aligned with direct economic, social and environmental benefits for industries reliant on natural environments, such as tourism and fishing. Established schemes such as the <u>Marine Stewardship</u> <u>Council</u>, <u>Forest Stewardship Council</u>, and <u>Fairtrade</u> can be leveraged to couple carbon with non-carbon certification schemes, driving higher prices, and increasing demand for more sustainable and climate-resilient activities in these areas. Particularly in countries such as Indonesia, Timor-Leste, the Philippines, and Pacific Islands, where subsistence economies, livelihoods and natural environments are intrinsically interlinked, this is seen as an avenue for incentivising and monetising investments from the private sector.

Coastal and land-based management projects could be developed in such a way that requires whole-ofecosystem investment – from upstream to downstream – and generating ecosystem services payments for the benefits, such as reduced erosion, water quality, avoided fish stock depletion, ecosystem resilience to extreme weather events, and so forth.

International trade in the region provides an opportunity to link ecosystem payment schemes to the trade of food. Sustainable plantation farming practices could be linked to a framework such as Fairtrade, for example. Regenerative and sustainable agriculture are being considered in the remit of the more specific NbS definition. In the context of communities and welfare, using a scheme that drives more sustainable practices throughout agrarian supply chains has the potential to improve sequestration in natural environments, improve biodiversity outcomes, and reduce clearing of native vegetation – as is the case under Australia's ERF. Additionally, the carbon credit payments incentivise better land management and protection, are an efficient use of public and private funding mechanisms, and could leverage the reputation, brand and consumer reach of a framework such as Fairtrade.

Linking land use incentivisation schemes to international trade would furthermore provide a clear and verifiable pathway for the production of commodities and sustainable food consumption under a renowned and verifiable framework in countries such as Australia and New Zealand for example. It is also recognised that technology developments must play a role in advancing sustainable farming practices to enable improvements in MRV and record keeping in ways that are scalable and strategic for landholders.

3.1.3 Interplay between Carbon and Non-Carbon Drivers

The measurement and valuation of nature's benefits for the purposes of driving investment in its protection, restoration and rejuvenation has proven much more commercially viable for carbon than for non-carbon markets. The ability to measure or estimate the amount of emissions sequestered or abated from a given activity has enabled the growth of carbon markets – without this ability, carbon market systems would not function. While difficulties in measuring (non-carbon) co-benefits are the primary the primary limitation to valuing and commoditising these co-benefits, it is important to note that carbon and non-carbon factors are not considered mutually exclusive.

Whether an organisation's decision to invest in nature is driven by a desire to improve its corporate branding, alignment with sustainability metrics, compliance measures, or the growth in carbon markets, an investment in a nature-based project for the purposes of emissions reductions is by default also an investment in cobenefits (although these benefits will vary depending on the project). For any nature-based project, it is impossible to extract the non-carbon benefits from the carbon benefits. This implies that the current uptick in NbS within carbon markets will drive broader sustainability benefits in the regions where projects exist. It also suggests that the most timely and cost-effective way to incentivise investment in non-carbon benefits could be through existing carbon markets themselves.

Ultimately, to drive market valuation of non-carbon benefits, it is necessary to understand the key risks considered, and the investment options favoured by private sector stakeholders.

3.2 Risk-Management Approaches to Investment in Nature-Based Solutions

The range of risks associated with nature-based investments requires all types of organisations that invest in them to apply rigorous due diligence processes. Management of such risks, from international governance to the project on the ground, forms these due diligence processes in varying ways for different types of entities – private sector actors are not monolithic in their risk management approaches. The weighting of risk considerations is varied not only between industries, but also on the region of investment, investment type, and organisational investment approach. Across the board, however, risk considerations for nature – based investments fall into one or more of the following categories: financial and fiduciary; governance; project; reputational, and counterparty risks.

3.2.1 Financial & Fiduciary Risk

The risk of reaping an unsubstantial return on an investment is a key factor for all types of organisations considering or already investing in NbS. This risk is however more pronounced for those organisations with fiduciary obligations to provide a return for their clients or shareholders. Financial risk is more likely to lead institutional investors and publicly listed companies to opt for lowest-cost abatement when reducing the net emissions of their portfolios, more-so than for actors on the supply side of the market.

Financial and fiduciary risks of carbon market investments, particularly within natural environments, are amplified as carbon credits are considered an alternative (albeit quickly emerging) asset class. Until carbon units are more mainstream, the demonstration of a clear return on investment (ROI) will be assessed with more scrutiny than it is for traditional asset classes, in order to reduce the financial risks. The adoption by carbon credit purchasers and project investors of a conservative investment approach is therefore a justifiable way of managing potential financial and fiduciary risks, but it in turn directly reduces the likelihood and scale of their investment in nature-based solutions.

Options for managing the financial risks associated with NbS investments are often limited, by virtue of the fact that the financial ROI is paramount to an investment decision. Investments simply will not be made in NbS if the perceived financial risk is too high. As such, there are few options for organisations to overcome this in the short-term and on their own accord. However, stakeholders from both the supply and demand sides of the market recommend that through increasing the sources of demand for carbon credits, this financial risk can be reduced. This security of demand is growing through voluntary markets, and can be further bolstered through national policy measures and international governance frameworks, particularly the Paris Agreement.

Promotion of the legitimacy, transparency and robustness of carbon schemes and activities can further improve market confidence and hence drive demand. Market stakeholders profess this to be particularly necessary across the APAC region where drivers of market maturity are extremely varied between countries.

Furthermore, support for market development within APAC countries is considered vital if cross-border market linkages are to be established in the future, which can in turn drive price stability and consequently reduce the level of financial and investment risks.

Investing in projects that can integrate various industries and emerging sub-sectors (e.g. tourism with carbon abatement) is an additional pathway that is expected to present opportunities for larger carbon projects to be developed, and hence buffer some of the financial risks. Institutional investors have expressed that the small scale of projects is often a factor hindering institutional-scale investments. Such cross-industry project development could therefore become a means of increasing the size of projects, as well as a financial risk buffer as the projects could generate multiple streams of income. Additionally, exploration of options to diversify the financing structures available, such as blended finance options, has been recommended as a macro risk-management strategy that would provide further market confidence and stability. Financing structures and options are further explored in section 3.3.1 of this report.

3.2.2 Governance Risk

Secondary to financial risks, governance risk is a key concern amongst stakeholders. Playing an integral role in governance risk are the institutional arrangements underpinning the initiatives, environmental markets, implementation and oversight bodies, regional convenors, and partnership structures. For an organisation to invest in NbS, they must trust the governance of each of the frameworks related to the project they are investing in. Poor governance at any one of these levels could deter private sector actors from investing in NbS, particularly the more risk-averse and conservative investors as referred to previously in this section.

Supply-side and demand-side market investors concur that transparency, and independent assessment and/or verification of schemes, agencies and partnerships is necessary in mitigating governance risk. This also provides investor assurance of the credibility and rigour of a scheme. Some Australian investors with carbon-neutral investment portfolios, for example, will not consider investment in carbon credits that are not approved by the Australian government's Climate Active scheme. Therefore, it is understood that trust in a given scheme or framework (in this example, Climate Active), or indeed trust in a government's policy stability, can be used to generate trust in additional nature-based schemes.

Stakeholders have also articulated that, in addition to strong institutional arrangements, political support of these arrangements is necessary. For example, it is understood that many private sector actors would be more inclined to work with regional partnerships on an ongoing basis if there was evidence that the partnerships would receive long-term support from governments in the region. With buy-in from private and public sector actors, and the complementary signal to the market that this support would be maintained, the risk that the governance of regional frameworks would falter is expected to be significantly diminished.

Furthermore, investment in capacity building of regional bodies and private-public-NGO partnerships has been identified as a strategy of minimising governance risk – this is understood to reduce the likelihood of an initiative or framework becoming dependent on limited, specific personnel. Project developers often also employ a co-management governance structure that ensures accountability and sound decision making, as well as ongoing capacity building. Involvement of non-governmental actors and multi-lateral development banks is acknowledged to mitigate some of the political risks that can arise within international frameworks, as its involvement helps to diversify and therefore reduce risk for each actor.

3.2.3 Project Risk

Risks involved with the management of nature-based projects on the ground are understandably most familiar to the project developers themselves. The very fact that other actors in the investment supply chain are not as astute to the intricacies of a project leads project transparency to be a risk consideration, predominantly for institutional investors. Particularly for nature-based investments in the APAC region where there is a desire for funding to be leveraged to support broader sustainability goals, institutional investors seek assurance that the money is not being funnelled primarily to the project developers, legal advisors and consultants, but rather to communities undertaking the activities in a timely manner.

Notwithstanding this, stakeholders ranging from EITE representatives to institutional investors, in addition to project developers, have an awareness of the rights issues arising from land-based carbon projects – including legal right to the carbon, benefit flows of the project, human rights, encroachment and land tenure. There is also a general understanding of the importance of ensuring a project's management is culturally appropriate. It is understood that issues around land tenure and custodial ownership can arise unforeseen, following pre-project legal processes and the final financial transaction approvals. This is particularly the case in Pacific countries including Fiji, PNG and Vanuatu. This inevitably presents a risk of necessary yet unexpected additions to project initiation timelines and budgets.

The time needed to create a project and subsequently receive financial compensation for the investment is both a barrier and risk to investment. For example, long project development timeframes and crediting periods may deter investment in the first instance, and if not, the need to maintain the project over decades increases its vulnerability to the perils of climate-induced risk. The development of a NbS project currently underway in Pakistan for example, has taken eight years to get to the legal and financial close required for the project to go ahead. Co-creation of a project with community stakeholders can require between 3-18 months, depending on the project. At times, the time taken to set up a project is outweighed by the rapid rate of deforestation. These kinds of timeframes present a risk to the project developer who is less likely to be able to secure private sector funding for an investment that might not receive credits for many years.

The variability and vulnerability of nature also presents a risk to NbS. While the Pacific region is rich in biodiversity and presents significant carbon sequestration potential, it is also understood by investors that it is at risk of the increasing intensity and frequency of climate-related extreme weather events such as storm surges, heavy rainfall, and tropical cyclones. For terrestrial projects, ongoing conservation management is required to reduce fire risk. For emerging coastal NbS including blue carbon projects, other climate and ocean drivers of change impacting small islands include variations in sea and land temperatures, ocean chemistry changes, and sea level rise, contribute to the perceived risk of NbS.

In managing issues around project transparency, ensuring best practice community engagement well in advance of, and during a project's development, is essential for all parties. The enhancement of ownership and benefits sharing activities between project stakeholders, and communication of this back to the investors, is crucial to mitigating project risk and ensuring transparency with regards to those risks. Some corporates ensure that they also have presence on the ground, to understand and mitigate some of this risk. Furthermore, seeking and obtaining free, prior and informed consent (FPIC) particularly of Traditional Owners is not only best practice but also assists in mitigating risks pertaining to stakeholders' rights.

It is understood that community engagement processes can prolongate project timelines, however, they also mitigate many of the project risks such as transparency, land rights, and appropriate financial

disbursements. They are also intended to reduce the risk of unforeseen discord between stakeholders. Aside from following best practice community engagement, there are limited methods of managing project timeframes. The same is true for nature-based risk factors such as extreme weather events, although management of rapid-onset, land-based disasters such as fire is much less complex than slow-onset issues such as ocean acidification. However, stakeholders have recommended that the development of nature-based for risk.

3.2.4 Reputational Risk

The risk of failure of an investment or of a project is particularly pronounced if it has the potential to bring the integrity of environmental investments into question. Upholding the integrity of a project, the scheme under which it is credited, and the jurisdiction within which it is governed is of interest to all players involved in carbon markets. Without this, there is risk of reputational damage to those organisations championing carbon projects, including NbS projects. As there is still a level of public scepticism around using credits to reduce net emissions of a company or portfolio, the risk of one project failure tarnishing the whole industry is high.

This reputational risk extends beyond the project in question and to the monitoring, accounting, governance, and claiming of emissions units. False claiming or double-claiming of units by one entity could lead all actors involved in environmental crediting schemes to suffer irrevocable reputational damage.

At this stage, Management of reputational risk is limited to conducting due diligence on all aspects of the project that could potentially fail to uphold integrity – including but not limited to the project development organisation, project type, scheme, government or organisation administering the scheme.

3.2.5 Counter-Party Risk

Investment structures that are facilitated through multiple parties creates counter-party risk. This is the case for project developers, who may co-develop a project with a local organisation; financial institutions acting as convenors of various parties to enable access to capital; and EITE corporates involved in offtake agreements with many offtake partners. In all of these instances, each additional party involved adds to the potential risk. Diligent assessment of counter-parties, including the likelihood of default, forms a key part of initial risk analyses, particularly amongst financial and legal service providers. It is also an opportunity for investors to consider how they might de-risk their commercial interactions through engagement with carbon market-based consumer protection frameworks, such as the <u>Australian Carbon Industry Code of Conduct</u>.

3.3 Investment Options, Products & Structures

While carbon crediting has and will continue to be critical in driving investment in NbS, upfront financing²² is not always commercially viable for carbon-focused investors (including initial project funding). Amidst the urgency to swiftly scale up climate action and concerns for the lack of clarity around the rules of Article 6 of the Paris Agreement, the economic impacts of COVID-19 have slowed some immediate investment in carbon projects.

The mobilisation and amalgamation of private and public sector funding for nature-based investments is a critical step to leveraging the investments made by separate actors. Non-governmental organisations are also playing a convening role in developing and facilitating collaborative private-public funding structures.

Between 2010 and 2020, 99 global climate-dedicated funds²³ were developed. Of the 99 funds recognised by the OECD's <u>Climate Fund Inventory</u>, 74 operate in the Asia-Pacific region, with 51 funds providing nature-based finance, including to REDD+ activities. Led initially by governments and inter-governmental agencies, these funds have evolved to engage more donation-based and private-sector finance models and products, as outlined in **Table 11**, below.

TABLE 11: Consolidated Details of Global Climate-Dedicated Financing Structures and Funds			
Fields	 Adaptation Agriculture/Forestry/Land Use Capacity Building Clean Energy Disaster Risk Reduction 	 Mitigation REDD+ Technical Assistance Technology Transfer Other 	
Турез	Bilateral, Multilateral, Donation-based, M	Iultilateral/Private Sector, Private Sector	
Financing Mechanisms	 Carbon Finance Blended Finance (incl. loans) Bonds (Green, Blue, Transition & Catastrophe bonds) Co-Financing Concessional Finance (incl. loans) Debt (incl. senior and mezzanine debt) Equity Financial Incentives (co-financing, guarantees, loans, credit insurance) 	 Grants (incl. cost-sharing) In-kind contributions Insurance Loans (incl. senior loans/guarantees) Official Development Assistance Results-based Payments (for achieved emissions reductions) Risk Capital (inc. risk management) Technical Assistance Structured Financing 	

based on data extrapolated from the *Climate Fund Inventory*, OECD (2019)

²² For definitions of financial terms mentioned in this section in particular, refer to the Glossary.

²³ 'Climate-dedicated funds' represent those that only invest in climate-related activities; these are distinct from 'climate-relevant funds' which include such activities in their investment strategy, but don't explicitly identify individual investments as climate-related (OECD, 2015).

3.3.1 Structures and Products Successfully Used for Investments in Nature-Based Solutions

This study has gleaned insights from various stakeholders about their current engagement with, and interest in, specific financing structures for nature-based investments. This is summarised in **Table 12** below and further explored in the following sections.

TABLE 12: Summary of Financing Structures Currently Used or of Interest, by Organisation Type				
Financing Structure	Financial Institution	Institutional Investor	Project Developer	EITE Organisation
Equity Funds	Yes	Yes	Yes	Yes
Impact Funds and Natural Capital Funds	-	-	Yes	-
Upfront Financing	-	-	-	Yes
Loans and Green Loans	Yes	_	-	_
Green, Blue and Sustainable Bonds	Yes	_	Yes	Interested
Social Impact Bonds	Yes	-	-	-
Offtake Agreements	-	-	Yes	Yes
Profit-Share Models	-	-	Yes	-
Debt Financing	Yes	Yes	Yes	-
Multilateral Development Banks (MDBs)	-	-	-	-
Donor Grants	-	_	-	_
Blended Finance	_	_	-	Yes
Hybrid Finance Models	Yes	_	_	_

3.3.1.1 Funds and Upfront Financing

Large funds, in the form of equity, impact and natural capital funds are popular amongst a range of investors, with equities considered the most effective at capital raising. The Forest Carbon Partnership Facility (FCPF), a conglomerate of government, private sector and civil society actors, has pooled over USD \$1.3bn to provide incentive payments for forest carbon activities in non-industrialised nations – including PNG, Vanuatu, Fiji and others in the Asia-Pacific.

Impact investment has attracted interest from investors within the APAC region, due to the presence of large agrarian markets, coupled with the desire to drive positive social and livelihood impacts through investments. Recent examples include two private capital funds; a \$1.4bn sustainable agriculture impact fund with carbon and biodiversity components, and a \$5bn natural capital fund for productive landscapes designed to generate biodiversity, food security and social returns. These examples elucidate the opportunities in raising funds for projects with intended carbon as well as non-carbon outcomes.

Australian listed carbon neutral portfolio offerings are also being managed by institutional investors. Managers of such portfolios acknowledge that reduction in corporate emissions must be prioritised over offsetting, however, offsetting still plays a role. As such, investment portfolios with carbon neutrality claims will inevitably invest to some extent (directly or indirectly) in carbon abatement and sequestration projects, of which nature-based projects form a part. Upfront financing models are also adopted, primarily by corporates with the funds to do so and with compliance obligations, such as EITE companies.

3.3.1.2 Bonds and Loans

Financial institutions are engaged with bonds and loan structures, helping to provide financial certainty to the market. This is generally led by a bank, playing a convening role, connecting the market players to enable the bonds and loans to be linked to sustainability outcomes. These linked bonds and loans can then be strategically aligned with corporate SDG strategies and targets, and also present opportunities to leverage non-carbon investment within green-grey infrastructure bonds, and blue bonds.

There have been instances of nature-based bonds, like the <u>Forests Bond</u> issued by the International Finance Corporation (IFC) with USD \$12 million in financial support from BHP. This bond secured finance for carbon projects in Kenya, under the United Nations' REDD scheme. However, bond investors tend to adopt conservative risk approaches. This has meant that in Australia, for example, the majority of green bonds have been allocated to built-environment projects, because of the return on investment that can be yielded through those types of projects. Coupled with the high demand that is incommensurate with the supply of bond issuances, this creates a highly competitive market.

There is private sector interest in overlaying bonds with other financing instruments such as grant funding. It has also been suggested that imposing environmental conditions within green bond issuances should be explored.

3.3.1.3 Offtake Agreements, Profit-Share Models and Blended Finance

Offtake agreements are popular between project developers and corporates on the buy-side. For some project developers, they constitute the primary instrument used for investment in carbon. However, as mentioned in section 3.2.5 of this Chapter, the level of risk of an offtake agreement increases as the number of parties that are involved increases.

Public-private profit share models can be successful in facilitating partnerships between government and private sector actors. For example, the Indian government has developed a program to reforest 3,000 hectares of land with private investment input. In this model, the land is provided by the Government which then invites private sector tenders to run the projects.

Blended finance that aligns to the SDGs is also a means of unlocking and merging private, public and philanthropic finance, and can be structured in such a way that the private sector invests in the easily monetised carbon benefits, and public sector invests in the co-benefits. According to the <u>OECD</u>, blended finance structures tend to also be primarily comprised of concessional loans, but also include direct investment in small-to-medium sized enterprises (SMEs), syndicated loans, grants and guarantees.

3.3.1.4 Multi-Lateral Development Banks (MDBs)

The contributions of MDBs such as the Asian Development Bank (ADB) and the World Bank to financing nature-based projects are generally considered successful. Enabling environments are facilitated through

MDBs usually by the provision of concessional loans, and investment guarantees. However, this is criticised for leaving a gap in the market, as such structures do not assist in raising the up-front project development costs, which are often a barrier.

Additionally, the involvement of MDBs necessarily implies their acquisition of larger stake in the investment, leaving less opportunity for private sector investment. Shifting this dynamic would allow for private sector investment to increasingly crowd in.

MDB financing opportunities have also been critiqued for the fact that resources flow through national governments, rather than flowing directly to the recipient/s. This applies to both mitigation and adaptation activities and becomes problematic in terms of leveraging funds.

3.3.1.5 Grants

Government grants have been suggested to help catalyse early stage development and momentum of the industry. They are also valued for their ability to support capacity building. In addition to minimising upfront capital costs, this could provide some additional financial certainty for nature-based projects. However, this creates a point of contention whereby grant funding is at once welcomed but simultaneously cautioned against due to the financial unsustainability.

3.3.2 Insights and Financial Models for Future Consideration

Stakeholders advocate for increased interaction and collaboration between private sector, public sector, and NGO stakeholders, which would allow for more investment opportunities to be created. There is also investor appetite for the introduction of new investment products, or improvements to existing investment products that can be scaled across the APAC region and applicable to a broad base of industries. A number of the challenges, risks, and barriers to market entry already mentioned in this paper can be addressed through developing and leveraging the above noted financing structures, as summarised below in **Table 13**.

TABLE 13: Examples of Perceived Opportunities to Leverage Financing Structures			
Model/ Structure	Issues Potentially Addressed by this Model/Structure	Opportunities	
Profit-share	Financial risk;Organisational capacity;Project risk.	Models could be facilitated through regional partnership programs, and carbon benefits as well as co-benefits could be leveraged.	
Public-private partnerships	 Limited opportunity for cross- organisational capacity building; Financial/governance risk; Project risk; Reputational risk; Challenges in valuing co- benefits. 	Collaboration between private, public, and NGO actors through joint financing could be facilitated through regional partnership activities. Additionally, processes to get funding proposals off the ground (e.g. with Green Climate Fund proposals) are extremely rigorous and time consuming, so partnerships would be welcomed by the private sector.	
MDB financing	 Limited opportunity for private sector investment through MDB financing; Resources channelled through national governments, rather than flowing directly to the recipient/s. 	Hybrid financing structures whereby MDBs represent some, but not all of, the funding, would shift this dynamic and allow for private sector investment to increasingly crowd in.	

Instigating collaborative financing structures that bring together private and public sector actors has the potential to further develop co-benefit valuation systems, which could be used to invest in projects that reap positive carbon sequestration and non-carbon outcomes. Moreover, such models could have the indirect benefit of improving capacity amongst organisations within the region, through allowing knowledge-sharing and cross-industry collaboration. It has been noted that organisations are often critically missing one or more of the necessary capacity elements (e.g. risk management; funding proposals; legal; community engagement, etc.) and don't have the capacity to weave all of the threads together.

In addition to improving collaboration and capacity, there is a role for different types of financing structures to play in increasing market confidence and stability, as summarised in **Table 14**. There is consensus among consulted private sector stakeholders that it is necessary for governments to contribute towards nature-based investment assurance, which can be done through underwriting and first loss provisions for private sector investments.

It is also possible to utilise already established government export credit agencies to encourage international investments. Government export credit agencies provide a financial guarantee to companies looking to invest in domestic exports. This could be explored for adoption in the nature-based investments space. International partnerships could play a role in exploring pathways for using existing structures and agencies for facilitating nature-based investments in the region.

Other government agencies (such as Australia's <u>Clean Energy Finance Corporation</u> and <u>Australian</u> <u>Renewable Energy Agency</u>) are considered well positioned, well respected and established for driving investment through facilitating project financing which can be leveraged and built on by private companies.

TABLE 14: Examples of Perceived Opportunities to Improve Market & Investor Confidence		
Model/Structure	Potential Issues	Opportunities
Government underwriting; First loss provision	Market confidence;Policy uncertainty;Financial risk.	Underwriting and first loss provision are expected to mitigate risk, which would in turn help create the necessary enabling environment for investors. Financial institutions would consider these as 'game changers' in terms of incentivising and catalysing investment.
Export credit agencies	Financial risk;Counter-party risk;Market confidence.	The assurance provided by export credit agencies would contribute to risk mitigation of private sector investment, and improve confidence in investments.
Interim investment vehicles (e.g. impact accelerator funds)	 Market confidence; policy uncertainty; financial risk; scale/speed of investment; organisational capacity. 	To create more demand (whether domestic, or cross- market demand), there's an opportunity for interim investment vehicles to raise capital, which would allow for market momentum to develop, capacities to be built, and emissions to be sequestered at a more rapid rate than it would be without these vehicles.

In the same vein, investment vehicles that can be deployed in the interim to catalyse capital raising are recommended. There are instances of project developers leveraging European impact accelerator funds, which have proven successful in providing the necessary momentum for capital raising.

3.3.3 The Role for Self-Sustaining Financing Structures

Certain financing options are considered at odds with the goal to facilitate investment in projects that are financially sustainable. Market participants acknowledge that grant and regulatory funding for example are necessary to some extent, but the primary driver and buyers of environmental credits should be from within the private sector to ensure the investments can be self-sustaining in the long term.

Due to the potential to create debt traps, debt financing is often deemed unsuitable, and at times unethical, for the purposes of driving investment in NbS in developing countries. Additionally, specifically from an institutional investment perspective, bonds are not considered appropriate to finance nature-based projects such as forestry, due to the debt accrued from interest. Stakeholders also consider the ongoing funding costs of a financial structure when deciding on the most appropriate model. While equity funds may be effective at raising capital, the ongoing management costs of equity funds can also pose risks to fund performance.

Chapter 4: Incentivising Investment

This Chapter details the business case for investing in NbS, for different types of corporate entities. It then outlines key host countries and investor countries of interest, based on stakeholder consultations, as well as enabling environment considerations for scaling up NbS.

4.1 The Business Case for Investment in Carbon and Non-Carbon Assets

There are multiple drivers, decision-making criteria and both financial and non-financial approaches to investment in nature-based solutions. The issues, risks, and investment options as outlined previously (in particular chapter three), are intrinsically linked; it is difficult to separate out any one factor as a key enabler or disabler of private sector investment in NbS. This shows how complex these activities are, and how much knowledge sharing, capacity building and commercial interaction is required between actors.

For the private sector, there is no 'one size fits all' approach to investment in NbS. Indeed, use of the term 'private sector' assumes a relative homogeneity of behaviour by market participants; a concept disproven throughout this research and consultation process. Although the mode of engagement with, and scale of investment in, NbS is unique to each individual organisation, there are certain approaches that suggest a consistency in investment behaviours (i.e. the ways in which they frame, commercialise and originate investment in NCBS). In this report, these groups of entities are defined as:

- institutional investors;
- commercial banks;
- emissions intensive trade-exposed (EITE) companies;
- corporate entities, and
- project development organisations.

Detailed below is an overview for each of the above groups of private-sector entities, designed to provide an understanding of:

- the role these types of organisations play in NbS investment;
- carbon and non-carbon investment drivers;
- key decision-making criteria; and
- financial and non-market approaches taken.

It is recommended that in considering engaging with the private sector, regional partnerships and public sector agencies/departments extend their capacities to build relationships with relevant businesses and the strategic and investment decision-makers within these organisations. In turn, this would enable those partnerships and public sector actors to further identify and leverage opportunities to align public policy outcomes and strategies of private sector actors.

4.1.1 Institutional Investors

An institutional investor is an organisation that buys, sells, and manages stocks, bonds, and other investment securities on behalf of its clients, customers, members, or shareholders. Generally, there are six types of institutional investors: endowment funds, mutual funds, hedge funds, pension funds, insurers and commercial/institutional banks. Institutional (investment) banks operate differently in this regard and so will be covered separately in Section 4.1.2, below. Institutional investors are more sophisticated than most other investors and so are astute to a range of factors that may place long-term returns at risk. This includes the embedding of environmental, social and governance (ESG) risk metrics into asset valuation, and other behaviours.

Carbon & Non-Carbon Investment Drivers

- Institutional investors are exposed to climate risk through the businesses they invest in, and since 2017 have become a global driving force for businesses adopting more transparent climate risk disclosure and stronger management practices under the guidance of the <u>Taskforce on Climate-related Financial Disclosures</u> (TCFD) framework.
- Investment in emissions (carbon) reductions have traditionally been limited to the management of carbon risk and climate risk exposure to an asset they own, through either:
 - reducing the asset's carbon exposure by requiring the business to adopt climate strategies and/or targets; or
 - reducing their portfolio's exposure to climate risk through divestment of carbon-intensive assets.
- Current carbon credit generating projects do not meet the risk or return threshold requirements for investment at scale as either equity or fixed income assets, due to the limited size and scale of the investment opportunities. There is however expected future potential for NbS activities to be seen as an alternative asset class with growth in size and scale.
- Current carbon-related behaviour is primarily driven through:
 - Reducing risk pertaining to governance, financial and other risks by purchasing offsets to meet institutional or portfolio-related carbon neutrality goals; or
 - Institutional portfolio/asset managers understanding and managing ESG risks associated with the creation and purchase of offsets by companies the institution has a stake in.

Key Decision-Making Criteria

- Institutional investors will often apply other due diligence processes or minimum standards to the purchase of offsets. Factors considered by investors in this context include:
 - <u>Governance risks</u>, the mitigation of such risks requires high environmental integrity of a carbon unit verification scheme, including Government endorsement or operation (assuming low sovereign risk).
 - <u>Project risks</u>: the mitigation of such risks requires engaged parties to have appropriate legal tenure and agreements in place to carry out projects; the legal right to sell the carbon units; and requires the funding to be appropriately channelled to relevant stakeholders not disproportionately channelled to developers and legal advisors.
- Institutions have a fiduciary duty to deliver value to beneficiaries/clients over an appropriate time horizon which results in a responsibility to maximise the return via the purchase of lowest-cost carbon units available. Consequently, projects with co-benefits are no more attractive than those without noting that NbS with high environmental integrity are more likely to be procured.

Possible future investment behaviours in NbS

• Institutional investors are inherently conservative in their investment mandate and risk appetite, and so are less likely to invest in pilot, early stage, demonstration, or other innovation activities.



Nature-Based Investment in the Asia-Pacific Region Scoping Study

- Depending on the organisation, investment in NbS or other types of carbon projects may require a deal size of at least AUD\$100million \$150million to pass minimum threshold and return requirements.
- Regardless of the scale of investment, projects are required to provide an appropriate financial return in order to be commercially feasible. Projects must also meet all standard due diligence criteria, including the management of associated price, counterparty, governance, legal, project and policy risks.

Financial & Non-Market Approaches

Opportunities

- Given the critical focus of institutional investors in reducing their exposure to climate risk within their asset portfolios, there is an opportunity to work with these organisations to help drive positive NbS-related investment behaviour in the assets and companies in which they invest.
- Educating institutions on the value of NbS may help shareholder action to drive stronger corporate climate action, support the critical climate repair and co-benefit narratives of NbS, and shift more corporate funding at scale towards nature-based activities. The impact of this type of education and advocacy may be harder to quantify, however the insight of institutional investors in the higher-level strategic discussions will be of great use in driving broad change.
- The financial sector is commencing a two year work program (for testing in 2022) to develop a <u>Taskforce on</u> <u>Nature-related Financial Disclosures</u> (TNFD), to build awareness and capacity to reduce the negative impacts of the financial sector on nature and biodiversity (and linking to the work of the Taskforce on Climate-related Financial Disclosures). This work program will be relevant to institutional investors (including commercial banks) and may be a step towards driving stronger measurement of and demand for nature-based solutions in the mid-2020s.

Example

• A consortium approach to an aggregation fund that co-invests (with public and private investors) in multiple carbon projects across the Asia Pacific region (including NbS) and guarantees a strong financial return is an example of an alternative asset that may be of interest for investment by some leading, first-mover institutional investors.

Case Study: Institutional Investment Leveraging Public Policy Developments

The Asia-Pacific region has fostered a large interest in NbS from the part of institutional investment firms. This has been encouraged through national governments – with Malaysia exploring a climate change taxonomy, the Bank of Japan undertaking scenario analysis and market stress testing, Singapore exploring options for green investment products, and Hong Kong and the Philippines creating regulatory roadmaps to govern their climate change responses.

This multitude of converging public policy factors within the broader region is attracting the attention of institutional investors, who see the opportunities that can be leveraged from public policy developments. The adoption by Japan in 2014 of a <u>Stewardship Code</u> was intended to facilitate, amongst other things, investor engagement with companies to promote ESG-related outcomes. Investor engagement with ESG funds has helped catapult Japan to become one of the most rapidly expanding markets for responsible investment – Japanese sustainable investing assets grew from 3% in 2016 to 18% in 2018. In 2017, the international and investor-led <u>Climate Action 100+</u> initiative was launched, and has since gained the membership of major Japanese investment firms including Sumitomo Mitsui Trust Bank, Asset Management One, Fukoku Capital Management, and Nikko AM.

Through ongoing engagement working groups, a number of leading APAC-based investors are striving to increase awareness within the sector of the opportunities that lie in sustainability-related investments. Market leaders are eager to explore possible avenues for scaling up investment opportunities across Asian markets, which remains a challenge – there is a recognised gap in the market in terms of identifying and aggregating nature-based projects for scale.



4.1.2 Institutional (Investment) Banks

Institutional (investment) banks are generally seen as institutional investors. However, in the context of private sector investment in NbS, they have been discussed separately due to their role in debt financing. Institutional banks generally engage more with debt than equity-based financing products, noting that they do engage with hybrid products (i.e. a financing product that involves both debt and equity). Through bonds and other types of debt financing, institutional banks play a key role in the development of green finance products for market participants.

Carbon & Non-Carbon Investment Drivers

- Global sustainability-related debt markets (bonds, loans and credit facilities) are expanding significantly, due to broader mainstreaming of green finance in financial systems, and regulatory and investor responses to climate change. These activities are being driven primarily by the Paris Agreement, the Sustainable Development Goals (SDGs), the Taskforce on Climate-related Financial Disclosures, and the Climate Bonds Initiative (CBI).
- <u>Global issuance of green bonds rose</u> from USD\$171.2bn in 2018, to USD\$258.9bn in 2019. The APAC region has seen a 20% increase in green bond finance over this period, with the number of issuers nearly doubling to 345 in 2019, including a significant portion from Japanese institutions.
- The majority of green bonds (including CBI certified climate bonds) finance sustainability-related energy, buildings and transport projects. Climate-related benefits of these projects are generally easier to measure and verify than nature-based projects. In contrast only 3% of bond proceeds are used for land and nature-based activities, so there is much less experience in mainstream institutional banks on how to appropriately define (with appropriate financial taxonomy) and value NbS project benefits, or appropriate risk/return measurement.
- NbS do not currently receive high levels of support from institutional banks, as they do not typically fit the risk return profiles required for commercial debt financing. Institutional banks as compared to institutional investors will generally accept smaller deal sizes (less than USD\$100million).
- To the extent that any institutional bank is engaged in NbS, it is likely to be through:
 - o purchasing offsets to meet company related carbon neutrality goals;
 - $\circ \quad \mbox{donation funding through established environmental non-profit organisations; or }$
 - nature conservation outcomes stipulated as an additional condition in green bonds (or other sustainability-linked debt finance instruments).

Key Decision-Making Criteria

- Institutional banks have clear bond transaction and risk frameworks guiding how sustainability-linked financial products will be structured, used, and how the institution will measure, report and verify its impact. Banks will develop these frameworks adhering to global and industry-wide harmonised frameworks that set out goals and metrics, including those set by the:
 - o SDGs Bond Framework
 - UN Global Compact (targets and indicators)
 - o UN Principles for Responsible Investment
 - The primary questions for an institutional bank in lending capital revolve around risk and return:
 - What is the probability that the investor will be able to pay back the loan?
 - What cashflow (income stream) will be returned from the activity to service the debt?
 - What is the likelihood that the investor will default and not pay back the debt?
 - What is the risk profile of the person receiving the finance?
- Institutional banks will operate as an intermediary in the issuance of a green bond, connecting the borrower with the investors. Banks will structure finance to meet client needs, noting bond investors are quite conservative, and may look for the following:
 - o high-volume, low-margin returns over a longer timeframe;
 - a charismatic impact narrative that investors can connect to (e.g. species conservation, in cases where the project does have a nature-based element or condition);



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Financial & Non-Market Approaches

- As with institutional investors, institutional banks are conservative investors, and are increasingly guided by the Taskforce on Climate-related Financial Disclosures in the disclosure and management of climate risk within debt financing portfolios.
- The Paris Agreement is an important global framework in driving:
 - o development of banks' corporate climate strategies; and
 - o investor and client requests for more sustainability-related financial products.
- Developing finance for existing and potential clients includes engaging with corporate boards, executives, and enables a 'halo effect' for institutional banks to drive impact through the uptake of sustainability-linked financial products (particularly bond-scale investments).
- Institutional banks, along with other institutional investors are heavily involved in the development of globally harmonised climate-related financial frameworks and taxonomies that in future will likely enable more mainstreamed investment in NbS.

Case Study: Sustainable Bond Financing

ANZ bank's organisation-wide integration of the SDGs has driven the bank to implement concrete sustainabilityrelated initiatives, including the creation of an <u>SDG Bond Framework</u>, and the mapping of the SDGs against its institutional loan book. The SDG Bond Framework is guided by the <u>ICMA Green Bond Principles 2018</u>, <u>Social Bond</u> <u>Principles 2018</u>, and the <u>Sustainability Bond Guidelines 2018</u> – conformity with these frameworks forms part of ANZ's process for assessing assets.

To date, bonds issued by ANZ have either provided or are due to provide a total equivalent of AUD\$9.812m in <u>funding</u>. The proceeds of these issuances are then put towards the implementation of SDG-based initiatives, such as natural disaster prevention infrastructure (e.g. flood alleviation schemes). As at March 2020, AUD\$3.299m of the proceeds from its SDG bonds had been allocated to SDG-aligned infrastructure for healthcare and education, renewable energy, clean transport facilities, and other infrastructure-based developments.

ANZ's \$600 million 5-year fixed rate green bond was also established in 2015 to finance assets aligned to the CBI. This bond is allocated to renewable energy assets and green buildings in Australia (78% of funding), Taiwan and the Philippines (18% combined), and New Zealand (4%).

While these issuances have not contributed to funding NbS, there have been examples of successful public-private partnerships involving regional banks for natural environment projects. A <u>USD\$15million blue bond</u> was issued through the World Bank, for coastal ecosystem management in the Seychelles in 2018. This 10-year bond involves partial guarantee from the World Bank (USD\$5 million) and a concessional loan from the Global Environment Facility (USD\$5 million). This structure allowed for risk minimisation of the investors, which were three socially responsible investment funds.



4.1.3 Emissions Intensive Trade Exposed (EITE) Companies

Emissions-intensive Trade-exposed (EITE) companies are organisations whose operational activities are highly emissions intensive, and the commodities they produce are traded in international markets. The price of these goods is set by the international or domestic markets they are sold into, with the carbon content of those goods often attracting an additional cost in jurisdictions with a formal carbon pricing mechanism in operation.

These local carbon costs must be absorbed; as EITE companies do not set the price for their goods, they cannot pass the carbon cost onto consumers, and so they are 'trade-exposed'. Examples of EITE companies include those that produce oil and gas, coal, steel, cement and chemicals.

Carbon & Non-Carbon Investment Drivers

- EITE companies are impacted by carbon drivers from multiple fronts, many of which have been compounded by the Paris Agreement. These include:
 - That over 90 nations party to the Paris Agreement have signalled the current or future use of carbon market compliance mechanisms to help meet their NDC targets. These NDCs will be required to increase in ambition every five years, so the cost of compliance with these mechanisms will continue to increase.
 - Led by the Taskforce on Climate-related Financial Disclosures, investors are demanding that EITE companies disclose and manage various climate-related risks to their businesses, leading to the development of sophisticated climate strategies, and more ambitious (often net-zero) emissions reduction targets. This pressure is augmented by the significant public media scrutiny, community pressure and youth/advocacy group protest movements.
 - Corporate, Financial and Prudential regulators globally are defining the collective and individual fiduciary duties that company executives and board members have in considering the risks of climate change to the business. The rise in legal action taken by various community and advocacy groups against companies, executives and boards is driving stronger climate disclosure and risk management.
- Some of the world's largest EITE companies have acknowledged the findings that nature-based solutions can constitute <u>one third of the solution</u> required to meet the goals of the Paris Agreement. There is a narrative driving EITE action: that companies must move beyond offsets for compliance purposes and invest in climate repair solutions those NbS that restore environments, draw down carbon and generate additional environmental, social and economic co-benefits.
- Guided by the Paris Agreement, EITE companies are looking to create carbon business models to take advantage of the opportunities that emerge in the global economic decarbonisation already underway. Some EITE companies are therefore beginning to develop internal capabilities to:
 - purchase, stockpile and trade carbon credits;
 - o fund nature-based carbon activities through longer-term offtake agreements;
 - o support the funding/development of new related innovations and technologies; and
 - develop these NbS activities inhouse (including convening of internal finance, policy, legal, risk, incountry stakeholder engagement and technical carbon project teams).
- Ambitious corporate strategies are also driving investment, advocacy, collaborations and international partnerships that stimulate carbon market activity resulting in increased investment in NbS that generates carbon units, potentially giving companies access to a more liquid and lower cost supply of carbon units in the future.
- EITE companies are also guided by other non-carbon and corporate social responsibility factors, which particularly drive the need to invest in relationships, communities, natural resources and local economies of the jurisdictions, and immediate geographical regions in which they operate. NbS activities are a useful tool to assist these measures due to the myriad environmental, social, cultural and economic co-benefits embedded in these activities.



Key Decision-Making Criteria

- When engaging in NbS activities, EITE companies robustly consider a range of due diligence factors that are often more influential than basic price threshold, including:
 - Policy and governance risks;
 - Anti-corruption, bribery and human rights risks;
 - Clarity on land title/tenure and legal carbon rights;
 - o Community benefits flows and extent of trusted local partners; and
 - Whether units within a jurisdiction are counted towards an NDC, or excluded from it to determine if the unit is already counted or can it be wholly claimed by the company.
- Projects must be of a sufficient volume to enable an effective return on initial investment. A materiality assessment of a project's business case includes review of the net present value, discounted cashflows and payback period. General project, stakeholder and counterparty risk assessments also help to determine the right financial debt, equity or hybrid financial product to use in funding the development.
- The generation of carbon credits that can be used for current or future compliance or voluntary surrender is generally preferred to activities with a non-credit return. Non-credit return activities are considered if they align with corporate strategy goals, including grant-based or R&D funding that tests concepts or technologies that could enable more efficient market participation in the future (e.g. participation in/support of Paris Agreement Article 6 pilots, support for early stage blue carbon projects, development of innovative investment structures that could enable scaled carbon projects).
- For investments in those projects that generate carbon units, the units must be credible, with high environmental integrity, and increasingly, with high social and environmental returns (co-benefits).

Financial & Non-Market Approaches

- There is no single financial product used by EITE companies when investing in NbS activities. The investment structure is dependent on the carbon or non-carbon outcomes (as noted above). Understanding of financial approaches taken by these private sector entities requires knowledge of different EITE companies, their corporate structures, strategies, and emissions reduction targets. Companies will mostly invest in long-term offtake agreements or spot market purchases to reduce their net emissions (driven either by compliance obligations or voluntary commitments), but are increasingly making forays into more direct and indirect capital investment activities. These approaches are outlined below:
 - Long-term Offtake Agreements: A contractual agreement whereby a project developer is able to secure a mix of some upfront capital and/or debt financing to underpin early-stage development and project setup, with the resulting emissions reduction (in the form of carbon units) being sold back to the corporate entity at an agreed price at a specific time in the future.
 - Spot Market Purchases: A corporate entity may decide to manage its short-term corporate climate goals through the immediate purchase of carbon units on the open market. These activities are usually subject to restrictions on the liquidity, vintage, type and price of units in the market at any single point in time. These purchases are usually one part of a broader climate strategy.
 - <u>Direct Capital Investment:</u> Investing capital into a project and working with the developer to define, fund and receive benefits directly.
 - Indirect Capital Investment: Investing capital with a third-party consortium, partnership or fund that, in turn, structures the financial product with funding from multiple partners. The entity representing the group would interact with and oversee the project development and benefit returns directly.
- EITE companies are increasingly adopting harmonised financial and climate related decision-making frameworks that enable them to communicate better with financial institutions, governments, NGOs, inter-governmental organisations and other stakeholders. These include (but are not limited to) the Paris Agreement, SDGs, Principles for Responsible Investment (PRI) and the Taskforce on Climate-related Financial Disclosures.



Case Study: Strategic EITE Support for Reducing Market Barriers

Efforts to establish NbS as a commercially investible asset class gained momentum in late 2019, with the establishment of the '<u>Markets for NCS Initiative</u>', launched by IETA. The initiative has welcomed the support of EITE corporations BHP, BP, Shell, Woodside and Chevron, which will work towards establishing NbS as a key component to meeting Paris Agreement targets. The committee will review and recommend policy and corporate frameworks, with the intention to increase the flow of private sector finance to NbS. Building the scale, stability and integrity of carbon markets is considered crucial for such organisations that invest pools of corporate funds into sequestration activities. In Australia, the Carbon Market Institute has taken on a role as the Australian partner for this initiative, working with IETA and private sector partners to support the development of Paris-compliant NbS projects.

In the meantime – and while the commercial viability and scalability of nature-based projects is still in development, for example in the Pacific region – forward-looking EITE corporations have evidenced their willingness to invest in research and development to help drive NbS. Beyond the possible corporate reputational benefits (if these investments are made public), EITE support for R&D highlights these companies' conviction of the continued growth of NbS. The <u>Blue Carbon Lab</u> within Deakin University for example has received sponsorship from a number of private and public organisations – the names of some, but not all, of which are published.

Moreover, supporting the expansion of NbS through R&D is strategic for EITE companies with existing or potential future emissions liabilities. Their support for NbS development is evidence that these organisations are prepared to actively and cooperatively contribute to overcoming the real and perceived risks and barriers to market maturity. Mainstream inclusion of blue carbon methodology in carbon markets for example is not expected for at least five years – which can be reduced, and ultimately taken advantage of, with private sector funding of R&D.

As research bodies like the Blue Carbon Lab are also sponsored by government agencies, private sector actors also recognise that research initiatives present an opportunity to build relationships with the public sector, and enable alignment of private-public goals and funds for NbS.



4.1.4 Other Corporate Entities

This section focusses on corporate entities of a significant size that could be viewed as either climate leaders or fast followers. Such organisations have developed a clear climate strategy that includes a position on their role in supporting, promoting, or funding NbS. These entities will often be of similar size and scale to EITE organisations, and may also have significant emissions profiles from their operations but not necessarily at a level that would require coverage under a jurisdictional emissions compliance mechanism. These organisations are increasingly announcing net-zero commitments aligned with the Paris Agreement that take voluntary climate action beyond the ambition of domestic climate policies. Often these corporate positions allocate significant funding for engagement with carbon markets, including nature-based activities.

Carbon & Non-Carbon Investment Drivers

- Corporate entities are impacted by climate and carbon drivers from multiple fronts, many of which have been compounded by the Paris Agreement. These include:
 - Led by the Taskforce on Climate-related Financial Disclosures, investors are demanding that companies they invest in disclose and manage various climate-related risks to their businesses, leading to the development of sophisticated climate strategies, and more ambitious (often net-zero) emissions reduction targets. This pressure is augmented by the significant public media scrutiny, community and consumer pressure and youth/advocacy group protest movements.
 - Corporate, Financial and Prudential regulators globally are defining the collective and individual fiduciary duties that company executives and board members have in considering the risks of climate change to the business. The rise in legal action taken by various community and advocacy groups against companies, executives and boards is driving stronger disclosures and increased active management of climate change rather than just greenwashing.
- As with EITE companies, there has been acknowledgement by some of the world's largest corporate entities that nature-based solutions is <u>one third of the solution</u> required to meet the goals of the Paris Agreement by/in the second half of the century. There is a growing public consensus that that companies must invest in NbS, which is driving broader corporate action.
- Guided by the Paris Agreement, larger corporate entities are looking to create or invest in carbon business models to support their corporate climate goals/targets. In creating such business models, corporate decision makers are developing stronger internal capabilities to:
 - o fund nature-based carbon activities through longer-term offtake agreements;
 - o support the funding/development of new related innovations and technologies; and/or
 - develop these NbS activities inhouse (including convening of internal finance, policy, legal, risk, incountry stakeholder engagement and technical carbon project teams).
- Ambitious corporate strategies are also driving investment, advocacy, collaborations and international partnerships to stimulate voluntary carbon market activity. Increased investment in (nature-based) carbon activities that sequester carbon with co-benefits are in demand particularly those that support climate resilience within domestic and global supply chains.
- Corporate entities are also driven by non-carbon corporate social responsibility factors, which particularly drive the need to invest in relationships, communities, natural resources and local economies of the jurisdictions, and immediate geographical regions in which they operate. NbS activities are a useful tool to assist these measures due to the myriad environmental, social, cultural and economic co-benefits embedded in these activities.



Key Decision-Making Criteria

- As with EITE companies, other corporate entities of significant scale generally have more sophisticated internal risk and investment frameworks that also cover how they engage in carbon market and related nature-based carbon activities. These include a range of due diligence factors that are often more influential than basic price thresholds, including:
 - Policy and governance risks;
 - Anti-corruption, bribery and human rights risks;
 - o Clarity on land title/tenure and legal carbon rights;
 - o Community benefits flows and extent of trusted local partners;
 - o Activities with high environmental integrity, social and environmental returns (co-benefits); and
 - Ensuring emission reductions from activities undertaken in a particular jurisdiction are not doublecounted against other targets (e.g. towards an NDC)
- Other corporate entities are more flexible in their approach to NbS activities as they are not necessarily confined to traditional compliance carbon market drivers or responsibilities. This enables these entities to consider different and more exploratory roles, including in research and development of technology/innovation, and often will play a more public leadership role in collaborations. Such leadership roles are valued within these kinds of organisations, as they support corporate reputation and other corporate social responsibility (CSR) goals, and the possible development of new financial product innovations.

Financial & Non-Market Approaches

- Other corporate entities are not necessarily only driven by the creation of a carbon unit for compliance or trade purposes. An example of an investment strategy seeing increasing uptake by these organisations functions as follows:
 - Direct investment into a NbS project that operates against a recognised method, with the project meeting high environmental integrity and appropriate MRV standards.
 - These NbS projects measure the abatement but are not required to generate credits as the benefit return to the investor is that company's ability to confirm an amount of abatement, often with net-carbon neutrality achieved through this investment.
 - As these projects are developed through equity or upfront capital allocations, there is no need to raise finance from the sale of credits at the end of the project (which is often the case for more traditional carbon crediting projects that engage debt finance to fund the project, with returns coming from the later sale of credits).
- There is no single financial product employed by other corporate entities when investing in NbS activities. Investment structure, return and timing is dependent on the form of both the carbon and non-carbon outcomes (as noted above). Understanding of financial approaches taken by these private sector entities requires knowledge of different corporate entities, their corporate structures, strategies and emissions reduction targets, and self-defined roles they have established in the longer-term development of NbS activities. Depending on the internal strategy and risk approach, companies will invest in carbon and NbS in a range of ways, including direct capital investment, indirect capital investment, long-term offtake agreements and/or spot market purchases.
- Other corporate entities (particularly highly scrutinised public brands) are increasingly adopting harmonised financial and climate related decision-making frameworks that reduces the integrity risks of 'greenwashing' to their strategic goals, as well as carbon neutral or other climate-related claims. Operating under internationally recognised frameworks such as the Paris Agreement, SDGs, PRI and the Taskforce on Climate-related Financial Disclosures also helps improve their standing in communications and partnerships with financial institutions, governments, NGOs, inter-governmental organisations and other stakeholders.



Case Study: Corporate Competition Accelerating Climate Ambition – and Climate Repair

The groundswell of corporate climate strategy announcements across the globe has been coupled with growing recognition that these strategies must have strong scientific foundations. To date, 942 companies have submitted their climate strategies to the <u>Science Based Targets Initiative</u> (SBTi) for independent verification that their climate strategies are science-based and aligned to the Paris Agreement trajectory. As at <u>October 31, 2019</u>, the scope 1 and 2 emissions targets of the 285 organisations approved at the time would collectively reduce 265 million tonnes of emissions, and drive USD\$18 billion of investment into climate mitigation activities.

The SBTi theorises that support from a critical mass of 20% of the organisations within a given geography or sector will catalyse a tipping point whereby 'ambition drives ambition'. This seems to be the case well beyond the SBTi framework, with corporate climate strategy announcements becoming increasingly ambitious – climate ambition could be considered analogous with industry competition. Organisations such as Microsoft and Apple have this year released statements committing to nature-based solutions as integral components of their climate plans.

For example, <u>Apple's recent commitment</u> to 100% carbon neutrality in its supply chain and products by 2030 includes initiatives for increasing energy efficiency, renewable energy uptake, and improved materials recycling, in addition to 'carbon removal' solutions that will contribute to 25% of its emissions reductions. To further mobilise investment, the organisation will establish an Impact Accelerator fund, driving environmental and social outcomes, and supporting communities disproportionately impacted by environmental disasters. Apple has partnered with Conservation International for its NbS projects, which include land and marine-based ecosystem restoration activities from Kenya to Colombia.

Sustainability strategies such as these are therefore diversifying corporate investment to not only funnel finance to naturebased project development, but also supporting the capacities of those nature-focused environmental organisations and local communities facilitating environmental outcomes.

Earlier in 2020, Microsoft, <u>stating</u> that "those of us who can afford to move faster and go further should do so", pledged to reach carbon neutrality by 2030 and remove by 2050 all of the carbon the company has emitted either directly or by electrical consumption since 1975. Whether or not Apple's announcement was driven by that of its competitor, is unclear. What is clear is that climate ambition from a critical mass of corporates is becoming increasingly achievable.



4.1.5 Project Development Organisations

These organisations include a range of different entities operating at varying scales, include the on-ground project operators and developers, as well as the legal, professional and other service providers. They cover a wide range of technical skillsets and have been instrumental in the development of NbS activities that sequester carbon and reduce emissions.

Carbon & Non-Carbon Investment Drivers

- The evolution of compliance and voluntary carbon markets has driven the growth and experience of these organisations, particularly over the last decade to build expertise in technical carbon-related activities, and the enabling environments of domestic and international policy, carbon trading mechanisms, and legal, commercial and risk frameworks.
- Article 6 of the Paris Agreement is the long-term market signal that is driving the growth of carbon project development expertise in the global economy.
- This is augmented by other economic demand drivers including targets and announcements from governments and sub-national actors, compliance oriented EITE companies, other corporate entities, and the investment drivers from institutional investors and banks.
- The business models underpinning these organisations is predicated on assumptions that:
 - NbS have real value to the environment, communities, and the economy; and
 - these activities can be commercially successful and can be done at scale.

Key Decision-Making Criteria

- Project developers undertake a range of different scoping activities that include, critically, the abatement (and increasingly other co-benefit) potential of a landscape, the ensuing legal rights and land tenure of those responsible for the land, and the domestic policy environments that either enable or prevent projects from taking place.
- A range of due diligence factors are considered, similar to those for 'other corporate entities':
 - Policy and governance risks;
 - Anti-corruption, bribery and human rights risks;
 - Clarity on land title/tenure and legal carbon rights;
 - o Community benefits flows and extent of trusted local partners; and
- Whether units within a jurisdiction are counted towards an NDC, or excluded from it to determine if the unit is already counted or can it be wholly claimed by the company. Commercial viability for the development of NbS activities is critical.
- This includes an assessment against internal due diligence, risk and investment frameworks. Unlike for EITE and other corporate entities, the commercial assessment for project development organisations is more focused on the business case for supplying abatement to the market.
- Understanding the counterparty risk of partners or investors, as well as the overall expectations of these organisations, is critical to the success of the relationships and the projects.
- Decisions would also be made on a case-by-case basis (depending on the buyer) as to the use of debt, equity or a hybrid finance approach, which would also determine the specific financial structures and payback periods required.



Financial & Non-Market Approaches

- Project development-related organisations will operate in a variety of different ways. Service providers will generally work through a fee for service model (consulting/professional services), whereas the development organisations will enter into a range of financial agreements, including receipt of direct/indirect capital investment, long-term offtake agreements and/or spot market purchases.
- These organisations engage in long-term activities over multiple years and therefore take a longer-term position on finance, and pursue commercial relationships that are likely to suit large investors.
- Depending on the abatement/credit sale arrangement, some organisations may need to seek debt finance to support initial development (until abatement is realised and payments received).

Case Study: Self-Sustaining Carbon Projects

Initial funding through aid is a useful catalyst for project development. However, the long-term financial sustainability of a project or initiative, which allows it to become viable without aid funding, is often dependent on the implementation of good project governance structures. Terra Global's <u>Kulera Landscape REDD+ Program</u> in Malawi is one such example, now earning VER credits.

The program runs on a legally recognised land tenure structure in Malawi, known as a co-management structure, whereby the government and communities in the border zones manage protected areas. Under this structure, the carbon credits are jointly allocated to the project proponents: the Department of National Parks and Wildlife and two community associations. Contractual agreements between the parties support the program's operation, fiscal management, carbon tenure and marketing of carbon credits. In addition to the 7.2 million tonnes of emissions abated since 2009, the project contributes to community livelihood, biodiversity benefits, improved management of community forests, agricultural improvements and crop diversification across 217,000ha of land.

By ensuring the financial sustainability of the program through community-led management, this has integrated social and economic benefits into the initiative. Across the Pacific, too, some project proponents ensure community-focused models are integral to the carbon reward, for example, allocating 2% of project proceeds to community support and engagement.

While the first model ensures that the project's financial success is dependent on its community-led management, the second follows the approach that, the more financially successful a project is, the greater amount of money will be cycled back to the community. It is for this reason that developers consider the most successful projects to be those that embed non-carbon benefits into the carbon reward.



4.2 Targeting Host & Investor Country Action

4.2.1 Host Countries of Interest

In undertaking this study it has become clear that the outcomes (return) required of nature-based activities differ from organisation to organisation, so it has been necessary to review potential host countries on both the basis of abatement potential as well as the socio-economic and cultural benefits that come with these activities.

The majority of NbS activity in the Asia Pacific to date has taken place in large and mainland APAC countries²⁴. This study has shown there is interest from the private sector in moving beyond existing host countries and activities to find opportunities where early-stage investment could reap project-scale carbon sequestration, socio-economic benefits, and the learnings to enable larger-scale, multifaceted activities to take place in future. There is substantial investor interest in expanding the geographical scope of historical NbS investment trends, beyond bigger countries in the region. As outlined in Chapter 2, awareness amongst corporate entities of factors such as climate mitigation and adaptation potential, regional geopolitical incentives, and regional political interest (including Australia's 'Pacific Step-up' strategy) have placed Pacific nations in the spotlight. Moreover, due to the culture of regional collaboration amongst Pacific Island countries, it is understood that catalysing investment in one country may have a compounding, flow-on effect in other Pacific nations.

This emphasis on Pacific nations is not to detract from the level of investor interest in other countries in the region, or to underplay current investment barriers (political, regulatory, institutional, or otherwise) in Pacific countries. Stakeholder consultations revealed a genuine recognition and awareness of the above challenges, as well as a conviction that opportunities for NbS in the Pacific are significant enough to warrant further exploration.

It is on this basis that this study recommends seven Pacific Island countries as target host countries. The countries listed below provide a range of opportunities that encompass both abatement as well as additional benefits to local communities that are already impacted by climate change.

Fiji: The Blue-Green Innovator

Fiji's progressive policies and efforts to push forward innovative financing solutions, consistent engagement with REDD+ programmes, and efforts to pass carbon-market focused legislation in the next year, make Fiji an attractive country from an investor's perspective. Fiji's land tenure is overseen by the iTaukei Lands Trust Board and most land is registered. Fiji has actively pursued support to progress blue carbon initiatives and innovative financing arrangements and is likely to complete the necessary requirements to transfer carbon through the Forest Carbon Partnership Facility (FCPF) in the next 12 months. Fiji has a relatively diversified private sector and tourism market and is looking to increase the visibility of its ecotourism brand through innovative initiatives involving marine protected areas and marine parks. A forest protection and community livelihood diversification project developed through *Live and Learn's* Nakau Programme on Vanua Levu island recently won the prestigious 'Energy Globe' award in 2020, illustrating the growing potential for innovative partnerships and projects in Fiji.

²⁴ As per Table 2 in Chapter 2, these countries – in descending order of amount of abatement generated from nature-based carbon projects – are: Australia, Indonesia, Cambodia, PNG, India, Laos, Malaysia, Timor-Leste, New Zealand, Vietnam, South Korea.



Papua New Guinea: The Pacific Forest Giant

Papua New Guinea is home to one of the world's most biodiverse tropical forests in the world and has carbon sequestration capacity that eclipses that of all the other Pacific countries and territories covered in this study combined. Economic dependency on extractive activities, un-registered tribal lands, and governance challenges have hampered recent efforts to improve the opportunities the country can leverage from its environmental wealth. Nonetheless, Papua New Guinea has championed REDD+ concepts from the outset and has developed increasing capacity and policy to support greater engagement with carbon markets, which, together with the country's unrivalled expanse of nature and biodiversity, provides an attractive investment environment. The existing carbon abatement potential, strong socio-economic/cultural and biodiversity-based rationale to progress conservation and protection-based activities make Papua New Guinea a globally important actor for current and emerging carbon-markets.

Solomon Islands: An Opportunity for Sustainability

Like Papua New Guinea, the forests and mangroves of the Solomon Islands are of high value in terms of biodiversity and livelihood support. The Solomon Islands have much to benefit from the improved protection and conservation of their diverse and culturally significant environmental assets, especially in light of recent environmental disasters²⁵ and ongoing deforestation challenges. While reform is required to improve the legal framework for carbon trading in the Solomons, the benefits of stronger mechanisms for enforcing environmental protections are clear. Land reform is a key requirement and prerequisite for many different sustainable development objectives in the Solomon Islands. Private sector investment in NbS in the Solomon Islands will require close consultation with communities to help delineate project scope, objectives, and beneficiaries and would benefit from investors with ability to commit to longer term projects and engagements.

Vanuatu: Championing Nature-Based Co-Benefits

Vanuatu has championed the importance of protecting 'well-being' in its policies and attributes high value to cultural protection and environmental sustainability. As one of the most climate and disaster vulnerable countries on earth, Vanuatu is a nation where social development and environmental sustainability objectives are particularly tightly interlinked. The opportunities to develop proof of concept for nature-based activities which demonstrate an array of cross-cutting benefits for communities are particularly high in Vanuatu. This is due to the high costs and risks associated with any form of land degradation in a highly vulnerable country where the vast majority of the population's livelihoods are dependent on local environments.



²⁵ <u>2019 Bauxite Spill follows recent oil spill in Solomon Islands</u>

Timor-Leste: Carbon Management as Driver for Positive Land Reform

Timor-Leste's complicated colonial history has created long term challenges for governance and land tenure. Despite an array of barriers that have restricted sustainable development in Timor-Leste, national policies and plans have continued to highlight a strong vision for the conservation of Timor-Leste's environmental assets. Direct engagement with communities in Timor-Leste can help to create impactful partnerships with the support of local actors and organisations. Land issues are unlikely to be addressed overnight but progress made to date and recent voluntary locally led nature-based projects could help to continue to expand the potential project pipeline and demand while also putting positive pressure on required governmental reform.

New Caledonia: Open for Business

New Caledonia has protected over half of its forests through formalised reserves and has one of the world's largest fully protected marine reserves. There are opportunities to support both new and existing conservation arrangements and clear reasons why Porsche has selected New Caledonia as the site for its most recent *Porsche Impact* forest restoration project. New Caledonia has a unique environment, and its dry forests and expansive seagrass meadows offer new frontiers for carbon markets. Private landownership and relatively high operational costs in New Caledonia can mean that environmental restoration and enhancement costs are high in comparison to other countries in the region.

Samoa: A Potential Model for Small Island Ecosystem Adaptation and Enhancement

As a climate-vulnerable small island country heavily dependent on ecotourism and environmentallylinked livelihoods, Samoa is an important context in which to enhance the coastal protection services of mangroves and water management, and the soil protecting abilities of forests. Ecosystem adaptation will be required to manage the impacts of climate change and rising intensity of disaster events. Samoa offers an intimate setting to develop locally managed projects with clear co-benefits for people and the environment.

4.2.2 Opportunities for Strategic Private Sector Investment in Pacific Island Countries

Due to the intersectionality of benefits that can be reaped through nature-based projects, an understanding of the interactions between such benefits is essential to deliver projects with the greatest cost-impact ratio. Likewise, the ability to design solutions is highly dependent on a deep understanding of the 'problems' and issues involved at the local level. This requires an understanding of the way in which risks can cascade across complex and unique ecosystems and environments.

In general, across the Pacific contexts, approaches to NbS must take into account very high 'structural dependency' that exists between Pacific ecosystems, environments, and societies. In exploring NbS development activities for the seven countries listed above, it is recommended that a strategic and holistic approach is taken. The recent <u>Global Standard for Nature-based Solutions</u> may provide a useful framework though which to build effective NbS approaches combining carbon abatement potential and non-carbon co-benefits.



The IUCN Global Standard suggests that the success of nature-based activities is dependent on the following eight key criteria:

- 1. Ability and effectiveness of NbS in addressing societal challenges,
- 2. The degree to which NbS is informed by scale,
- 3. Net-gains to biodiversity that can be achieved,
- 4. The economic feasibility of the intervention,
- 5. The inclusivity of the governance arrangement involved,
- 6. The balance of trade-offs,
- 7. The adaptive management potential, and
- 8. The degree to which NbS are sustainable and mainstreamed within the context.

Owing to the unique scales and high environmental integration of small island states, there is high value to localising such frameworks to suit the context in question. Climate change and disaster risk reduction priorities and risks in the Pacific are often interlinked and indistinct. Due to the increasing intensity of climate change-exacerbated disaster events and range of inter-related management challenges, interactions, and feedback loops that exist between slow- and fast-onset events²⁶ there is increasing rationale to formally interlink Pacific climate and disaster risk management agendas. Similarly, food and water security in the Pacific is often deeply inter-linked and associated with the direct provisioning services of local environments, while human health indicators are often intrinsically linked to the degree of economic and social development.

In addition to this classification of societal challenges, NbS approaches in the Pacific <u>have been defined</u> through five overarching categories:

- 1. **Restorative** (ecological restoration, forest landscape restoration, ecological engineering)
- 2. **Issue-specific** (ecosystem-based adaptation, ecosystem-based mitigation, ecosystem-based disaster risk reduction, climate adaptation services)
- 3. Infrastructure (natural infrastructure)
- 4. Management (integrated coastal zone management, integrated water resources management)
- 5. Protection (area-based conservation approaches, protected area management).

As a result, there is value in 'grouping' and classifying benefits and approaches in a way that is specific to Pacific Island contexts. To support the consideration of the benefits and applications of NbS in the Pacific the following groupings of approaches and benefit objectives have been developed.

These groupings have been considered specifically in relation to NbS investments that are enabled through efforts to protect and enhance carbon-abatement potential; and can together be considered as a sort of 'spectrum' due to the high interconnectedness between the issues and challenges considered.

²⁶ E.g. slow-onset events such as drought; fast-onset events such as inundation and tropical cyclones.
Benefit Grouping 1: Maintaining High Socio-ecological Integration

This grouping of benefits is associated with carbon abatement activities which create co-benefits in relation to the protection, conservation, and restoration of existing environmental services.

- These activities help to maintain livelihood activities by protecting and conserving the associated environmental assets they depend on.
- These activities act as an alternative to other activities and land-use changes that may negatively impact communities (e.g. logging, mining, private development of land). An alternative to extractive behavior is created through financial exchange for carbon rights.
- Activities involved with conserving and enhancing environments draw upon traditional knowledge and reinforce existing socio-cultural values and norms thereby acting as a form of cultural protection.
- By preserving and protecting environmental integrity, these activities may counteract socio-cultural loss and damage, and reduce the degradation of environmental services that have been impacted by recent unsustainable development activities.

These types of benefits and the ability to quantify them benefit from:

- a) conservation valuations;
- b) ecosystem services assessments; and
- c) improved understanding of subsistence livelihoods and value chains.

Benefit Grouping 2: Reducing Climate and Disaster Risk

This grouping of benefits is associated with carbon abatement activities that help contribute to resilience building measures through enhancements which bring about emissions abatement, climate adaptation, and disaster risk management benefits.

- These activities are designed with the awareness of the localised drivers and exacerbators of, for instance, flood and coastal inundation risk, food and water security threats, and localised disaster risks. With this awareness, carbon sequestration enhancement activities such as afforestation are strategically oriented and designed to maximise risk reduction outcomes.
- These activities support adaptation through the explicit linkage between the design of nature-based enhancement and specific ecosystem-based benefits such as the reduction of climate change driven invasive species risk through the re-introduction of indigenous tree species.
- These activities may seek to instigate full land-use change and re-forestation of degraded and climate vulnerable sites or incentivise sustainable land-use change transitions in once developed areas that have become uninhabited due to out migration and urbanisation.

These types of benefits and the ability to quantify them can be further enhanced through:

- a) Climate change projections;
- b) Disaster risk assessments;
- c) Integrated scenario analysis exercises; and
- d) Multi-criteria analysis.



Benefit Grouping 3: Creating Sustainable Development Gains

This grouping of benefits is associated with carbon abatement activities which enable or create distinct and additional socio-economic development gains. While such activities may also contribute to reducing climate and disaster risk or protecting/maintaining existing natural assets, these activities specifically create new and additional advancements to human-well-being. These activities may:

- Through actions to enhance carbon sequestration, create new jobs or help fund critical infrastructure.
- Incentivise and help to fund governance reform and capacity building interventions that both enable the ability to transfer carbon while also supporting broader development objectives.
- Create additional sustainable financing arrangements which create social value and benefit due to the long-term nature of the carbon abatement project agreement.
- Help stimulate the growth and productivity of ecotourism-related business ventures by helping to incentivise the protection and enhancement of key natural environments and assets.

These types of benefits and the ability to quantify them, benefit from:

- a) National development plans;
- b) Socio-economic analysis;
- c) Private-sector development roadmaps; and
- d) Undertaking SDG Voluntary National Reviews.

4.2.3 Investing in the Pacific Nature-Based Solutions Benefit Spectrum

Rather than treat these groupings as distinct, there is more value to considering the potential synergies between these benefits and approaches through the idea of a 'spectrum' of Pacific core benefits. By considering ways to engineer linkages between these groupings of benefits, there becomes greater potential to consider the ways in which NbS can offer a 'spectrum' of benefits in the region.

Hypothetical Benefit Spectrum Project Example

A project that secures private finance to effectively protect a forest by disincentivising logging through payments made in exchange for carbon abatement rights may be perceived as a halfway measure between true additional emissions reductions and sustainable long-term forest management.

However, if the same initiative and carbon abatement potential is used to help fund the implementation of a reforestation (grouping 1) project designed to create a wind buffer and prevent potential land slips near a local village (grouping 2) while also supporting the development of new mountain-biking tourism venture in the same forest (grouping 3) the full spectrum of benefits can be realised.

This approach is similar to the risk-focused investment logic of the 'triple dividend of resilience' which suggests that investments in risk reduction should always endeavour to create three distinct dividends:

- 1) Avoided losses;
- 2) New economic potential; and
- 3) The generation of development co-benefits.

The Pacific benefit spectrum above aims to contribute to and produce four dividends:

- 1) The enhancement and protection of carbon sequestration potential;
- 2) The ability to maintain high socio-ecological integration;
- 3) The ability to reduce climate and disaster risk; and
- 4) Contribution to creating sustainable development gains.



Understanding the practical application of this spectrum would require further consideration of the appropriate methods that can be used in the Pacific context as well as key enablers, trade-offs, costs, governance, scale, and capacity issues involved.

4.2.4 Investor Countries of Interest

The more developed APAC countries have traditionally focused on reducing emissions from industrial emissions sources, as they have been easier to understand, measure, and invest in. However, limited in-country opportunities to reduce emissions, increased credibility of NbS as one third of the required climate solution, and an expanded global capability to measure, report and verify NbS are driving some nations to look beyond their borders to meet current or future NDCs.

Growing regional interest in these activities is underpinned by the success of highly credible land-based offset schemes in Australia and New Zealand (amongst others), building the case for regional (foreign) investment with a carbon return that could be used towards NDC targets. Governments and related agencies with the institutional and financial capacity to invest in emissions reductions across jurisdictions are more likely to be open to more sophisticated models of engagement – including public-private funding partnerships. Furthermore these *'investor countries'* are more likely to have access to large-scale capital required to drive the abatement or added sequestration of hundreds of millions of tonnes of emissions per year required to meet global Paris goals.

Seeking investor country support is also likely to further foster the host-country enabling environments (see section 2.3); manage risks (see section 3.2); better leverage co-financing investment options (see section 3.3); and forge stronger and more collaborative climate alliances between APAC neighbours.

It is suggested that development of regional NbS activities could benefit by the inclusion of, or collaboration with, one or more investor countries. This may enable access to institutional strengthening support; low-risk capital; leveraging of legal, financial and regulatory expertise; and linkages to established and mature private sector markets.

Noting that further engagement and exploration would be required to fully understand the potential, five nations have been listed below as possible investor countries to consider.

Japan

A decade of experience with Japan's Joint Crediting Mechanism (JCM) shows a clear capability and willingness by public institutions to engage in cross-jurisdictional technology transfer and investment. Japan has built sophisticated carbon regulatory, legal, financial and market-based systems, as well as an appetite for regional climate collaboration.

The further sophistication of public and private financial institutions regarding TCFD disclosure and carbon risk management, positions Japan as a possible early-stage investor in NbS technology and development.



Singapore

Singapore's announcement of a Long-term Low Emissions Development Strategy in April 2020 has outlined a goal of halving peak emissions by 2050. Singapore has limited space and is seeking to secure significant energy supply from Australia's Sun Cable project. The project aims to connect the world's largest solar farm and battery in Australia's Northern Territory, to Singapore and Indonesia via a 3,700km undersea cable.

The city-state is also becoming a regional carbon market trading hub; exploration of NbS investment could help build its carbon market capabilities, and assist in achieving its current goal of net-zero "as soon as viable" in the second half of the century. Most recently, Singapore announced in 2021 its <u>Green Plan 2030</u>, which set out a range of actions to support its climate targets, including to 'develop Singapore to be a carbon services hub, and a leading centre for green finance in Asia and globally'.

South Korea

South Korea's emissions trading scheme has operated since 2015 and has signalled that future expansion of the scheme in line with NDC targets will require access to international units. Although there is little clarity on the unit, methodology and quantitative eligibility requirements for foreign emissions units to be used in this scheme, there exists an opportunity to engage early with South Korea to establish potential institutional frameworks that may enable the use of credible, high quality NbS units that meet the environmental integrity standards of Article 6 of the Paris Agreement.

Australia

Australia's domestic carbon offset scheme is dominated by land-sector abatement activities, and both public institutions (including its Clean Energy Regulator, Department of Industry, Science, Energy and Resources, and CSIRO) and private sector market participants have a wealth of knowledge in developing project, financing, regulatory, and MRV systems. This expertise, coupled with the Australia's regional *Pacific Step-Up* strategy positions Australia as a valuable NbS partner.

New Zealand

Positioned similarly to South Korea, New Zealand's emissions trading scheme (NZ ETS) has been in operation for more than a decade, with forestry emissions reductions as the only credited activity available within the scheme. In recent years NZ has become a leading voice in international carbon market discussions, particularly in Paris Agreement Article 6 negotiations. Although the NZ ETS is closed to international markets, it has outlined formally that is working to identify options for how it could access international carbon markets in the future. There exists an opportunity in this context to engage with New Zealand on how its market might open to regional NbS in the future.



4.3 Considerations for Scaling Up Investment

In understanding how nature-based activities could be invested in at scale, consideration should be given to the extent in which the private sector is willing and able to invest. Due consideration should also be given to the public policy and financial frameworks that must be strengthened in order to support this investment, as well as the key role that governments and partnerships play in enabling these activities to take place.

4.3.1 Private Sector Willingness to Invest

In the same way, the willingness of the private sector to invest in NbS is extremely varied, and is driven by a range of strategic, financial and legal factors. In conceptual terms it is critical to understand the spread of climate-related business activity that is happening across the economy. This helps to understand the willingness of different actors to take part in not only nature-based activities, but climate action more generally.



In this context, only private-sector 'leaders' and 'followers' are showing willingness to invest in nature-based activities, because they have enough critical knowledge to understand the opportunities but also the risks from not engaging. For the purposes of the following reflections, the above categories will be applied to how different entities specifically lead, follow, lag, or remain unengaged with nature-based activities.

NbS are complex activities that require cross-functional disciplinary teams to make headway, and it is only those organisations with relatively sophisticated climate, carbon and environmental markets that are able to drive investment, and innovate new financial and other products that are required to scale up these activities. This means that even in the context of those that have an understanding of climate change, risk and opportunity, there is a smaller pool of potential private sector partners to work with. The development of partnerships with the right private sector entities require:

- Clarity on the level of strategic and financial sophistication needed by private sector entities to engage in partnerships or NbS activities;
- Knowledge of what disciplines, technical skills, and market intelligence is needed for a partnership to succeed; and
- Relationships with, and deep knowledge of the different market participants, decision-makers, and their individual drivers and risk appetite.



The willingness of private sector entities across this range also applies to the different groupings outlined in section 4.1. The business case considerations outlined there apply in the majority, to organisations that fit the 'leader' profile in the short term. However, uptake of these nature-based activities by leaders, followers, laggards, and unengaged masses depends on the extent to which these activities are embedded in the mainstream economic and investment activities.

Note: the use of leader, follower, laggard and unengaged in **Table 15** below pertains to their role to date in investing in NbS (as opposed to the general explanation/interpretation above).

TABLE 15: Summary of Engagement with Nature-Based Solutions		
Institutional Investors		
Laggard	 Developing early-stage understanding of these activities Do not have appropriate risk frameworks/valuation metrics to support large-scale investment. Market for NbS is not mature enough to create the deal size to enables mainstream asset investment. 	
Institutional Investors are a critical driving force behind shifting finance and investment towards decarbonization. However, given the clear barriers, they have not shown a strong willingness or ability to invest at scale in NCBS – noting recent moves from the sector recognising the role that nature-based activities will play in meeting Paris Commitments. Leading institutional investors and coalitions of investors (particularly those supporting development of the TCFD) are willing to innovate and drive financial sector leadership in the development of appropriate financial taxonomies, related education, risk and valuation frameworks. Institutional investors should have a seat at the table to advise on what is required to mainstream and incentivise investor-scale capital, and to feed developments back to relevant investor organisations that may be interested in providing capital under the right market conditions.		
Institutional (Investor) Banks		
Laggard	 Have experience with financing sustainability-linked projects at scale, although direct interaction with NbS activities is low. Do not have appropriate risk frameworks/valuation metrics to support large-scale investment in NbS NbS is not in high demand for mainstream debt financing, and so there are few 'off the shelf' commercial financial instruments available that fit these activities appropriately. 	
Institutional Banks are critically aligned with Paris Agreement pathways and along with other institutional investors are a key intermediary to influence and impact investment in low or zero-carbon solutions. It is noted that banks are more willing to support smaller pilot and development activities in collaboration with other corporate, government, and non- profit entities, and although the risk appetite varies from bank to bank, these institutions are showing a strong		

Development of new debt and other financing instruments by institutional banks at scale however requires sectorwide testing and adoption of harmonised risk, return and impact measurement frameworks that align with existing SDG, PRI, CBI and other existing frameworks. Embedding these considerations into these frameworks and into mainstream finance/investment activities will require institutional banks to build capacity on NbS activities, natural capital valuation, and carbon markets. Leading Banks or representatives of global banking/finance groups (particularly with relation to bonds) should be engaged so as to help build capacity of the sector to support scaled financing of these activities.



willingness to engage in these activities now.

EITE Com	EITE Companies				
Leader	• Initially driven by medium and longer-term carbon compliance obligations, EITE companies are				
		driving investment, R&D and innovation in the development of NbS.			
	•	Engage with NbS as a source of carbon credits, and to support broader climate repair and drawdown			
		activities. Investment in these activities is tested against rigorous due diligence and clear risk/return			
		frameworks and are focused on ensuring the financial instrument used is the most appropriate for			
		that specific activity.			
	•	High quality projects embed co-benefits and these are increasingly in demand.			
	•	EITE investment in NbS activities is increasing and is expected to scale up dramatically over the next			
		decade.			

Driven by many pressures, EITE companies will increasingly become a key investor, innovator, developer and collaborator on NbS over the next decade. Many EITE companies have confirmed ambitious emissions reductions targets and funding allocations that provides a clear signal. With experience and cross-functional teams supporting these activities across multiple jurisdictions, the leadership of these entities will be critical in driving high quality, timely and practical solutions.

Corporate Entities				
Follower	 Have traditionally only engaged with NbS activities at small scale to meet general corporate social responsibility goals. With various social, investor, consumer and climate risk pressures now driving more ambitious corporate strategy, these non carbon compliance-focused entities are quickly becoming leaders in the development of new, agile approaches to funding and development of, and innovation in NbS activities. This includes various business model approaches to activities that generate carbon credits, but also those that do not. 			
Since the au brands hav targets, lai	dvent of the Paris Agreement, the TCFD, and increased social and protest pressures, large global consumer e begun competing for leadership on climate action. This includes the proclamation of ambitious climate rge funding allocations to NbS, and embedding change throughout global supply chains. These			

targets, large funding allocations to NbS, and embedding change throughout global supply chains. These organisations are bringing direct capital investment to the table and are interested in high quality partnerships that can deliver strong social, cultural, environmental and economic narratives that align with corporate operations, strategy and reputation. Representatives of this class of organisation should be included in private sector engagement, noting there is work to be done to find the right organisation that aligns with Paris goals and partnerships' activities.

Project De	evelopment Organisations			
Leader	•	Approach project development facing much of the same commercial, risk and return realities and challenges as other private-sector organisations, although are seeking investment in their abatement supply development activities, rather than from the demand-side investor position.		
	•	Developers and service providers engage in long-term activities and so approach risk, return and financing of their activities in the same way.		
	•	Have strong technical and practical knowledge of how to undertake NbS, and have useful experience that can advise on the scale-up of these activities across a region.		

These organisations are critical entities with the technical skills to undertake these NbS activities on the ground, and have a wealth of practical experience with these activities that should be engaged to understand how these climate-related activities can be scaled up whilst maintaining environmental integrity, transparency and accountability.

Project developers have deep knowledge of barriers, challenges and successes of different types of activities in different geographies and will have on-ground relationships with communities and an understanding of the additional benefits that can be generated for those most affected by climate change. Any private sector partnerships should at a foundational level engage with experienced, trusted and innovative project developers that have the ability to scale as well as related legal and other related technical service providers that can help drive new activities to a successful conclusion.



4.3.2 Strengthening Public Policy & Financial Frameworks

In order to leverage private sector investment in NbS activities, direction is needed, in the form of strong institutional arrangements, and robust financial frameworks that provide a stable environment in which to do business. To date, policy uncertainty has remained a barrier to speeding up momentum. The education of investors, and government entities is critical to understand the commercial realities, trade implications and future integration of NbS activities with other relevant policy and market environments.

However, despite varying levels of policy volatility in various Asia Pacific markets, corporate commitments have grown and endured, and the global market for these activities is expanding. There's a high level of interest from Asian investors to invest back into the APAC region, particularly as there are large agrarian markets and a desire for investment to have a positive impact on workers, livelihoods and communities. Investors in the region are looking for private sector and government leaders to develop investment products that support these outcomes.

Strengthening of Asia Pacific government legislative and regulatory institutions is required to enable private sector investment in NbS activities at scale. Particularly, this relates to the need for stable, transparent and rigorous frameworks that provide policy certainty, high integrity measurement, reporting and verification frameworks and rules that provide clarity on the legal right of parties to undertake carbon-related activities (including land rights, tenure, and the legal right to own or sell carbon units or related benefits). Across the region there are varying levels of capacity, including for:

- high-level capacity to undertake national assessments, formulate climate strategy and take part in international negotiations under the Paris Agreement;
- an expanded capacity to design and implement relevant policy, legislation and regulation; and
- a strengthened and sophisticated capacity to develop, implement and operate measurement, reporting and verification (MRV) systems across the jurisdiction.

Where there is a stable policy environment with a capacity to undertake the above activities, there is also generally sophisticated data management, legal and judicial frameworks required to enforce minimum standards of market participants and operate with high integrity, transparency and accountability. Undertaking such broad institutional reforms required to develop Paris-aligned pathways for a country is a very complex challenge that is essentially country-specific. Many nations do not have access to the knowledge, expertise or funding required to build the required capacity, so developments are often enough to allow for participation in international (Paris Agreement) negotiations, but not enough to facilitate market-enabling frameworks to be applied across the entire jurisdiction. Becoming party to the Paris Agreement has provided nations, including those with significant resource and budget constraints, with a level of political impetus to make incremental steps forward, whilst connecting them with a network of government, IGO and NGO partners that can provide varying levels of technical or financial assistance to build capacity in climate relevant areas.

To date this support has not been provided in any material way by the private sector. The general view from the sector is that generally these activities should remain in the public sector domain, but that the development of such institutional capacity should leverage the technical, legal and financial expertise of the private sector so that government structures are efficient and practical, and a low-risk environment for investment.



Private sector entities generally have noted a range of **policy and institutional frameworks** as key stabilisers and de-risking tools to enable NbS investment in-country. At a high level, these include:

- <u>Clarity on legal rights</u>: Development of clear legislative instruments, regulations and tools to help navigate and define legal and customary land title (traditional and cultural ownership) and land tenure. This also includes requiring free, prior and informed consents from legal right-holders to both undertake NbS activities, but also the carbon property rights that support the sale and trade of carbon (or other resulting benefits).
- <u>Enhanced anti-corruption and bribery structures</u>: Improved integrity, transparency and accountability of government institutions and decision-makers increases policy and regulatory stability and reduces the risk of doing business or investing in the in-country operating environment.
- <u>Monitoring, reporting and verification (MRV) systems and related project development tools:</u> Robust government MRV frameworks enable high environmental integrity of NbS projects that will be required by the private sector to verify the impact that they have invested in; this will also be a critical measure expected in carbon and environmental markets as they evolve under Article 6 of the Paris Agreement. Development of these NbS-related tools also include development of national emissions accounts that will assist nations in reporting against their obligations under the Paris Agreement; and technical assistance and expertise sharing between countries with strong institutional frameworks (e.g. Australia) and other less-developed countries in the region, including particularly Pacific Island nations.
- <u>NDC carbon policy positions</u>: Private sector entities are interested in the positions that governments will take on the treatment of abatement created from international voluntary carbon crediting and NbS activities namely whether those units/benefits will be included in or excluded from a country's NDC. This treatment impacts the extent to which a private sector entity can wholly or partially claim abatement for their own use, or whether it will also be claimed. Investment is still possible under both scenarios, however it is policy certainty on these issues (expected once the rules of Article 6 of the Paris Agreement are finalised) that will enable private-sector funding to flow.
- <u>Article 6 preparation activities:</u> There is strong interest in how carbon markets will evolve under Article 6 of the Paris Agreement. Global markets will require the development of structures to enable tracking of tradeable units (registries), avoid double counting, and ensure high environmental integrity of units. There is interest from the private sector to work with governments to develop projects that create and test such systems, and some pilots are already underway. Pilots, or MOUs between countries, could be established to progress this work, and help create a more stable investment environment for private sector investment.
- <u>Other climate/NbS-relevant capacity:</u> Effective implementation of NbS-specific policies and measures will require the strengthening of capacity in other government policy areas and institutions, including primarily agriculture, forestry, fisheries, treasury & finance, as well as energy, transport, water, infrastructure and general economic/trade policies.

Private sector entities have also noted a range of **financial frameworks and related interventions** that support a stronger business case for investment in NbS solutions in-country. At a high-level these include:

- <u>Foreign direct investment and ownership rules:</u> Clarity is needed on how foreign direct investment in NbS activities in a country (including ownership/use of land, sale of project units/benefits, financial limits, tax treatment and exemptions), will be treated by the national government. Clarity strengthens the business case and reduces the risk of operating in that environment.
- <u>Early-stage and co-financing structures</u>: The public sector can incentivise private sector investment by developing and offering early-stage financial structures such as donor grants, profit sharing, blended



co-finance options or first-loss provisions to support capital expenditure the initial stages of NbS project developments. Whilst domestic government institutions and funding mechanisms should be considered for this, the support of larger multilateral development banks (MDBs) provide could be elevated to crowd-in more private sector investment.

- Endorsement of best-practice frameworks: Governments aiming to create a sophisticated financial system that supports the development of NbS activities at scale should consider the endorsement of, and/or embedding of globally-development best practice frameworks into their structures and markets. Taking this approach provides a well-understood and level playing field for private sector entities to engage in as these structures are endorsed and used by leading private sector entities. Such structures to consider include the Sustainable Development Goals (indicators and targets), the UN Global Compact (financial metrics), Principles for Responsible Investment Framework, the recommendations of the Taskforce on Climate-related Financial Disclosures and the Climate Bonds Initiative. This list is not exhaustive but recognises some of the most widely used and endorsed frameworks in place.
- <u>Support financial taxonomy and valuation metrics</u>: Sustainability, climate and nature-related risk/return valuations should be embedded over time in institutional investment frameworks. This requires strengthening of capacity within relevant government institutions to understand the concepts and how to implement them. Private sector investors are embedding these considerations in their own financial frameworks and so governments should work to support work domestically and globally that develops harmonised financial language, valuation, risk and return metrics. This support will provide a strong financial understanding of NbS activities across public and private financial institutions and send a market signal to incentivise future investment.
- <u>Export Credit Agency (ECA) investment:</u> Export credit agencies are government agencies that effectively underwrite or provide a finance guarantee to companies looking to invest in that country's domestic exports (e.g. an APAC-based company investing in Australian commodities could access Australian government export finance). Expanding the mandate of these established government finance structures to include support for NbS activities would contribute to risk mitigation of private sector investment.

Governments have a role to play in supporting financial certainty and structure, and understanding the ways in which existing financial structures and institutional capacity can be used across government to support a more collaborative, stable and sophisticated approach to enabling NbS activities.

4.3.3 Role for Government and Partnerships

The private sector is aligned on the need for strong government leadership and action on the development of nature-based activities. One of the defining features of climate-related markets is that they are much more sensitive to government and policy intervention that more traditional physical commodity markets. Carbon, and the related co-benefits that result from NbS activities have traditionally derived value from the measurement and demand-driver policies that any one country has set.

These tradeable benefits and the markets that facilitate these trades have essentially been politically created. Therefore, whilst other private sector and social demand drivers for climate-positive goods are increasingly driving investment, these activities will still be heavily impacted by policy.



Private sector investment in nature-based activities is still answerable to traditional commercial risk and return thresholds. Governments have an important role to play in providing high integrity, transparent and accountable policy and market structures that minimise the risk for a private sector entity investing in that jurisdiction. There is general alignment about the various ways in which governments can play a role in scaling up nature-based activities, which include the following:

- <u>Successfully conclude Paris Agreement negotiations</u>: At the highest level, the private sector is calling for governments to actively drive a conclusion to the rules of the Paris Agreement, particularly the rules, modalities and procedures on how Article 6 will proceed. The role for governments to set policy direction for markets and economies to follow is critical, which in turn filters down to the policy signal and demand drivers for investment in NbS.
- <u>Strengthen climate-specific and climate-relevant institutional capacity</u>: As aligned with the Paris Agreement, Governments must make incremental steps towards a high-quality policy and market environment that leverages public finance and frameworks to incentivise private sector investment in NbS at scale. Governments should develop clear climate specific policies and embed relevant considerations across climate-relevant government institutions; the ensuing sophistication and education on climate action across government enables a more sophisticated discussion on the need, value and role for NbS activities at scale.
- <u>Support early-stage NbS finance and development:</u> Governments can play an underwriting role to provide confidence to the NbS market. Testing early-stage ideas in collaboration with industry provides governments with necessary experience to develop practical policy and reduces the risk that a private sector entity would take on in conducting early innovation activities themselves. Activities undertaken with industry could include endorsement of: financing or participation in NbS method or co-benefit valuation framework development; technology incubation, demonstration, and commercialisation; providing co-financing or grant funding to support capital-intensive project setup; and engaging in Article 6 Pilot activities.
- <u>Empower community engagement:</u> Governments have a clear role in undertaking appropriate education and outreach that reduces participation risk for communities and individuals and gives them the ability to make informed decisions on how to take part in nature-based activities. These project activities are complex and will impact business models, land use, as well as institutional and community trust, so protecting participants and consumers in the market is critical.

If the right government policy structures and institutions are the critical foundation for activity to take place, then partnerships are a supporting mechanism that enables more efficient use and operation of that foundation by facilitating knowledge sharing, commercial interaction, and capacity building.

The Asia Pacific region has such high-abatement and potential co-benefit generating environments, expanding emissions intensive economies, and increasing private sector and investor wealth. It is critical that any NbS partnerships in this region include private sector expertise, finance and technical skills, and leverages the proven ability to develop and deploy solutions at scale across economies, nations and regions, without having to 'reinvent the wheel'.

Partnerships could support scaled NbS by undertaking the following:

• <u>Set a market-oriented strategy with material goals:</u> Successful models of partnerships are those that are designed to meet specific progress goals. Engagement with private sector entities will require clear action-oriented strategies coupled with a desire to implement at commercial speed. Regional



partnerships for NbS also have a role to play in focussing on livelihoods, job creation, economic benefits to GDP. Partnerships in the Pacific should be community-focused, supporting minority, climate-exposed, poor and marginalised groups, and there should be a clear cultural narrative about how projects and partnerships will support this.

- <u>Allow private sector participation</u>: Partnerships that successfully support the development of NbS activities provide a clear commercial model for how government, business, investors, academics and market competitors can work together. Without this coalition-building engagement and strategic clarity, private sector engagement will stagnate, and finance will not flow. It's necessary to be outcomes-focused, ensure that the right people (decision-makers) are in the room, and then provide real value to these participants. Independence from individual private sector entity interests could be ensured by engaging with industry groups that facilitate appropriate involvement.
- <u>Align knowledge, frameworks and drivers:</u> Countries in the Asia Pacific region are varied, so in a regional context, partnerships play a valuable role in creating a common understanding of what nature-based activities should look like, and how they should operate. Partnerships can be used to harmonise language and frameworks across governments, but also with the private sector.
- <u>Reduce private sector participation risk:</u> Partnerships are critical, as investors often don't have the technical capabilities to drive high quality projects on the ground. Partnerships help private sector entities spread their risk by building trust and working with strong counterparties, including other corporate entities, technical experts, and government partners.
- <u>Support market readiness</u>: Partnerships could/should consider their role in building market readiness in-country, to matching investments, introducing stakeholders in the market, and facilitate the NbS education of public sector representatives by private sector stakeholders. This also includes building relationships with relevant industry groups that can support Partnership aims across the economy and provide a whole-of-market approach to issues.
- <u>Source and facilitate investment opportunities</u>: NbS-related partnerships should establish practical (as opposed to ideological) public/private 'coalitions' designed to conceptualise, develop, fund and test specific commercial project ideas. Some ways this could be achieved are below:
 - Establish a practical modular framework which would allow for ongoing development and scaling up of the coalition over time, as the group increases its activity in understanding the drivers and parameters for attractive projects, building appropriate funding mechanisms; and moving towards implementing them where possible.
 - Pilot activities are attractive as they provide opportunities for in-country capacity building and allow for the scientific components of a project to be tested and subsequently scaled up (the subsequent understanding of which reduces the pressure to generate carbon units from the activity). They enable regional nation and community stakeholders to better understand the opportunity and how to replicate them. It has been noted that this would be particularly effective in supporting scaled activities across Pacific Island nations.
 - Development of an NbS aggregation platform that scales up investment could be developed by a public-private partnership as a first step in looking at how large-scale regional fund and governance structures could be formed. Such a platform could aggregate smaller deals that meet the minimum deal-size for different types of investors and spread risk across the group.
 - Partnerships should engage with and learn from multi-national development banks and largescale environmental non-profit operations in the region, particularly to provide an understanding of what capabilities and teams are required to structure such an activity. Successful activities developed at scale will include valuation/risk management teams,



deal/fund structuring teams; legal/due diligence teams; social/community engagement teams; government engagement/policy teams; and communications teams.

The role for partnerships in the nature-based activity space can be extremely varied, but it is incumbent on the existing partners to examine and decide how they move forward, whether they want to engage with the private sector, and to what extent they want to materially invest in opportunities and take on associated risk.

There is a strong willingness from leading private sector entities in Australia (and the region), and the political and institutional will from Governments to manage risk and create opportunities in a global transition aligned with the goals of the Paris Agreement. Nature-based activities will remain a critical solution that will need to be scaled up, and at this nascent stage they require more strategic knowledge sharing, commercial interaction, capacity building and public/private collaboration activities to be undertaken to ensure success, and an overall positive contribution to climate mitigation, repair and resilience.



Appendices

Appendix 1: List of Countries Considered in Scope

American Samoa	Laos	Samoa
Australia	Malaysia	Singapore
Bangladesh	Maldives	Solomon Islands
Bhutan	Marshall Islands	South Korea
Brunei	Myanmar	Sri Lanka
Cambodia	Nauru	Taiwan
Cook Islands	Nepal	Thailand
Federated States of Micronesia	New Caledonia	Timor-Leste
Fiji	New Zealand	Tokelau
French Polynesia	Niue	Tonga
Guam	Northern Mariana Islands	Tuvalu
India	Pakistan	Vanuatu
Indonesia	Palau	Vietnam
Japan	Papua New Guinea	Wallis and Futuna
Kiribati	Philippines	

Appendix 2: List of Countries Analysed in Further Detail

Fiji	New Caledonia	Papua New Guinea
Samoa	Solomon Islands	Timor-Leste
Vanuatu		



Glossary

Blended finance: a type of financial mechanism in which funds from governments, multilateral development banks and/or philanthropy are complemented by private sector funds, structured in such a way that removes uncertainty or risk so that investment by the private sector is made easier.

Bond: a type of financial mechanism whereby debt is issued as a tradeable asset and purchased by investors who receive repayments with interest.

Blue bond: a bond used exclusively for the purposes of investing in activities which sequester carbon in coastal and marine ecosystems, particularly mangroves, sea grasses and salt marshes.

Catastrophe bond: a bond used exclusively for the purposes of managing the financial risks of a natural disaster, designed to raise funds for companies in the insurance industry in the event of a disaster.

Green bond: a bond used exclusively for the purposes of investing in sustainable ('green') projects.

Social impact bond: a bond used exclusively for the purposes of investing in projects that have positive social impacts.

Transition bond: a bond used exclusively for the purposes of investing in projects which allow emissions-intensive companies or industries to transition away from their emissions-intensive activities, to more sustainable business practices and investments.

Carbon finance: finance derived from a project or activity that sequesters or abates greenhouse gas emissions.

Concessional finance: a lower (or discounted) rate.

Debt finance: finance that is raised through the issuance of debt from one party to another, whereby the investor receives interest payments as financial return for their investment.

Ecosystem services: a broad term used to classify services provided by the natural environment, which serve to provide subsistence to humans and other species, assist in regulating the natural environment, support natural ecosystems.

Endowment fund: an investment portfolio with initial funding derived from donations.

Equity finance: finance that is generated through the sale of shares, whereby the investor receives dividend payments as financial return for their investment.

Export credit agency: a private or public-sector organisation that assists companies to navigate policy, legislative, and business-related environments in another country. This allows for greater and more efficient export of domestic goods and services to international markets.



First-loss guarantee: an arrangement in which a guarantor agrees to absorb any potential initial financial losses incurred, for the purposes of mitigating risks for the investor and thus enabling the investment to take place.

Grant/donor grant: money given to support an activity, with no explicit expectation that it will generate a financial return to the donor – although there may be expectations for other non-financial returns.

Green loan: a loan made available exclusively for the purposes of financing a sustainable ('green') activity.

Guarantee: a contracted provision of assurance to an individual, group or organisation entering into a financing arrangement, used to mitigate risk for the investor.

Hedge fund: an investment fund pooling finance from various parties, often adopting aggressive investment strategies.

Hybrid finance model: a combination of equity financing and debt financing used to raise capital, for the purposes of increase potential pools of funding, and also potentially providing regulatory and taxation benefits.

Impact investment/impact accelerator fund: investment or funds which seek to combine competitive financial returns with a set of social and/or environmental benefits.

Institutional investor: an organisation which pools and invests money on behalf of other organisations, groups or individuals, giving it the capacity to invest at scale.

Interim investment: short term or temporary investment derived from funds which are intended for a future investment, used for the purposes of growing capital in preparation for the longer-term investment.

Multilateral Development Bank (MDB): a financial institution jointly created by two or more countries, for the purpose of enabling financing of development projects in non-industrialised countries.

Mutual fund: an investment fund with money pooled from a range of investors.

Natural capital: renewable and non-renewable resources derived from the natural environment, which may or may not be traditionally valued in monetary terms, but which provide measurable benefits to people and the planet.

Natural capital fund: a fund used for the purposes of channelling investment into natural capital projects.

Official Development Assistance (ODA): financial assistance provided from one government to another country, intended to assist economic and social welfare developments.

Offtake agreement: an agreement between two or more parties, whereby one party is contracted to purchase a commodity from a second party in the future, intended to provide the second party confidence in the project's profitability prior to their initial investment in the project or activity.

Payment for ecosystem services: an arrangement in which a buyer pays a seller to manage a resource that the seller owns (or for which they have access rights) in a way that improves environmental outcomes.



Pension fund: an investment fund used to invest workers' money on their behalf, for the purposes of providing income to those workers during their retirement.

Private equity: financial capital that is invested through avenues which do not involve public markets.

Private-public funding structures: a partnership between private sector and public sector actors, whereby the private sector actor/s is contracted by the public sector actor to finance a project, for which they receive a financial reward or return on investment.

Profit-share model: a financial model whereby profits and losses are shared by multiple actors – which could be individuals or parties. This model serves to share risk across the group, and incentivise those actors to assist in the growth in profit of a given project or organisation.

Public-private partnership: a partnership between private and public sector actors, whereby the private sector actor/s is contracted by the public sector actor to finance, design, build, operate and/or manage a project, for which they receive a financial reward or return on investment.

Results-based payments: a financing structure whereby payment is made based on the performance or results of a given investment project.

Risk capital: funds invested in high-risk investments with the potential to provide a high return.

Structured financing: an umbrella term for a financial instrument, often used by large financial institutions, with specific and complex financial needs.

Syndicated loan: a loan which pools funds from a number of stakeholders.

Underwriting: formal arrangement where one organisation takes on the financial risk of another organisation, for a fee.

Upfront financing: the finance of initial costs associated with a given investment or project, including for example the initial costs associated with the issuance of a bond.

Venture capital: a high-risk type of investment made early in development of a business in the hope that it will yield a high financial return.





for more information please contact

Brad Kerin General Manager brad.kerin@carbonmarketinstitute.org +61 (0) 411 701 054