



# Investing in nature-based solutions through rangers: Building an economic case for essential frontline conservation workers

**A working document for the  
international Ranger Roundtable 2023**

By  
Dedee Woodside, Jenny Vasseleu, Ariadne Gorring,  
Jane Hutchinson, Josh Bishop, William Jackson,  
Terry Pyke, Matt Sykes, Kirsty Galloway McLean

**Preferred Citation:**

Woodside, D.P.<sup>a</sup>, Vasseleu, J.<sup>b</sup>, Gorrington, A.<sup>c</sup>, Hutchinson, J.<sup>c</sup>, Bishop, J.<sup>d</sup>, Jackson, W.<sup>e</sup>, Pyke, T.W.<sup>a</sup>, Sykes, M.<sup>f</sup>, Galloway McLean, K.<sup>g</sup> (2023). Investing in nature-based solutions through rangers: Building an economic case for essential frontline workers. Ranger Roundtable (RRT) working document.

- a. Corporate and Community Sustainability International (CCSI), 26 Heritage Close, Umina Beach, NSW 2257
- b. JV Insights, 36 Coachwood Crescent, Alfords Point, NSW 2234
- c. Pollination Foundation, Pollination Group, 2A Armstrong Street, Middle Park VIC 4074
- d. WWF Australia, Level 1/1 Smail St, Ultimo NSW 2007
- e. Thin Green Line Foundation, 7/3056 Frankston-Flinders Road, Balnarring, VIC 3926, Australia
- f. Regeneration Projects, Naarm, Melbourne, Australia
- g. Ampliseed, c/o Pollination Foundation, Melbourne, Australia
- h. Corresponding author email: [dwoodside@ccsi-consulting.com](mailto:dwoodside@ccsi-consulting.com)

**Acknowledgements:**

We thank Tim Schneider and Sean Willmore of TGLF Australia and Marianne Kettunen, TGLF UK for their generous support throughout this project. Thanks to Tim for helping to plan the structure of the report and for his regular reviews of the many drafts. We are grateful for the information and insights provided by colleagues across a wide spectrum of industries, investors, and active field projects in Australia and globally. Everyone engaged in generous and open debates about ways to clarify the winds of change across the business sector, financial institutions, and trade platforms and what this all means for the recovery and stewardship of our natural capital. Significantly, they provided many ideas about next steps and future directions for those working on the frontline and those providing funding. In particular, we thank Cliff Cobbo and Nat Burke of WWF Australia, Rohit Singh of WWF Singapore, Dominic Nicolls of Mimal Aboriginal Land Management, Jennifer Ansell of ALFA, and Lou Halloran previously of RIAA. We also thank all those who we interviewed in the impact investment sector, leaders in sustainable resource use and enterprise, funding brokers, conservation and social NGOs, managers of bio-trusts and nature-based trade entities, and rangers on the ground. We trust we have represented your many and varied perspectives faithfully.

**Disclaimer and Context:**

This is a 'working paper', commissioned by the international Ranger Roundtable (RRT)\* to support ongoing conversation within the ranger sector and beyond. It contributes to a suite of RRT reports and activities concerning the vital work of rangers globally. This report aims to encourage and inform discussions about funding, policy settings and capacity building for frontline workers and specifically targets government policy makers, NGOs, public and private investors, and key community leaders. This paper will be a resource document that can be divided into smaller and more targeted commentaries.

This working paper explores several aspects of investment in the conservation frontline and is intended to complement the work of Timmins, Stolton and Dudley and others for RRT in 2022. They investigated a range of new and improved policy settings to support frontlines of conservation. Our goal was to add value by providing a useful framework and stimulus for deeper conversations between potential funding sources and vital work on the ground. In this rapidly changing landscape of funding mechanisms and opportunities, we did our best to represent the wide range of issues to be addressed and the emerging opportunities. We recognise that our summary may be more indicative of the wide range of opportunities than it is exhaustive. Photo credits: open source

\*The RRT was established in 2020 as a collaboration between the International Ranger Federation, The Thin Green Line Foundation, and the Universal Ranger Support Alliance. The RRT is committed to exploring how to raise the professional profile of and gain greater support for Rangers as essential frontline conservation workers. Between 2020 and 2023, it convened a suite of global online discussions around important issues affecting the future of rangers, other frontline conservation workers, indigenous custodians, and local communities. While the RRT originally emerged in response to the immediate impacts of COVID-19 on Rangers, their communities and Protected and Conserved Areas, it continues to deliver on the goal of the Chitwan Declaration, 2019.

# CONTENTS

---

<b>ABSTRACT</b>	<b>4</b>
<b>INTRODUCTION</b>	<b>4</b>
The economic case for investing in nature	4
Our frontline conservation workforce as essential planetary health workers	5
A framework for the future	7
<b>SHIFTING PARADIGMS TOWARDS A GREENER ECONOMY</b>	<b>7</b>
The shift towards sustainability	7
The future of business and the environment	8
<b>BIODIVERSITY IS THE NEW FRONTIER FOR INVESTMENT AND BUSINESS ACTIVITY</b>	<b>9</b>
New tools for financing the nature-based economy	9
The emerging role of nature markets	10
Governments can help reduce risk for investors	11
Global frameworks for standardised measurement	12
<b>THE ECONOMIC CASE FOR INVESTING IN NATURE THROUGH RANGERS</b>	<b>13</b>
The investor and partnership ecosystem	13
<b>BUILDING THE ECONOMIC CASE FOR INVESTING IN NATURE THROUGH RANGERS</b>	<b>14</b>
The role of rangers in conservation and sustainable development	14
Rangers as economic multipliers in a nature-based economy	15
Case study analysis: rangers deliver strong returns on investment	17
Proven pathways for investing in rangers and delivering returns	17
<b>BUILDING INVESTOR CONFIDENCE WHILE BUILDING CAPACITY OF THE RANGER SECTOR</b>	<b>25</b>
Building capacity and confidence	25
Challenges that need to be addressed	25
<b>STRENGTHENING THE ROLE OF CATALYSTS, BROKERS, AND INTERMEDIARIES</b>	<b>26</b>
The role of critical enablers	26
Enabling the enablers	27
<b>NEXT STEPS AND RECOMMENDATIONS</b>	<b>28</b>
<b>REFERENCES</b>	<b>30</b>

# Investing in nature-based solutions through Rangers: building an economic case for essential frontline workers

## ABSTRACT

---

In this paper, we investigate the changing relationships between business, nature, and society. Our focus is on exploring how investment frontiers in nature can be structured to flow resources towards rangers and other essential frontline conservation workers. This is an essential step towards the effective conservation and restoration of biodiversity, which, in turn, will enhance the ecosystem services that are vital for sustaining a nature-positive economy. Our proposed investment framework acknowledges the correlation between well supported frontline conservation workers and the flow on benefits to local communities, governments, business, and investors.

We provide a summary of the various drivers behind sustainable financing at different scales, and present pathways towards attaining a regenerative, nature-positive economy. We show how these pathways for achieving environmental and social outcomes are intertwined with the services provided by rangers and other frontline conservation workers. Aspects of these pathways can be measured and can be used to monitor return on investment and track the distribution of benefits to local communities and economies. By understanding these economic flows and potential returns, we reveal the compelling economic case for investment in rangers.

We conclude by reflecting on the aspects of the ranger sector that need to be strengthened to instil confidence in investors, and to provide evidence that demonstrates how innovative partnerships can yield numerous and long-lasting benefits.

## INTRODUCTION

---

### The economic case for investing in nature

Historically, conventional economic models have not taken into account the fact that we're using up natural resources and services faster than they can be replenished, and we now recognise that we have drawn down our planet's natural endowment as if it is limitless and self-renewing. Historically conventional Policies and business strategies rewarded growth above all, with little concern for the erosion of the natural asset base they rely on (Dasgupta 2021).

Alarmingly, we are at risk of losing at least US \$90 billion in global real GDP by 2030 from habitat loss, which rapidly rises to US \$225 billion when we include impacts on carbon sequestration (World Bank, 2021). The news is similarly bleak for our dwindling wildlife, with stocks having already declined by 69% (WWF 2022a), and several natural support systems such as wild pollination nearing collapse (IPBES 2019; WEF 2021). In its *Global Risk Report*, the World Bank estimates that if these ecological tipping points are reached, the global economy could face annual losses of US \$2.7 trillion by 2030 (WEF 2021). On the ground, this translates to the loss of arable lands and agricultural yields, declines in the flow of ecosystem services such as fish, pollination services and access to fresh water or clean air, medicines, and disruptions to the supply chains of most industries, culminating in very significant impacts on society.

On a more positive note, we have recently seen a global realignment of governments, international agencies, financial institutions, and the business sector who now are beginning to understand the risks, joining with civil society organisations to urgently prioritise the reversal of biodiversity loss. In December 2022, the 15<sup>th</sup> Conference of the Parties (COP15) to the United Nations Convention on Biological Diversity (CBD) concluded with an agreement for a new global framework to protect, restore and expand biodiversity as a matter of urgency. This CBD agreement recognises that biodiversity and ecosystem services underpin the global economy and human well-being, that this builds a compelling business case for taking action to preserve biodiversity, and that the cost of inaction is high.

To reverse these trends, we need policy changes, new funding mechanisms, and a structural shift from an exploitative economy to a nature-positive regenerative economy. The CBD framework recognises that urgent change is needed globally, regionally, and nationally to stabilise biodiversity loss by 2030 and allow for the recovery of natural ecosystems in the following 20 years.

It comes as no surprise that a significant investment is necessary to repair nature, recover biodiversity and integrate natural capital into all aspects of economy and society. The World Economic Forum has estimated that investment would need to triple to US \$350 billion by 2030 and rise again to US \$536 billion by 2050 (WEF 2021). However, experts also estimate that there is potential for nature restoration markets to yield significant returns of US \$64–454 billion per year in output by 2050 (Appleton et al, 2022), with estimated return on investment ranging between 7–30 times (WEF 2021).

For this restoration and all its benefits to occur, we need a strong workforce delivering change on the ground and we need to ensure that resources flow to the frontline where they can support rangers and empower the Indigenous Peoples and Local Communities (IPLCs), in whose lands most of our biodiversity remains, and ensure tangible outcomes for the benefit of people and nature.

In this paper we aim to expand on the growing conversation about the essential role of these frontline workers, especially in delivering agreed biodiversity targets, and supporting future business and social development opportunities. We map the key pathways for environmental and social outcomes attributable to rangers and other frontline workers and show how this can be used to track returns on investment, benefits to local communities and thus build on the economic case for investing in frontline conservation workers. We examine the recent shift in the focus of business and the emergence of new investment opportunities. In doing this, we consider the challenges of sustainable financing and consider how investments can more effectively reach rangers and other conservation workers or communities on ground, so they can, in turn, be more effective in their central roles (Figure 1). We highlight the challenges of rapidly expanding the ranger sector to meet global challenges and how this sector can build confidence for early investors by engaging effectively with enabling organisations, brokers, and intermediaries.

## Our frontline conservation workforce as essential planetary health workers

A key pathway to restore natural resilience and rebalance our over-exploited resources is through nature-based solutions (NbS, see Box 1). This approach focuses on strengthening healthy ecosystems to protect people, optimising natural infrastructure, and safeguarding a stable and biodiverse future. This requires site-specific nature repair works on land, at sea, and in freshwater systems. Local place-based actions can be scaled up to create a network of landscape/seascape-wide improvements to combat climate change that will aid ecosystems in sequestering carbon dioxide, stabilising atmospheric conditions, and mitigating the impacts of climate change.

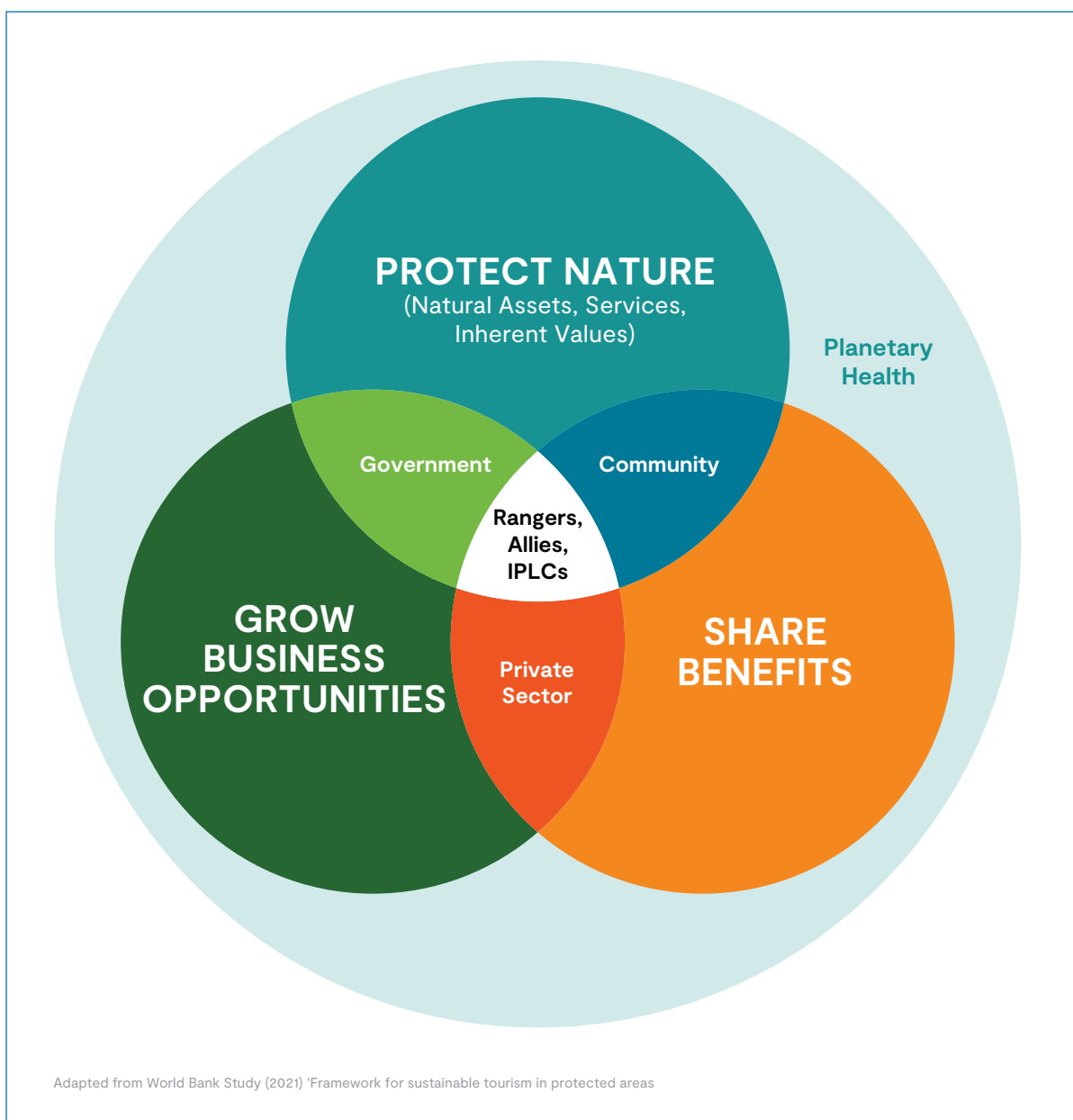
### Box 1: Definition of Nature Based Solutions (IUCN)

“Nature-based solutions leverage nature and the power of healthy ecosystems to protect people, optimise infrastructure and safeguard a stable and biodiverse future.

Nature-based solutions address societal challenges through the protection, sustainable management, and restoration of both natural and modified ecosystems, benefiting both biodiversity and human well-being. Nature-based solutions are underpinned by benefits that flow from healthy ecosystems. They target major challenges like climate change, disaster risk reduction, food and water security, biodiversity loss and human health, and are critical to sustainable economic development.”

We can only achieve these ambitious but necessary outcomes with a large and committed workforce on the ground that includes local rangers, park rangers, guardians, Indigenous custodians, and other stewardship communities. Given the complexity and far-reaching impact of rangers and other frontline workers, they have been described by others as “essential planetary health workers” (Timmins et al 2022, Singh et al 2021). Looking to the future, their collective effort will be crucial to reversing biodiversity loss and maintaining the delicate balance between nature and people for a stable economy. Yet, until recently they have not had a strong voice in the conversation about the future.

**Figure 1:** A framework for highlighting the central role of rangers with other frontline workers and Indigenous Peoples and Local Communities (IPLCs) in securing enduring outcomes through nature-based solutions (NbS) for business and government. For simplicity, we refer to broad collection frontline workers as “rangers and allies” and apply the broad definition used by the International Ranger Federation (IRF) as being those “involved in the practical protection and preservation of all aspects of wild areas, historical and cultural sites (IRF, n.d.).



## A framework for the future

Delivery of NbS requires coordinated efforts from a very large and committed workforce, far greater than the existing capability of conservation agencies and organisations. More staff are needed at all levels, especially on the frontline and there is a need for greater integration with IPLCs who serve as the stewards and custodians of biodiversity on land and at sea. Indigenous peoples and local communities are leading the global transformation on nature and climate (Erwin 2021, WWF 2022), with more than 80% of the world's remaining biodiversity under their care. Their traditional knowledge and practices have proven effective in preserving these ecosystems and promoting sustainable resource management (Nakashima et al 2012, Garnett et al 2018). The local ranger workforce often overlaps with IPLCs and plays a key role in the incorporation of local knowledge and practice that improves delivery of NbS (Figure 1) and ensures local benefits that are culturally appropriate.

The role of rangers and other frontline workers, in all settings ranging from indigenous land or sea scapes, remote or uninhabited places or urban centres, is vital to meeting global commitments such as the 30 by 30 target. Investing in the ranger workforce also stimulates local economy, local development, business opportunities and general improvement in community well-being. In turn, the local community has greater capacity and motivation to protect natural capital. Aligning government, community and private sector policies and actions in support of NbS will promote both biodiversity conservation and economic development, improving planetary health through the development of a regenerative and nature-positive economy.

An expanded workforce focussing on nature stewardship and recovery will require considerable investment at all levels by governments, philanthropy, and business to develop this sector to its full potential. In terms of numbers, the greatest demand is on the ground, where many thousands more rangers and associates will need to be recruited, trained, equipped, motivated, and supported to deliver NbS on a scale the world has never seen before. It is estimated that to meet the agreed minimum targets of the global biodiversity framework, this workforce will need to rapidly expand by 3 to 5 times (Appleton et al 2022), requiring considerable investment and new policy frameworks at many levels (Timmins et al 2022).

## SHIFTING PARADIGMS TOWARDS A GREENER ECONOMY

---

### The shift towards sustainability

In recent years, there has been a significant shift towards sustainability in the business world. This transformation has been driven by a growing recognition that companies must operate in a way that balances economic growth with social and environmental responsibility (Figure 2). It is estimated that 50% of global GDP is dependent on nature, with more than 75% reliant on pollination services (WEF 2020), and most businesses are reliant on nature in that supply chains are affected by the deterioration of nature and ecosystem services (Dasgupta 2021).

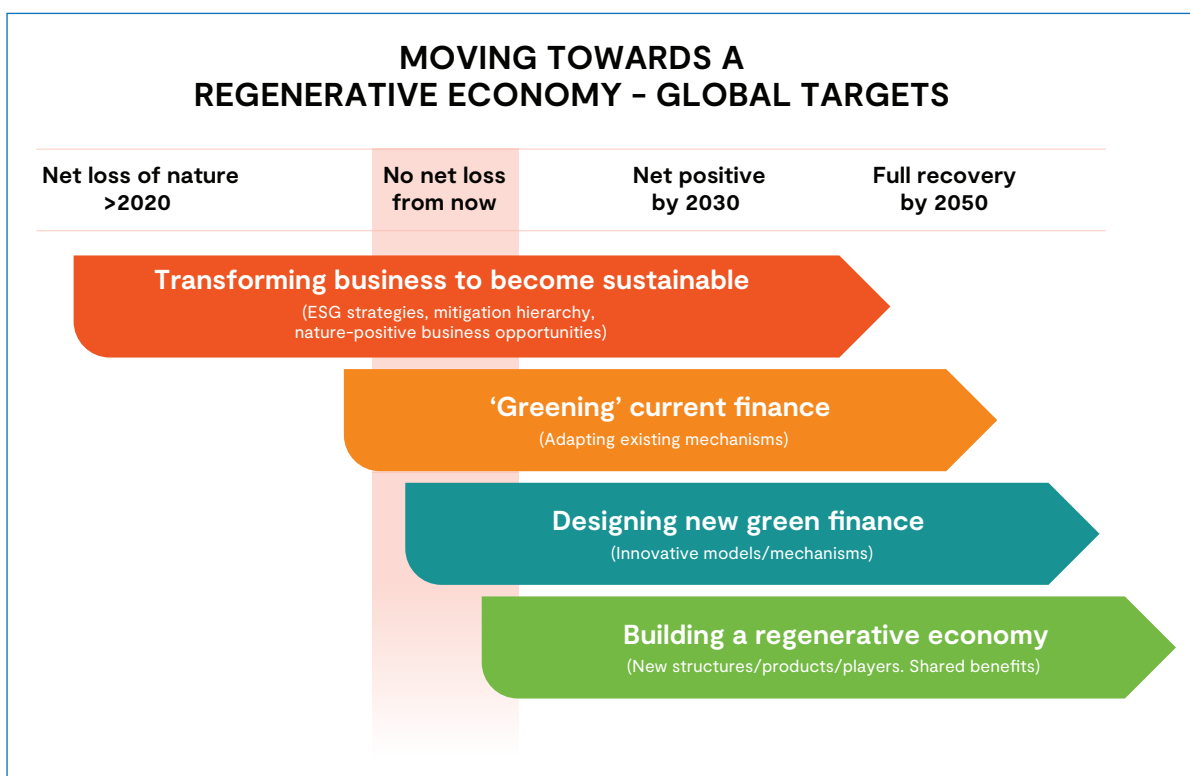
Businesses have increasingly recognised the risks that they face due to their reliance on natural capital. From board directors to operational teams, the potential for disruptions to their supply chains that could arise from factors such as water scarcity, deforestation and climate related shocks are key risks which are starting to be integrated into forward business planning. In addition to taking steps to mitigate these risks and identify new opportunities, businesses are also recognising the need to take a more holistic approach to their operations that respects the natural environment, and to seek new opportunities associated with an economy based on environmental sustainability and social equity. This involves incorporating environmental considerations into their decision-making processes and working with stakeholders to promote sustainable practices throughout their supply chains. By doing so, businesses can not only reduce their exposure to nature risk, but also create more sustainable and resilient operations that are better equipped to thrive in the face of environmental challenges, and design ways to scale investments (Nedopil 2022).

## The future of business and the environment

One significant development in the move towards sustainability has been the “greening of finance” (TNC 2019; CFA 2020). The financial industry has recognised that it can play a vital role in promoting sustainability by investing in environmentally sustainable projects and supporting companies that prioritise sustainability. Over time business sustainability strategies have moved from exploitation of nature which is often heavily subsidised (WEF 2021), to accounting for their impact through their Environment, Social and Governance (ESG) frameworks, to applying the mitigation hierarchy (i.e., avoidance, minimisation, restoration, and offsets), and more recently moving towards carbon neutral, nature-positive and shared equity models. Green finance involves directing investment capital towards projects that have a positive environmental impact, helping to accelerate the transition to a low-carbon and sustainable economy.

Recognising that our current economic systems are based on the exploitation of natural resources, and that this is not sustainable in the long run, a regenerative economics approach goes beyond the traditional sustainability model (which aims to minimise harm to the environment) by prioritising the restoration and regeneration of natural systems (Figure 2). Complementing this is the development of a nature-based economy, which emphasises the importance of using natural resources in a sustainable way and recognises that the value of these resources goes beyond their market price. A nature-based economy seeks to create economic systems that are based on the sustainable use of natural resources and systems that support the health and resilience of natural systems. Both approaches recognise that human systems can and should work in harmony with natural systems, and that a healthy environment is a fundamental component of a sustainable society.

*Figure 2: A shifting paradigm for businesses as they reduce impacts and risks by improving their sustainability, engaging with greener finance, new financial products and opportunities in the emerging nature-based economy*





# BIODIVERSITY AS A NEW FRONTIER FOR BUSINESS AND INVESTMENT

---

## New tools for financing the nature-based economy

Funding of nature stewardship has long been the domain of government and philanthropic support. However, several novel financial products are emerging to support a nature-based economy and engage new players in sustainable investing (TNC 2019, CPIC 2021, F4B 2022, LBIN 2022, WBG 2020). These financial products are designed to channel investment towards activities that support the restoration and regeneration of natural resources and wider ecosystems. By providing investors with a way to support environmental initiatives while also earning a return on their investment, these products are helping to promote the transition towards a nature-based economy that is more sustainable and resilient (Gorring et al 2022).

Conservation financing tools vary in terms of implementation difficulty – more difficult tools are more complex and take more time, effort, and money to implement but often achieve greater impact in proportion to the time, effort and money spent. One recent development in conservation financing is the use of green bonds, which are fixed-income securities that are issued to fund projects with environmental benefits. Green bonds can be used to finance a wide range of projects, such as renewable energy, sustainable forestry, or water conservation. They provide investors with a way to support environmental initiatives while also earning a return on their investment. An example is impact investing, which involves investing in companies or projects that have a positive social or environmental impact, in addition to financial returns. Impact investors seek to support businesses that are aligned with their values and have a positive impact on the world. This approach is gaining popularity as investors increasingly prioritise sustainability and social responsibility in their investment decisions. Other tools such as payments for ecosystem services (PES) programs are designed to incentivise landowners to protect or restore natural resources in exchange for payments. The “Rhino bond” (described later in this paper) is an example of a clever combination of green bonds and PES principles so that it becomes possible to invest in a share of an endangered species survival plan and in the environmental services rendered by their existence as calculated over their lifetime. In general, PES programs can provide a source of revenue for landowners who are practicing sustainable land use, while also providing ecosystem services that benefit the broader community. Figure 3 lists various types of mechanisms, but financing tools are typically non-exclusive and are often combined to achieve impact. Investments that are designed to generate both impact and profit are in high demand at both the retail and wholesale levels (Banhalimi-Zakar et al 2022), and there is a growing demand for nature-based trade and nature-focussed enterprises.

Figure 3: Examples of conservation tools adapted from Gorrington et al 2022

MECHANISM	EXAMPLES
Grants and Other Transfers	Philanthropy; Public Funding / Official Development Assistance (ODA); Trust Funds
Return-based Investments	Microfinance; Peer-2-Peer & Crowdfunding; Incubators and Venture Capital; Debt; Capital Markets; Sustainable Investment Strategies; Green Bonds
Economic Instruments	Taxes; Fees and Charges; Tradable Permits; Fines and Penalties; Compensation and Offsets; Deposit-refund Schemes; Subsidies
Public Financial Management	Public Fiscal Planning, Budgeting and Disbursement; Fiscal Transfers; Government Grants; Subsidy reform; Earmarking Revenues for Nature
Financial Efficiency	Management Effectiveness; Public Private Partnerships (PPP); Integrated Accounting; Mainstreaming Biodiversity in Development
Business and Markets	Supply Chain; Nature-Based Enterprise; Voluntary Offsets
Risk Management	Insurance Products; Pay for Success; Blended Finance

\*Adapted from the Conservation Finance Alliance Guide, <https://www.conservationfinance.info/>

## The emerging role of nature markets

Nature markets are emerging as a new way to finance solutions that incentivise and scale up the conservation and restoration of natural resources, while also providing a source of revenue for landowners and communities. These markets enable the buying and selling of ecosystem services, such as carbon sequestration, water quality, and biodiversity, and operate based on the principle that natural resources and ecosystem services have economic value, and that this value can be monetised through market transactions.

In a nature market, buyers purchase credits or offsets that represent the environmental benefits generated by a particular project or initiative. For example, a city could purchase credits to protect wetlands that provide it with clean drinking water. These credits would typically be certified by third-party organisations to ensure that they represent real and additional environmental benefits. In addition, nature markets can be seen as a way to align economic incentives with environmental goals: by putting a price on ecosystem services, they provide a market signal that encourages the conservation and restoration of natural resources. They may also create a demand for nature positive products and services, which can drive innovation and promote the development of more sustainable business models. While still in a developmental stage, these markets are growing rapidly, and are likely to play an important role in promoting a transition towards a more sustainable and regenerative economy.

These developments are enabling a wide range of new entrants to participate in the market as suppliers or buyers of biodiversity and carbon products. For example, in Australia, the Aboriginal Carbon Foundation together with the Firesticks Alliance, have developed a cultural fire credit that sells cultural fire credit units to prospective buyers and reinvests funds into Indigenous led cultural fire practices which result in biodiversity and community well-being benefits (AbCF 2022).

## Governments can help reduce risk for investors

Governments play an essential role in nature repair and building a regenerative economy, with the introduction of enabling laws and policies being key to creating market demand for biodiversity products and services. Additionally, governments play a crucial role in building market confidence by providing seed financing for nature market start-ups, and unlocking the human resources and capacity needed to repair and steward nature at the scale and speed needed to meet our current global challenges.

Governments operating at various levels are the primary investors in frontline conservation through direct employment of rangers and by supporting community-led ranger programs. Successful government initiatives in this area include Australia's Indigenous Ranger Program and Canada's Indigenous Guardian programs that demonstrate the wide contributions of rangers in managing and protecting their traditional lands and waters and provide numerous benefits to Indigenous communities. Rangers may be employed through government to a wide range of activities including building relationships with communities to address human wildlife conflict and combat poaching, monitor and control invasive species, conduct research and education, mitigate the impacts of climate change, restore degraded habitats, or manage urban landscapes and visitors.

Governments are also responsible for setting the frameworks that provide the essential foundations for success of the work of rangers and other frontline workers while developing the confidence to attract investors. Enabling laws and policies are needed to support the development of nature markets, such as regulations to protect natural resources, incentives for sustainable production practices, and funding for research and development (Appleton et al 2022, Timmins et al 2022). A good example of enabling government policy is Chile's *Derecho Real de Conservación* (DRC) – a breakthrough law developed specifically to accommodate private land conservation in Chile by allowing landowners to voluntarily grant conservation easements on their land (Tepper and Alonso 2010).

Governments also have a role in reducing barriers to investment such as financial risks of new projects and the need to scale-up the investment to deliver substantial or sustainable returns. Governments can help manage risk by providing start-ups with targeted investment into structure, governance, a secure budget for core operations, or other financial guarantees.

Central banks play a role in designing financial products such as green bonds, discount loans, sustainability investment loans, performance payments that help manage risk and open opportunities for investors (WBG 2020). Blended financial solutions might include government, philanthropy, and private investment into draw-down trusts or endowments that enable recipients to establish self-financing enterprises or trade platforms. Brokers can match the risk profile of projects and the risk appetite of investors and help shape the solutions (WWF 2022b, TNC 2019).

Investors will need to work with suppliers to expand biodiversity conservation and regeneration programs to achieve the necessary scale of investment required to mobilise finance for nature recovery. Scaling will face additional challenges because unlike global climate change, biodiversity is place-based, and scaling-up will require aggregation of place-based projects and cross-jurisdictional partnerships (see example in Box 2). To reach scale, public-private partnerships where government provides supportive structure, enabling policies and start-up funding or other incentives will be required (CFN 2017, CPIC 2022b, TNC 2019).

## Box 2: Coast Funds – Investing in Stewardship

“We envision a world where First Nations exercise their inherent rights to self-determination, ensuring healthy and thriving communities and ecosystems for generations to come.”

Coast Funds, created in 2007 as part of the Great Bear Rainforest agreements in Canada, is an Indigenous-led conservation finance organization and a globally recognized model of permanent conservation financing that invests to strengthen the well-being of First Nations and support land stewardship efforts. The Fund is structured as two separate organisations managing nearly CDN\$120 million provided by six private foundations, the Province of British Columbia and the Government of Canada and guided by a board of directors who report to members representing the interests of participating First Nations and original funders. With this financing, First Nations are building sustainable local economies and conserving their homelands for the benefit of current and future generations.

Further information: [www.coastfunds.ca](http://www.coastfunds.ca)

## Global frameworks for standardised measurement

Beyond consideration of corporate risk, business is increasingly relying on standardised measurement for trade, including biodiversity and ecosystem units and verified fair distribution of benefits to communities (EA and TNC 2020, IUCN). To this end, investors are forming coalitions for action, including the Partnership for Biodiversity Accounting Financials, the Finance for Biodiversity Pledge, Nature Action 100, and the Coalition for Private Investment in Conservation (CPIIC 2021). Several global initiatives are working to develop frameworks for businesses to measure their impact and dependencies on nature. These initiatives, reporting frameworks and standards recognise the importance of incorporating natural capital considerations into business decision-making processes and aim to provide businesses with the tools and guidance they need to do so.

One such initiative is the Task Force on Nature-related Financial Disclosures (TNFD), which was launched in 2019 by a group of financial institutions, companies, and NGOs. The TNFD is developing and delivering a framework for businesses and financial institutions to disclose and manage their nature-related risks and opportunities. The framework incorporates recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), which provides guidance on how companies can disclose their climate-related risks and opportunities. Another initiative is the Natural Capital Protocol (NCP), developed by the Natural Capital Coalition in collaboration with businesses, governments, and NGOs. The NCP provides a standardised framework for businesses to measure and value their impacts and dependencies on natural capital. It is designed to help businesses identify risks and opportunities associated with natural capital and make more informed decisions that account for the value of nature.

The Science Based Targets initiative (SBTi) drives ambitious climate action in the private sector by providing a clearly defined pathway for companies to set science-based emissions reduction targets, helping prevent the worst impacts of climate change and future-proof business growth. The Global Reporting Initiative (GRI) Standards are a widely used framework for sustainability reporting that provide guidance on how companies can report on their impacts and dependencies on natural capital, and how they are managing these risks and opportunities.

At a national and regional level, governments are also developing policy frameworks to monitor biodiversity and incentivise nature repair. Financial institutions are designing loans and debt products to incentivise nature positive enterprise and increasingly investors are focused on sourcing nature positive projects that deliver environmental and social impact alongside profit (Banhami-Zakar et al 2022).

# THE ECONOMIC CASE FOR INVESTING IN NATURE THROUGH RANGERS

---

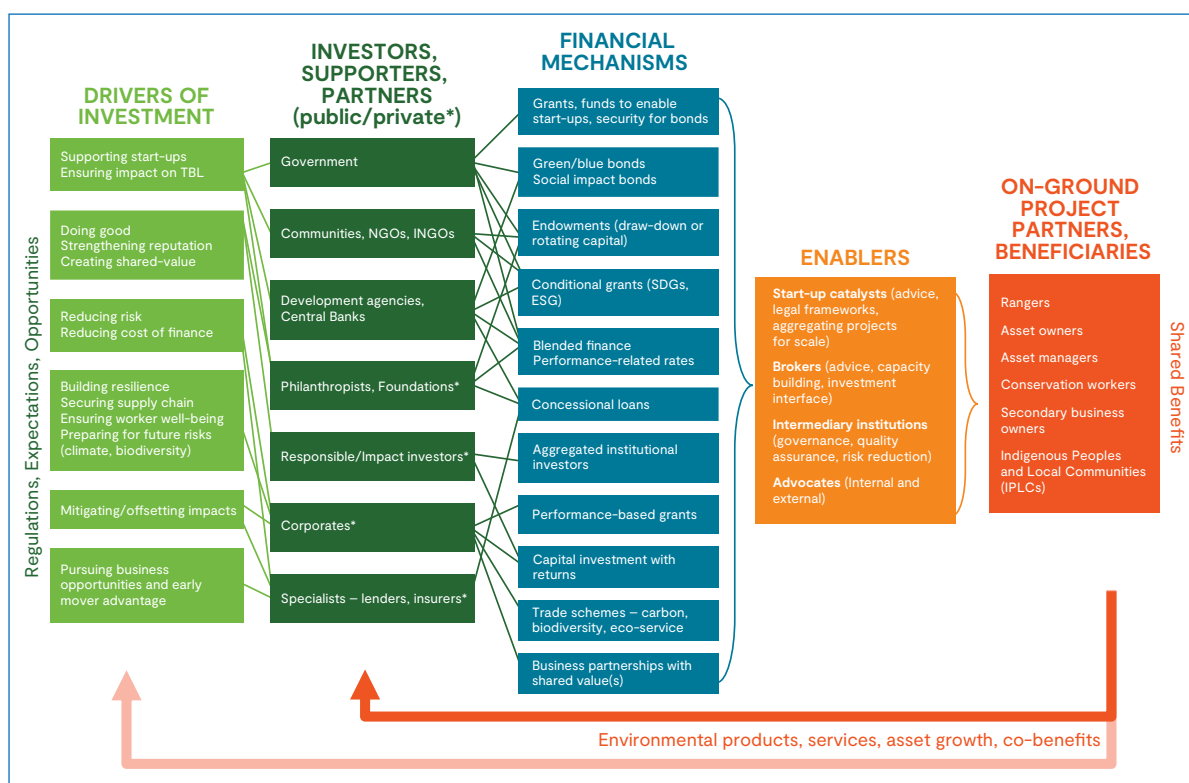
## The investor and partnership ecosystem

The investor-partner ecosystem refers to the network of individuals, organisations, and institutions that must work together to provide funding, expertise, and other resources to support sustainable development and address social and environmental challenges. This ecosystem is made up of several parts including a range of motivations, or drivers, for investment in environmental work (such as regulatory environment, risk management, business development opportunities); different types of investors (such as government, corporates, philanthropists); a diverse array of financial mechanisms (such as grants, bonds, endowments); other key players such as brokers and intermediaries, and on-the-ground partners and beneficiaries (such as rangers, Indigenous communities, other conservation workers) (Figure 4).

Drivers of investment vary across the players, with some motivated by an obligation to contribute to nature restoration (effectively a business tax); or to reduce risk and mitigate or offset damage; to build resilience in a changing operational environment; and/or to seek new business opportunities through new partnerships (“LBIN” by Tobin et al 2021). Beyond financial returns, investors in nature markets may also benefit from a range of social and environmental returns (WWF 2022b). Nature markets can provide social benefits with increased opportunities for local communities to participate in sustainable economic activities, improved ecosystem services, and contributions to cultural and spiritual values. Investing in nature markets can enhance a company’s reputation and brand image by demonstrating a commitment to sustainability and responsible business practices. A motivated business or investor may promote collaboration and partnerships between nature market stakeholders, such as private companies, non-governmental organisations, and local communities, to foster cooperation, coordination, and sharing of knowledge and expertise.

There are several valuable resources that can navigate through the growing list of financial mechanisms. Both WWF (2022b) and “The little book of investing in nature” (LBIN 2021) provide summaries of the options for conservation finance and suggestions for ways to unlock private finances. The Conservation Finance Network (2017) provides a toolkit for investment with examples of financial returns and IUCN (2022) reports on the foundations of nature-based markets, especially those that lead to nature positive and equitable outcomes. CPIC (2022a) looks at biodiversity credits and the role of development banks in setting standards and access to finance. BIOFIN (2019) considers the significant role of central banks and conservation and reflects on how governments and other institutions need to build the foundations for unlocking private finance. UNEP (2021) reviewed financing the solutions for 2030 and how the public sector needs to help manage the risks for private sector in emerging markets.

Figure 4: A simplified view of the “investor-partner ecosystem”



## BUILDING THE ECONOMIC CASE FOR INVESTING IN NATURE THROUGH RANGERS

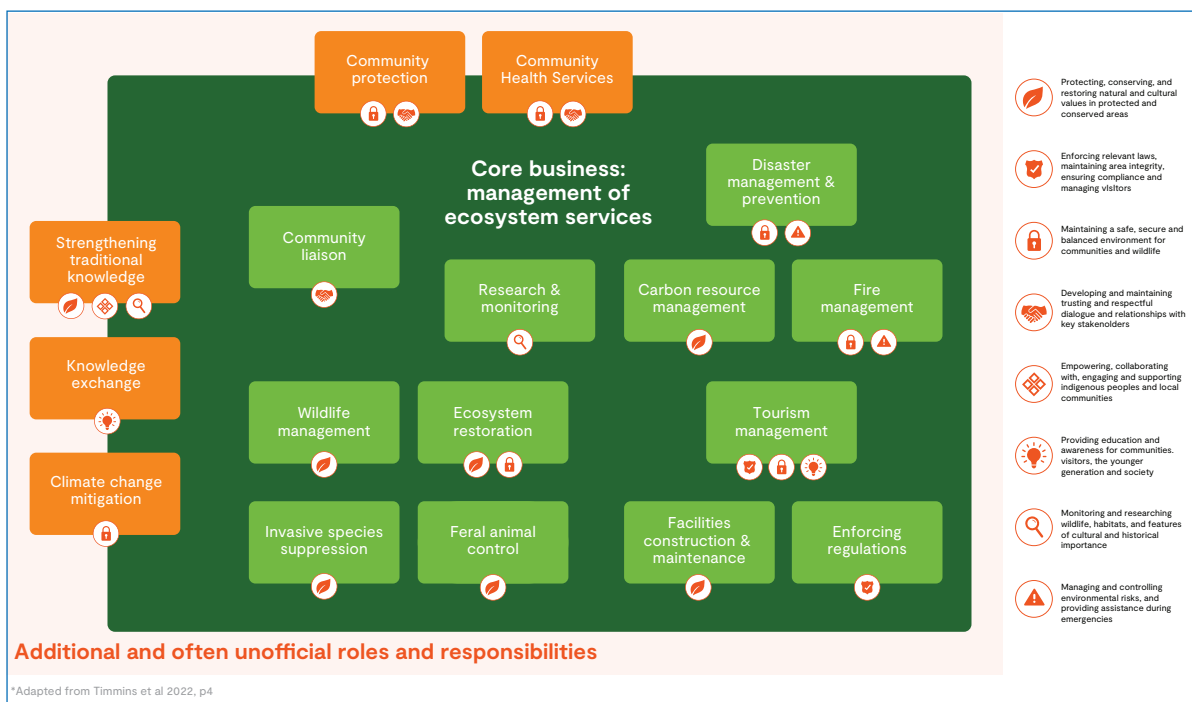
### The role of rangers in conservation and sustainable development

There is growing recognition of the vital role of rangers and other frontline workers including IPLCs in conserving, managing, and restoring natural resources. Their contributions extend far beyond this to protecting cultural assets, securing natural infrastructures that are essential for business, social development, and stability of communities (Woodside et al 2021). This includes protection of watersheds, reefs, wetlands, and coastlines as well as facilitating the flow of ecosystem services such as fresh water, forestry, and fisheries. In addition, rangers help mitigate natural hazards such as fires, floods, and human-wildlife conflict, while simultaneously creating opportunities for education, recreation, and tourism. Figure 5 explores some of the contributions of rangers to achieving conservation and development goals, a complex array of multifaceted contributions that has led to their description as “essential planetary health workers” (Timmins et al, 2022).

As each country strives to achieve the ‘30 by 30 target’ of the new global biodiversity framework, rangers will assume an even greater importance. This target aims to effectively conserve and manage at least 30 per cent of terrestrial, inland water, and coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, by 2030. The ‘30 by 30 target’ is deemed the minimum necessary required to sustain biodiversity and the essential ecosystem services that benefit humanity and overall planetary health. To avoid the risks of ‘paper parks’ (areas designated as protected areas on paper that have little or no real protection of natural resources on the ground). As mentioned previously, to accomplish the 30 by 30 target, the frontline ranger workforce will need to expand significantly by 3 to 5 times, from an estimated 286,000 to 1.5 million people (Appleton et al 2022). There will be a need for greater investment in the management of protected and conserved areas, community managed areas, and integrating environmental improvements into ‘working landscapes and seascapes’ such as those used by agriculture, forestry, fisheries mining, and recreation, as well as supporting the communities that live in and near these areas.

To achieve and sustain this increased investment will require more than the government schemes and philanthropic grants that have conventionally supported rangers, and attracting private sector investment is one solution to address this financial need. Earlier in this paper we outline how business is changing to support investment in a regenerative and nature positive economy; a key challenge is to attract some of this new investment to support the work of rangers and other frontline workers and communities on the ground.

**Figure 5:** The diversity of ranger roles and responsibilities (both official and unofficial)



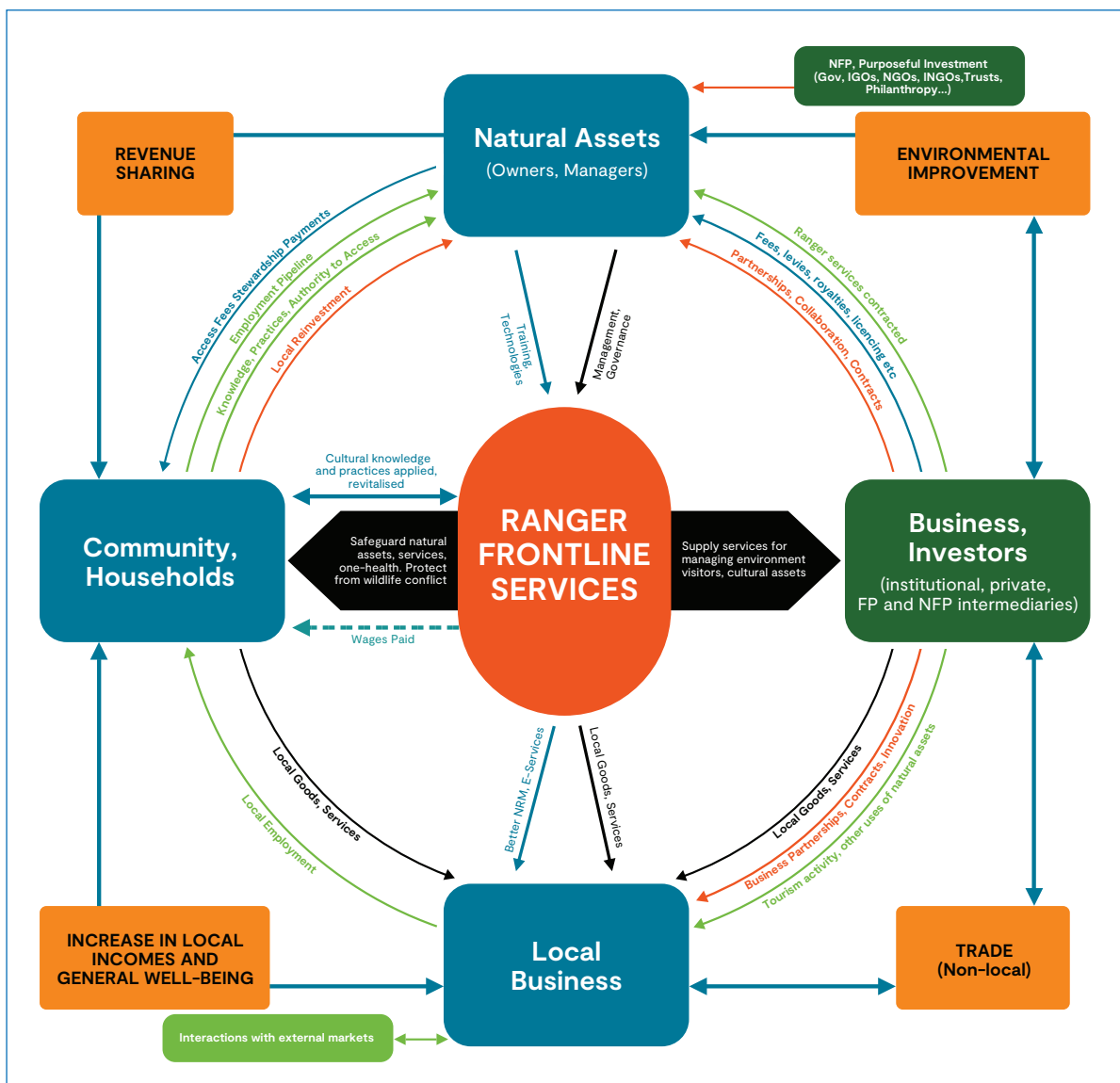
## Rangers as economic multipliers in a nature-based economy

In a nature-based economy, rangers are both key contributors and beneficiaries with significant influence on local economies. The schematic in Figure 6 highlights four key areas where rangers and other frontline workers play central roles in delivering outcomes – environmental, local economy, social well-being, trade, and business development. These relate to key Sustainable Development Goals (SDGs), quantifiable aspects of tradable units (using scientifically standardised measurement, IWG-TNFD 2021), fulfillment of impact investment criteria (PRI 2021), achievement of philanthropic goals or fulfillment of government policy discussed earlier.

To further evaluate the contribution of rangers and their economic multiplier effects we have applied a simplified version of the Local Economy-Wide Impact Evaluation (LEWIE) method (Taylor and Filipski 2014) as shown in Figure 4. The resulting schematic is a map of economic flows and contributions, both direct and indirect that result from investment in frontline conservation services. It highlights pathways that delivers broader environmental, social, and economic outcomes and provides revenue sharing with locals while also increasing community well-being. These impacts and their multiplier effects can be measured as a return on investment (ROI) made at several points along these pathways. A similar approach was used to compare the economic benefits of tourism activities for local communities in five different protected areas (WBG 2021). In our application of this framework, we show that the impact of rangers and other frontline workers can be ‘unpacked’ and ultimately measured.

The economic flows and wider contributions of rangers are indicated by arrows. The schematic shows that local communities benefit directly from investments in rangers through improved household incomes and employment opportunities and healthier environmental conditions that support food production systems, access to water, and mitigation of risks from natural hazards. In some communities, rangers are the primary source of employment, and their income is critical in stimulating financial flows. Their income supports both local or remote business interests through purchasing power and provision of services. They may form project-based partnerships with businesses (e.g., tourism or carbon farming) that may attract additional services into the community and involve brokers and intermediaries. For business, they may reduce key environmental risks, enhance natural capital that can become tradeable or conduct research that supports critical management of natural assets, making these areas attractive for both public and private investment. Rangers frequently work in collaboration with local communities, NGOs, and government agencies to deliver programs and in so doing, channel additional external funding to local communities while also transferring key skills and knowledge. Additionally, rangers also provide a mechanism for two-way sharing of scientific, indigenous, and local knowledge and are distributors of both social and economic benefits locally with intergenerational value.

**Figure 6:** Economic flows and outcomes enriched by employment of rangers and other frontline workers. Many of the interactions between rangers and the business sector are assisted by brokers and other intermediaries.





## Case study analysis: rangers deliver strong returns on investment

An analysis of 15 case studies demonstrates the potential environmental, social, and economic value created by engaging rangers and other frontline workers, and the multiplier effects stimulated by employment of workers and local community. Table 1 summarises estimates for ROIs for these studies. In several cases, Social Returns on Investment (SROI) methodology has been used to estimate the value created by rangers (and equivalents) by restoring environmental infrastructure of communities and the value of avoiding detractors such as conflict and poor health. Both government, philanthropists and private investors received significant ROI and social impact.

The values for returns in these case studies varied from at least 1.1 to more than 40:1, depending on the nature of the investment and the assumptions made in generating the estimates. In some cases, the value created was directly related to recovery of natural capital and products that were then traded, in others it included the value of local employment leading to tax contributions, or the creation of new trading enterprises attracting external partners and funding.

Determining the full value of rangers to investors and their local communities will require dedicated pilot studies where the estimates for ROI include the full breadth of their contribution as conceptualised in Figure 5. Estimates for ROI need to include their roles in conserving and restoring nature, their roles in protecting cultural assets and built capital, contributions to providing flows of ecosystem services that support social development and stability of communities, mitigating natural hazards (including fires, floods, and human-wildlife), and enabling opportunities for education, recreation, and tourism. An estimate of value may also be considered for their wider contribution to social cohesion, broader environmental health as outlined by Timmins et al (2022) and Singh et al (2021). Indeed, a more standardised methodology would enable comparison of the contributions of rangers in different settings and could be used to motivate both public and private investors.

## Proven pathways for investing in rangers and delivering returns

As elaborated above, achieving the 30 by 30 target will require mobilising large scale private finance in NbS on the ground, and thus investing in a large ranger workforce (Appleton et al 2022). A further exploration of 14 case studies in Table 2 presents some of the various pathways that have been used to ensure funding successfully reaches the frontline workers, while also accruing valuable returns for investors in line with their investment goals. Financial mechanisms explored include grants, green and blue bonds, trust funds and self-sustaining business models. Support for these projects often relies on a mix of startup investment that includes enabling government policy and programs that provide grant funds for start-up costs and incubation programs; start-up funding from philanthropists and NGOs; engagement with central banks and development agencies; and strategic facilitation and nature product structuring provided by various intermediaries (WWF 2022a, b; UNEP 2021).

It is important to consider governments as key investors at all stages and levels of conservation programs. Governments are currently the largest direct employers of and/or investors in rangers supporting rangers working within the boundaries of protected areas (PAs) or outside PAs in Other Effective Conservation Mechanisms (OECMs, i.e., areas that are achieving the long term, in-situ conservation of biodiversity outside of PAs such as agricultural landscapes and sea scapes). Private industry also directly employs or contract ranger services, and this may be a growing source of finance as private entities invest in natural capital and biodiversity services.

Connection pathways between investors and rangers will vary depending on financial motivation, appetite for risk and partnership readiness. Pathways may be different for impact investors working directly with on-ground projects; responsible investment working with a portfolio prepared by other retailers; revenue seekers looking for long-term business partnerships; and those seeking to trade for profit.

However, to date, financial pathways that have proven to be successful in financing ranger work are relatively small scale. As Table 2 shows, they largely rely on philanthropic grants or government schemes to employ rangers, or to contract ranger teams to do specific restoration work on agricultural and other private lands. For the most part, ranger services are included in project budgets which are aimed at managing natural and cultural capital. More thought is needed around ways to scale up the projects and the investment and enhance the productivity and performance of the entire sector. Incremental investment and growth in ranger numbers will not be sufficient. A new approach might be the aggregation of conservation projects and ranger programs across large biocultural regions or jurisdictions to ensure adequate scale to have large conservation impact and a greater attraction to investors.

**Box 3: 10 Deserts Case study: An Indigenous-led partnership for healthy country and people to facilitate change at scale**

The 10 Deserts of Australia is the world's largest connected network of protected areas and spans over 35 per cent of Australia (2.7 million km<sup>2</sup>) across five state and territory jurisdictions. It is a system under threat and vulnerable to the impacts of climate change. The area is of immense cultural value to its traditional owners who have a history of occupation spanning more than 50,000 years. The area is highly diverse, including sand dune deserts, sandstone ranges, woody plains, grasslands and stony 'gibber' deserts, and critically important ephemeral wetlands with ancient river channels that fill only when it rains.

The traditional owners of the deserts work collectively to address key threats to this unique environment through the work of Indigenous rangers and local land managers. Everyone benefits directly from employment and the reinforcement of their traditional knowledge and practices.

The foundations for success include a strong central management structure that is representative and inclusive. The project is widely collaborative, working with many external partners and programs supported by government for the existing Indigenous Protected Areas (IPAs). Collective action is focussed on high-impact interventions to reduce threats and those that could deliver with enduring benefits socially and environmentally.

Achieving greater environmental resilience is essential and the project aims to develop environmental programs that can be scaled up or replicated. It aims to develop innovative environmental policy that can be transferred and new economic models to support change. There is ongoing measurement of environmental integrity, risk reduction and improvements.

Economic benefits are monitored, both direct and indirect, along with the multiplier effect and local "creation of value" to the communities. Strategies are developed for sustainable livelihoods and intergenerational opportunities.

All the lessons are shared globally. The project is supported by philanthropic investment from the BHP Foundation's Environmental Resilience Global Signature Program.

Further information: [bhp.com/foundation](https://bhp.com/foundation)

**Table 1:** Estimates of “value creation” and economic influence of rangers and other frontline of conservation workers. Direct comparisons are limited as these projects involve use of variety of methodologies to arrive at financial return on investment ratio and multiplier effects driven by employment of rangers and community members.

Project	Description	Investments	Created Value and Outcomes	
			Description	Multiplier (ROI, SROI) Estimate
Great Bear Rainforest BC– Canada 2007-21  (Footnote Reference: 1a,b,c)	Sustainable, diverse business venture in First Nations (FN) Territories to build conservation enterprise and capacity. Protect ¼ of the world’s remaining temperate forests, bears, salmon ecology, cultural renewal	Government – Economic Development Fund – CDN \$60m in draw-down fund 2007 Private corporate philanthropy Endowment Fund (\$60m Trust 2007. Earnings reinvested) NGOs – TNC facilitated initial public \$39m as catalyst to leverage more On-going business development, new partnership investment	By 2021 attracted \$370m new investment \$54m earned, 192new FN businesses 1198 new FN jobs (340 ranger-guardians) \$42.5m for 199 FN conservation projects 59 new cultural projects New hydropower for sustainable energy All-age employment, community support	3.1:1 ROI for business  ~5:1 SROI for Gov
Kanyirninpa Jukurrpa (KJ) IPA, Western Australia On-Country Programs of the Martu 2010 – 2020  (Footnote Reference: 2a,b,c)	On-Country program to support Martu Indigenous Desert People to preserve and renew culture, build prosperous, sustainable economy, pathways for youth. Regular monitoring of SROI	Government Grants – AUD \$12.1m start-up Private Grants – \$3.4m Corporate, private, philanthropic Private & NGO In-kind support – \$2.2m – broker funding, building capability/systems Other – \$2.3m revenue from training services and interest earnings	AUD \$55m total value created (to 2014) \$39m (68%) generated by Martu including: \$17m (29%) directly due to Rangers \$48k social/enviro value generated/ ranger \$24k social value generated/community member employment up by 89% Reconnection with country, engaged youth Strengthened on-country practices, sharing traditional knowledge/language	3:1 for Gov \$48k generated per ranger (\$12k/year)
Review of investment in IPAs and Indigenous Ranger Programs  (Footnote Reference: 3a)	Review of the impact and value of government investment in Indigenous Protected Area (IPA) program focusing on Indigenous Rangers land and sea management, employment, cultural heritage, and well-being.			
Warddeken IPA, NT Australia Review of SROI 2009-2015  (Footnote Reference: 4a)	Warddeken IPA was one of 4 case studies reviewed in 2015 using SROI tools	Government – AUD \$10.1m grants, partnerships Private –\$2m- Corp & NGO partners, foundations, trusts, and others Business Revenues – \$4.5m Carbon offset buyers	AUD \$55.4m value created: 53% returned to Gov 22% ROI to Carbon Traders \$3.5k increase with Ranger wellbeing per year 35% returned to community through Rangers Increased employment and tax revenue Reduced income support Increased skills, capacity – transferrable Lower cost of land mgt using local knowledge More confidence, less offending	3.4:1 for Gov
Girringun IPA, Qld Australia Review of SROI 2010-2015  (Footnote Reference: 5a)	Girringun IPA was one of 4 case studies reviewed in 2015 using SROI tools	Government (< 2015 \$13.4m grants, partnerships) Private (to 2014 \$0.5m including NGOs, Partners, Foundations, Trusts)	AUD \$30.9m total value created 48% return for Gov \$3.5k increase value of Ranger wellbeing per year by working on country 40% return to Rangers and community 12% return to other (investors) Improved stewardship through Rangers – culturally based fire management, invasive species control, wildlife habitat recovery	2.2:1 for Gov
Birriliburu/ Matuwa Kurrara Kurrara IPA Western Australia Review of SROI 2011-2015  (Footnote Reference: 6a)	The two IPAs, Birriliburu and Matuwa Kurrara Kurrara were included in one of 4 case studies reviewed in 2015 using SROI tools	Government (< 2015 AUD \$2.8m grants and partnerships) Private (to 2015 \$1m corporate and NGO)	AUD \$8.8m total value created 40% return for Gov 46% return to Rangers and community 14% return to others \$3.5k estimate of value for improvement inf Ranger wellbeing by working on country	2.3:1
Minyumai IPA, NSW Australia Review of SROI 2011-2015  (Footnote Reference: 7a)	Minyumai IPA was one of 4 case studies reviewed in 2015 using SROI tools	Government (AUD \$0.8m grants, partnerships) Private (to 2015 AUD \$1.2 NGO partners, foundations, trusts)	\$1.4m value created 30% return for Gov 46% return to Rangers and community 24% return to others \$3.5k increase value of Ranger wellbeing per year by working on country	1.5:1

Indigenous Guardian Work Canada's Northwest Territories 2009-2016  (Footnote Reference: 8a)	Evaluation of the ROI in guardian programs launched across Canada, by Indigenous Communities including ranger equivalents. Application of SROI tools and principles	Government (2016- CDN \$3.9m grants, partnerships) Private - CDN \$0.24m NGO Partners Community members - CDN \$0.34m	\$11.1m total value created 21% return for Gov 76% return to Rangers and Community 4% return to NGO partners Stronger Indigenous ties to land, culture Increased employment, skills, income Reduced offending	2.5:1
ALFA NT Australia  (Footnote Reference: 9a)	Aboriginal-owned, not-for-profit carbon farming business created by Aboriginal Traditional Owners (TO) in Arnhem Land to engage with the carbon industry. Nine TO groups formed collaboration framed as a joint venture, NFP entity governed by locals	Revenue from environmental services Trade in carbon credits (expanding to biodiversity credits). Contracted. Revenue distributed back to member ranger groups ALFA grants scheme Member ranger groups covered ranger costs Employed 237 rangers and traditional owners in 2020-21	AUD \$10m in new sales, contracts (2021) Multiple land management and social outcomes using traditional fire methods. Renewal of knowledge Integration of remote sensing and advance planning technology and ground management tools 62 Cultural sites protected	>40:1 (Estimate based revenue. Does not include costs)
Mimal Indigenous Land Management Corporation, NT Australia  (Footnote Reference: 10a,b,c)	Mimal Indigenous Lands are managed by an Indigenous corporation that employs rangers and TOs and works to achieve its Healthy Country Plan (HCP)	Government (2021) \$5.3m in for Mimal Rangers (2020-2023) \$719k for IPA Consultation to assist in application for IPA status, delivery of HCP and environment services Other Grants - social programs, women rangers NGO and philanthropists - ranger support especially women ranger program	900% increase in employment (2015-2021) in Bulman and Weemol (Indigenous communities)	3:1 to 5:1
World Bank Review of investment in PAs to support sustainable nature-based tourism  Brazil, Nepal, Zambia, and Fiji 2021  Review based on data available pre-Covid19  (Footnote Reference: 11a)	Review of benefits of investing in PAs - how nature-based tourism impacts economic development, creates jobs, and stem the loss of biodiversity an ecosystem services. More revenue, more investment in PAs		Revenue reinvested in PAs Boost to local incomes	
	Brazil - Abrolhos Marine Park (2018-2019)	Government pays operations (in 2019 US\$455,606) Revenue - (user/visitor fees reinvested)	Revenue reinvested in PAs Boost to local incomes	6.2:1 (ROI on Gov spend) 1.74:1 (local multiplier)
	Fiji's Mamanuca Islands (2018-2019)	n/a	Revenue reinvested in PAs Boost to local incomes	1.83:1 (local multiplier)
	Nepal's Chitwan National Park (2018-2019)	Government pays wages (in 2019 US\$5.7m) Includes payment of army Revenue - (user/visitor fees reinvested)	\$2.5m revenue generated Revenue reinvested in PAs Very large boost local incomes	7.6:1 (ROI on Gov spend) 1.78:1 (local multiplier)
	Zambia's Lower Zambezi Park (2018-2019)	Government pays wages (in 2019 US\$4.2m) Revenue - (user/visitor fees reinvested)	\$5.3m revenue generated Boost to local incomes 7,463 new jobs generated	16.7:1 (ROI on Gov spend) 1.82:1 (local multiplier)
	Zambia's South Luangwa National Park (2018-2019)		28,210 new jobs generated Large boost to local incomes	28.2:1 (ROI on Gov spend) 1.53 (local multiplier)
Rainforest Elephant Project  (Footnote Reference: 12a)	Holistic 'nature credits' developed around keystone species and the ecosystem services they provide - all aspects are monetised  Revenue used to protect and grow biodiversity and prosperity for community	Tradable nature credits/Tokens issued for protection and value of individual animals Individuals or corporate buyers UDS\$1.75m investment Use of block chain technology and 3 <sup>rd</sup> part accreditation to maintain high integrity for social equity, biodiversity, carbon capture	7% increase in carbon capture in forest per elephant Value of elephant \$1.75m if alive; \$40k if dead USD\$136k carbon transformed to date for social good (\$8.5K ranger salaries, \$70k education, \$17.5kMicrocredit for women, \$40k health projects)	4375:1 return for living elephant vs dead \$1.75m value created in e-service per living elephant
Review of protected Area personnel and ranger numbers regarding global biodiversity goals 2022  (Footnote Reference: 13a)	Review of PAs in 176 jurisdictions regarding personnel and rangers against 30/30 CBD 2022 targets. Workforce is only 20% of what is needed. Need 5 times more rangers on the ground	Rangers mostly gov employees in OECMs Govs invest < 36% of funds needed to meet 30% global biodiversity estate	Expanded PAs to 30% will provide additional revenues from OECMs of USD \$64-454b per year  Gross annual production value per ranger/conservation worker would leverage to \$28800-\$204400 per year	3:1 - 9:1 (Est ROI- tbc)  \$28800-\$204400 production value of a ranger per year
The Rhino Bond, South Africa 2022  (Footnote Reference: 14a)	W/Bank (IBRD) developed world first wildlife conservation bond (Rhino bond) Biodiversity Units and Pay-for-Success Model used to finance local rangers and communities in conservation related employment. Model be scaled, replicated	Blended finance portfolio: bonds (5 year \$150m sustainable development bond performance payment GEF backing to address investor risk. Principal redeemed at maturity of bond with performance payments based on standardised measurements	Max performance payment USD\$13.8m over 5 years based on potential population growth	1:1 (Est ROI)

### Footnote References for Table 1

- (1a) Smith M, Sterritt A and Armstrong P (2007) From Conflict to Collaboration: The Story of the Great Bear Rainforest. <https://coastfunds.ca/wp-content/uploads/2016/02/StoryoftheGBR.pdf>
- (1b) Coast Funds (2019)– Reflecting on 10 years of conservation finance <https://coastfunds.ca/wp-content/uploads/2019/06/Talking-Stick-10-Years-of-Conservation-Finance-Spring-2019.pdf>
- (1c) Coast Funds Annual Report (2021) <https://coastfunds.ca/wp-content/uploads/2022/04/Coast-Funds-Annual-Report-2021.pdf>
- (2a) SVA Consulting (2014) Kanyirrinpa Jukurrpa Evaluative Social Return on Investment Report <https://www.kj.org.au/our-impact>
- (2b) SVA Consulting (2018) Investing in Very Remote Aboriginal Communities – A cost benefit analysis. <https://www.socialventures.com.au/assets/Investing-in-Very-Remote-Aboriginal-Communities-A-cost-benefit-analysis-SVA-Report.pdf>
- (2c) SVA Consulting (2021) Think Martu. Think Differently. Act Differently. – Evaluation of KJ against Martu Outcomes. <https://www.socialventures.com.au/work/kanyirrinpa-jukurrpa-10-year-evaluation/>
- (3a) SVA Consulting (2016a). Department of the Prime Minister and Cabinet – Consolidated report on Indigenous Protected Areas following Social Return on Investment analyses. <https://www.socialventures.com.au/assets/Consolidated-SROI-Report-on-IPA-WoC.pdf>
- (4a) SVA Consulting (2016b). Department of the Prime Minister and Cabinet – Social Return on Investment analysis of the Warddeken Indigenous Protected Area and associated Indigenous ranger programme. <https://www.socialventures.com.au/assets/Warddeken-SROI.pdf>
- (5a) SVA Consulting (2016c). Department of the Prime Minister and Cabinet – Social Return on Investment analysis of the Giringun Indigenous Protected Area and associated Indigenous ranger programme. <https://www.socialventures.com.au/assets/Giringun-SROI.pdf>
- (6a) SVA Consulting (2016d). Department of the Prime Minister and Cabinet – Social Return on Investment analysis of the Birriliburu/ Matuwa Kurrara Kurrara Indigenous Protected Area and associated Indigenous ranger programme. <https://www.socialventures.com.au/assets/BB-MKK-SROI.pdf>
- (7a) SVA Consulting (2016e). Department of the Prime Minister and Cabinet – Social Return on Investment analysis of the Minyurnai Indigenous Protected Area and associated Indigenous ranger programme. <https://www.socialventures.com.au/assets/Minyurnai-SROI-Report.pdf>
- (8a) SVA Consulting (2016f). Analysis of the Current and Future Value of Indigenous Guardian Work in Canada’s Northwest Territories <https://www.ilinationhood.ca/publications/report-sva-analysis-of-current-amp-future-value-of-indigenous-guardians-work-in-the-nwt>
- (9a) ALFA (NT) Limited Annual Report 2021 <https://www.alfant.com.au/news/alfa-annual-report-2020>
- (10a) Australian Government National Indigenous Ranger Funding recipients July 2021 <https://www.niaa.gov.au/sites/default/files/indigenous-ranger-program-list-funding-outcomes-july-2021.docx>
- (10b) Australian Government Grant Connect, Grant Award View <https://www.grants.gov.au/Ga/Show/BEABBB01-0B23-0969-584A-B93298BBDA7E>
- (10c) CEO D Nicholls pers com, annual business plan and report
- (11a) World Bank Group (2021) Banking on Protected areas: promoting sustainable protected area tourism to benefit local economies <https://www.worldbank.org/en/topic/environment/publication/banking-on-protected-areas-promoting-sustainable-protected-area-tourism-to-benefit-local-communities>
- (12a) Rebalance Earth 2022 <https://www.rebalance.earth/mission>
- (13a) Appleton, M.R., Courtiol, A., Emerton, L. et al. Protected area personnel and ranger numbers are insufficient to deliver global expectations. *Nat Sustain* 5, 1100–1110 (2022). <https://doi.org/10.1038/s41893-022-00970-0>
- (14a) World Bank (2022) Wildlife Conservation Bond Boosts South Africa’s Efforts to Protect Black Rhinos and Support Local Communities Press Release Mar 2022 <https://www.worldbank.org/en/news/press-release/2022/03/23/wildlife-conservation-bond-boosts-south-africa-s-efforts-to-protect-black-rhinos-and-support-local-communities>

**Table 2: Pathways for funding of frontline workers and custodial communities with examples of nature-based projects with different financial mechanisms.**

Project Title	Description with Ranger engagement	Financial Sources/Mechanisms
Kenya Forest Carbon Partnership, Masai Ranger Group, (REDD+ Readiness Project 2012 – The Chyulu Hills REDD+ Project 2018 – (Footnote Reference: 1a,b,c)	Community-led organisation with rangers conducting NRM, watershed protection, generation of carbon credits, providing wildlife and stock protection services, invasive species control Revenue through services include carbon credits, crop/ livestock protection, visitor education Direct employment of rangers	Domestic government pays for watershed stewardship, e-services User fees for invasive species, anti-poaching, wildlife conflict management Carbon credits revenue Development assistance grants Philanthropy NGO direct and in-kind
Great Bear Canada (Footnote Reference: 2a,b)	Community-led organisation with direct employment Rangers and guardian for NRM, tourism, restoration, research. Second tier businesses in Community organisation employs large ranger-guardian workforce	Draw-down Trust (government funds – federal and provincial) Endowment (private funds, philanthropy) Revenue through sustainable forestry & fisheries enterprise Local government NRM & guardianship fees
African Forest Elephant Conservation (Rebalance Earth) 2021 – (Footnote Reference: 3a,b,c,d,e,f)	Protection of elephants as keystone species providing ecosystem services and biodiversity values locally and globally. Tokens reflect economic value of lifetime, per elephant. 'Rebalance Earth' provides management, measurement, collaborative governance and certified trade platform Direct funding of ranger and community stewards through local organisations, NGOs	Biodiversity tokens (retail) Biodiversity credits 3 <sup>rd</sup> -party accreditation– use of block chain for integrity
Wilderlands Biodiversity Units, Australia 2022 – (Footnote Reference: 4a)	Biodiversity unit (BDU) sales with 3 <sup>rd</sup> party accreditation BDUs provide retail products for individual and institutional investors. Tradeable. Dedicated sites –Indigenous and private landholders Scalable and repeatable scheme	Biodiversity units for biodiversity improvements on 10sqm units (retail) 20yr management and in-perpetuity conservation guarantee Focus on impact investors with long-term returns Not offsets but investment in net- gain for biodiversity Supported by Landowner stewardship agreements, local employment
Firesticks Alliance Biocultural Credits Scheme Australia 2022 (Footnote Reference: 5a,b,c,d)	The Cultural Fire Credits - collaboration between the Firesticks Alliance Indigenous Corporation and the Aboriginal Carbon Foundation Sale of premium value credits that include carbon capture, land management, biodiversity, traditional knowledge 3 <sup>rd</sup> party accreditation Funds distributed to community for well-being programs, ranger employment training	Biocultural Credits (retail) marketed on specialised platform "Catalyst" Insurance company (IAG) 3-year contract for credits as offset and investment.
Arnhem Land Fire Abatement (ALFA) 2009 – (Footnote Reference: 6a,b,c)	Community-led NFP includes 9 members rangers groups contracted for fire management that ensures emission reduction Direct employment of rangers and traditional owners – high returns	Carbon credits (Collaborative trade platform through NFP) Revenue redistributed and reinvested locally NGO and Gov grants
New Forests Sustainable Forest Management (Australian, New Zealand, Malaysia, Indonesia, Laos) 2005 (Footnote Reference:7a,b,c)	Commercial forestry enterprise with integrated shared-benefits model, sustainable forestry (FSC for 800k ha), benefits for community, conservation, nature connectivity, watershed management. 'Net Zero Asset Management', biodiversity pledge, high ESG principles with Biodiversity Pledge Scalable approach extendable to agriculture Forestry Rangers employed, trained	Retail business- high co-benefits and conservation impact USD\$6b assets of high value. institutional investors (pension funds, sovereign wealth funds, and development finance institutions, individuals)
Wetland Restoration South Australia (SA) 2021- (Footnote Reference: 8a)	Coastal wetlands restoration across SA's 'emerald coastline' innovative new 'blue carbon' finance projects that leverage government funds (Emissions Reduction Fund) with private donation	Blended finance (Blue Carbon Finance Project) Government Fund (catalytic and operational) Philanthropic donations

Insurance sector protecting sustainable infrastructure and strengthening resilience of natural infrastructure. Focus on contribution of on reefs, (Caribbean) and mangroves, northern Australia 2020 (Footnote Reference: 9a,b,c,d)	Insurance sector working on pilot projects and research to value natural infrastructure, reduce risks/cost/intensity of crises and to protect economy Employment of rangers and locals to protect, restore and monitor natural infrastructure	Public-private partnerships to protect and build resilient infrastructure and reduce systemic risk. Private funding (research and pilot projects)
The Rhino Bond, South Africa 2022  (Footnote Reference: 10a,b)	W/Bank (IBRD) – world first wildlife conservation bond – Rhino bond – 5 year \$150m sustainable development bond with performance payment and backing from GEF which helps address investor risk Can be scaled up and replicated	Blended finance Pay-for-success model (performance payment with principal on maturity) Bonds finance local rangers and communities in conservation related employment
Sustainable Fisheries Seychelles 2018 (Footnote Reference: 11a)	Gov partnership with the World Bank for sustainable marine fisheries. GEF (\$5m) concessional loan to de-risk the sovereign blue bond	Blended finance Seychelles' sovereign Blue Bond Investors receive performance guarantee
Solomon Islands, Fiji, Vanuatu - Sustainable community-led forestry 2015-  (Footnote Reference: 12a)	Communities engage with Nakau business group to deliver small scale sustainable forest carbon projects based on standardised methodology and traditional knowledge to ensure accredited carbon sales guaranteed local benefits. Employment and training of forest rangers, women business groups and PAs	Blended finance Green Bonds Development Assistance grants NbS grants (WWF-A with DFAT) Private donation Carbon credits
Misool Private Marine Reserve Indonesia, Coral Triangle 2005  (Footnote Reference: 13a,b)	Blue Finance created a new investment facility that aggregates a pipeline of “bankable” high-impact MPA projects. Shared value and benefits scheme Employ rangers to protect reef, monitor fisheries and bycatch, reef restoration	Blue Finance – Private public partnership in fund Concessionary capital for private investors Visitor fees finance local projects and build fund Sustainable enterprise with local revenue sharing
Chumbe Island Coral Park (CICP) Zanzibar Tanzania - 1991 – present  (Footnote Reference: 14a)	Tanzania’s first marine park co-managed with Chumbe Island Coral Park Limited (CHICOP) for marine sanctuary and public education	NFP (using Government grant as catalyst) Visitor fees finance local projects and build fund Re-investment locally Financially self-sustaining since 2000
Bhutan for Life 2017 – 2032 (estimated)  (Footnote Reference: 15a,b)	Support for improved management of network of five PAs. Ensures sustainable livelihoods through multi-value forestry and NRM, climate mitigation and biodiversity projects in rural areas. Direct employment of rangers, other park staff. Community, compensation for loss due to human-wildlife conflict	Blended financing USD\$118m Green Climate Fund (GCF) GCF + grants from public sector Catalytic funds in draw-down trust – growth through domestic government Visitors fees finance local projects and build fund NGO (WWF) support (grants and in-kind)
“WithOneSeed/Replenishing the Planet, Timor-Leste 2010- on-going” (Footnote Reference: 16)	Planting and caring for 1million trees in community co-op model, paid for carbon captured and growth measured Contributes to 10 SDGs, complimentary planting allowed – building community with sustainable livelihoods and sustainable farming, supports life beyond dependence on oil/gas industry, deforestation, and cash cropping	USD600k paid to community 2010- 2021 for 81k tonnes of carbon captured in trees in lieu of other cash crop Program to adopt/sponsor a tree through Climate Changer Program, investment funding potential AUD150k paid in 2021 to one cooperative group of tree farmers – shared benefits, new tech used to measure trees
10 Deserts Project: Indigenous-led conservation and sustainable livelihoods for conservation at scale, Australia 2017- ongoing (see Info Box #3)	Indigenous rangers work with traditional across 10 deserts conservation network – the largest in the world covering 2.7 million km <sup>2</sup> and the largest Indigenous-led conservation network on earth. Use of traditional knowledge and development of sustainable livelihoods and enduring change. Highly monitored environmental change at scale, strong collaborative management, capacity building,	Funded by BHP Foundation Environmental Resilience Global Signature Program- AuD20.9m over 5 years to 2022 Other support from 4 NGOs, 7 Indigenous Corporations, Government IPA program Catalytic funding to support strong management participation, governance, capacity building, leadership, and knowledge sharing. Building sustainable livelihoods and self-funding environmental enterprise

## Footnote References for Table 2

- (1a) Chyulu Hills, REDD+ Carbon Project 2022 <http://maasaiwilderness.org/wp-content/uploads/2016/04/CHRP-Deck-2022.pdf>
- (1b) Maasai Wilderness Conservation Trust <http://maasaiwilderness.org/programs/carbonproject/>
- (1c) Chyulu Hills REDD+ Project Monitoring & Implementation Report 2016 [http://verra.org/wp-content/uploads/2016/11/CCB\\_IMP\\_REP\\_1408\\_19SEP2013\\_31DEC2016.pdf](http://verra.org/wp-content/uploads/2016/11/CCB_IMP_REP_1408_19SEP2013_31DEC2016.pdf)
- (2a) Tjornbo, O. (2010). Case Study: The Great Bear Rainforest. University of Waterloo, SiG@ Waterloo Case Study. [https://www.academia.edu/1198431/Case\\_Study\\_The\\_Great\\_Bear\\_Rainforest](https://www.academia.edu/1198431/Case_Study_The_Great_Bear_Rainforest)
- (2b) McGee, G., Cullen, A. & Gunton, T. A new model for sustainable development: a case study of The Great Bear Rainforest regional plan. *Environ Dev Sustain* 12, 745–762 (2010). <https://doi.org/10.1007/s10668-009-9222-3>
- (3a) Hawkins, F., Kiss, E and Baralon (2022?) Biodiversity Credits: a turning point for nature. Coalition for Private investment in Conservation (CPIC) <http://cpicfinance.com/blog-part-2-biodiversity-credits-a-turning-point-for-nature/>
- (3b) Voshmgir S (2021) Token Kitchen Biodiversity Tokens: Rebalance Earth <https://token.kitchen/biodiversity-tokens-rebalance-earth>
- (3c) <https://www.iadb.org/en/environment/natural-capital-lab>
- (3d) <https://convocatorias.iadb.org/en/bid-lab/digital-tokens-biodiversity>
- (3e) <https://www.iadb.org/en/news/idb-lab-announces-results-its-digital-tokens-biodiversity-challenge>
- (3f) <https://www.cbd.int/financial/mainstream/idb-platform.pdf>
- (4a) <https://wilderlands.earth/stories/new-platform-to-protect-australias-biodiversity-one-square-metre-at-a-time/>
- (5a) <https://www.abcfoundation.org.au/>
- (5b) <https://www.firesticks.org.au/philosophy-and-guidelines/>
- (5c) <https://www.insurancebusinessmag.com/au/news/breaking-news/iag-to-develop-new-first-nations-led-carbon-farming-projects-412401.aspx>
- (5d) Cultural Fire Credit – Philosophy and Guidelines. <http://www.firesticks.org.au/cultural-fire-credits/>
- (6a) Ansell, J., Evans, J, Adjumarllar Rangers, Arafura Swamp Ranger, Djelk Ranger, Jawoyn Rangers, Mimal Ranger, Numbulwar Numburindi Ranger, Warddeken Rangers, Yirralka Rangers and Yugul Mangi Rangers (2020). Contemporary Aboriginal savanna burning projects in Arnhem Land: a regional description and analysis of fire management aspirations of Traditional Owners. *Inter J Wildlife Fire* 29: 371-385 <https://doi.org/10.1071/WF18152>
- (6b) <https://www.aspistrategist.org.au/reaping-the-social-benefits-of-carbon-farming-in-northern-australia/>
- (6c) [https://www.tasmanenvironmental.com.au/wp-content/uploads/2021/09/ALFA-ANNUAL-REPORT-2020\\_email.pdf](https://www.tasmanenvironmental.com.au/wp-content/uploads/2021/09/ALFA-ANNUAL-REPORT-2020_email.pdf)
- (7a) <https://newforests.com.au/wp-content/uploads/2021/04/SR2020.pdf>
- (7b) <https://newforests.earth/wp-content/uploads/2021/11/NFC-FY21-Sustainability-Report.pdf>
- (7c) <https://newforests.com.au/wp-content/uploads/2021/04/Materiality-Supplement.pdf>
- (8a) Billy, V. (2021) Gem of a partnership set to save South Australia's Emerald Coast <https://www.natureaustralia.org.au/newsroom/partnership-to-save-emerald-coast/>
- (9a) Tercek, M. 2017 (Speech) Insuring Nature, Ensuring Resilience <https://www.nature.org/en-us/about-us/who-we-are/our-people/mark-tercek/insuring-nature--ensuring-resilience/>
- (9b) IISD Bechauf, R (2020) Building the Investment Case for Nature-Based Infrastructure - The role of insurance solutions <https://www.iisd.org/articles/investment-case-for-nature-based-infrastructure>
- (9c) <https://www.iisd.org/articles/press-release/new-initiative-supports-nature-based-infrastructure-climate-adaptation>
- (9d) [https://www.globalinfrastructure.org/sites/gif/files/2022-10/IWG%20Global%20Stocktake%20Report\\_final\\_v2.pdf](https://www.globalinfrastructure.org/sites/gif/files/2022-10/IWG%20Global%20Stocktake%20Report_final_v2.pdf)
- (10a) World bank (2022) Wildlife Conservation Bond Boosts South Africa's Efforts to Protect Black Rhinos and Support Local Communities Press Release Mar 2022 <https://www.worldbank.org/en/news/press-release/2022/03/23/wildlife-conservation-bond-boosts-south-africa-s-efforts-to-protect-black-rhinos-and-support-local-communities>
- (10b) World bank (2022) Wildlife Conservation Bond Boosts South Africa's Efforts to Protect Black Rhinos and Support Local Communities <https://www.worldbank.org/en/news/press-release/2022/03/23/wildlife-conservation-bond-boosts-south-africa-s-efforts-to-protect-black-rhinos-and-support-local-communities>
- (11a) <https://www.worldbank.org/en/news/press-release/2018/10/29/seychelles-launches-worlds-first-sovereign-blue-bond>
- (12a) NAKAU <https://www.nakau.org/about.html>
- (13a) <https://www.misoolfoundation.org/misool-marine-reserve>
- (13b) <https://blue-finance.org/>
- (14a) Dodds, R. (2012) Ecotourism education and marine conservation: the case of Coral Park Chumbe Island, Zanzibar. *Téoros* [https://www.academia.edu/8507651/Ecotourism\\_education\\_and\\_marine\\_conservation\\_The\\_Case\\_of\\_Coral\\_Park\\_Chumbe\\_Island\\_Zanzibar](https://www.academia.edu/8507651/Ecotourism_education_and_marine_conservation_The_Case_of_Coral_Park_Chumbe_Island_Zanzibar)
- (14b) <https://blue-finance.org/>
- (15a) <https://www.greenclimate.fund/project/fp050>
- (15b) WWF (2016) Bhutan for life storybook. [https://drive.google.com/file/d/1YR7G37n0Jk3zTpD1L\\_CNVKN551HZX1Gt/view](https://drive.google.com/file/d/1YR7G37n0Jk3zTpD1L_CNVKN551HZX1Gt/view)
- (16) <https://withoneseed.org.au/>
- (17) <https://www.bhp.com/foundation>



# BUILDING INVESTOR CONFIDENCE WHILE BUILDING CAPACITY OF THE RANGER SECTOR

---

## Building capacity and confidence

Greater investment and recognition of rangers will help improve their professional and organisational performance, their efficacy in conservation programs on the ground, and their attraction to investors. Recognising the role that rangers play in tackling global challenges and including them in discussions about the future development of the sector will help ranger organisations to build confidence and capability, and consequently build greater investor confidence (Figure 7).

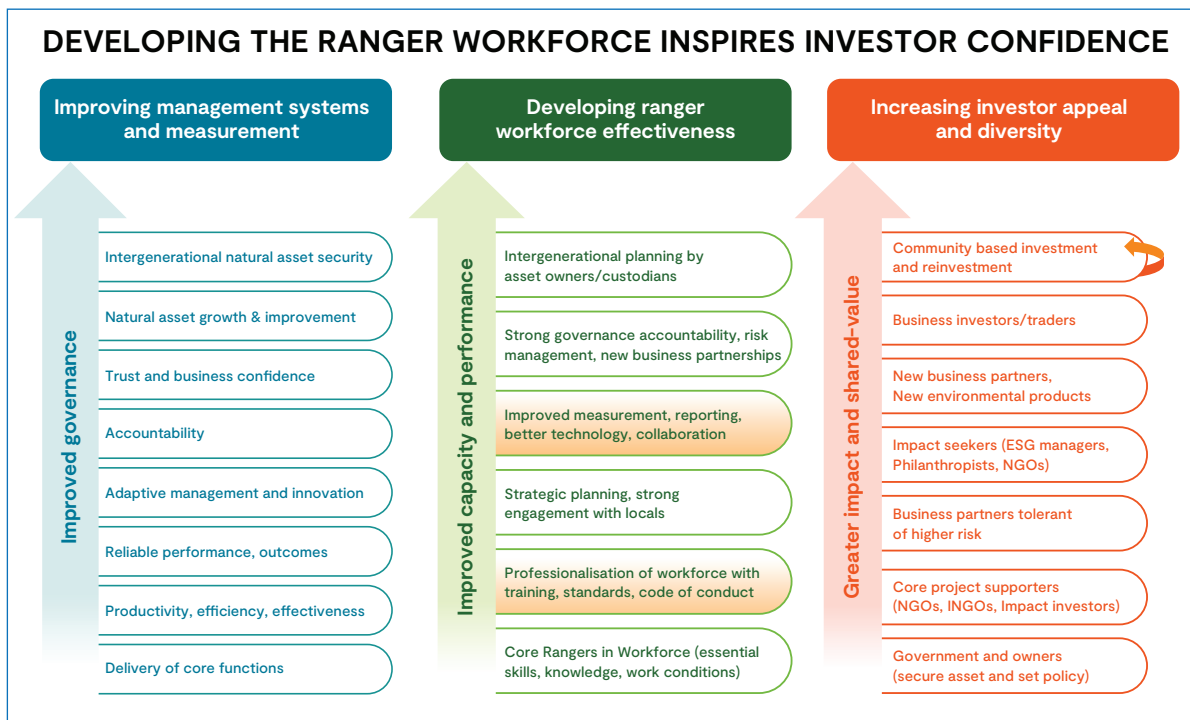
To build confidence, investors require transparency in terms of rangers' operations, regular reporting regarding impact of ranger activities and accountability for the use of funds. This requires a well designed strategy for capacity building at many levels (Woodside and Vasseleu 2021). Figure 7 demonstrates how the stages of development and maturation of the ranger workforce from basic performance of assigned duties, to well-governed entities capable of engaging with business partners or with other ranger groups to form coalitions. Each stage in development builds investor or partner confidence, partnership readiness and reduces partnership risks. These partnerships and investments can be facilitated by intermediaries and brokers that unlock capacity and facilitate relationships which further reduces risk for investors.

## Challenges that need to be addressed

There are at least five major challenges ahead for the ranger sector for it to optimise its relationship with both public and private investors:

- Developing within the ranger sector the necessary depth of capabilities, structural maturity, and responsiveness to build the confidence of investors. Existing regional associations provide one potential mechanism to address this challenge. The sector is working to establish global standards (IRF CoC 2022), improve performance and support underfunded regions, and implementing a global Action plan (URSA 2020) to achieve the aims of the Chitwan Declaration (2019).
- Building ranger confidence in fulfilling their roles as planetary health workers (Timmins et al 2023). Build the 'Planetary Health Worker' brand to attract strong candidates and committed locals entering the profession. A global brand might help develop a positive culture and outlook especially where ranger well-being and on-ground support has been poor.
- Expanding the ranger sector by 5 times (500%) in a short period to meet the demands of the '30-by-30 target' while seeking new investment to do so. Few industries will ever face such a great challenge: it is like building the plane while flying it!
- Platforms to measure and publicly report performance and contributions to all the areas that the ranger profession influences and celebrate these achievements while using them to attract attention and investment.
- Design and implementation of pilot programs that test ideas of effective investment, collaborative arrangements across regions to build scale, measurements of success and return on investment, and the benefits to local communities.

**Figure 7:** Stages of development of ranger organisations and the wider sector that build levels of self-confidence, performance and accountability and consequently build confidence of potential investors.



## STRENGTHENING THE ROLE OF ENABLERS: CATALYSTS, BROKERS, INTERMEDIARIES AND ADVOCATES

### The role of critical enablers

Enablers play a vital role in the success of many conservation programs and in the effective engagement of rangers and other frontline workers (WWF 2022a,b, UNEP 2021). Often invisible, they are the organisations that work in the middle (Figure 8). They help build the capacity of the system and bring key players and resources together. They facilitate the conservation projects by matching them with funding bodies and financial instruments. "Catalysts" can play essential roles by providing initial stimulus for start-up projects, assisting with early design, securing initial funding, and helping to shape the governance structure. Others serve as "brokers", introducing the various players to each other and highlighting shared values and potential for value creation. These organizations may help to identify credible values-aligned partner opportunities, set up partnership agreements, provide due diligence, and facilitate communication and collaboration between groups. Others may serve as on-going "intermediaries" providing advice on corporate structure and governance, verification services, or serve as trusted platforms for trade activities. They may also provide the structures to aggregate and support scale up, such as through regional coalitions. "Advocates" inform investor and other stakeholders of programs and benefits that are shared with communities.

An example of an organisation in this role is ALFA (Arnhem Land Fire Abatement Ltd), a non-profit company established to make a financial return from savanna fire management. ALFA provides the corporate structure for a coalition of nine indigenous organisations wanting to engage with the business of carbon trade using their cultural fire management systems and optimises the benefits back to their communities. Operating at the intersection of customary domains and Western governance, ALFA supports carbon emission avoidance activities of Aboriginal ranger groups and traditional landowners, who deploy both customary and Western fire management approaches at a large regional scale. It also manages the Australian Carbon Credit Units earned, selling them to corporate or government purchasers, or saving them for later sale (Altman et al 2020).

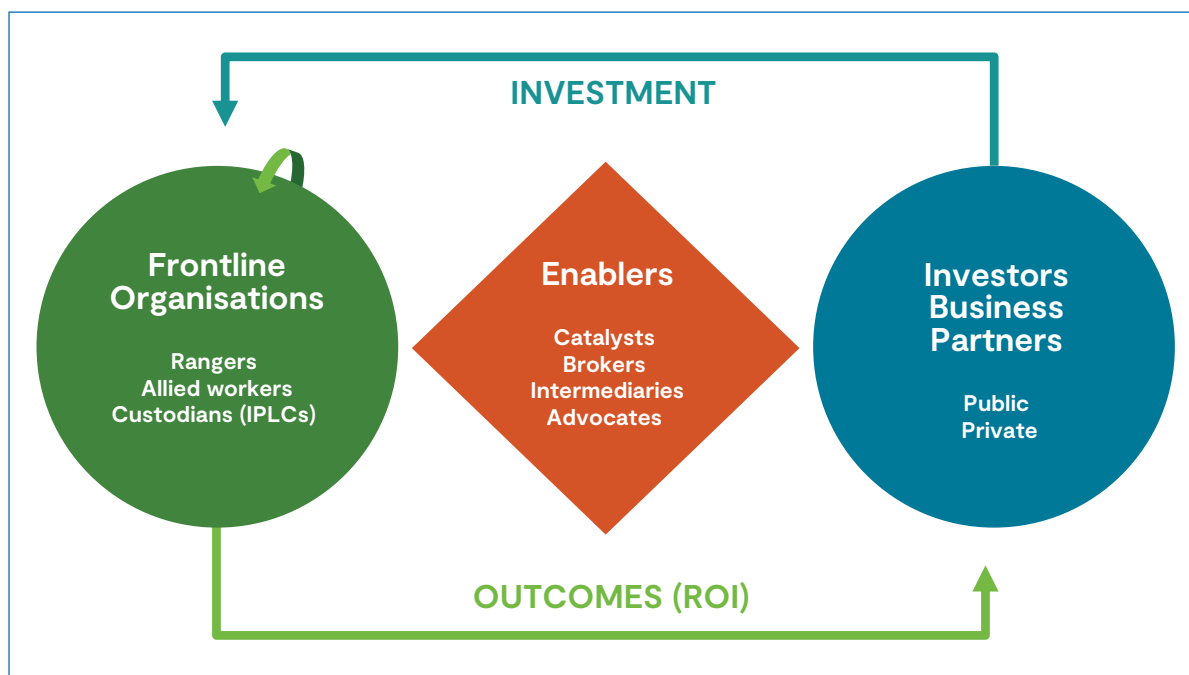
## Enabling the enablers

A major contribution from the “middle players” is through their ability to speak the language of both the community and the investor, whether public or private. They can understand, identify, and help manage the risks perceived by each player to stimulate innovative solutions. They play a vital role in early identification of opportunities for partnerships and can follow through with the skills to attract finance, establish structures and influence policy. They are the bridge between opportunities and finance for ranger and other conservation workers on the frontline.

We suggest that the organisations serving as enablers should receive greater recognition as essential contributors to achieving conservation outcomes. Given the challenges for biodiversity recovery and the significant expansion required within the ranger sector, enabler roles will become increasingly important.

It may be useful to develop an industry standard or methodology for this group similar to the core principles of responsible investment (Heath et al 2016). This could help build confidence on both sides of the conservation partnership. Global bodies such as IUCN, UNEP, other international development agencies or central banks may play a part in strengthening this sector and its members.

**Figure 8:** The vital role of enablers in conservation programs



## NEXT STEPS AND RECOMMENDATIONS

---

Rangers and their frontline co-workers are facing increasing demands with pressure to expand their numbers fivefold and integrate the products of their work in a burgeoning nature-based economy. To meet these demands, rangers will need to rapidly assemble a larger, more capable, and more confident workforce; attract new investment to support their work; and regularly measure and report on their impact. Ranger organisations will need to engage effectively with the finance sector who are looking to invest in nature-based solutions, with business looking to reduce nature risk, and governments looking to reach global agreements, in addition to building strong relationships with ethical brokers, intermediaries and other enablers.

In preparation, rangers urgently need to build key competencies and performance measures across their sector, and recognition and recompense for their sector-wide contribution to conservation, community wellbeing, and planetary health. Their organisations will need to find ways to scale up place-based projects to reach landscape-scale and connected corridors to attract large investment. Achieving scale will require testing new models of governance and partnerships that lead to shared benefits with local communities.

We suggest a suite of specific actions that could strengthen the contributions of four key players: Rangers, Governments, Investors and Enablers/Intermediaries.

1. **The Ranger Sector** needs to focus on attracting new talent, strengthening professional capabilities, structural maturity, and responsiveness; building coalitions; and implementing impact measurement tools. Ranger priorities could include:
  - a. Promoting the work of the professional ranger sector internally and externally to build pride and positive reputation, to attract suitable recruits into a growing workforce.
  - b. Reinforcing professionalisation by providing competency-based training and qualifications, development of modern skills and access to technology, and strong management structures.
  - c. Collaborating across regions and sectors to build ranger coalitions that share knowledge to scale up impact.
  - d. Seeking partners and investors willing to take risks to conduct trials and measure impact for nature, communities, and business.
  - e. Incubating and testing innovative business and funding models.
2. **Governments** play an essential role in supporting a nature-based economy, with the introduction of enabling laws and policies being key to creating market demand for biodiversity products and services. Government priorities could include:
  - a. Expanding investment in initiatives that support frontline conservation workers and empower rangers, Indigenous Peoples and Local Communities (IPLCs) to take an active role in meeting the increasing demands for their work.
  - b. Developing enabling laws and policies that support the development of nature markets, such as regulations to protect natural resources, incentives for sustainable production practices, and funding for research and development.
  - c. Reducing barriers to investment, for example by providing seed financing or other financial guarantees for nature market start-ups.
  - d. Participating in blended financial solutions with private investors, philanthropists, and other actors while also ensuring strong governance capabilities at the project level.

3. **Investors** need to consider how they can bolster investment in the frontline of conservation that is essential to achieving a nature positive future. They need to design innovative partnerships that engage rangers, explore new funding models and instruments that help manage risk, and promote equitable benefit-sharing with communities and knowledge-holders. Investors may do this by:
  - a. Understanding business dependencies on nature and engaging with frontline conservation workers including rangers, Indigenous Peoples, and local communities, to enter into partnerships that protect, restore and repair nature.
  - b. Working with government and financial institutions and intermediaries to identify or develop acceptable risk investment options.
  - c. Collaborating with government to create ‘blended funding’ pools to support projects that employ frontline workers and deliver benefits to the community, environment, and economy.
  - d. Integrating nature-based solutions into financial decision-making and corporate performance through ESG and new business opportunities such as ‘Sustainable Investment Bonds’ (or equivalent support mechanisms) to direct investments to the frontline for nature.
  - e. Avoiding “greenwashing” (spending more time and effort in marketing organisations as environmentally friendly than actually making notable sustainability impacts).
  - f. Sharing stories of success to grow engagement and opportunities in the nature-based economy. Developing awareness of the value and engagement opportunities may need to occur through recognised ranger bodies or conservation brokers (e.g., NGOs and others).
4. **Enablers** (Brokers, Catalysts, Intermediaries, Advocates) should be recognised as essential players in the early development of the nature-based economy. They open doors to new players and investment pathways, help with strategic design and governance of projects, encourage best practice partnerships and shared benefits. Rangers and investors need to know who and how best to engage with brokers, catalysts, or intermediaries. Enablers might undertake this by:
  - a. Sharing their best practice guidelines for nature-based projects and partnership, and potentially developing for accreditation associated organisations such as PRI.
  - b. Providing opportunities and support for ranger organisations to learn how to engage with intermediaries and prepare for partnerships with investors.
  - c. Assisting rangers to identify values-aligned potential investors and funding opportunities, and enabling investors to identify credible and effective ranger programs to assist them to channel investments that are aligned with their conservation priorities.
  - d. Engaging with the ranger sector to establish pilot projects at various scales and using various funding models, including ways to track and measure success.

## REFERENCES

- Aboriginal Carbon Foundation and Firesticks Alliance Indigenous Corporation (2022). Cultural Fire Credit – Philosophy and Guidelines. <http://www.firesticks.org.au/cultural-fire-credits/>
- Altman, J., Ansell, J. & Yibarbuk, D. (2020). No ordinary company: Arnhem Land Fire Abatement (Northern Territory) Ltd. *Postcolonial Studies*. <https://doi.org/10.1080/13688790.2020.1832428>
- Appleton, M.R., Courtiol, A., Emerton, L., Slade, J.L., Tilker, A., Warr, L.C., Malvido, M.A., Barborak, J.R., Bruin, L., Chapple, R., Daltry, J.C., Hadley, N.P., Jordan, C.A., Rousset, F., Singh, R., Sterling, E.J., Wessling, E.G., Long, B. (2022). Protected area personnel and ranger numbers are insufficient to deliver global expectations. *Nat Sustain* 5, 1100–1110. <https://doi.org/10.1038/s41893-022-00970-0>
- Banhalmi-Zakar, Z., Spicer, M., Vaughan, E. (2022). Engage, Advocate, Collaborate: Unpacking Stewardship in Australasia in 2022, Responsible Investment Association Australasia, Melbourne. [https://responsibleinvestment.org/wp-content/uploads/2022/11/728RIAA\\_Stewardship-Report\\_FINAL.pdf](https://responsibleinvestment.org/wp-content/uploads/2022/11/728RIAA_Stewardship-Report_FINAL.pdf)
- Baralon, J., Marks, D., Dieterich, U., Hinojosa, G., Mallin, C., Stadelmann, M., Sethi, S.A., Tobin, J., Puente, D. (2021). Conservation Finance 2021: An Unfolding Opportunity. Coalition for Private Investment in Conservation Publication. <http://cpicfinance.com/wp-content/uploads/2021/12/CPIC-Conservation-Finance-Report-2021.pdf>
- Chitwan Declaration (2019). International Ranger Federation (IRF). [www.internationalrangers.org/wp-content/uploads/Chitwan-Declaration\\_2019\\_EN.pdf](http://www.internationalrangers.org/wp-content/uploads/Chitwan-Declaration_2019_EN.pdf)
- Cooper, G., Trémolet, S. (2019). Investing in Nature: Private Finance for Nature-based Resilience. The Nature Conservancy and Environmental Finance. London, United Kingdom. [https://www.nature.org/content/dam/tnc/nature/en/documents/TNC-INVESTING-IN-NATURE\\_Report\\_01.pdf](https://www.nature.org/content/dam/tnc/nature/en/documents/TNC-INVESTING-IN-NATURE_Report_01.pdf)
- Dasgupta, P. (2021). The Economics of Biodiversity: The Dasgupta Review. Abridged Version. 103 pages. (London: HM Treasury). [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/957292/Dasgupta\\_Review\\_-\\_Abridged\\_Version.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957292/Dasgupta_Review_-_Abridged_Version.pdf)
- Ervin, J. (2021). Indigenous people lead essential global transformation on nature, climate, economies. UNDP, July 15 2021. <https://www.undp.org/blog/indigenous-people-lead-essential-global-transformation-nature-climate-economies>
- Fair Supply (2022). What biodiversity's COP15 means for business. <https://fairsupply.com.au/what-biodiversitys-cop15-means-for-business/>
- Finance for Biodiversity (F4B). (2022). The future of nature markets. Report of the Taskforce for Nature Markets. F4B Initiative. <https://www.naturemarkets.net/publications/the-future-of-nature-markets>
- Garnett, S. T., Burgess, N. D., Fa, J. E., Fernández-Llamazares, A., Molnár, Z., Robinson, C.J., Watson, J. E. M., Zander, K. K., Austin, B., Brondizio, E. S., Collier, N. F., Duncan, T., Ellis, E., Geyle, H., Jackson, M. V., Jonas, H., Malmer, P., McGowan, B., Sivongxay, A., Leiper, I. (2018). A spatial overview of the global importance of Indigenous lands for conservation. *Nature Sustainability* 1, 369–374. <https://doi.org/10.1038/s41893-018-0100-6>
- Gorring, A., Galloway McLean, K., Hutchinson, J., Macleod, M., Niesten, E. (2022). Conservation Financing Strategies: Key Lessons and case studies. Ampliseed, Melbourne, Australia. [https://d1c2gz5q23tkk0.cloudfront.net/assets/uploads/3398775/asset/Conservation\\_Financing\\_Strategies\\_ENG\\_2022\\_v6a-compressed.pdf?1663761295](https://d1c2gz5q23tkk0.cloudfront.net/assets/uploads/3398775/asset/Conservation_Financing_Strategies_ENG_2022_v6a-compressed.pdf?1663761295)
- Hand, D., Ringel, B., Danel, A. (2022). Sizing the Impact Investing Market: 2022. The Global Impact Investing Network (GIIN). New York. <https://thegiin.org/assets/2022-Market%20Sizing%20Report-Final.pdf>
- Hawkins, F., Kiss, E., Baralon, J. (2022). Biodiversity credits: a turning point for nature? Coalition for Private Investment in Conservation (CPIC) blog. <http://cpicfinance.com/blog-part-2-biodiversity-credits-a-turning-point-for-nature/>
- Heath, A., Paty, M., Martindale, W. (2016). Global Guide to Responsible Investment Regulation. Principles for Responsible Investment. [https://www.msci.com/documents/1296102/0/PRI\\_MSCI\\_Global-Guide-to-Responsible-Investment-Regulation.pdf/ac76bbbd-1e0a-416e-9e83-9416910a4a4b](https://www.msci.com/documents/1296102/0/PRI_MSCI_Global-Guide-to-Responsible-Investment-Regulation.pdf/ac76bbbd-1e0a-416e-9e83-9416910a4a4b)
- IPBES (2019). Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, H. T. Ngo (editors). IPBES secretariat, Bonn, Germany. 1148 pages. <https://doi.org/10.5281/zenodo.3831673>
- IRF (2022). Ranger Code of Conduct: A new ranger code of conduct promoting professionalism, collaboration, and leadership for more effective and just conservation. International Ranger Federation. <https://www.internationalrangers.org/toolkit/ranger-code-of-conduct-2/>
- IRF, n.d. International Rangers Federation – Home Page. <https://www.internationalrangers.org/>
- Meyers, D., Bohorquez, J., Cumming, T., Emerton, L., Heuvel, O.v.d., Riva, M., Victorine, R. (2020). Conservation Finance: A Framework, Conservation Finance Alliance. <https://static1.squarespace.com/static/57e1f17b37c58156a98ftee4/t/5e8c97ecf33f8960fc2cbda3/1586272239963/Conservation+Finance+Framework.pdf>
- Nakashima, D.J., Galloway McLean, K., Thulstrup, H.D., Ramos Castillo, A., Rubis, J.T. (2012). Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation. Paris, UNESCO, and Darwin, UNU <https://unesdoc.unesco.org/ark:/48223/pf0000216613>
- Nedopil, C. (2022). Integrating biodiversity into financial decision-making: Challenges and four principles. *Business Strategy and the Environment*, 1–15. <https://doi.org/10.1002/bse.3208>
- OECD (2019). Biodiversity: Finance and the Economic and Business Case for Action, report prepared for the G7 Environment Ministers' Meeting, 5–6 May 2019. <https://www.oecd.org/environment/resources/biodiversity/biodiversity-finance-and-the-economic-and-business-case-for-action.htm>
- Singh, R., Galliers, C., Appleton, M., Hoffmann, M., Long, B., Cary-Elwese, J., Fritze, C., McCallum, J., Jones, R.P. (2021a). The vital role of rangers in conservation. *Parks Stewardship Forum* 37(1): 128–136. <https://doi.org/10.5070/P537151745>

- Smit, C, Makhijani, R., Ram, C., Lindeberg, E. (2021). 5 factors to ensure a successful ESG and sustainability strategy. Korn Ferry Report. [https://www.kornferry.com/content/dam/kornferry-v2/featured-topics/pdf/ESG\\_Five\\_factors\\_to\\_ensure\\_a\\_successful\\_strategy.pdf](https://www.kornferry.com/content/dam/kornferry-v2/featured-topics/pdf/ESG_Five_factors_to_ensure_a_successful_strategy.pdf)
- Taylor, J., Filipksi, E., Mateusz, J. (2014). "Beyond Experiments in Development Economics: Local Economy-wide Impact Evaluation," OUP Catalogue, Oxford University Press, number 9780198707882. <https://ideas.repec.org/b/oxp/obooks/9780198707882.html>
- Tenorio V., Meyer, S. (2017). The Conservation Finance Network Toolkit (CFN). [www.conservationfinancenetwork.org/toolkit](http://www.conservationfinancenetwork.org/toolkit)
- Tepper, H., Alonso, V. (2010). The Private Lands Conservation Initiative in Chile. Chapter 4 *In* Levitt, J.N. (ed). Conservation Capital in the Americas: Exemplary Conservation Finance Initiatives. Lincoln Institute of Land Policy. Cambridge, Massachusetts. <https://www.landconservationnetwork.org/sites/default/files/CCA%20Ch%204%20Tepper%20Alonso.pdf>
- The Taskforce on Nature-related Financial Disclosures (2022). The TNFD Nature-related Risk & Opportunity Management and Disclosure Framework: Beta v0.1 Release, 2022, p. 88, <https://tnfd.global/wp-content/uploads/2022/03/220315-TNFD-beta-v0.1-full-report-FINAL.pdf>
- Timmins, H., Stolton, S., Dudley, N. (2022). Essential planetary health workers: positioning rangers within global policy. International Ranger Federation, The Thin Green Line Foundation and Universal Ranger Support Alliance. <https://www.ursa4rangers.org/ursa4rangers-resources/>
- Tobin-de la Puente, J., Mitchell, A.W. (eds.) (2021). The Little Book of Investing in Nature, Global Canopy: Oxford. [https://globalcanopy.org/wp-content/uploads/2021/01/LBIN\\_2020\\_EN.pdf](https://globalcanopy.org/wp-content/uploads/2021/01/LBIN_2020_EN.pdf)
- UNEP (2021). State of Finance for Nature Report Tripling investments in nature-based solutions by 2030. United Nations Environment programme. <https://www.unep.org/resources/state-finance-nature-2021>
- URSA (2020). Ranger Action Plan. <https://www.ursa4rangers.org/ursa4rangers-resources/>
- Williams, G., Fisher, C., Symons, W., Bishop, J., Cronin, T. (2022) Banking on Natural Capital. Unlock the true value of nature. Deloitte and WWF. [https://assets.wwf.org.au/image/upload/f\\_pdf/file\\_pub\\_DA\\_E\\_banking\\_on\\_natural\\_capital\\_report](https://assets.wwf.org.au/image/upload/f_pdf/file_pub_DA_E_banking_on_natural_capital_report)
- Woodside, D.P., Vasseleu, J. (2021). Shaping a global strategy for building capacity and performance of rangers in and around protected areas. Parks Stewardship Forum 37(1): 137–152 <https://doi.org/10.5070/P537151746>
- Woodside, D.P., Vasseleu, J., Pyke, T., Wilson-Holt, O., Roe, D. (2021). Building healthy relationships between rangers and communities in and around protected areas. Parks Stewardship Forum. 37. <https://doi.org/10.5070/P537151747>
- World Bank Group (2021). Banking on Protected Areas: Promoting Sustainable Protected Area Tourism to Benefit Local Economies. World Bank, Washington, DC. <https://openknowledge.worldbank.org/handle/10986/35737>
- World Bank Group (2020). Mobilizing private finance for nature. A World Bank Group paper on private finance for biodiversity and ecosystem services. <https://pubdocs.worldbank.org/en/916781601304630850/Finance-for-Nature-28-Sep-web-version.pdf>
- World Economic Forum and PwC (2020). Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy; [https://www3.weforum.org/docs/WEF\\_New\\_Nature\\_Economy\\_Report\\_2020.pdf](https://www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf)
- World Economic Forum (2021). Global Risks Report 16th Edition: Insight Report. [https://www3.weforum.org/docs/WEF\\_The\\_Global\\_Risks\\_Report\\_2021.pdf](https://www3.weforum.org/docs/WEF_The_Global_Risks_Report_2021.pdf)
- WWF (2014). Living Planet Report: Species and spaces, people and places. <https://www.worldwildlife.org/pages/living-planet-report-2014>
- WWF (2022a). Living Planet Report (2022) Building a nature-positive society. Almond, R.E.A., Grooten, M., Juffe Bignoli, D., Petersen, T. (Eds). WWF, Gland, Switzerland. [https://wwfint.awsassets.panda.org/downloads/embargo\\_13\\_10\\_2022\\_lpr\\_2022\\_full\\_report\\_single\\_page\\_1.pdf](https://wwfint.awsassets.panda.org/downloads/embargo_13_10_2022_lpr_2022_full_report_single_page_1.pdf)
- WWF (2022b). Unlocking finance for nature: learning from experience in driving climate action. WWF-UK. <https://www.wwf.org.uk/sites/default/files/2022-12/unlocking-finance-for-nature.pdf>

