Cyan Ventures

alca Australian Land Conservation Alliance

Report

Strengthening the Case for Nature

Australian Land Conservation Alliance

March 2026

Acknowledgement of Country

The Australian Land Conservation Alliance recognises and respects the deep and enduring relationship that Australia's First Nations peoples have with land, sea and water. Their knowledge and connection, built over tens of thousands of years, offers profound lessons for how we Care for Country today. We acknowledge that for First Nations peoples, nature and culture are inextricably linked and we respect their leadership and right to self-determination in managing Country.

First Nations Representation in the Case for Nature

Cyan Ventures and the Australian Land Conservation Alliance recognise that broad investment in First Nations communities and programs supports healthy Country. Given challenges in existence and availability of third-party data, this report may not capture the full range of cultural, social, environmental and economic factors that collectively are considered the case for nature by First Nations people and communities. We will continue to strengthen this over time so it may better reflect and recognise First Nations leadership and stewardship of Country.

About us

Australian Land Conservation Alliance

The Australian Land Conservation Alliance works towards a future where nature thrives Australia-wide, cared for by empowered people and resilient communities. We are the national peak body for nature conservation: our purpose is to scale the protection, management and restoration of nature. Independent and non-partisan, we unite those actively caring for the lands and waters that sustain life, amplifying their collective voice and shaping the conditions that make their work powerful and enduring.

Cyan Ventures

Cyan Ventures is a specialist sustainability project development and advisory firm. Our focus is singular: helping the climate projects that have never been done before get done - and shaping the conditions that make them possible.

We develop First-of-a-Kind projects and work with other first-of-a-kind developers to bring first commercial-scale deployments to market. These projects are essential to net zero - but they face challenges standard commercial support can't address. We help to solve those challenges.

Thanks and Acknowledgements

Advisory Group

A project Advisory Group was established to provide guidance and advice throughout the design and development of this Report. Members of the Advisory Group include Jason Lyddieth from Pew Charitable Trusts, James Trezise and Lis Ashby from the Biodiversity Council and Paul Elton Doctoral Researcher and Non-Executive Director.

Case Study Contributors

This report contains examples of organisations who have successfully integrated nature into their operations to deliver sustainable agriculture outcomes:

- Cassinia Environmental: Paul Dettman, Founder / CEO
- Impact Ag Australia: Toby Grogan, Head of Natural Capital and Advisory
- Kilter Rural: Angus Ingram, General Manager
- Kullilli Bulloo River Aboriginal Corporation: Cassandra Stevens, Prescribed Body Corporate (PBC) Coordinator
- Odonata / Tiverton Agriculture Impact Fund: Nigel Sharp, CEO, and Cecilia Riebl, Strategic Communications and Impact Lead

Executive Summary

Context

Funding for nature, both globally and in Australia, is falling short of the level needed to halt the loss of biodiversity.[1] While multiple reports globally and nationally have articulated the value of nature, there is not yet a consolidated Australian view that quantifies the benefits across the economy and sectors, nor clarity on where the evidence base is still missing.

Purpose and scope

The Australian Land Conservation Alliance (ALCA) has commissioned Cyan Ventures to conduct a literature review to synthesise existing evidence on the case for nature, identify gaps in that evidence base and recommend where future focus is needed to strengthen the case. The review is intended to support ALCA's engagement with public, private and philanthropic decision-makers to catalyse new and additional nature spend.

The review is split into two key parts:

- *Part A – Benefits to Society* examines the benefits to society by drawing on economic indicators such as GDP, employment, productivity, avoided costs and risk reduction, alongside social and environmental impacts including health and wellbeing, climate mitigation and adaptation, water quality and security, and cultural outcomes.
- *Part B – Commercial benefits* examines commercial benefits through a case study of the agricultural sector, acknowledging that commercial outcomes are highly industry-specific and therefore require separate treatment, with further industry-based business case analysis recommended in the next phase.

Key findings on the benefits to society

There is a substantial and growing evidence base demonstrating that nature generates measurable economic, social, cultural and environmental value, with more than 100 global and Australia-specific academic and applied studies, over 30 of which are cited in this review. Beyond its intrinsic worth, healthy ecosystems underpin community wellbeing, cultural continuity and essential public goods.

Nature plays a foundational role in Australian cultural life, particularly for First Nations communities. The Pew Charitable Trusts' review of Indigenous Ranger and Indigenous Protected Area programs finds evidence of improved community wellbeing, increased employment and training pathways, reductions in welfare dependence and alcohol-related harms, and lower incarceration rates in participating communities.[2]

Complementing this, an independent review by Social Ventures Australia for the Department of the Prime Minister and Cabinet found that Indigenous Protected Areas generate a social return on investment of up to $3.40 for every $1 invested, with even higher returns where Indigenous ranger employment is present.[3]

[1] The Paulson Institute, The Nature Conservancy, Cornell Atkinson Center for Sustainability (2020)
[2] The Pew Charitable Trusts, Country Needs People, and Synergies Economic Consulting (2015)
[3] PEW Charitable Trusts (2019)

For the economic value of nature, the strongest and most consistent quantification relates to macroeconomic indicators of nature's value. Multiple studies estimate GDP dependence, and many quantify cost-savings and risk-reduction effects. Overall, studies have found that a significant part of the Australian economy is dependent on nature with nature-dependant sectors valued between $AUD138 billion - $892 billion, or 34% of the Australian GDP.[4,5]

There is strong evidence for the value of nature in cost savings and risk reduction. Loss of species and ecosystem function reduces resilience to extreme events such as fires, floods and heatwaves. This increases volatility in food production, infrastructure damage and insurance exposure.[6] For example, it is estimated that mangroves protected more than A$50 million in property value in 2020–21.[7]

The health benefits of nature are also well established. Exposure to green space reduces harm from stress and heat impacts while actively restoring and strengthening physical and mental health. A cohort of studies in Australia has found that adults living in neighbourhoods with at least 30 per cent tree canopy have lower odds of psychological distress and of poor health than those in low-canopy areas.[8] These findings imply that nature is an important preventative health infrastructure.

Nature also underpins water quality, water security and agricultural productivity in Australia. Ecosystems provide critical services such as water purification, flow regulation and groundwater recharge. For example, constructed wetlands and vegetated drains for farm runoff achieved ~44% reductions in dissolved inorganic nitrogen and 20–72% reductions in total nitrogen, materially improving downstream water quality.[9]

Key findings on the commercial benefits

Private sector investment in nature requires an industry-specific lens because commercial outcomes vary widely across industries. The returns of investing in nature depend on each industry's reliance on natural assets.

Eleven major industries were assessed through their dependence on ecosystem services, using the ENCORE framework. Agriculture and food show the highest dependence on nature, while sectors such as resources, infrastructure, energy and transport combine moderate nature dependence with significant regulatory exposure. Service-oriented sectors like finance or technology face lower operational dependence on nature but are increasingly influenced through disclosure expectations and portfolio-level exposure to nature-related risks.

[4] Australian Conservation Foundation (2022)
[5] The Pew Charitable Trusts (2025)
[6] Australian Climate Service (2025). Australia's National Climate Risk Assessment: An Overview
[7] ABS (2025)
[8] Astell-Burt T, Feng X. (2019)
[9] Kavehei, E et al. (2021)

For the agriculture sector, regenerative agriculture and native revegetation emerged, through consultations with stakeholders, as key areas with demonstrated commercial benefits, including improved yields, cost reductions, resilience gains and new revenue streams from carbon and biodiversity markets. While the benefits seem clear, the precise quantification of those benefits is only emerging. Furthermore, several barriers constrain scale, including low consumer willingness to pay for nature-positive products, farmers' capability gaps and nascent voluntary biodiversity markets where the resulting certificates do not yet have dedicated buyers. This indicates that while evidence of the commercial returns of nature investments exists, the business case for nature is not yet fully established and widely recognised by industry stakeholders.

Key gaps in the literature

Taken together, these findings show that nature delivers substantial economic, social and environmental value, yet this value is not systematically integrated into decision-making. The evidence base is strongest for avoided financial losses, risk reduction and protective benefits for assets and people, indicating that nature often functions as critical infrastructure underpinning economic stability and community wellbeing.

However, **forward-looking estimates of returns on investment** remain limited at both the societal level and the commercial level, making it difficult to translate the value of nature into project finance metrics that influence policy or private capital allocation.

At the societal level, a forward-looking analysis quantifying these returns would give governments a basis for policy and budget decisions, showing spending on protecting nature is an investment to reduce long-term fiscal pressures in areas such as health, infrastructure and disaster recovery. For example, such an analysis could:

- Quantify the economic returns on a dollar of public investment in nature (i.e., every dollar of public investment in nature adds $X to the GDP and creates X jobs)
- Quantify the value of health and environmental benefits in dollar terms (i.e., every dollar of public investment in nature helps avoid $X in the health system costs and $X in water treatment expenditure)

An example of such a study is the recent report by the Great Barrier Reef Foundation, quantifying the economic returns of investing in Reef-related restoration, adaptation and protection.[10] This study employs the scenario modelling technique to quantify the economic returns of investing in protecting and restoring the Great Barrier Reef, and found that climate action and investment in reef resilience create a $124 billion economic opportunity over the next 50 years.

Another area of gap in the literature is the case to invest in nature for industries other than agriculture. This report's agriculture case study demonstrates how a sector-specific lens can clarify risks, opportunities and revenue pathways. Extending this structured approach to other industries such as energy, infrastructure, and resources will help build credible, industry-specific investment cases and enable the private sector to play a larger role in financing Australia's nature conservation.

[10] Great Barrier Reef Foundation and Deloitte (2025)

Next steps

This study finds strong evidence that nature underpins Australia's economic and social well-being. Yet, despite the evidence, investment remains below what is required to protect, restore and steward Australia's nature [11]. To close this gap, the next phase of work should focus on three priorities:

- **Close the information gap**: Strengthen forward-looking fiscal and commercial return-on-investment analysis to support public, philanthropic and private capital allocation, and extend industry-specific business cases beyond agriculture to industries such as energy, infrastructure and resources.
- **Scale up existing models**: Build landholder capability to mainstream regenerative practices and native revegetation that deliver both commercial and environmental returns.
- **Develop new revenue streams**: Expand demand for nature-positive products through government regulation, procurement, compliance markets and stewardship payments, strengthening and building environmental markets and creating the market certainty needed to crowd in private capital at scale.

[11] Australian Land Conservation Alliance and Cyan Ventures Nature Spend Tracker and Insights Report (2026)

Contents

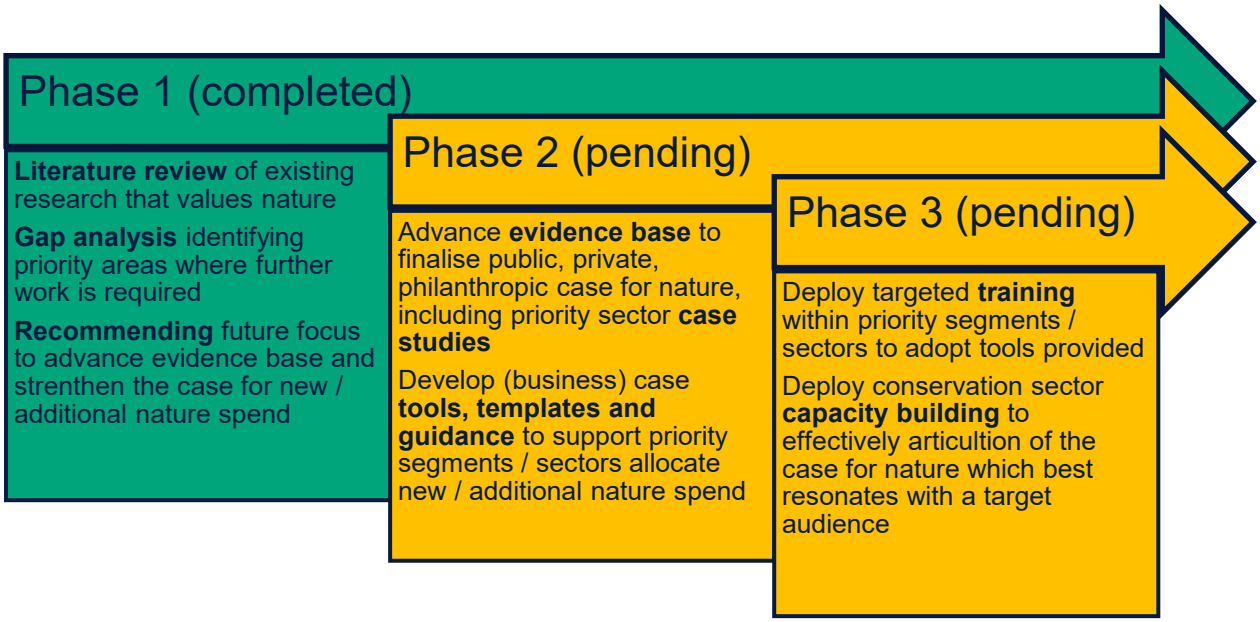
1. Introduction

While multiple reports globally and nationally have articulated the value of nature, there is not yet a consolidated Australian view that quantifies the benefits across the economy and sectors, nor clarity on where the evidence base is still missing.

In this context, the Australian Land Conservation Alliance (ALCA) has commissioned Cyan Ventures to conduct a literature review synthesising existing work on the case for nature, highlighting gaps where evidence is incomplete or absent and providing recommendations on specific areas where evidence could be strengthened. Specifically, this project explores the benefits of money flowing into nature, whether provided **with** an expectation of financial return (finance) or **without** it (through grants or donations), to better understand the full spectrum of investment value.

This project (represented as phase one below) is intended as a precursor to the development of pragmatic tools and guidance, enabling decision makers across public, private and philanthropic segments to unlock new and additional funds for nature.

Exhibit E.1: Strengthening the case to invest in nature approach



The research focuses on three key stakeholder groups: public (federal, state and territory governments), private, and philanthropic sectors. For each, the case for nature depends on their respective interests and incentives. The public sector is primarily motivated by macroeconomic, social good outcomes. Philanthropic actors are driven by impact aligned with their mission. The private sector, in contrast, is most responsive to commercial drivers across finance and risk, though increasingly attentive to social and environmental impact.

To address these perspectives, this literature review is structured across three focus areas, split across two parts.

Part A – Benefits to Society

1. **Economic indicators** – This literature review will synthesise the key evidence on the importance of nature to economic indicators such as returns to GDP, productivity, employment, and economic resilience. These are indicators that are often used by policymakers to inform policy and public investment decisions.
2. **Social and environmental impact** – This literature review will synthesise key evidence on the importance of nature on human wellbeing, community resilience, cultural preservation and environmental outcomes (other than biodiversity outcomes)

Part B – Commercial Benefits

1. **Commercial outcomes** – This paper aims to test the methodology to build industry-specific business cases for nature spend, acknowledging that the evidence on the benefit of nature investments on private sector returns is less well understood.

Part A – Benefits to Society

2. Macroeconomic indicators

For most of modern economic history, nature has been treated as a background condition rather than a core economic asset. Classical and neoclassical economic models conceptualised production as a function of labour and manufactured capital, often assuming that natural inputs were abundant and freely available. This framing led to the implicit treatment of nature as a "free good", available in unlimited supply and excluded from production costs unless physically extracted or commodified (e.g., timber, minerals, land).

Economics has long struggled to account for nature's true value because of three pervasive features: mobility, silence, and invisibility, as highlighted in the Dasgupta Review (2021).[12]

- **Mobility:** Natural assets such as air, water, and biodiversity flow across boundaries, making ownership and regulation difficult.
- **Silence:** Nature does not communicate scarcity in market terms. Ecosystems degrade without direct price signals.
- **Invisibility:** Many ecosystem services (pollination, carbon sequestration, soil fertility) are intangible and not captured in conventional accounting systems.

Because most forms of natural capital lack markets, their degradation is rarely reflected in prices or national accounts. The result has been systematic undervaluation, where economic growth has often been achieved by drawing down ecological assets. As highlighted in the Dasgupta Review (2021), this has produced unsustainable trajectories of growth and wealth accumulation, where per capita natural capital declined by nearly 40% between 1992 and 2014, even as produced capital doubled.[13]

Contemporary models now recognise the interdependence between natural, human, and produced capital. They seek to address historical omissions by incorporating nature's value into macroeconomic systems, through tools like natural capital accounting and nature-related financial disclosures. Despite such progress, funding for nature continues to fall short of the level needed to halt biodiversity loss. Current global spending on biodiversity conservation is estimated at US$124–143 billion a year, while the annual funding required to halt biodiversity loss by 2030 is US$722–967 billion.[14] Australia's inaugural Nature Spend Tracker has conservatively identified over $AUD1.5 billion of FY25 funding initiatives where nature is the core focus, with at least $AUD8.3 billion per annum[15] required to protect and restore Australia's nature – even more for ongoing nature management and stewardship.

This section examines the existing evidence on the economic returns of directing funds towards nature at the whole-of-economy level, highlighting what is already known and where critical gaps remain.

[12] Dasgupta, P. (2021)
[13] Ibid.
[14] Paulson Institute, The Nature Conservancy, and Cornell Atkinson Centre for Sustainability (2020)
[15] Includes nature protection – ALCA estimates a $5b fund, apportioned over five years, is required to deliver the Australian Government's 30 x 30 nature protection targets (Nature now, why Investing in nature can't wait, Oct 2024); and nature repair - the Wentworth Group of Concerned Scientists estimates $7.3b p.a. is required (Blueprint to Repair Australia's Landscapes, July 2024)

2.1 Macroeconomic indicators

Common indicators are used within economics to quantify the impact of nature on the economy. See Table 2.1 below.

Table 2.1: Key Macroeconomic indicators used to quantify returns

Areas of returns	Description
Gross Domestic Product (GDP)	Large shares of GDP rely on ecosystem services (soils, water regulation, pollination, stable climate).
Revenue opportunities	New and emerging markets and services for nature.
Jobs	Jobs supported by new and emerging markets and services for nature.
Cost savings & productivity	Lower input & operating costs (for example, water and energy) and or capex avoidance via natural infrastructure.
Risk reduction	Reduction of physical, supply chain, regulatory and financing risk. Such as reduced exposure to flood, storm, heat and drought damage.

2.2 Discussion on the current evidence base

Indicators are strongest and most consistent for macro-economic value, with multiple studies quantifying GDP exposure or dependence and many estimating cost savings, productivity gains, and risk reduction effects. There is some evidence on revenue opportunities and jobs, but the literature leans toward an economic dependence and risk lens, so avoided losses are quantified more robustly than returns on investing in nature. Evidence for cost savings, productivity, and risk reduction encompasses both place-based case studies and system-level analysis, focusing on the protective benefits of nature for industries, properties and infrastructure.

2.2.1 Gross Domestic Product (GDP)

The importance of nature to GDP has been quantified in a small set of global studies by the World Economic Forum (WEF) and the World Bank, and in Australia by the Australian Conservation Foundation (ACF). The WEF and ACF estimates adopt a dependency/exposure approach, allocating the share of GDP with moderate to high direct dependence on ecosystem services (US$44 trillion globally[16] and A$892 billion for Australia[17] respectively).

[16] World Economic Forum (2020)
[17] Australian Conservation Foundation (2022)

While useful for establishing materiality, these figures are not returns and can overstate nature's impact. This is because they describe the share of economic output currently dependent on ecosystem services, rather than the incremental change in output that would result from investing in or degrading nature. Contrarily, the World Bank's study uses scenarios to understand how changes in land use (forests, pastureland and cropland) and the loss of natural land under these scenarios will negatively impact ecosystem services and therefore lead to a loss in GDP in 2030. Additionally, the same study provides a converse scenario in which nature policies could result in an increase in global GDP in 2030.[18]

While useful in quantifying economic dependence on nature and scenario-driven results for GDP under ecosystem decline and under nature-positive policies to 2030, none of these studies provides forward-looking return metrics (i.e., dollars of GDP per dollar invested in nature).

2.2.2 Revenue opportunities

Revenue opportunities are reported in a small set of forward-looking studies with sector detail. WEF estimates approximately US$10.1 trillion per year by 2030[19] in nature-positive business opportunities and presents these as opportunity buckets by economic system rather than a single macro aggregate, mapping opportunities across food and land, ocean use, the built environment, and energy and resources. Australian estimates provide a corresponding sector view, following the same methodology as WEF, Cyan Ventures have estimated A$298 billion per year in nature-positive opportunities by 2035.[20]

Moreover, there have been studies within Australia that have looked at the valuation of specific markets. For example, a PWC study has estimated A$137 billion by 2050 from a biodiversity market in Australia.[21] Additionally, The Nature Conservancy Australia estimated A$35.5 million per year from coastal wetlands' contribution to nearshore commercial fisheries in south-eastern Australia.[22]

All of these estimates reflect the size of the opportunities, based on potential market value rather than likely revenues or marginal returns. They offer sector-specific disaggregation, which enables comparison across industries and helps identify where opportunities are larger or nearer term.

2.2.3 Jobs

Employment effects are reported in a small set of forward-looking studies. The World Economic Forum estimates that nature-positive transitions could support about 395 million jobs by 2030.[23] For Australia, the Cyan analysis estimates 1.6 million direct jobs by 2035.[24] These are potential jobs contingent on realising nature opportunities.

[18] World Bank (2021)
[19] World Economic Forum (2020)
[20] Cyan Ventures (2024)
[21] PWC (2024)
[22] The Nature Conservancy Australia (2019)
[23] World Economic Forum (2020)
[24] Cyan Ventures (2024)

2.2.4 Cost saving & productivity

Existing evidence in the literature focuses on the benefits of nature in avoiding damages, cost reduction, and productivity valuations. Global estimates include protection benefits from mangroves of about US$65 billion per year,[25] wetland restoration savings of about US$199 per hectare per year,[26] and GDP protected by coral reefs of about US$109 billion.[27] Australian estimates report protection to dwellings from mangroves of about A$57 million in 2020–21 and from saltmarsh of about A$8 million[28]; wetlands are also valued at about A$469 per hectare per storm for damage mitigation.[29] These figures indicate potential fiscal savings and productivity effects in specific contexts rather than macro returns.

These studies apply hazard-loss and replacement-cost models or tally physical outputs and associated market values. Results are location and asset-specific, expressed in heterogeneous units such as per year, per hectare per year, or per event, which makes aggregation inappropriate without a common framework. The sector view is useful because it identifies where savings and productivity gains are likely to be largest across coastal protection, water provision, timber and carbon services, and urban infrastructure, but project-level appraisal still requires translating these valuations into benefit–cost metrics for the specific site and investment.

2.2.5 Risk reduction

The evidence reports benefit–cost and protection metrics rather than macro returns. Global syntheses suggest that every US$1 invested in adaptation yields about US$2 to US$10 in net benefits. Australian estimates indicate coastal protection from mangroves, saltmarsh, and seagrasses that reduce wave energy by roughly 37 to 71 per cent and protect property valued at about A$2.6 billion,[30] alongside climate risk reduction through carbon stored in ecosystems valued at about A$43.2 billion.[31] These estimates derive from cost–benefit syntheses and hazard–loss models that estimate avoided damages, wave attenuation, and asset exposure, as well as natural capital accounting for carbon storage.

2.3 Key gaps in the current evidence base

While the evidence based on nature's economic value has expanded significantly over the past decade, several critical unknowns continue to constrain a full understanding of how natural systems underpin macroeconomic performance. These are summarised below in Table 2.2.

[25] Menéndez, P et al. (2020)
[26] Ramsar, Convention of Wetlands (2025)
[27] Spalding (2022)
[28] ABS (2025)
[29] Mulder et al. (2020)
[30] The Nature Conservancy Australia (2019)
[31] ABS (2025)

Table 2.2: Gap assessment of current indicators of the economic importance of nature

Indicator	What we know	What we don't know
GDP	• Existing global and national studies quantify economic dependence on ecosystem services but largely provide backward-looking exposure rather than causal impacts on GDP.	• Forward-looking GDP output based on investment in nature. (i.e. $ of gross value added per $ invested in nature). • Integration of natural capital into national accounts and GDP reporting in Australia.
Revenue Opportunities	• Global and Australian revenue opportunity from nature positive business across key systems (food, land and ocean, built environment and resources). • Focus on key sectors such as biodiversity markets and fisheries.	• Forward-looking potential revenues based on investment in nature. (i.e. $ of revenue per $ invested in nature)
Jobs	• Global and Australian jobs supported by nature-based business across key systems (food, land and ocean, built environment and resources).	• Sectoral, regional, and occupational breakdowns.
Cost Savings & Productivity	• Case studies demonstrate avoided damage and restoration costs-benefits.	• Forward-looking potential cost savings based on investment in nature. (i.e. $ of savings per $ invested in nature) • Scaling of cost savings across ecosystems and geographies. • Benefits of active management of biodiversity
Risk Reduction	• Global and Australian valuations exist for coastal and flood protection, and macro-level cost-benefit for adaptation.	• Forward-looking potential risk reduction based on investment in nature. (i.e. $ avoided loss per $ invested in nature)

3 Social and environmental indicators

Over the past decade, governments have increasingly sought to quantify and integrate social and environmental benefits into formal policy and investment frameworks. In Australia, there are several key frameworks that exist to account for environmental and social value. Some of these key frameworks include:

- **Social Return on Investment (SROI) Framework:** The SROI framework provides a structured approach to capturing social and non-market benefits that traditional financial appraisal methods often overlook. It quantifies social, cultural, and environmental outcomes in monetary terms to provide a holistic view of program value beyond financial returns. While not a mandated tool across Australian governments, SROI is increasingly used as a complementary framework in program evaluations that have strong community or wellbeing outcomes. For example, the NSW Department of Communities and Justice has adopted SROI in its Guide to Social Impact Measurement to evaluate social programs[32], and the Australian Government has applied SROI in assessments of Indigenous Protected Areas to capture community, cultural, and environmental benefits.
- **System of Environmental-Economic Accounting (SEEA):** The SEEA framework is the international statistical standard for integrating nature (stocks, condition, ecosystem-service flows) with the economy.[33] The framework was formally adopted by the UN Statistical Commission in 2021 and is now used to inform policy in over 30 countries. Australia has adopted the framework via the Australian Bureau of Statistics' (ABS) National Ecosystem Accounts (2025). This publication quantifies the value of ecosystem services domestically, such as carbon storage, flood protection, and water supply.

This section examines the existing evidence base on the value of nature based on social and environmental indicators, highlighting what is already known and where critical gaps remain.

3.1 Social and environmental indicators

Common indicators are used to measure the social and environmental importance of nature.

Table 3.1: Key social and environmental indicators used to quantify returns

Areas of returns	Description
Cultural & community benefits	Caring for Country delivering ecological, social, and cultural outcomes (economic outcomes captured under section 1 macroeconomic analysis).
Climate mitigation & adaptation	Forests, soils, and wetlands store carbon and avoid emissions and natural defences reduce flood/storm damage and are cost-effective.
Public health & wellbeing	Green/blue space access lowers mortality, reduces heat stress, and improves mental and cardiometabolic health.
Water quality & security	Healthy catchments lower treatment costs and ensure a resilient water supply.
Food security	Dependence on pollination underpins nutrition and agricultural stability.

[32] NSW Department of Communities and Justice Guide (2020)
[33] United Nations (2018)

3.2 Discussion on the current evidence base

3.2.1 Summary

Indicators are strongest for climate mitigation (and to a lesser extent adaptation) and public health and wellbeing, particularly the quantification of avoided mortality and morbidity attributable to urban vegetation. Additionally, indicators of benefit to water quality and security are well researched. The quantitative literature linking nature to food security and land productivity is growing, with most studies focused on pollination as the key ecosystem service. By contrast, the links between Indigenous cultural and community benefits are typically more indirect and less frequently quantified, limited to program-level evaluations.

There is evidence globally and within Australia on the climate change mitigation potential of nature, though there is a greater focus on land over water environments. Moreover, there is substantially more research on how climate change affects nature. Since the 1990s the Intergovernmental Panel on Climate Change (IPCC) has documented climate impacts on ecosystems and species, developing a large body of evidence on observed and projected impacts.

Globally, countries generally follow the IPCC Guidelines for National Greenhouse Gas Inventories to measure the emissions/removals as the authoritative basis for quantifying land-sector emissions and removals in national inventories. For example, increased reforestation is identified as a major source of land-based sequestration due to its cost-effectiveness and scalability.[34] Moreover, the impact of nature-based solutions on climate change has been quantified in more recent literature regarded as playing a significant role in mitigating carbon emissions[35], reducing the risk of disaster-associated climate-induced hazards.[36]

The ABS ecosystem accounts quantify carbon stored in selected ecosystems and assign a monetary value (2020–21) using SEEA accounting methods.[37] These indicators describe asset values and technical/economic potential, but they establish the scale and location of mitigation potential for policy and investment planning.

3.2.2 Cultural and community benefits

The value of nature to Australian culture is widely recognised. Studies such as those by Tourism Research Australia also highlight how nature-rich environments contribute to social cohesion by supporting outdoor activities that are widely embedded in Australian cultural life.[38]

Beyond recreation, Indigenous land and sea management programs demonstrate how Caring for Country strengthens cultural continuity, leadership and community governance. The Pew Charitable Trusts' review of Indigenous Ranger and Indigenous Protected Area programs finds evidence of improved community wellbeing, increased employment and training pathways, reductions in welfare dependence and alcohol-related harms, and lower incarceration rates in participating communities.[39] Ranger programs also reinforce cultural authority by embedding elders in planning and decision-making processes, strengthening community ownership and aspirations.[40]

[34] Australian Government (2025)
[35] Pan et al. (2023)
[36] Zhu et al. (2020)
[37] ABS (2025)
[38] Austrade (2024)
[39] The Pew Charitable Trusts, Country Needs People, and Synergies Economic Consulting (2015)
[40] DCCEEW (2021)

A review by Social Ventures Australia for the Department of the Prime Minister and Cabinet reports a social return on investment of up to $3.40 per every $1 spent for Indigenous Protected Areas, with higher returns where Indigenous ranger employment is present.[41] This provides a finance-relevant metric for program appraisal.

3.2.3 Public health and wellbeing

The links between nature and public health and well-being have been well researched, with a number of frameworks and clearly quantifiable indicators developed. Building on evidence from natural, social and health sciences, Marselle et al. present a conceptual framework to link biodiversity influences on human health via four domains of pathways.[42] The framework distinguishes pathways that reduce harm (e.g., mitigating heat and air pollution), restore capacities (e.g., stress recovery and attentional restoration), build capacities (e.g., enabling physical activity and social cohesion), and cause harm (e.g., allergens and vectors). For the purpose of this literature review, cause harm evidence has not been reviewed as this is not aligned to building the case for investment in nature.

Reducing harm:

- Across the reducing-harm pathway, the most developed indicators quantify avoided mortality and morbidity attributable to urban vegetation. Evidence typically traces benefits to (i) vegetation's effects on air quality and heat, or (ii) city-scale changes in Normalised Difference Vegetation Index (NDVI) linked to all-cause mortality (i.e., deaths from any cause over a period). For example, for air quality, a research study in the United States estimated that trees removed 17.4 million tonnes of pollutants in 2010 (valued at US$6.8 billion), associated with >850 fewer premature deaths and ~670,000 fewer acute respiratory symptom cases. [43] For heat, a more recent study focused on London's urban forest reported substantially cooler maxima and minima in high-canopy areas and estimated that this difference prevented 153 heat-related deaths between 2015–2022. The study further projected that adding 10% canopy cover could reduce heat mortality by another 10%.[44] At a global scale, a health-impact assessment across 96 cities translated incremental greening into avoided deaths. A one percentage point increase in greenspace produced a median reduction of 1.77 premature deaths per 100,000 people per year across the 96 cities. By comparison, a one percentage point increase in the share of residents with nearby natural space yielded a median reduction of 0.56 deaths per 100,000 per year.[45]
- While the quantitative evidence for reducing harm is clear, each approach has limits. Local air-quality and heat studies are more specific and strengthen causal interpretation, but they are context dependent and harder to scale. NDVI or percent-greenspace models are easier to compare across cities and provide simple metrics such as deaths avoided per percentage point of greening, but they are association only and use a proxy that does not capture ecosystem quality or biodiversity.

[41] PEW Charitable Trusts (2019)
[42] Marselle et al. (2021)
[43] Nowak et al. (2014)
[44] Taylor et al. (2024)
[45] Martin et al. (2025)

Restoring capacities

- For restoring capacities, observational and longitudinal studies continue to link nature exposure with better psychological health, and the signal is stronger when the exposure captures canopy or biodiversity rather than “any greenspace.” In Australia, a cohort study found that adults living in neighbourhoods with at least 30 per cent tree canopy have lower odds of psychological distress and of fair/poor general health than those in low-canopy areas, whereas grass-dominant greenspace showed little or adverse association; this supports using tree canopy as a local indicator of restorative potential.[46] Additionally, an Australian analysis found that visiting green space for at least 30 minutes per week was associated with up to 7% lower population prevalence of depression and 9% lower prevalence of high blood pressure, suggesting a simple behavioural exposure metric that could be tracked in surveillance; however, the estimates are associative and rely on self-reported visits and cross-sectional design.[47]

Build capacities

- For building capacities, the most relevant indicators capture nature-enabled physical activity, social cohesion, and nature connectedness. Syntheses generally find that access to publicly accessible greenspace is positively associated with mental health and with objectively measured physical activity, although effect sizes for long-term greenspace and physical activity can be mixed, underscoring the role of design, quality, and equity of access.

3.2.4 Water quality and security

There is a strong link between nature and water quality and security, with a robust and growing evidence base showing that natural ecosystems provide measurable water-related services. The SEEA-EA identifies water-related services as flow regulation, water purification, groundwater recharge and freshwater provisioning. Literature seeking to quantify these services are primarily case studies which highlight operational and treatment cost savings from watershed and farm-scale nature-based measures. These results are location-specific and reported in physical and monetary units that are not directly additive, but they provide evidence for targeted investment where treatment costs and nutrient loads are material. For example, a 17-year global study of source-water protection via forest buffers found 9–19% lower spring nitrate at intake and ~US$2.63 m/yr in net operational benefits from reduced salt, electricity, activated carbon and water use.[48] In Australia, constructed wetlands and vegetated drains for farm runoff achieved ~44% reductions in dissolved inorganic nitrogen and 20–72% reductions in total nitrogen.[49]

[46] Astell-Burt T, Feng X. (2019)
[47] Shanahan et al. (2016)
[48] Wu et al. (2024)
[49] Kavehei, E et al. (2021)

3.2.5 Food security and land productivity

The Food and Agriculture Organisation of the United Nations (FAO) frames “biodiversity for food and agriculture” as the diversity of plants, animals and micro-organisms, at genetic, species and ecosystem levels, within and around crop, livestock, forest and aquatic systems.[50] It encompasses domesticated genetic resources, the associated biodiversity that sustains production (e.g., soil biota, pollinators, natural enemies), and wild foods. Through these components, nature supports core ecosystem services (soil health, nutrient cycling, pollination, water regulation, pest and disease control), underpins resilience to shocks and climate variability, provides the genetic basis for adaptation and productivity, and broadens diets and nutrition.

Evidence of indicators for food security and land productivity is limited and generally focused on the quantification of the value of pollination services. Australian estimates quantify the contribution of introduced honeybee pollination to the economy, and the contribution of coastal wetlands to nearshore fisheries in south-eastern Australia. These indicators focus on specific ecosystem services and markets rather than economy-wide output and are useful for identifying sectors and locations where nature-based productivity effects are largest.

3.3 Key gaps in the current evidence base

[50] FAO (2019)

Table 3.2: Gap assessment of current indicators of the social and environmental importance of nature

Indicator	What we know	What we don't know
Indigenous cultural & community benefits	• Nature is central to Australian culture and social cohesion, particularly through outdoor activities embedded in everyday life. • While measurement remains limited, evidence shows nature investment can deliver strong social returns — up to $3.40 per $1 invested in Indigenous Protected Areas.	• Integrating cultural outcomes with carbon, water, and biodiversity benefits, without double-counting, is methodologically underdeveloped.
Climate mitigation & adaptation	• Literature consistently shows substantial mitigation potential at reasonable costs and clear adaptation co-benefits from nature-based solutions.	• At the project and portfolio level, especially in Australia, there is limited, consistent quantification that combines mitigation and adaptation in one business case (e.g., avoided flood losses plus carbon, with explicit permanence/reversal risk).
Public health & wellbeing	• There are well-established qualitative links between access to quality green/blue space and improved mental and physical health. • Multiple studies link specific nature actions, such as increasing urban tree canopy or time spent in parks, to reductions in certain diseases and symptoms (e.g., psychological distress, cardiometabolic risks) and to better overall wellbeing.	• Quality-adjusted life year (a metric used in healthcare to measure the health benefit by combining length of life with quality of life), avoided healthcare costs based on investments in nature.
Water quality & security	• Case studies demonstrate operational savings and, in some contexts, avoided capital expenditure through source-water protection.	• Consistent benchmarks for cost-effectiveness (e.g., A$ per kilogram of nitrogen/phosphorus/total suspended solids removed) and valuations of water-supply reliability or yield gains attributable to nature.
Food security & land productivity	• Nature underpins production via pollination, soil health, biological pest control, and coastal habitat nurseries. • There is existing quantification for pollination services globally and in Australia, and case evidence that habitat or management actions can raise yields or sustain fisheries.	• Yield stability (not just average yield), on-farm input cost savings (e.g., reduced pesticides, fuel, irrigation) and downstream nutrition/price effects. Contributions of non-bee pollinators and monetised soil-health pathways (e.g., erosion control, soil organic carbon, infiltration).

Part B – Commercial benefits

4 Industry dependence on nature

The private sector's case for investing in nature requires a different approach from public or philanthropic perspectives. Commercial outcomes are inherently sector-specific; what constitutes a "return" in agribusiness, infrastructure, or finance can vary significantly depending on the degree of dependence on natural assets and exposure to nature-related risks.

Understanding the drivers of commercial returns at the sector level is essential to building a compelling business case that aligns with each sector's specific dependencies, risks, and opportunities. Thus, rather than attempting to quantify industry-level returns within this review, this section focuses on establishing a process for identifying where and how such returns can be demonstrated. In particular, this section:

- Seeks to map industries that are most dependent on nature, and
- Outlines pathways for assessing the benefits and costs of investing in natural capital, providing a framework to guide future sector-specific business cases that can strengthen private investment in nature.

Two primary drivers are used to assess private sector action on nature-related investments: first, where the success of a business model has direct dependencies on thriving natural systems; and second, where companies face significant exposure to environmental regulations, creating a business imperative to mitigate their impacts on nature.

The following eleven industries are considered in this analysis.

- **Agriculture & Food** includes farming, aquaculture, forestry, and food processing. Supermarkets are captured under the "Retail" sector.
- **Financial Services** covers financial services, investment management, and insurance. It includes banks, funds, and superannuation providers.
- **Energy** covers the generation, transmission, distribution, and retail of electricity and fuels.
- **Healthcare & Biotechnology** encompasses hospitals, healthcare providers, pharmaceuticals, and life sciences. It also includes medical research, biotechnology, and related services within the supply chain.
- **Manufacturing & Industrials** covers the production of goods and industrial processes such as chemicals, cement, steel, and equipment.
- **Infrastructure** includes the construction of buildings, roads, railways, utility projects, and other civil engineering services
- **Resources** includes the exploration, extraction, and processing of minerals, metals, and fossil resources, as well as end-of-life mine rehabilitation.
- **Retail** covers the wholesale and retail trade of goods and services. It includes supermarkets, department stores, e-commerce, and consumer goods companies, and focuses on supply chains, packaging, and retail support services.
- **Technology & Telecommunications** covers information technology, software, hardware, and communication services.

- **Transport** encompasses transport networks and services across road, rail, air, and sea, as well as logistics.
- **Tourism** encompasses accommodation and food services.

For dependency on nature, the *Exploring Natural Capital Opportunities, Risks and Exposure (ENCORE)* database, developed in partnership with the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), has been used.[51] ENCORE reflects current academic and expert consensus on the extent to which different economic activities depend on ecosystem services. In ENCORE, *ecosystem services* are defined as the connections between nature and business, that is, the benefits nature provides that enable or support economic activity. The database identifies 25 key ecosystem services and assesses the degree to which 271 economic activities depend on each service. These dependency linkages were reviewed and validated by industry experts across multiple sectors. For this analysis, ENCORE's detailed economic activities were mapped to ten broader sectors. The average dependency score of the mapped activities was then calculated and applied at the sector level to represent overall dependence on nature.

Environmental regulation exposure has been assessed based on the extent to which the direct operations of each sector are affected by environmental laws, standards, and compliance requirements. Sectors with capital-intensive activities and significant physical or resource footprints, such as mining, manufacturing, energy, and transport, tend to face greater regulatory exposure. These industries are more directly subject to environmental permitting, biodiversity offsetting compliance obligations, land-use controls, and waste-management obligations. In contrast, sectors with primarily service-based or financial activities, such as banking and superannuation, are generally indirectly affected through disclosure requirements, investment portfolio expectations, and public scrutiny.

[51] ENCORE Knowledge Base (2024)

Exhibit 4.1: Industry dependence on nature assessment[52]

	Nature dependency	Environmental regulation
Agriculture & Food	High	High
Tourism	High	Low
Resources	Moderate	High
Infrastructure (inc. transport & utility infrastructure)	Moderate	High
Manufacturing & Industrials	Moderate	Moderate
Transport	Moderate	Moderate
Energy	Moderate	Moderate
Healthcare & Biotechnology	Low	Low
Retail	Low	Low
Technology & Telecommunications	Low	Low
Financial Services	Low	Low

The **agriculture and food industry** demonstrates a high dependence on nature, reflecting its reliance on ecosystem services such as pollination, soil quality regulation, water supply, rainfall pattern regulation, and climate stability. These services underpin productivity and crop yields, and any degradation or disruption can directly affect production capacity, supply chains, and food security. The sector also experiences a moderate to high level of exposure to environmental regulation, particularly in areas related to water extraction, land management, chemical use, and biodiversity conservation. This regulatory context shapes both operational practices and long-term investment decisions.

The **resources industry** scored moderately on overall dependence on nature, with higher dependency observed for ecosystem services such as global climate regulation, water supply, flood mitigation, rainfall pattern regulation, and water flow regulation. These services are critical to maintaining operational continuity; disruptions could significantly constrain production and reduce economic output. The resources sector also faces high exposure to environmental regulation, reflecting the stringent requirements around land use, emissions, water management, and rehabilitation that directly influence the operating environment.

[52] High dependence means that economic value comes from business activities that could fail financially as a result of particular ecosystem disruptions. Moderate dependence means that economic value comes from business activities that are likely to experience a material reduction in financial returns because of particular ecosystem disruptions. Low dependence means that economic value comes from business activities that are likely to experience limited material financial effects of ecosystem disruptions.

The **infrastructure industry** scored moderately on overall dependence on nature, with higher dependency observed for ecosystem services such as flood mitigation services, rainfall pattern regulation and storm mitigation. These services underpin asset performance, tenant wellbeing and business continuity, particularly for assets located in floodplains, coastal zones or heat-exposed urban areas. Disruptions can drive material impacts through higher insurance premiums, capex for resilience upgrades, operating downtime and valuation impairment. The sector is also highly exposed to environmental regulation and planning controls, including stormwater management, coastal setback and bushfire/flood standards, biodiversity offsets and green-infrastructure requirements, all of which shape development feasibility and operating costs. In addition, upstream dependencies in construction materials (e.g. timber and water intensive products) introduce nature-related supply risks that can affect delivery schedules and project margins.

5 A case for nature investment in the agriculture sector

This section provides an example of a case for nature investment in the agricultural sector. This case study aims to answer the following questions:

- What are the key opportunities for nature investment in the agriculture sector?
- What is the evidence on the commercial benefits and costs of these opportunities?
- What is the potential for scaling these opportunities?

This case study has been informed by discussions with five organisations in the sustainable agriculture sector, as well as desktop literature reviews: Kullilli Bulloo River Aboriginal Corporation, Kilter Rural, Tiverton Agriculture Impact Fund, Cassinia Environmental, and Impact Ag Australia.

5.1 Key nature positive opportunities

Interviews with stakeholders point to two main opportunity areas for nature investment in the agriculture sector: **regenerative agriculture** and **native revegetation**.

Regenerative agriculture refers to farming practices that restore ecosystem function by rebuilding soil health, increasing biodiversity, and improving water quality and therefore improve agricultural yields. These practices are consistent with the Do No Significant Harm principle, adopted within Australia's Sustainable Finance Taxonomy[53], which sets a hierarchy for integrating nature into agriculture by first seeking to avoid negative impact to nature, followed by mitigating unavoidable impact with 'offsetting' residual impact (via environmental markets) as the approach of last resort.[54]

Opportunities discussed included no-till farming (planting crops directly into undisturbed soil to retain soil structure), rotational grazing (moving livestock between paddocks to allow pastures time to rest and regenerate), and biofertilisers (e.g., humic acid-enriched amendments).

The second category of opportunity, native revegetation, focuses on restoring and regenerating degraded or underutilised parts of agricultural landscapes. Stakeholders highlighted strong potential in areas with limited commercial farming value, including shelterbelts (planting rows of trees and shrubs alongside paddocks or fields to reduce wind speed), riparian buffers (growing native plants along rivers and creeks to trap sediments), and reconnecting fragmented patches of native vegetation. These projects contribute to biodiversity outcomes while maintaining the productive potential of core agricultural land, making them an attractive nature-positive investment pathway.

[53] The Taxonomy establishes criteria for defining sustainable economic activities thereby acting as an enabler to increasing investment in sustainable activities, including nature.
[54] ASFI (2025)

5.2 Benefits and costs of nature investments

5.2.1 Benefits of regenerative agriculture

Regenerative soil management can deliver meaningful productivity gains by improving soil health and increasing resilience. Healthier soils retain more moisture, support beneficial microbial communities, and help buffer crops and pastures against climate variability. Evidence from the Tiverton Agriculture Impact Fund, using a CircleAG liquid biofertiliser, shows that soil health improvements can be achieved with no net loss to food production.[55] Reported outcomes include dressed lamb weights increasing from 18 kg to 24 kg at Ardgardon Pastoral, canola oil content rising from 47 per cent to 51 per cent at Orana Park, and an olive grove at Orana Park fruiting 12 months earlier than expected following sustained application of CircleAG products.[56]

Cost savings and greater resource efficiency also emerge as key benefits. Reducing reliance on synthetic fertilisers and chemicals lowers input expenditure, while enhanced soil biological function decreases nutrient loss and improves water use efficiency. A Queensland sugarcane trial, for example, demonstrated that applying a microbial biofertiliser allowed farmers to reduce synthetic nitrogen use by 40 per cent while maintaining yields.[57]

Overall, there is limited evidence that customers are consistently willing to pay a premium for products derived from regenerative practices. Stakeholders cited isolated examples, such as an Italian textile company prepared to offer higher prices for wool sourced from farms using regenerative methods, but these cases remain exceptions rather than the norm. The discussion emphasises that any price premium is highly dependent on specific products and client segments, and cannot be assumed across all sustainably produced agricultural goods.

Therefore it is critical that regenerative agriculture solutions demonstrate a cost benefit to consumers which many of Australia's sustainable agricultural leaders, like Tiverton, are seeking to demonstrate that this is possible.

5.2.2 Benefits of native revegetation

Cassinia Environmental (delivery partner for the Victorian Government's BushBank nature program) and Impact Ag Australia separately offer two prominent examples of businesses that have developed successful models by integrating native revegetation into commercial land management. Both demonstrate that strategic restoration, when aligned with natural capital markets and farm system design, can generate environmental value while strengthening long-term economic performance.

The Kullilli Bulloo River Aboriginal Corporation's acquisition of Thargomindah Station demonstrates how Australia's carbon market can be leveraged for nature while supporting Indigenous land ownership, long-term economic development, and cultural renewal when aligned with community priorities.

[55] Tiverton Rothwell (2025)
[56] Ibid
[57] Qiu et.al (2022)

Bushbank Victoria

BushBank is the Victorian Government's initiative to restore more than 20,000 hectares of land across the State. While the program receives government funding, this alone is insufficient to meet its ambitious revegetation targets. Cassinia Environmental, the delivery partner for the private land stream, plays a central role in closing this funding gap by sourcing and securing co-funding. This can come from landowners or, where suitable, from external partners such as carbon market investors and philanthropic organisations focused on biodiversity. Both co-funders and participating landowners may choose to register, retain or sell Australian Carbon Credit Units, creating a revenue stream that can continue for up to 25 years.

To date, BushBank Victoria, led by Cassinia Environmental, has secured more than $11 million in co-funding from partners and landholders. This investment has enabled planting on 4,827 hectares from a total to date of 11,600 hectares identified for future restoration.[58] The programme also delivers broader economic and cultural benefits, with 32 percent of seed and seedling contract value awarded to First Nations suppliers.

Impact Ag Australia

Environmental plantings can create a strong stacked revenue model when they are underpinned by strategic land planning that integrates carbon, biodiversity and agricultural objectives. Impact Ag Australia's work on a Central West grazing property illustrates this approach.

Using a digital twin of the farm, Impact Ag Australia identified areas where a 70 to 30 mix of trees and shrubs could be planted along 220 kilometres of tree lines without displacing productive land. The design aimed for about 200 stems per hectare across 200 hectares, creating habitat, improving microclimates and enhancing landscape function.[59]

This spatially informed layout is projected to generate about 48,000 Australian Carbon Credit Units over 25 years while supporting eligibility for biodiversity payments.[60] At the same time, the plantings improve soil stability, water retention and livestock comfort, strengthening the underlying farming system. The case shows that when plantings are guided by land capability and whole-farm design, they deliver environmental and carbon outcomes alongside measurable productivity and resilience gains.

[58] Cassinia (2025)
[59] Impact Ag Australia (2025)
[60] Ibid

The Kullilli Bulloo River Aboriginal Corporation (KBRAC)

The Kullilli people's journey into carbon farming began in 2017, following the recognition of Native Title. Through this process, KBRAC became an eligible interest holder in carbon projects in their Country. Early carbon revenue provided a meaningful and flexible income stream, delivering tangible outcomes for the community, including the purchase of a house in Thargomindah for holding return to country activities for Kullilli people. This initial experience has allowed the group to increase their knowledge and build capabilities in delivering carbon projects.

In 2023, KBRAC took a significant step forward by purchasing a pastoral station near Thargomindah. The acquisition was undertaken in partnership with Conscious Investment Management (CIM), an impact investment fund manager, and Climate Friendly, a carbon project developer. CIM's capital is not concessionary, and target financial returns are commensurate with the underlying risk of the investment. The transaction enabled the Kullilli people to own a productive and culturally significant land asset while establishing a carbon farming project.

Prior to the acquisition, the station operated primarily as a cattle and sheep grazing enterprise. Today, the property integrates carbon farming alongside pastoral operations, creating two complementary revenue streams. The ACCUs are generated under the Human-Induced Regeneration method, which restores native forest on land that was previously cleared. Grazing practices, including herd movement and timing, have been adapted to align with carbon methodology requirements. It is planned that this dual-income model reduces reliance on a single commodity, diversifying risks and enhancing the financial returns of the station.

From the outset, the project has been designed to generate cultural, environmental and economic value in equal measure, ensuring that commercial returns support the long-term aspirations of the Kullilli people. Ownership of the station secures and protects a culturally significant site, strengthening the community's connection to Country. The project provides a practical pathway for Kullilli people to return to and actively manage culturally significant land, while creating opportunities to learn agribusiness practices and support intergenerational knowledge transfer between Elders and younger generations.

5.2.3 Net benefits of investments in nature

A key gap in building the business case for nature is the very limited public information about financial costs and benefits, given concerns over commercial sensitivity and competitiveness. Despite this, there are case studies on the net benefit of regenerative practices.

Impact Ag Australia

In 2018, Impact Ag Australia acquired a 2,021-acre dryland cropping property on behalf of a client delivering primary production across sorghum, mung beans, wheat, canola, barley and pulses. After delivering a five-year land transition strategy to optimise cropping and perennial grazing zones, protect koala habitat and implement regenerative cropping trials, the property was sold for a significant value uplift in 2023. The profit is attributable to key value drivers such as enhanced commodity production, land appreciation, optimised land use and targeted capital development.

As part of the same portfolio, Impact Ag Australia has undertaken a number of regenerative cropping trials that have included the introduction of biological treatments, removal of fungicides, novel cropping rotations and cover cropping. A trial in 2022 comparing regenerative to conventional cropping of faba beans delivered a 0.44 tonne/acre higher yield in the regenerative system and a 62% higher gross profit margin.

These results demonstrate how regenerative cropping through practices such as legume rotation, cover cropping, and reduced synthetic inputs can deliver both productivity gains and improved profitability while reducing business risk.

5.3 Challenges with scaling nature investment in agriculture

Discussions with stakeholders highlight that Australia's carbon market has created a material new revenue stream for nature investment on agricultural land, particularly through native revegetation and soil carbon projects. However, funding for nature remains well below what is required, with analyses from the Wentworth Group of Concerned Scientists and the Paulson Institute showing that current public and private investment levels fall short of what is needed to halt biodiversity decline.[61,62] The Paulson Institute estimates that to reverse global biodiversity loss, we need to be spending an additional US$598–824 billion per year on nature protection by 2030. For Australia, the Wentworth Group of Concerned Scientists estimated that about $6.2-$6.8 billion annually over 30 years is required to repair degraded landscapes and support biodiversity recovery. Stakeholders also pointed to several structural barriers limiting the scale of nature investments in agriculture, summarised in the table below.

[61] The Paulson Institute, The Nature Conservancy, Cornell Atkinson Center for Sustainability (2020)
[62] Wentworth Group of Concerned Scientists (2024)

Table 5.1: Challenges with scaling nature investment in agriculture

Challenge	Description
Low willingness to pay for nature-positive products	• Limited evidence that consumers or downstream buyers will pay a premium for regenerative or biodiversity-enhancing outputs, reducing commercial incentives for farmers.
Potential impact on land value	• Landowners are cautious about adopting nature-positive approaches due to the potential impact on future land value
Lack of knowledge and technical capability	• Limited familiarity with biological inputs, such as biofertilisers, and a varied understanding of regenerative methods, slow adoption and increased perceived risk.
Nascent voluntary biodiversity market	• Small, fragmented and inconsistent markets for biodiversity outcomes restrict the ability to monetise ecological improvements beyond carbon.
Scale requirements for native revegetation	• Native revegetation projects often need to reach a minimum scale to be commercially viable, limiting participation for smaller landholders or properties with constrained available land.

Overall, this agriculture analysis demonstrates that commercial returns are possible through regenerative practices and native revegetation, yet barriers such as limited willingness to pay, capability gaps and immature markets constrain scale.

6 Recommended next steps

There is strong and growing evidence that nature delivers substantial economic and social value. Up to $892 billion, or 34% of Australia's GDP, depends on ecosystem services, and nature reduces risk from fires, floods and heatwaves, protects infrastructure and supports food production. It also improves health, water quality and cultural outcomes, with Indigenous Protected Areas delivering social returns of up to $3.40 per dollar invested. However, despite this evidence, Australia's Nature Spend Tracker shows that Australia is not yet investing at the scale required to adequately protect. restore and steward nature.

First, there remains a significant information gap between recognising nature's value and translating it into investment decisions. While many studies document avoided losses and societal benefits, forward-looking return-on-investment analysis for governments and private enterprises is still limited. Clearer fiscal and commercial return on investment metrics would strengthen the case for increased public expenditure, philanthropic support and private capital allocation. A clear understanding of the return on investment is therefore a priority to help decision-makers justify and scale investment.

Another area of information gap is the case to invest in nature for industries other than agriculture. This report's agriculture case study demonstrates how a sector-specific lens can clarify risks, opportunities and revenue pathways. Extending this structured approach to other highly nature dependent / impactful industries such as energy, infrastructure, and resources will help build credible, industry-specific investment cases and enable the private sector to play a larger role in financing Australia's nature conservation.

Beyond closing the information gap, scaling up the adoption of regenerative practices and native revegetation in agricultural land is an opportunity to increase investment in nature. The agriculture case studies show that regenerative practices and native revegetation can deliver both commercial and environmental returns, yet capability gaps exist that constrain more widespread adoption. Building capability would help integrate nature-positive practices into mainstream land management.

Today, the commercial case for nature-positive investment remains emerging and highly dependent on policy settings. Limited price premiums for nature-positive products, concerns about land valuation impacts and a fragmented voluntary biodiversity market constrain investor confidence. While the ACCU market provides an important foundation, it could be expanded to support more projects with biodiversity benefits. The government has a critical role in creating demand signals through regulation, procurement, compliance markets, and stewardship payments. Expanding these demand mechanisms will be essential to crowd in private capital to unlock nature-positive investment at scale.

Part B – Commercial benefits

7 Research on economic returns

7.1 The current evidence base

Despite these uncertainties, major recent studies provide increasingly robust macro-level quantification of nature's economic importance.

Table 7.1: Summary of indicators of the economic importance of nature

Area of returns	Geographic focus	Indicator	Source	Value/ estimate	Timing
GDP	Global	GDP dependent on nature	World Economic Forum (2020)	US$44 trillion (over half of global GDP)	2020
		GDP at risk due to decline in ecosystem services	World Bank (2021)	US$2.7 trillion in global GDP is at risk	2030
		GDP increases due to nature-focused policies	World Bank (2021)	US$50-150 billion increase in global GDP	2030
	Australia	GDP dependent on nature	Australian Conservation Foundation (2022)	A$892.8 billion (nearly half of Australia's GDP)	2022
	Australia	GDP dependent on the Great Barrier Reef	Deloitte (2025)	A$9 billion	2025
Revenue opportunities	Global	Revenues from nature opportunities	World Economic Forum (2020)	US$10.1 trillion annually	2030
	Australia	Revenues from nature opportunities	Cyan Ventures (2024)	A$298 billion annually	2035
		Revenues from singular market (biodiversity market)	PWC (2024)	A$137 billion annually	2050
		Revenues from singular market (contribution of wetlands to commercial fisheries in Southeastern Australia)	The Nature Conservancy Australia (2019)	A$35.5 million annual contribution	2019
Jobs	Global	Jobs supported by nature opportunities	World Economic Forum (2020)	395 million jobs supported	2030
	Australia	Jobs supported by nature opportunities	Cyan Ventures (2024)	1.6 million direct jobs	2035
	Australia	Jobs supported by the Great Barrier Reef	Deloitte (2025)	77,000 jobs	2025

Area of returns	Geographic focus	Indicator	Source	Value/ estimate	Timing
Cost savings & productivity	Global	Protection benefits / potential cost savings from nature (mangroves)	Menéndez, P., Losada, I.J., Torres-Ortega, S. et al. (2020)	$US65 billion annually	2020
		Cost reduction from nature intervention (case study for wetland restoration)	Ramsar, Convention of Wetlands (2025)	US$199 per hectare per annum	Annual
		Protection benefits / potential cost savings from nature (coral reefs)	Spalding (2022)	$109 billion in global GDP	2022
	Australia	Protection benefits / potential cost savings from nature (mangroves)	ABS (2025)	A$57 million worth of dwellings protected	2020-21
		Protection benefits / potential cost savings from nature (saltmarsh)	ABS (2025)	A$8 million worth of dwellings	2020-21
		Productivity benefits from nature (forests in Victoria)	Victorian Government (2019)	Forests supplied: • ~6,432 GL of water (valued A$0.8-1.3 billion), • 9 million m³ of timber (valued at A$82 million) • Flood-mitigation benefits to 646 localities (≥A$97 million/yr) • Prevented 382 million tonnes of soil erosion (A$3.1–8 billion) • Sequestered 41 Mt CO_2 in 2017 (~A$3 billion)	2018
		Value of specific aspect of nature (case study of trees in Canberra, Australia)	Tapsuwan et al. (2021)	Trees in Canberra provided: • A$9.1 million in energy savings • A$2.15 million from carbon sequestration • $0.86 million in pollution removal • A$0.3 million from reduced stormwater runoff, among other services.	2018

Area of returns	Geographic focus	Indicator	Source	Value/ estimate	Timing
				• On average, each public tree contributed roughly A$35–$40 per year in combined ecosystem benefits	
		Value of damage mitigation from nature (case study for wetlands impact on storms)	Mulder et al. (2020)	A$469 per hectare	Ongoing
Risk reduction	Global	Cost-benefit of investment in nature (adaptation measures)	Global Commission on Adaptation (2019)	US$2–10 return per US$1 invested	Ongoing
	Australia	Protection benefits / potential cost savings from nature (saltmarsh, mangroves, seagrasses)	The Nature Conservancy Australia (2019)	A$2.6 billion worth of properties protected	2019
		Climate risk reduction	ABS (2025)	A$43.2 billion worth of carbon stored	2020-21

8 Research on social and environmental returns

8.1 The current evidence base

Table 8.1: Summary of indicators of the environmental and social importance of nature

Area of returns	Geographic focus	Indicator	Source	Value / estimate	Timing
Climate mitigation & adaptation	Global	Economic mitigation potential of AFOLU at < US$100/tCO$_2$e; largest potential from conservation, improved management and restoration of forests and other ecosystems	IPCC Sixth Assessment Report (2022)	4.2–7.4 GtCO$_2$e potential from ecosystem conservation and restoration; reduced deforestation in tropical regions highest total mitigation	2020–2050
	Australia	Carbon stored by selected ecosystems and monetary value	ABS (2025)	34.5 million kilotonnes of carbon stored; valued at A$43.2 billion	2020–21
Public health & wellbeing	Global	Health benefits associated with greenspace exposure (meta-analysis)	Twohig-Bennett C., Jones A. (2018)	31% lower all-cause mortality; 16% lower cardiovascular mortality; 28% lower incidence of type II diabetes	Various study periods
	Global (U.S. example)	Avoided mortality and morbidity from urban-tree air-pollution removal	Nowak et al. (2014)	>850 deaths avoided; ~670,000 acute respiratory symptom cases avoided annually	Annual
	Global	Health benefits associated with residential greenness (meta-analysis of longitudinal cohorts)	Rojas-Rueda D. et al. (2019)	Pooled HR = 0.96 (95% CI 0.94–0.97) per +0.1 NDVI within ≤500 m of home; based on 9 cohorts, 8.3 million people, 7 countries. Lower HR = lower all-cause mortality risk.	Various cohort follow-ups; study published 2019
	Global - Europe (31 countries; 978 cities + 49 greater cities)	Preventable mortality from insufficient urban green space (HIA vs	Barboza E.P. et al. (2021)	Meeting WHO's green-space access recommendation could prevent 42,968 deaths/year (95% CI 32,296–64,177) = 2.3%	2015 baseline year

Area of returns	Geographic focus	Indicator	Source	Value / estimate	Timing
		WHO proximity target)		(95% CI 1.7–3.4) of natural-cause mortality, equivalent to 245 YLL per 100,000 people (NDVI proxy). (Using % green-area proxy: 17,947 [0–35,747] deaths/year).	
	Global - UK (Wales	Ambient greenness & access to GBS and subsequent mental-health outcomes (10-year longitudinal panel)	Geary R.S. et al. (2023)	+0.1 EVI associated with 20% lower odds of CMD (AOR 0.80, 95% CI 0.80–0.81); 10-percentile-point more access to GBS associated with 7% lower odds (AOR 0.93, 95% CI 0.93–0.93); each additional 360 m to nearest GBS associated with 5% higher odds (AOR 1.05, 95% CI 1.04–1.05). Effects strongest in more-deprived areas.	2008–2019
	Global (11,534 urban areas)	Urban greenness and heat-related mortality (global modelling)	Wu Y. et al.(2025)	Increasing EVI by 10–30% would lower warm-season mean temperature by 0.08–0.19 °C and reduce heat-related mortality by 0.67–0.91 percentage points (AF)—equivalent to ~0.86–1.16 million heat-related deaths prevented (2000–2019).	2000–2019 (analysis period)
	Australia	Tree-canopy exposure and mental health outcomes	Astell-Burt T, Feng X. (2019)	≥30% canopy within 1.6 km associated with 31% lower psychological distress and 33% lower fair-to-poor health incidence	Longitudinal cohort
	Australia	Dose–response for visits to green space and disease prevalence	Shanahan et al. (2016)	30+ minutes per week associated with up to 7% lower depression and 9% lower high blood pressure prevalence	Cross-sectional
Water quality & security	Global	Source-water protection via forest buffers: treatment savings and	Wu et al. (2024)	9–19% lower spring nitrate at intake; ~US$2.63 m/yr net benefits; savings in salt, electricity, activated carbon, and water	17-year period

Area of returns	Geographic focus	Indicator	Source	Value / estimate	Timing
		operational benefits			
	Australia	Constructed wetlands and vegetated drains for farm runoff	Kavehei, E et al. (2021)	~44% reduction in dissolved inorganic nitrogen; 20–72% reduction in total nitrogen	Study period
Food security & land productivity	Global	Economic value of animal pollination to crops	IPBES (2016)	US$235–577 billion per year; ~35% of crop production underpinned	Annual
	Australia	Honey-bee pollination contribution to the economy and supported crop value	AgriFutures (2024)	A$4.6 billion per year contribution; A$12.9 billion per year crops supported	2020–21 base
	Australia	Coastal wetlands' contribute on to nearshore commercial fisheries (SE Australia)	The Nature Conservancy Australia (2019)	A$35.5 million per year	Annual
Indigenous cultural & community benefits	Australia	Social return on investment in Indigenous Protected Areas	PEW Charitable Trusts (2019)	Up to A$3.40 social return per A$1 invested; higher where Indigenous rangers employed	From 2009
	Australia	Community wellbeing, employment and training pathways, welfare, incarceration rates	Pew Charitable Trusts (2015)	The Working on Country program has resulted in almost 800 full-time ranger jobs. Retention rates in the program are very favourable (80 to 85%). These positions are created in remote areas where the advantage is greatest and social problems most severe.	2009-2012
	Australia	Employment	Australian Government (2021)	• Indigenous ranger and land management programs employ over 2,100 Indigenous people across Australia.	2021

Area of returns	Geographic focus	Indicator	Source	Value / estimate	Timing
				• Indigenous Protected Areas cover more than 87 million hectares, accounting for over half of Australia's National Reserve System. • Caring for Country programs support employment, cultural knowledge transfer and community wellbeing in remote Indigenous communities.	