KPMG

National Farmers Federation

A Return on Nature

Enabling the market for sustainable finance and ecosystem services.

Stakeholder Centricity

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National Farmers' Federation Foreword

Australian farmers manage 51 per cent of the country's total land area. They are environmental stewards and are therefore in the best position to continue to manage the land sustainably and protect the environment.

Farmers recognise the need to protect the Natural Capital that underpins their production systems. However, there is currently little or no recompense for the services the natural systems on their properties deliver to society. There is also little acknowledgement of landholders who actively make improvements to their land that increase the value of their Natural Capital.

While there is a benefit to landholders, Natural Capital on private land has been providing public good conservation outcomes. However, without a new ecosystem services market paradigm, these public good outcomes will continue to be unacknowledged. This is to the detriment of landholders who are required to continually invest in environmental stewardship activities. Farmers should be encouraged through performance measures – such as ecosystem services payments – to continue to undertake environmental stewardship and deliver wider biodiversity outcomes to meet public good demand. Farmers need to be paid fair and equitable returns for the products and services their properties provide, and the current approach to agricultural supply chains is not in the best interests of farmers or Australian consumers.

Additionally, as awareness and concern for the environment and social expectation on the services it provides elevates, it is prudent to consider how the value of Natural Capital can be meaningfully incorporated into a wider market-based framework that would ensure social, environmental and economic benefits are formally recognised and rewarded.

It makes sense to capture the value of Natural Capital and provide for ecosystem services payments in a market-based framework that incentivises and rewards ongoing environmental stewardship decision-making on farm. A transparent and robust system is needed to support this. In the absence of a market-based system that assigns value to Natural Capital and the various services provided by the environment, there is little ability for farmers to pursue the protection of natural assets within the current agricultural market framework without incurring significant cost or loss of income. Landcare has been a key transitional tool, the opportunity now is to take the next step and exploit digital and remote sensing technologies to provide the necessary efficiency and quality systems for an accessible set of indicators and complementary market framework. To date, national and state legislative instruments to protect the environment have been prescriptive, inefficient, and do little to recognise the potential role of farmers in sustaining, and enhancing, natural and agricultural landscapes.

The NFF believes research into the cost externalities for agriculture in Australia are inadequate, including assessment of production value, sustainable farming metrics, environmental benefits, and social benefits in balance with environmental costs such as nutrient rundown, degradation or biodiversity loss. To date there has not been sufficient quantification of the Natural Capital value and ecosystem functions for what they deliver in supporting a healthy environment. As such, we believe there is a crucial need to establish an ecosystems services market that delivers specified and defined biodiversity outcomes.

This paper discusses the need to capture the value of Natural Capital in a market-based system that is integrated with the Australian economy, and recognises that the best environmental outcomes are achieved by empowering and incentivising landholders to manage their landscapes.

Fiona Simson
President

Tony Mahar
Chief Executive Officer

KPMG Foreword

Farmers want to improve natural assets while driving environmental outcomes and to date they have already achieved so much. We pay tribute to the leaders of movements such as Landcare and other farm-focused environmental groups that have helped farmers deliver these improvements.

Australia's 50,000-plus farm businesses are already environmental stewards of vitally important plants, animals, air, water, soil, minerals and biodiversity – without which we cannot survive. They remain part of the environmental stewardship and biodiversity solution.

Governments want to support farmers in their environmental endeavours. Traditionally, support has been provided via grant programs that co-invest in on-farm works or training, or provide stimulus funding to accelerate on-farm practices such as rebate programs.

Finance and industry are moving quickly towards sustainable investment goals. This reflects a willingness to support sustainable investments with a multiplicity of environmental, social, cultural and financial returns. A healthy economy depends on a healthy environment, and the manner of economic growth increasingly matters.

We believe that farm business owners, Government, business, investors and consumers are ready to support and invest in structured ecosystem-based funds that support farmers to continue to improve Natural Capital resources and underpin a new valuation of biodiversity outcomes.

Sustainable Finance, driven through Natural Capital markets and associated ecosystem services investment options, signals a new dawn to address the diverse challenges of the agricultural sector. It also offers an innovative way to harness effective global capital markets to drive much needed capital at scale into the sector. This builds on, and celebrates, established positive stewardship participation and increases the agricultural sector's capacity to adapt to a changing climate and positively shape our nation's common wealth through the delivery of defined biodiversity outcomes.

This paper discusses market-based and Sustainable Finance approaches with a key focus on ecosystem services that combine capital raising for sustainable land use and management with yield generation linked to defined on-farm outcomes. These outcomes are environmental (such as improved soil, air or water quality including river health or biodiversity); social and cultural (such as indigenous community empowerment and protection of sacred sites); better livelihoods and community cohesion; or economic (such as increased farm productivity and diversification of revenue streams for farmers and landholders, regions and rural communities).

These models do not necessarily need government involvement and can be driven by individual farm businesses, groups and industries that are connected to fund managers, food companies, banks or other businesses. However, government investment in market design principles and catalytic participation as a public investor ensures private capital market investors and business can engage with confidence and bring scale to the marketplace.

Bringing new market-based, outcome-driven models to life will require strong intermediaries with convening power across sectors, deal structuring know-how and the independence to verify impact integrity and instil investor confidence.

We extend an open invitation to farmers, business, the government, conservation organisations and capital market investors to accelerate the opportunity ecosystem services markets provide to mobilise additional funding from a broader sustainable investment community. This in turn will grow and evolve the agricultural sector as an attractive and sustainable investment proposition that delivers environmental outcome benefits for all.

Robert Poole
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Director
Head of Social &
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Acronyms

Abbreviation	Definition
ABARES	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
ACCU	Australian Carbon Credit Units
APRA	Australian Prudential Regulation Authority
ASIC	Australian Securities and Investments Commission
AUD	Australian Dollars
BOM	Bureau of Meteorology
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DA	Department of Agriculture (Federal)
DFAT	Department of Foreign Affairs and Trade
DMAF	Disaster Mitigation and Adaptation Fund
ESG	Environmental, Social and Governance
EU	European Union
FAO	The Food and Agriculture Organization of the United Nations
FIRB	Foreign Investment Review Board
FSB	Financial Stability Board
FTAs	Free Trade Agreements
GHG	Greenhouse Gasses
GDP	Gross Domestic Product
GVA	Real Gross Value Added
IPCC	Intergovernmental Panel on Climate Change
NCD	Natural Capital Declaration
NFF	National Farmers' Federation
TEEB	The Economics of Ecosystems & Biodiversity
TCFD	Task Force on Climate-related Disclosures
SDG	United Nations Sustainable Development Goals
SLLF	Sustainability-Linked Loan Fund
UNFCC	United Nations Framework Convention on Climate Change
UNGC	United Nations Global Compact
UNCG	United Nations Climate Group
UNPRI	United Nations Principles for Responsible Investment

Glossary

Asset Class

A group of securities, investments or financial instruments that have similar characteristics, behave similarly in the marketplace and are subject to the same rules and regulations.

Biodiversity

Biodiversity includes diversity within and among species and ecosystems. Changes in biodiversity can influence the supply of ecosystem services. Biodiversity, as with ecosystem services, must be protected and sustainability managed.[1]

Biodiversity Markets

Operate to provide payments to land owners and managers for the protection, management or restoration of biodiversity. In an agricultural context, biodiversity markets consider the stocks of soil health, diverse pasture, and established trees and other assets that deliver sustainable flow of crops, fodder, shelter and shade.

Blended Finance

The complementary and strategic use of public, private and philanthropic funds to increase private sector investments and sustainable development, resulting in positive results for both investors and communities. Blended Finance transactions can be structured in conjunction with other market-based mechanisms, such as carbon credits and certification.

Capital Markets

The part of the financial system in which money is channelled into productive investments equity, debt and other medium- to long-term financial instruments.

Conservation Finance

A mechanism through which a financial investment into an ecosystem is made – directly or indirectly through an intermediary – that aims to conserve the values of the ecosystem for the long term.

Debt

Funds borrowed from a lender that the borrower promises to repay in accordance with the terms of a contract. The borrower usually has to repay the initial funds borrowed, as well as interest, namely, a regular payment of a sum calculated as a percentage of the funds borrowed (interest rate).

Ecosystems

Ecosystems are living elements that interact with each other and their non-living environments, and provide benefits or services to the world.[2]

Ecosystem Services

Ecosystem services are the benefits people obtain from ecosystems that make human life possible. These include provisioning services such as food and water; regulating services such as flood, fire and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services such as nutrient cycling.

Environmental Stewardship

The comprehensive understanding and effective management of critical environmental risks and opportunities related to climate change, emissions, waste management, resource consumption, water conservation, biodiversity protection and ecosystem services.[3]

Environmental, Social & Governance (ESG)

A set of non-financial indicators or standards for a business that investors or lenders use to evaluate corporate behaviour, screen investments and determine the sustainability impact and investability of an investment opportunity.

Equity

Equity involves raising money by selling interest in the company. Typically, equity holders receive voting rights and have an ownership stake in the business.

Green Bond

A fixed income financial instrument that is created for the purpose of raising investments for new and existing projects with environmental benefits exchange for a promise to pay it back, alongside payments called coupons.

Incentives

Strategies used by public and private sectors to encourage farmers to protect or enhance ecosystems services beneficial to them and others.[4]

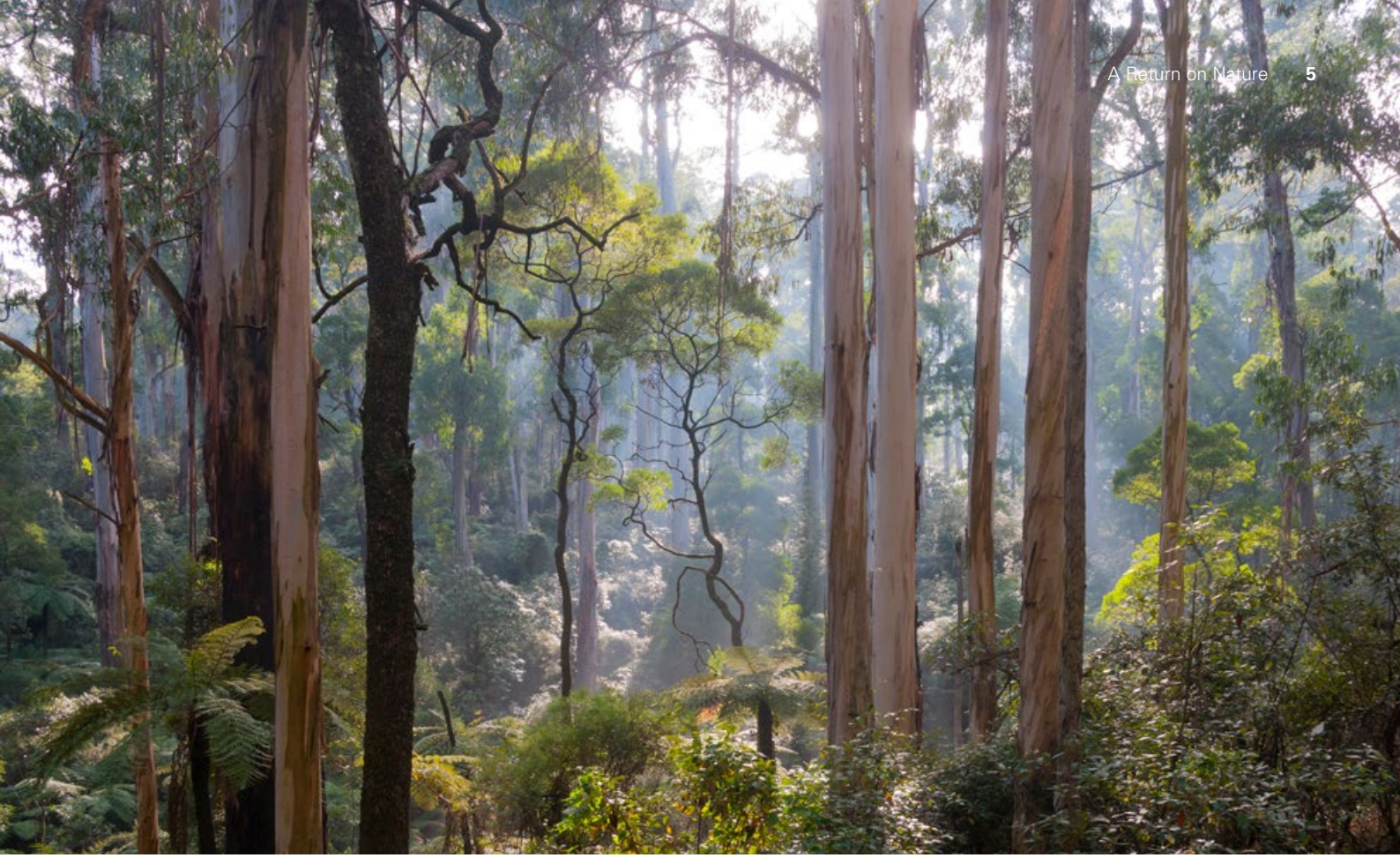
Impact Investors

Impact investments are made with the intention to generate positive, measurable social and environmental impact alongside a financial return.[5]

Institutional Investors

Entities that pool money to purchase securities, real property, and other investment assets or originate loans are known as institutional investors. These include banks, insurance companies, pensions, hedge funds, real estate investment trusts, investment advisors, endowments, and mutual funds – all of which invest on behalf of their members.

1. FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/en/
2. FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/en/
3. United Nations, 2019, United Nations Global Compact, Available at: https://www.unglobalcompact.org/
4. FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/incentives/en/
5. Global Impact Investing Network, 2019, What you need to know about impact investing, Available at: https://thegiin.org/impact-investing/need-to-know/#what-is-impact-investing



Intermediary

An intermediary is an organisation that acts as a link between parties to a business deal, investment transaction or negotiation.

Natural Capital

Natural Capital refers to the world's stocks of natural assets, which include geology, soil, air, water and all living things. Humans derive a wide range of services from Natural Capital, often called ecosystem services (see above).

Pay-for-Outcomes Financing

Pay-for-outcomes financing is a contract with a public sector or governing authority, whereby it pays for better, clearly defined and measurable social or environmental outcomes in certain areas and passes on the savings achieved to investors.

Responsible Investment

The United Nations Principles for Responsible Investment ('UN PRI') defines Responsible Investment (RI) as an approach to investing that aims to incorporate environmental, social and governance (ESG) factors into investment decisions to better manage risk and generate sustainable long-term returns.[6]

Sustainable Agriculture

Conserves land, water, and plant and animal genetic resources, and is environmentally non-degrading, technically appropriate, economically viable and socially acceptable.[7]

Sustainable Finance

Sustainable Finance broadly refers to investments made to achieve a triple bottom line of people, planet and profit.

Triple Bottom Line

A framework suggesting that companies or organisations consider environmental and social concerns as they do profit.

United Nations Sustainable Development Goals

The United Nations (UN) Sustainable Development Goals (SDGs) are a collection of 17 universal goals that aim to end poverty, protect the planet and ensure all people enjoy peace and prosperity. The UN brought them into life in 2015 with the intention to achieve them by 2030. The SDGs only propose what needs to happen, not how proposed solutions will be financed. The global community relies heavily on the private sector to solve some of the most urgent problems the world is facing. Both companies and institutional investors are being asked to contribute to the SDGs through their business activities and investment decisions.

6. KPMG Investment Advisory, February 2018, Responsible Investing – A fad or the future?, Available at: https://assets.kpmg/content/dam/kpmg/uk/pdf/2018/03/kpmg_responsible_investment_a_fad_or_the_future.pdf
7. FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/en/

Our Vision For The Future

Agriculture is deeply linked with nature. 51 per cent of Australia's land is used for agricultural production.[8] As a result, our farmers are stewards and beneficiaries of ecosystem services – along with other stakeholders around them.[9]

However, the protection and enhancement of most ecosystems services in agriculture require an active contribution and investment from farmers. But farmers are not the only beneficiaries, and often operate under very slim profit margins that give them little time or resources to invest in building ecological infrastructure that benefits a wide community.[10] Farmers need an incentive to embark on these activities.

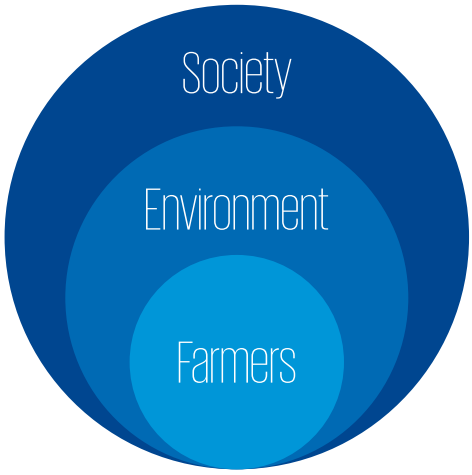
Existing markets do not value ecosystem services because they are seen as public good, instead of valuable products that could cease to be in supply if not properly managed.[11] Current Landcare and conservation grants are not sufficient to incentivise farmers, both in the long and short term. Such grants are also not sufficient to resource farmers to invest in the time and equipment required to develop new techniques and overcome typical adoption barriers for good environmental stewardship.

There is a current market failure in the agricultural sector. This is seen in a misalignment of the incentives between production, conservation and investment.

Sustainable Finance offers a new approach to reframe what we value when we invest. We see a clear and powerful opportunity for Sustainable Finance to address this market failure.

Sustainable Finance can reframe how Australian farmers can become an instrumental part of the solution (see diagram below). Delivering against defined sustainability outcomes today will yield a return tomorrow: a return on nature for environment, society, farming community, industry (corporates), investors and consumers.

Figure 1: The New Paradigm For Systems Thinking



Source: KPMG Australia

Sustainable Finance is a catalyst to widen and deepen incentives for farmers. It's also a powerful lever available to both public and private investors to overcome typical adoption barriers and drive sustainable land use and management practices across the agricultural supply chain. This will reposition and future-proof the entire food and agricultural sector towards greater resilience.

Through the creation of an ecosystem services market and an extension of incentive-linked ecosystem payments to farmers, agriculture has the potential to evolve and grow into attractive, uncorrelated asset classes. It also has the opportunity to deliver a number of direct positive returns or co-benefits, beyond financial returns, that occur as a result of sustainable land use and management. However, these co-benefits may not automatically be priced into the true value of the investment – a multiplicity of returns.

These returns include:

- **Environmental returns** such as improved water including river health, soil and air quality, biodiversity conservation, and sustainable pest and weed management.[12]
- **Social and cultural returns** such as increased social capital, indigenous community empowerment, knowledge sharing and education, better livelihoods and community cohesion, improved physical and mental health, and protection of sacred sites.[12]
- **Economic returns** such as increased farm productivity, diversified revenue streams for farmers and landholders through ecosystem services payments, investment in regions and rural communities or generating jobs on the land.[12]

Global capital markets and large institutional asset owners and managers are moving fast to adopt mandatory climate risk and mitigation disclosure requirements. We expect that sustainability metrics will increasingly be adopted into the investment and risk management process and reflected in funding costs and investments into new agricultural related sustainable finance options.

We must join the dots between a sustainable environment, farming practices, finance, communities and economy, and recognise the interdependencies. This represents a strategic opportunity to unlock the agricultural sector's vital role for our wealth and wellbeing as a society, and is best pursued in collaboration with government, industry and capital markets through new forms of ecosystem services markets.

The farming industry itself is at a critical point of potential growth. In 2018, the National Farmers' Federation (NFF) set out its 2030 Roadmap. A key pillar of this roadmap is to incentivise farmers to be good environmental stewards of their land and value ecosystem services to farming.[13] The NFF aims to achieve a net additional benefit of 5 per cent of farm revenue derived from ecosystem services by 2030, equating to $5 billion annually.

8. Australian Bureau of Statistics, 2017, Land Management and Farming in Australia 2016–17, Available at: https://www.abs.gov.au/ausstats/abs@.nsf/mf/4627.0
9. FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/incentives/en/
10. FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/incentives/en/
11. FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/incentives/en/
12. Carbon Market Institute, 2017, Carbon Farming Industry Roadmap, Available at: tent/uploads/2017/11/Carbon-Farming-Industry-Roadmap.pdf
13. National Farmers' Federation (NFF), 2018, 2030 Roadmap: Australian Agriculture's Plan for a $100 Billion Industry, Available at: https://www.nff.org.au/get/6175.pdf

A fully functioning environmental marketplace (such as payment for ecosystem services) can incentivise meaningful participation amongst farmers and Indigenous landholders, and diversify and grow farmer's revenue opportunities from domestic and international trading activity. At the same time, it can be delivering against a defined environmental outcome and in turn increasing the agricultural sector's overall resilience.

As a first step, the government has committed to a $30 million Pilot Agricultural Stewardship Program. This Program provides the opportunity to support the initial development of an ecosystem services market through the piloting of improved Natural Capital measurement and valuation approaches. It will also define how payment is made by investors and to farmers.

This initial Program would be further strengthened through the implementation of the recommendations of the independent report prepared for the Commonwealth Department of the Environment and Energy on the *Review of interactions between the Protection Biodiversity Conservation (EPBC) Act and the agriculture sector*. The review recommends the Federal Government[14] establish a $1 billion fund to create a market for biodiversity outcomes that "incentivises farmers (and others) to protect and actively manage matters of national environmental significance outside of legislated requirements."

We endorse and support the proposed establishment of the fund and the initial Pilot Agricultural Stewardship Program to frame up the market. This would accelerate the development of a national, scalable and globally aligned Natural Capital marketplace in Australia. Now is the time to act.

Australian farmers produce almost **93 per cent** of Australia's daily domestic food supply.[15]

Australian agriculture has an estimated capital shortfall of **$159.9 billion.**[16]

Only **0.3 per cent**[15] of institutional funds under management are invested in the agricultural sector.

Agriculture contributes **3 per cent** to Australia's total **gross domestic product** (GDP).[17]

About **90 per cent** **of native vegetation** in the eastern temperate zone **has been removed** as a result of human habitation, industry and transport, or replaced by introduced pastures and crops.[18]

94 per cent of Australian farmers are actively **undertaking natural resource management**.[19]

99 per cent of Australia's **85,681** **farm businesses** are **Australian owned and operated**.[20]

51 per cent of Australia's land is used for agricultural production.[21]

Loss of land resilience is estimated to cost at least **$2 billion** **annually**.[22]

In 2015-16, **59 per cent** **of water extraction was for agricultural purposes**.[23]

Farming contributes roughly **2.6 per cent** of Australia's total GVA ($1,662 billion).[24]

14. Department of Environment and Energy, 2019. Available at: https://www.environment.gov.au/epbc/publications/review-interactions-epbc-act-agriculture-final-report
15. National Farmers' Federation (NFF), 2019, Farm Facts, Available at: https://www.nff.org.au/farm-facts.html
16. National Farmers' Federation (NFF), November 2018, Statement by NFF CEO Tony Mahar on new small business funding measures, Available at: https://www.nff.org.au/read/6222/statement-nff-ceo-tony-mahar-on.html
17. National Farmers' Federation (NFF), November 2018, Statement by NFF CEO Tony Mahar on new small business funding measures, Available at: https://www.nff.org.au/read/6222/statement-nff-ceo-tony-mahar-on.html
18. Aretino, B, Holland, P, Peterson, D and Schuele, M, 2001, Creating Markets for Biodiversity: A Case Study of Earth Sanctuaries Ltd, Productivity Commission Staff Research Paper, AusInfo, Canberra.
19. National Farmers' Federation (NFF), 2019, Farm Facts, Available at: https://www.nff.org.au/farm-facts.html
20. National Farmers' Federation (NFF), 2019, Farm Facts, Available at: https://www.nff.org.au/farm-facts.html
21. Australian Bureau of Statistics, 2017, Land Management and Farming in Australia, 2016–17, Available at: https://www.abs.gov.au/ausstats/abs@.nsf/mf/4627.0
22. Stevens, W, 2001, Parliament of Australia: Declining Biodiversity and Unsustainable Agricultural Production-Common Cause, Common Solution?, Available at: https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp0102/02RP02
23. ABARES, 2018, ABARES Insights, Issue 1, 2018, Available at: http://data.daff.gov.au/data/warehouse/9aa__/ABARESInsights/2018_01/SnapshotAustralianAgriculture20181019_v1.0.0.pdf
24. Australian Trade and Investment Commission, 2019, Why Australia: Benchmark Report, Why Australia: Benchmark Report, Available at: https://www.austrade.gov.au/International/Invest/Resources/Benchmark-Report

Defining the Market

What is Natural Capital?

Natural Capital can be defined as the worlds stocks of natural assets which includes geology, soil, air, water and all living things. It's from this Natural Capital that humans derive a wide range of services, often call ecosystem services, which make human life possible.[25]

Ecosystem Services

As the world's population booms towards 9 billion by 2050, the demand for agricultural products (food, fibre and fodder) will rise dramatically. Combined with the effects of climate change, these demands will put even more strain on land, water, energy and other resources that are already stretched.[26]

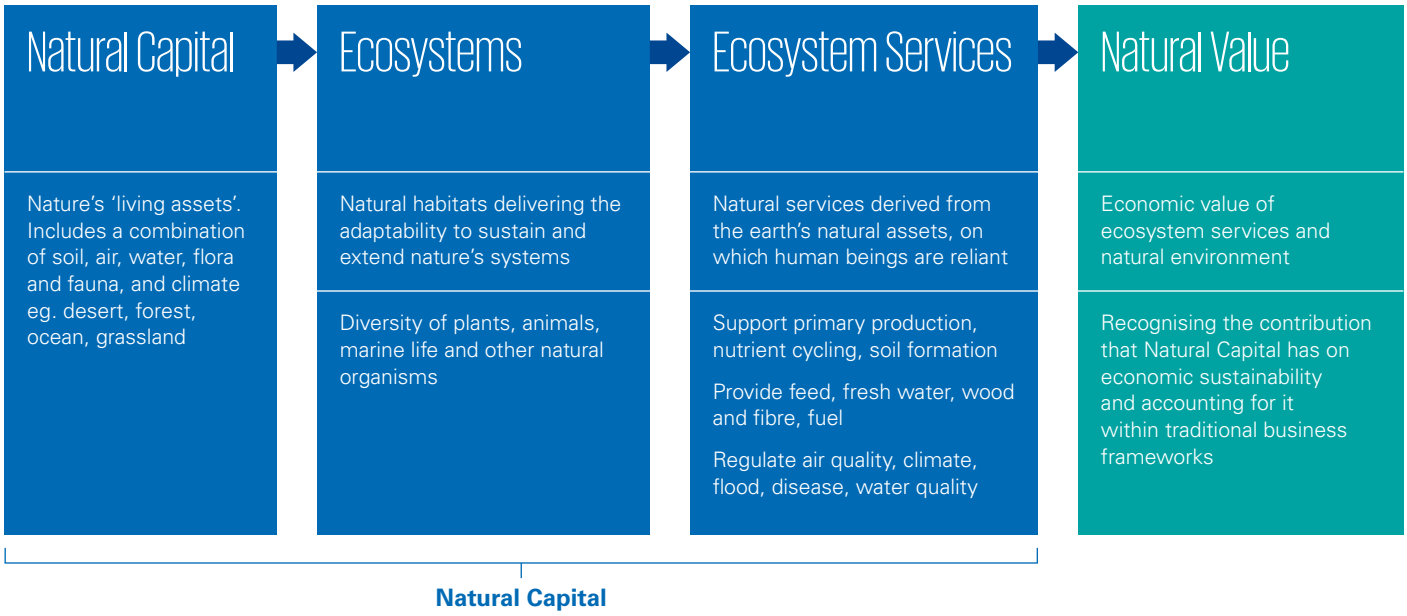
Nature supports human health, livelihoods and economies in countless ways. Ecosystems store carbon to slow climate change, purify and regulate water supplies, provide habitat for fauna, and offer opportunities for spiritual and cultural experiences. The world's population depends on resilient Natural Capital, but despite its importance, ecosystem services have largely been treated as externalities. They are recognised as important but not always factored into business and investment decision-making, often because practical, credible information about them is lacking or inaccessible.

Consequently, in economic terms, these ecosystem services are typically 'free' and are consequently at risk of being increasingly overexploited. A lack of agreed valuation on Natural Capital has limited the ability in recent times to invest in it through payment for the ecosystem services it provides. Instead, Natural Capital via ecosystem services payments can allow for valuation and investment with the same diligence and rigour that we invest in other forms of capital such as financial, manufactured or human capital.

Accelerating Australia's ecosystems services marketplace is crucial. In 2011, the total value of global ecosystems services was estimated to be USD$125 trillion.[27] As the Natural Capital Coalition points out "no one wants to put a price on nature but we do need a better understanding of its value."[28]

Farmers are key environmental stewards and have long practiced the need to sustainably manage the land that underpins their production system. Farmers are best placed to manage and use the land sustainably, and should be encouraged to protect the environment including its subsidiary ecosystems.

Figure 2: Defining Natural Capital



Source: adapted from World Forum on Natural Capital, The Economics of Ecosystems and Biodiversity, Food and Agriculture Organization of United Nations.

25. TEEB, 2018, Scientific and Economic Foundations Report, Available at: http://teebweb.org/agrifood/wp-content/uploads/2018/11/Foundations_Report_Final_October.pdf
26. WBCSD, 2019, Water-Smart Agriculture, Available at: https://www.wbcsd.org/Programs/Food-Land-Water/Water/Water-smart-Agriculture
27. Costanza R, de Groot R, Sutton P, Van der Ploeg S, Anderson SJ, Kubiszewski I, Farber S, Turner RK, 2014, Changes in the global value of ecosystem services, Global environmental change, 1 26, 152-8.
28. Natural Capital Coalition, August 2018, No one wants to put a price on nature but we do need a better understanding of its value, Available at: https://naturalcapitalcoalition.org/no-one-wants-to-put-a-price-on-nature-but-we-do-need-a-better-understanding-of-its-value/

The measurement and valuation of Natural Capital assets is essential for recognising and building the strengths of Australian landscapes in financial, environmental, community, cultural and spiritual terms. The measurement, restoration and building of ecosystem services marketplaces enables the introduction of new economic threads into the contribution biodiversity improvements make to the social fabric of Australia. They also provide financial incentives for agricultural businesses to build greater resilience as they grow and thrive through enhanced environmental stewardship.

Government funding of the initial development of clear, robust and transparent financial measurements can encourage much needed investment from the public and private sectors into agricultural assets.

How do we start to define the ecosystem?

There are already a multitude of activities underway exploring how we can value Natural Capital, including increased engagement by both financial, private and investment institutions.

Natural Capital Declaration
The Natural Capital Declaration (NCD) is "a finance-led initiative to integrate Natural Capital considerations and risks into loans, public and private equity, and fixed income and insurance product."[29]

The NCD is signed at CEO-level to secure the highest-level of commitment, which highlights the materiality of Natural Capital for the financial services industry. The NCD has developed new metrics, standards and tools to "systemically consider the impacts and interdependency of natural value in core business strategies and operations including risk management, risk underwriting, product and service development, sales and marketing, and investment management."[30]

Natural Capital Commitment
Companies around the world are being encouraged to sign the 'Natural Capital Commitment' to help reverse the loss of natural resources and ensure the continued delivery of vital ecosystem services.

This commitment will encourage companies to account for Natural Capital in its monitoring, reporting and decision-making – and effectively internalise costs in the maintenance and enhancement of supply chains. This approach looks beyond the balance sheet at the company's true impact to help them make more sustainable, long-term decisions.[31]

Natural Capital Valuation
A number of methodologies have emerged to assess the value of Natural Capital.

- *InVEST*

WWF scientists have helped developed InVEST[32] (Integrated Valuation of Ecosystem Services and Tradeoffs). This is a family of modeling tools that map, measure and value the goods and services we obtain from nature. It helps decision-makers visualise the impacts of their decisions and identify trade-offs and compatibilities between environmental, economic and social benefits and map scenarios.

InVEST also enables decision-makers to assess the trade-offs associated with alternative policy options, and to identify areas where investment in ecosystem services can enhance human development and conservation of terrestrial, freshwater, and marine ecosystems.

- *KPMG True Value*

KPMG has developed the True Value methodology – an internationally recognised measurement of a company's or activity's impact on society.

The True Value methodology measures companies' externalities. *Positive externalities* produce a benefit to society that the company is not (fully) compensated for, such as the training of staff or improvements made to local biodiversity. *Negative externalities* produce a negative impact that the company does not directly pay for. Examples of negative externalities include pollution, soil degradation or other environmental damages. True Value then typically gives these externalities a monetary value to provide a better picture of a company's total impact.

As industry and farmers understand their impacts – positive and negative – they are empowered to make better decisions as they grow their businesses. Increasingly, investors, insurers and customers want to know the impacts of companies as well.

The cost of global environmental externalities was nearly USD$7 trillion (11 per cent of the value of the global economy) in 2008, with the largest 3,000 companies causing around 35 per cent of them.[33]

Ecosystem Services as a starting point
There is continued effort required to develop and agree on consistent economic measurements and financial valuation of Natural Capital assets more broadly. Ongoing research and a coordination of existing activities are needed to continue momentum and drive outcomes in this space.

In the meantime, there are immediate opportunities to accelerate an ecosystem services market in Australia.

Clearly defined environmental outcomes that deliver a biodiversity improvement can form the basis of payment for ecosystem services managed by farmers.

This process can be accelerated through the Federal Government's $30 million Pilot Agricultural Stewardship Program and deliver confidence and structure to an ecosystem services market in Australia that would underpin a broader Sustainable Finance market for agriculture.

29. UNEP Finance Initiative, 2012, A commitment by financial institutions to mainstream natural capital in financial products and in accounting, disclosure and reporting frameworks, Available at: https://www.unepfi.org/fileadmin/documents/ncd_booklet.pdf
30. UNEP Finance Initiative, 2012, A commitment by financial institutions to mainstream natural capital in financial products and in accounting, disclosure and reporting frameworks, Available at: https://www.unepfi.org/fileadmin/documents/ncd_booklet.pdf
31. Natural Capital Coalition, n.d., Natural Capital Commitment https://naturalcapitalcoalition.org/projects/business-for-nature/natural-capital-commitment/
32. World Wildlife Fund, n.d., Available at: https://www.worldwildlife.org/pages/invest#
33. UNEP Finance Initiative, 2010, Principles for Responsible Investment, Universal ownership: Why environmental externalities matter to institutional investors.

Key Insights

The ability to value Natural Capital offers the opportunity to reconcile economic and environmental interests. It also provides the basis for better decision-making and can incentivise and reward farmers for existing sustainable land use and management, and/or encourage the adoption of additional innovative sustainable agricultural practices that deliver specific biodiversity and environmental outcomes.[34]

The ability to value Natural Capital will form the basis of future environmental market-based funding and trading mechanisms. It will also enable better Sustainable Finance investment decision-making processes (particularly in lending, property valuation and insurance) as the market continues to mature and key research gaps are addressed.

There is immediate opportunity to accelerate an ecosystem services market with clearly defined outcomes and active investors connected to incentivised farmers.

Recommendations

- Mainstream the Natural Capital valuation methodology for enterprises at all scales.
- Government recognition of the need for and development of a National Natural Capital Policy.
- Government to drive research into the role AgTech can play to measure, monitor and evaluate improvement in environmental and biodiversity outcomes for farm enterprises at all scales.
- Facilitate opportunities to upskill farmers on ecosystem services opportunities through specific training or farmer exchange events.

34. FAO, 2015, Natural Capital Impacts in Agriculture: Supporting better business decision-making, Available at: http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/Natural_Capital_Impacts_in_Agriculture_final.pdf

Ecosystem Services

The Economics of Ecosystems and Biodiversity (TEEB), grouped ecosystem services into four broad categories: provisioning, regulating, supporting and cultural.

Provisioning Services

Provisioning services describe the material or energy outputs from ecosystems. These services include:

Food
Providing the conditions to grow food. Most food production occurs in managed agro-ecosystems. However, food-providing ecosystems also include marine systems and forests that provide for human consumption.

Raw materials
Providing construction materials and fuel including wood, biofuels and plant oils that are directly derived from wild and cultivated plant species.

Fresh water
Playing a vital role in the global hydrological cycle. These services regulate the flow and purification of water.

Medicinal resources
Producing plants used as traditional medicines and raw materials for the pharmaceutical industry.

Regulating Services

Regulating services are the services that ecosystems provide by acting as regulators. These include:

Local climate and air quality
Influencing rainfall and water availability, and regulating air quality by filtering pollutants from the atmosphere.

Carbon sequestration and storage
Storing and sequestering greenhouse gases. Trees and plants remove carbon dioxide from the atmosphere and effectively lock it away in their tissues as they grow. Biodiversity also improves the capacity of ecosystems to adapt to the effects of climate change.

Moderation of extreme events
Creating buffers against extreme weather events or natural hazards include floods, storms, tsunamis, avalanches and landslides. For example, wetlands can soak up floodwater whilst trees can stabilise slopes, and coral reefs and mangroves help protect coastlines from storm damage.

Waste-water treatment
Naturally filter human and animal waste and act as a natural buffer to the surrounding environment. Through the biological activity of microorganisms in the soil, most waste is broken down. Pathogens (disease-causing microbes) are eliminated, and the level of nutrients and pollution is reduced.

Supporting Services

Habitats for species
Each ecosystem provides different habitats that are essential to species survival, and are individual to that species. Migratory species including birds, fish, mammals and insects all depend on different ecosystems during their movements.

Maintenance of genetic diversity
Providing genetic diversity in the variety of genes between and within species populations. Diversity distinguishes different breeds or races from each other, supporting the basis for locally well-adapted cultivars and a gene pool for further developing commercial crops and livestock. Some habitats have an exceptionally high number of species, which makes them more genetically diverse than others. These are known as 'biodiversity hotspots'.

Cultural Services

Recreation and mental and physical health
Walking and playing sports in green space is not only a good form of physical exercise but also helps people relax. The role that green space plays in maintaining mental and physical health is increasingly being recognised, despite difficulties of measurement.

Tourism
Ecosystems and biodiversity promote many kinds of tourism, which provides considerable economic benefits and is a vital source of income for many countries.

Aesthetic appreciation and inspiration for culture, art and design
Language, knowledge and the natural environment are intimately related throughout human history. Biodiversity, ecosystems and natural landscapes continue to be a source of inspiration for art, culture and increasingly for science.

Spiritual experience and sense of place
In many parts of the world natural features such as forests, caves and mountains are considered sacred or have a religious meaning. Nature is a common element of all major religions, and traditional knowledge and associated customs are important for creating a sense of belonging.

Table adapted from: http://www.teebweb.org/resources/ecosystem-services/

Rethinking Markets

There is a growing demand for Australian farmers to produce, value and deliver billions of tonnes of Natural Capital (in the form of carbon credit, for example) to a global market of buyers (such as major companies, industries and government). Additionally, there is growing expectation from the community around environmental stewardship practices and reducing biodiversity loss.

Therefore, the logical imperative is to capture the value of Natural Capital in a market-based mechanism to mediate supply and demand. This would also generate financing solutions for sustainable management and long-term conservation outcomes via ecosystem services.

Current environmental markets
In the absence of formalised environmental markets, voluntary markets (such as carbon) have emerged. There have also been a range of government-backed initiatives and other forms of payment such as via philanthropic channels and one-off funding mechanisms.

The current market approach provides little acknowledgement or incentives for farmers and landholders who actively make improvements to their land to increase the value of their Natural Capital and enhance ecosystem services. This is the unrealised opportunity.

At present, transaction costs to participate in existing markets outweigh the potential benefits, particularly for small and medium-sized farmers. This is a very dynamic space and is rapidly evolving.

While grant schemes have helped they almost always have defined timeframes and therefore do not support ongoing environmental management. The farm sector, supported by government and industry, has already designed many on-farm 'best management practice' systems and self-assessment tools that define the types of outcomes likely to be valued by the market.

Currently, government provides the vast majority of environmental outcomes programs via grant funding or short-term program funded initiatives. These include Landcare grants and voluntary tender programs such as Bush Tender.

Desirable features of Natural Capital markets
A nationally scalable and globally aligned Natural Capital market in Australia would need to be developed to ensure it offers both farmers and buyers the scale, confidence and mechanisms they need to engage efficiently.

There are several crucial building blocks to be considered when building a co-ordinated, fully functioning environmental market-mechanism for Natural Capital in Australia.

Desirable features include, but are not limited to:

- Farmer incentive and willingness to participate.
- Acceptable market structures.
- Translation of industry-agreed sustainable standards into the capital markets and system of finance.
- Robust and accessible data collection mechanism.
- Global trading links.
- Agreed accounting and measurement frameworks.

Established Markets

Carbon markets
While carbon markets are not new in Australia, they have been costly to adopt and participate in given the limitation to scale-up the market.

The Australian Emissions Reduction Fund (ERF)[35] is providing financial incentives to individuals and companies to use technologies in their businesses that reduce Green House Gas (GHG) emissions and improve energy efficiency.

By running projects to reduce emissions, scheme participants can earn Australian carbon credit units (ACCUs) for every tonne of carbon dioxide equivalent they store or avoid emitting. These units can be sold to the Australian Government through a carbon abatement contract, or to other businesses seeking to offset their emissions.

Over 770 projects have been registered under many eligible activities, including energy efficiency, waste management, revegetation, livestock management and savannah fire management.[36]

While not a perfect market structure, the current government is open to new carbon market approaches and/or the evolution of existing markets to deliver greater impact and returns for all market participants. There is an opportunity to evolve this market utilising new market structures via a Natural Capital or ecosystem services market.

Biodiversity markets
Biodiversity markets operate to provide payments to landowners and managers for the protection, management or restoration of biodiversity. In an agricultural context, biodiversity markets consider the stocks of soil health, diverse pasture, and established trees and other assets that deliver sustainable flow of crops, fodder, shelter and shade.

There are few examples of currently operating voluntary biodiversity markets, with most markets being established as a regulatory reform to protect the environment. One of the key barriers to the implementation and success of biodiversity markets is the definition of the tradeable metrics within the market.[37]

35. Clean Energy Regulator, n.d., Available at: http://www.cleanenergyregulator.gov.au/ERF/About-the-Emissions-Reduction-Fund
36. Department of the Environment and Energy, n.d., About the Climate Solutions Fund - Emissions Reduction Fund, Available at: http://www.environment.gov.au/climate-change/government/emissions-reduction-fund/about
37. Needham K, 2019, Offsetting impacts of development on biodiversity and ecosystem services, Available at: https://besjournals.onlinelibrary.wiley.com/doi/abs/10.1111/1365-2664.13372

The opportunity to further develop biodiversity markets is through more structured and formalised 'Pay-for-Outcomes' financial instruments. One example of an existing biodiversity fund with payment for existing outcomes is the NSW Biodiversity Conservation Trust. Under the *Biodiversity Conservation Act 2016*, the Trust manages and controls the Biodiversity Conservation Fund. The fund enters into co-operative conservation arrangements with landowners for the management and protection of natural environment, which is significant to the conservation of biodiversity. The Trust holds the funds set aside and invested to make annual conservation payments to holders of the funded conservation agreements, which are either in-perpetuity or long-term agreements.[38] While the Trust may not provide for the full opportunity of an ecosystem services marketplace, it does provide a pathway to build from.

Another outcomes-focused market instrument is the Reef Credit Scheme (see case study). This will launch in 2020 with a focus on improving the quality of water run-off into the Great Barrier Reef catchment, and attracting those wishing to invest in water quality improvements (such as government, private industry, conservation investors and philanthropists).

Key Insights

While environmentally-focused markets do exist, they are limited in their capacity to scale or are costly for individual farmers to participate in.

A Natural Capital and ecosystem services market will bring sellers (farmers) and buyers (industry and government) together to deliver environmental outcomes through agreed improvement metrics. This will stimulate new opportunities for private and public investment into agricultural assets whilst providing new income streams for farmers.

While the correct incentive mechanisms for farmer participation can be established, it should also be recognised that additional barriers still exist, for example land tax, which can prevent farmers from fully participating in these new markets.

Recommendations

- Research is still required and should be focused on measuring and developing robust and sustainable agriculture and/or biodiversity standards that can be used as the basis to further consolidate and scale incentive-linked Sustainable Finance markets for ecosystem payments. For example, in the current carbon market, there is one metric – carbon dioxide equivalent. Due to the complexity of Natural Capital assets, there are expected to be several metrics in this area. This requires scientific substantiation and robust valuation methodologies. However, it does not and should not represent an unsurmountable barrier to building a viable ecosystem services market. The private sector can pave the way and catalyse incentive-based Sustainable Finance approaches with producer participants through their existing procurement practices.
- Government needs to support the consolidation and convergence of a set of already existing 'best-in-class' responsible agriculture metrics and tiering. This should iterate over time with a view to arrive at a voluntary national Agricultural industry standard for sustainable land use and management and/or best-practice eco-system service delivery with lead and lag indicators. This could take a form similar to the Forest Stewardship Council's current voluntary forest management standards or the Responsible Aquaculture production (ASC) standards.
- There is an opportunity for the Australian Government to establish training and awareness building programs for farmers and other landholders on Natural Capital and ecosystem services opportunities and recognised best-practice responsible agricultural practices.

Case Study: The Reef Credit Scheme

The Reef Credit Scheme[39] is an innovative market-based solution that incentivises land managers to improve the quality of water run-off into the Great Barrier Reef catchment. A Reef Credit is the relative value of sediment reduction in the form of a quantifiable volume of nutrients and/or other agreed metrics, using the reef-wide water quality reduction targets described in the *Reef 2050 Water Quality Improvement Plan (2018)*. A Reef Credit can then be sold to those seeking to invest in water quality improvements, such as government, private industry, conservation investors and philanthropists. In 2017, natural resource management not-for-profits Terrain NRM and NQ Dry Tropics, and environmental markets investor, GreenCollar, established a partnership to guide the development of the Reef Credit Scheme. With financial support from the Queensland Government, the partnership has been focused on setting up a framework to support the Reef Credit Scheme. This framework includes independent governance arrangements that will ensure the highest standards of environmental and financial integrity. Integrity is further strengthened through a number of safeguards, including the requirement that Reef Credit projects are audited against robust methodologies to verify run-off reductions. The Reef Credit Scheme is due to launch in early 2020.

38. Biodiversity Conservation Trust, n.d., What we do, Available at: https://www.bct.nsw.gov.au/what-we-do.
39. Reef Credit, n.d., What is the Reef Credit Scheme?, Available at: https://www.reefcredit.org

Sustainable Finance: Incentive Based Ecosystem Funding Solutions

The Current Market Failure

There is a current market failure in the Agricultural sector due to a misalignment of the incentives between production, conservation and investment.[40]

1. Lack of focus to adopt and apply already existing sustainable land use and management practices into a financial context

Existing markets do not value ecosystem services as these services are seen as public good, not valuable products that could cease to be in supply if not properly managed.[41]

Australian farmers already participate in a range of formal and informal sustainable land use and management practices. Many industries (such as cotton and sugar) have recognised Best Management Practice (BMP) programs, or agreed environmental parameters and benchmarks such as DairySAT (an environmental self-assessment and action-planning tool for Australian dairy farmers).

While these programs exist, there has been a limited ability to measure and value the environmental impact and improvement in a financial context, or more desirably, through an incentive-based Sustainable Finance instrument.

2. Lack of sustainable funding pathways

Many efforts to incentivise and reward environmental stewardship – and more specifically its improvement on biodiversity parameters – have been through one-off or short-term grant-based programs and initiatives. However, current Landcare and conservation grant funding are finite and, in isolation, insufficient to sustain long-term conservation efforts beyond the defined program tenors.

3. Lack of Ecosystem Service Payment Incentives

The Yorke Peninsula case study demonstrates that ecosystem and biodiversity outcomes and agriculture should not be viewed as silos – both are part of the same system. In fact, the outcomes are highly symbiotic for all stakeholders involved, particularly farmers. This case study also highlights the current market failure.

Understanding the Need for Incentives

Incentives would encourage farmers to protect and deliver more ecosystem services through better management of crops, livestock, forests and fisheries, and conservation of endangered species and protected habitats.

According to the UN Food and Agriculture Organization (FAO), without incentives, both in the long and short term, farmers are limited in their ability to invest the time and money required to develop new techniques and overcome typical adoption barriers for good environmental stewardship – be they technical, cultural or financial.[42]

FAO states that when first adopting sustainable practices, farmers may need to invest in the rehabilitation or upgrading of their land and water management structures. They may have to set aside sensitive land and forest areas. This may require access to credit or funds for labour, more intensive management or support to address income gaps from lower yields.

Once these investments pay off in higher yields or new crops – thanks to better water retention or soil fertility – farmers may need assistance to make the most of this new situation and sell the additional produce. Incentives and support in this case could include access to markets to sell their produce.

If the area that has been set aside causes continuous costs, there needs to be permanent compensation for continuing to maintain them for greater societal benefits. This could be provided through new income-generating activities like carbon credits or ecotourism.[43]

Incentives link beneficiaries with stewards

Usually, successful environmental markets combine several types of incentives for ecosystem services. The FAO suggests a range of incentives ranging from regulatory (permits, laws and quotas) to voluntary (certification and labelling), which can be governed by industry or government.

Incentive-based Sustainable Finance mechanisms can link beneficiaries of ecosystem services (communities, private industry, retailers, NGOs and governments) with stewards of the land like farmers and other landholders.

40. FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/incentives/en/
41. FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/incentives/en/
42. FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/incentives/en/
43. FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/incentives/en/

Case Study: Rewilding the Yorke Peninsula

The Southern Yorke Peninsula in South Australia retains some of the state's most significant areas of coastal mallee ecosystems. However, 95 per cent of the area's 29 mammal species are locally extinct.[44] The absence of these fauna species, and the ecosystem services they provide, is causing a gradual decline in the condition of these important systems. The Yorke Peninsula is also one of Australia's most productive dry-land agricultural districts, delivering premium harvests of wheat and barley in most years. Despite this high level of productivity, damage from introduced pest species and the input costs required to control them (including periodic mouse plagues) often impact farm gate returns. In an innovative approach to managing both the natural and agricultural systems in tandem, the Great Southern Ark Rewilding Project aims to reduce the impact of pest species and simultaneously reinstate natural ecological processes through the reintroduction of key native species, including native predators. The below map shows the fences across Stage 1 and Stage 2 of the Rewilding Project.

The Northern and Yorke Natural Resources Management Board initiated the project with a $2.6 million National Landcare grant from the Federal Government to implement the project in conjunction with WWF Australia, Zoos SA, FAUNA Research Alliance and the SA Department for Environment and Water. The 20-year project is Australia's first attempt to apply the rewilding ethos across an entire landscape,[45] and the first to actively drive tangible cross-sector outcomes for ecosystems, local agriculture, farmers, crop productivity and local communities.[46]

The first stage of the project involves the construction of a 24km fence across the foot of the peninsula, with a second 28km fence planned to bring the total enclosed area up to 170,000 hectares (see Figure 1).[47] Coupled with an intensive feral predator management program across the Southern Yorke Peninsula, the fence will limit further movement of feral cats and foxes onto the peninsula. Foxes are significant agricultural pests as they prey on livestock and feral cats act as vectors of livestock disease, which can impact heavily on the local sheep industry.[48] A program to increase the local barn owl population will also be introduced as part of the project to control house mice populations.[49] Farmers globally regard house mice as one of the most prevalent and damaging pests due to their extensive distribution and impact on crops.[50] International studies have demonstrated the value of increasing avian predator numbers, with significant decreases in rodent abundance demonstrated along with simultaneous reductions in the damage they cause to crops.[51] Reintroduced small native predators will act to manage mouse populations harboured inside the blocks of native vegetation. A reduction in foxes, feral cats and house mice would therefore deliver significant benefits to crop productivity and profitability.

The project also plans to reintroduce a number of locally extinct native mammals to re-establish the ecological functions they once provided. For example, the brush-tailed bettong and southern brown bandicoot will be reintroduced as soil engineers. Their constant digging activity improves water permeability and soil fertility within the native vegetation, which provides the necessary conditions for the ongoing conservation of the peninsula's important bushland.[52]

Local communities can benefit directly from rewilding projects, most notably through wildlife tourism income. Tourism expenditure in the Yorke Peninsula was $205 million in December 2018, and is estimated to reach $302 million in December 2020.[53] Further, tourism provides 1,300 jobs directly for local communities.[54] The low-impact ecotourism opportunities that can be derived from the rewilding project are manifold.

Natural Resources Northern & Yorke Planning and Programs Manager, Dr Andy Sharp, has commented on the holistic nature of the project:

"Biodiversity conservation and agriculture should not be viewed as silos, they are both part of the same system. For example, many of the input costs in agriculture are derived from management actions that seek to address imbalances in the system – pest management, weed management, pollination services, soil additives. Native species can play a significant role in addressing these imbalances and provide farmers with boosted productivity and farm gate returns."

This innovative landscape approach to rewilding was developed through collaborative planning with more than 19 partner organisations from a range of sectors, and will deliver diverse and positive outcomes for local ecosystems, farmers, local communities and crop productivity.

44. Spence, A, 2019, Feral-proof fence drives biodiversity revival, Available at: http://theleadsouthaustralia.com.au/industries/environment/feral-proof-fence-drives-biodiversity-revival/
45. Johnston, G, Menz, C, Natural Resource: Northern and Yorke, 2019, Rewilding Yorke Peninsula, Available at: https://www.naturalresources.sa.gov.au/northernandyorke/news/170622-rewilding-yorke-peninsula-nws
46. Johnston, G, Menz, C, Natural Resource: Northern and Yorke, 2019, Rewilding Yorke Peninsula, Available at: https://www.naturalresources.sa.gov.au/northernandyorke/news/170622-rewilding-yorke-peninsula-nws
47. Spence, A, 2019, Feral-proof fence drives biodiversity revival, Available at: http://theleadsouthaustralia.com.au/industries/environment/feral-proof-fence-drives-biodiversity-revival/
48. Johnston, G, Menz, C, Natural Resource: Northern and Yorke, 2019, Rewilding Yorke Peninsula, Available at: https://www.naturalresources.sa.gov.au/northernandyorke/news/170622-rewilding-yorke-peninsula-nws
49. Spence, A, 2019, Feral-proof fence drives biodiversity revival, Available at: http://theleadsouthaustralia.com.au/industries/environment/feral-proof-fence-drives-biodiversity-revival/
50. Johnston, G, Menz, C, Natural Resource: Northern and Yorke, 2019, Rewilding Yorke Peninsula, Available at: https://www.naturalresources.sa.gov.au/northernandyorke/news/170622-rewilding-yorke-peninsula-nws
51. Johnston, G, Menz, C, Natural Resource: Northern and Yorke, 2019, Rewilding Yorke Peninsula, Available at: https://www.naturalresources.sa.gov.au/northernandyorke/news/170622-rewilding-yorke-peninsula-nws
52. Johnston, G, Menz, C, Natural Resource: Northern and Yorke, 2019, Rewilding Yorke Peninsula, Available at: https://www.naturalresources.sa.gov.au/northernandyorke/news/170622-rewilding-yorke-peninsula-nws
53. Government of South Australia, 2017, Yorke Peninsula: The Value of Tourism, Available at: https://tourism.sa.gov.au
54. Government of South Australia, 2017, Yorke Peninsula: The Value of Tourism, Available at: https://tourism.sa.gov.au

"Sustainable Finance mechanisms can be assessed and designed to better integrate farmers into driving ecosystem outcomes, rewarding them for good environmental stewardship and deepen and widen the accessible funding available beyond grants by accessing the full spectrum of the capital continuum – linking farmers and other landholders with beneficiaries – building agricultural sector resilience."

Carolin Leeshaa,
Director, Head of Social & Sustainable Finance, KPMG

The Opportunity

Global capital markets have functioned as one of the most efficient market mechanisms for centuries and financial capital is one the most powerful incentives available to drive action.

We believe that farm business owners, government, business, investors and consumers are all ready to support and invest in structured Sustainable Finance instruments that help farmers to improve eco-system service outcomes. This essentially places a value on Natural Capital and provides financial rewards for farmers to manage them.

Looking ahead, it is now critical to convene government, industry and farmers (via the NFF) to innovate, design and assess optimal Sustainable Finance transactions. These are required to catalyse the market and ensure measurable environmental outcomes are firmly integrated into the design of the optimal Sustainable Finance mechanism. This will right-size it to the Australian context, ensuring that it is firmly embedded into the agricultural value chain.

We see a clear and powerful opportunity for Sustainable Finance to:

- Practically and meaningfully address the identified market failure caused by misaligned incentives between farmers, retail, conservation and investors.
- Elevate the existing industry conversation and move into action by harnessing the tool of finance to design Sustainable Finance products and instruments.
- Reward and incentivise farmers for good environmental stewardship.
- 'Crowd-in' and cultivate new investor markets beyond finite government grants.
- Evolve and grow sustainable agriculture as an attractive, uncorrelated asset class.
- Align sustainability with future-proofed funding and agricultural sector resilience.
- Reframe how we value nature, make it investable and protect it into perpetuity for future generations as a matter of good practice.
- Build on global best practice and existing incentive-based financial instruments will help find the common ground between government, farmers, industry, finance and conservation organisations alike: valuing it makes it investable.
- Reframe how Australian farmers and other landholders can become an instrumental part of the solution today that delivers against defined sustainability outcomes and yields a return tomorrow (a Return on Nature for environment, society, farming communities, industry (retail), investors and consumers).
- Drive market activity at scale.

The pathway of establishing an environmental marketplace needs to take a long-term view. It is now critical to ensure that defined environmental outcomes are squarely anchored, measured and recognised within any such incentive-based ecosystem payment mechanisms.

Australia has a very sophisticated capital market and plenty of flexibility to execute many possible Sustainable Finance instruments, incentive-based mechanisms and other tools that together allow investors, farmers, industry and government to agree on the terms and outcomes, and achieve financial returns alongside defined and measurable environmental, economic and social and cultural outcomes.

Future State: What is Needed? What is Possible?

Sustainable Finance is a catalyst to widen and deepen incentives for farmers. It's also a powerful lever available to public and private investors to overcome typical adoption barriers and drive sustainable land use and management practices at large across the ag supply and value-chain. This has the potential to reposition and future-proof the entire food and agricultural sector towards greater resilience in the face of climate change.

Agriculture has the potential to evolve and grow into an attractive, uncorrelated asset class. It also has the opportunity to deliver a number of direct positive returns or co-benefits. These are beyond financial returns that occur as a result of sustainable land use and management, but may not automatically be priced into the true value of the investment – a multiplicity of returns.

These returns include:

- **Environmental returns** such as improved water including river health, soil and air quality, biodiversity conservation, and sustainable pest and weed management.[55]
- **Social and cultural returns** such as increased social capital, indigenous community empowerment, knowledge sharing and education, better livelihoods and community cohesion, improved physical and mental health, and protection of sacred sites.
- **Economic returns** such as increased farm productivity; diversified revenue streams for farmers and landholders through ecosystem services payments; and investment in regions and rural communities or generating jobs on the land.

We can provide examples where businesses, investors and consumers can combine to provide Sustainable Finance instruments with well-defined and monitored environmental outcomes and structured returns on a triple-bottom-line basis.

These Sustainable Finance models do not necessarily need government involvement. They can be driven by individual farm businesses, groups and industries that are connected to fund managers, food companies, banks or other businesses seeking a multiplicity of returns.

55. Sweeney, O, et al, 2019, We can 'rewild' swathes of Australia by focusing on what makes in unique, Available at: http://theconversation.com/we-can-rewild-swathes-of-australia-by-focusing-on-what-makes-it-unique-111749.

Governments can assist in accelerating the process through supporting the development of these new market structures. It may be that one single instrument would work well, but it is more likely that a 'blend' of complementary instruments will make up the mechanism required to provide a suitable profile of financial risk, returns and sustainability outcomes for both investors and farmers.

The choice and sequencing of the type of capital and credit enhancement tools can be used to fund different life-cycle stages and elements of ecosystem services. For example, a patient loan may be used to finance capital investments for machinery to improve sustainable farming practices (such as those required to establish No-Till Farming systems in grain production). However, a grant may also be necessary to cover a portion of the technical assistance needed for measuring the environmental outcomes of indicators (such soil or river health), especially before the investment generates any returns.

Global-scale businesses in Australia and around the world are ready to support capital and revenue models that reward farm businesses for ongoing ecosystem services that improve Natural Capital. They will require 'stock-exchange' standard reporting and auditing to reassure investors or customers of the bonafides of their investments and claims.

To date, farmers adopting sustainable agricultural practices are subsidising the laggards and are not incentivised to adopt Natural Capital projects. However, with capital market investors increasingly pricing for ESG risks, this is bound to change.

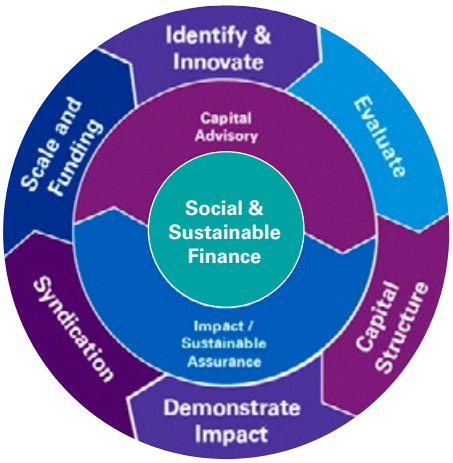
KPMG Social and Sustainable Finance

The design and financial structuring of optimal Sustainable Finance models for the Australian agricultural sector is similar to other traditional financial investments. It comes down to connecting those seeking investment with investors who are aligned on financial risk, return and impact appetite.

The design and implementation of ecosystem payment incentives requires locally-adapted arrangements with strong independent oversight by a convening intermediary across the public, private and social sectors and the investor community.

As an independent and trusted advisor across sectors, KPMG has the multi-disciplinary expertise to focus the agenda for Sustainable Finance solutions at scale, and the convening power to syndicate (seemingly) disparate system stakeholders and investors across public, private and social sectors. This will in turn instil the required investor confidence and crowd-in funding at scale into the agricultural sector.

Figure 3: The Lifecycle of Social and Sustainable Finance



Source: KPMG Australia

There is a need to support effective financial intermediaries with multi-disciplinary skillsets and convening power across public, finance, industry and the agricultural sector to underpin the development of national, scalable and globally aligned Sustainable Finance instruments and Natural Capital markets.

Key Insights

A commercially structured Natural Capital Adaptation Fund would link to farm businesses that choose to be involved through the agriculture value and supply chain and does not need to be ubiquitous like compliance models.

Government can amplify its finite funds to crowd-in private sector capital through well-structured and designed Sustainable Finance instruments, and drive the adoption of sustainable land use and management practices at scale across the agricultural sector, thereby building resilience.

Government can catalyse a Sustainable Finance market for the agricultural sector by substantially de-risking the investment proposition for private investors and allow new investors to engage in agriculture.

These innovative Sustainable Finance models will also support key sectors (such as banking and insurance), and lead to new ways of implementing and managing supply and value chains at industry level. Over time, this will underpin a new valuation of a farm businesses' Natural Capital as reflected in asset quality and income streams to farmers.

Recommendations

Government to support intermediaries to structure and design investable Sustainable Finance instruments and convene finance, industry, farm sector and private and public investors to arrive at optimal capital structures and investment propositions.

Incentive based programs

Case Study: Landcare

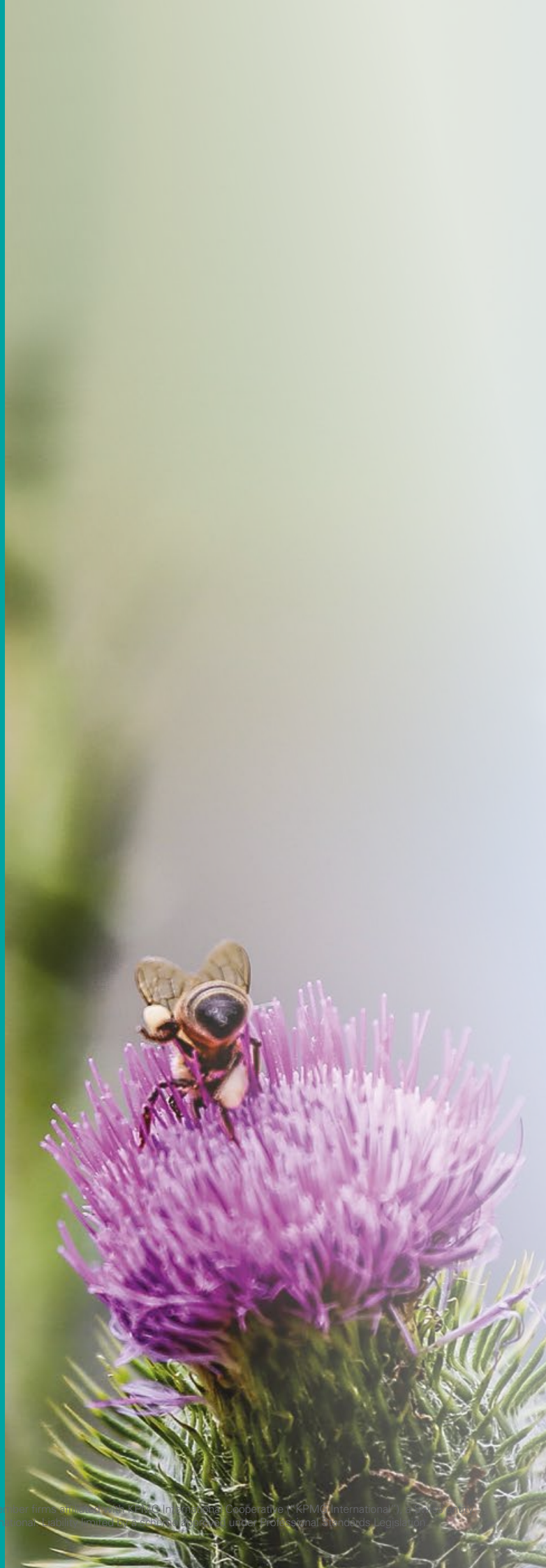
Landcare provides grants for initiatives across cropping and livestock sectors to:

– Reduce erosion
– Improve soil health and moisture
– Ensure precision application of inputs
– Address soil acidity and salinity
– Support regenerative agriculture
– Understand the benefits of cover crops and crop rotations
– Improve biodiversity
– Boost nutrient and water use efficiency
– Enhance water quality and waterway management
– Improve the management of climate variability
– Support the adoption of technology and up-skilling[56]

These initiatives provide funding to improve environmental outcomes, but do not provide a mechanism to recognise the increase in the value of Natural Capital.

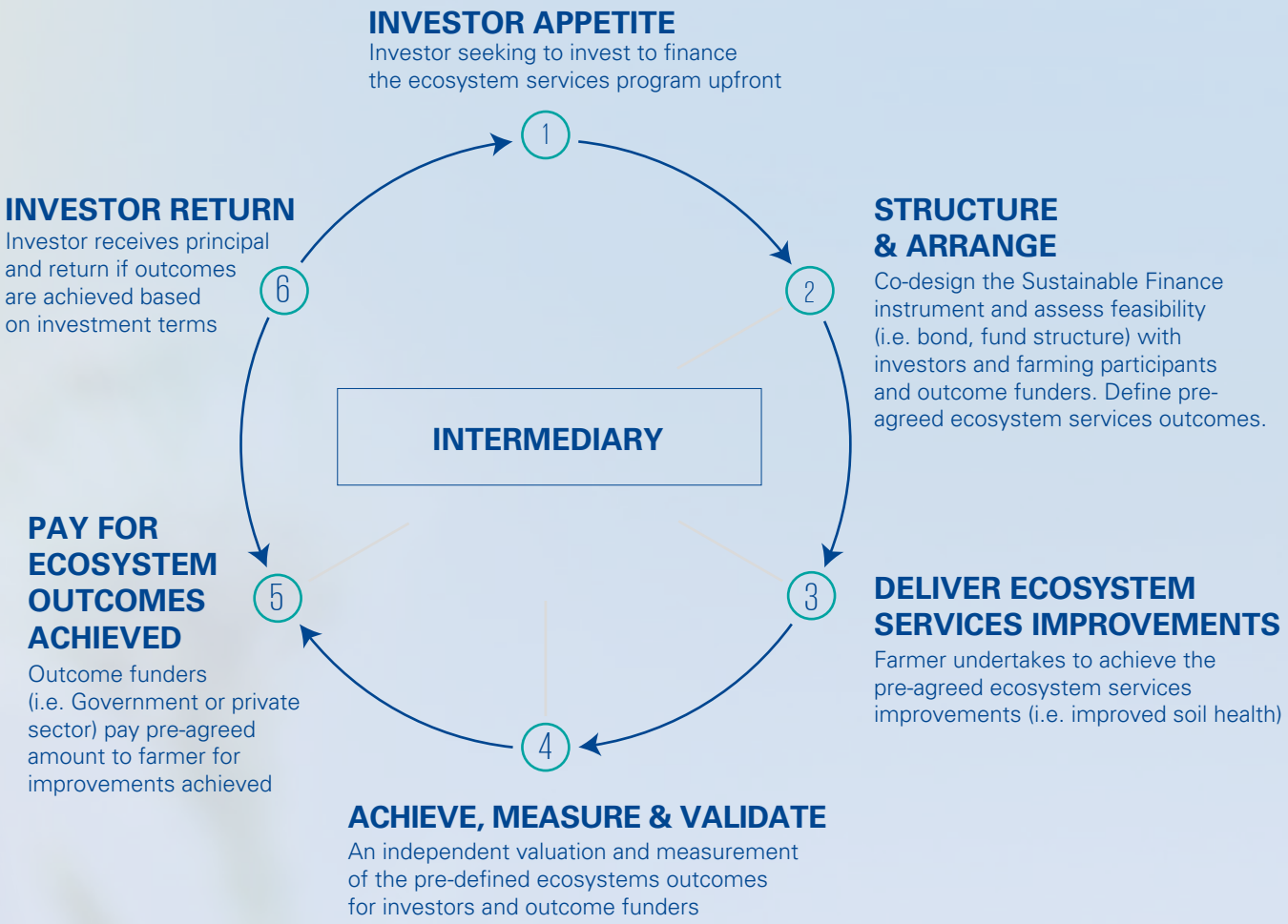
Case Study: Bush Tender

Tender-based approaches, also called auctions, deliver funding to community groups and individuals for conservation works, and in some cases, to protect biodiversity. Under this system,[57] landholders are invited to submit a bid to scheme providers to carry out conservation works on their property. After determining the estimated cost of the works, bids are ranked according to best value for money and granted in an effort to assist in the preservation of land. Biodiversity benefits are scored based on the combination of weighted conservation significance and the predicted gains in vegetation quality through the agreed commitments. The first tender scheme was the Bush Tender Trial started in northern Victoria and Gippsland and run by the former Victorian Department of Natural Resources and Environment in 2001/2002. The trial offered landholders the opportunity to gain financial support through entering an agreement to provide management services to maintain or improve the quality and/or extent of their native vegetation. The Bush Tender Trial acted as a catalyst for a number of similar tender-based projects that have since been implemented across Victoria, all of which target a range of biodiversity and other natural resource management outcomes.



56. National Landcare, 2015, National Landcare Programme for Sustainable Agriculture, Available at: http://www.nrm.gov.au/system/files/pages/edaaee10-d943-4d5c-ab4d-a0bcddc2ae21/files/sustainable-agriculture-grants-successful.pdf
57. Victorian Department of Environment, Land, Water and Planning n.d., Available at: https://www.environment.vic.gov.au/innovative-market-approaches/bushtender

Figure 4: Ecosystem Services Pay-For-Outcomes Mechanism
To bring the 'art of the possible' to life, a visual example of a potential approach to developing an incentive-based ecosystem services market in Australia is provided below in Figure 4. This example demonstrates the complexity in bringing the players together.



Source: KPMG Australia, adapted from Brookings Institute https://brookings.edu

The Market Opportunity

There is a clear need to transition from and build upon the current state of policy driven and short-term programs to a future state with the correct long-term incentives and reward to investors, farmers and other landholders. Current state opportunities as outlined below, continue to play a role in a future state ecosystem services market. The outlined future state instruments should be seen as an extension or evolution of existing current state programs.

Description of future state market opportunities on pages 22-23.

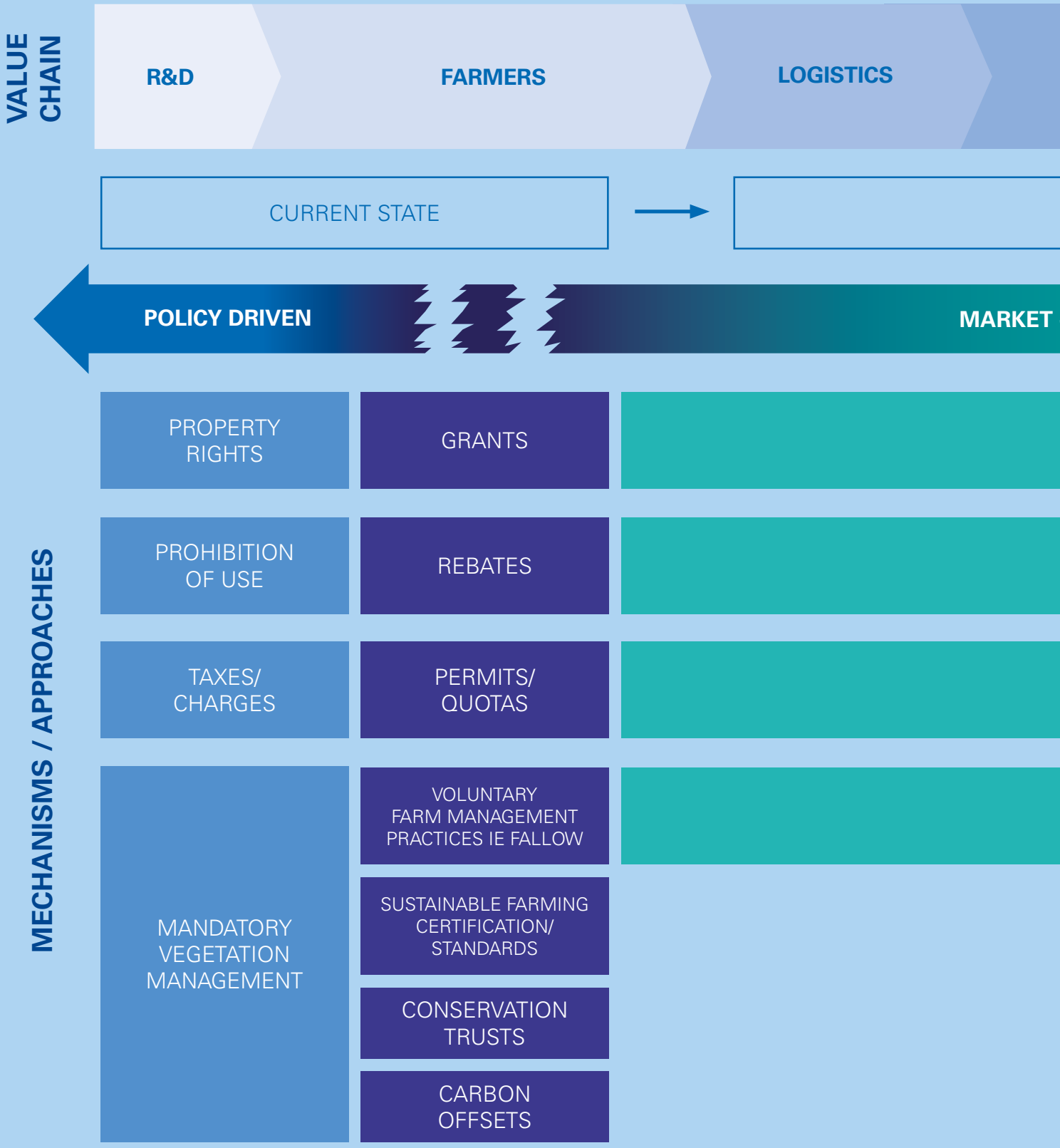
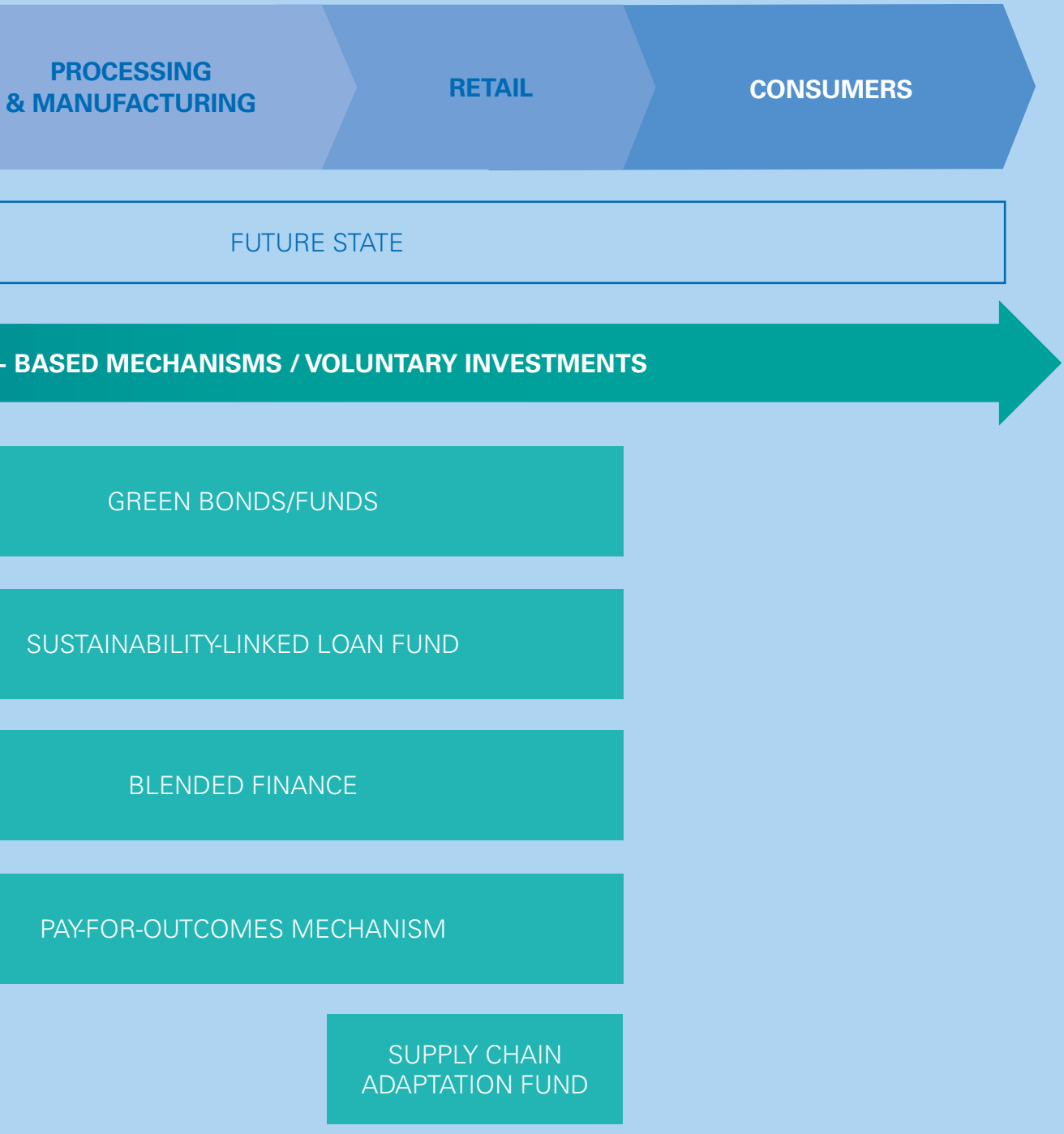


Figure 5: The Market Opportunity



*Adapted from FAO

Instrument	Description	Agricultural Example
Pay-for-Outcomes Mechanisms **(see ecosystem pay-for-outcomes mechanism diagram example)**	Under a Pay-for-Outcomes mechanism investors fund the delivery of a program (e.g. increase of biodiversity) that targets a measurable improvement over a particular timeframe. Achievement of this outcome should reduce the need for, and therefore government spending on, particular social or environmental services. Part of the resulting public sector savings are used to repay investors' principal and make additional reward payments. The level of return on investment is dependent on the degree of outcome improvements achieved. Typically, governments are outcome funders, although industry and private corporations can also be outcome funders. The use of funding avenues that incentivise private sector investment, share financial risks, and draw much-needed attention to urgent eco-system services challenges in Australia will be highly useful to protect biodiversity.	**The Rewilding the Yorke Peninsula project** offers a hypothetical example of how using a financial instrument such as an **Endangered Australian Species and Biodiversity Outcomes Bond** could be applied to work towards the revival of the local Mallee ecosystem and biodiversity outcomes. Such an initiative would allow investors to buy bonds that aim to increase the local population of native species. An Endangered Australian Species and Biodiversity Outcomes Bond could combat the rapid fall in native animal species over a defined period of time, and crowd-in additional private sector investors. The risk of funding conservation is transferred from public donors to impact investors by linking conservation performance to financial performance. Investors will invest upfront and will be paid back their capital and a coupon if the population of native endangered species rise. Nature-based Pay-for-Outcomes Mechanisms have been trialled globally and it is hoped that the impact-investing nature of an Australian Biodiversity Bond could lead to similar related Sustainable Finance offerings in the future. We think Pay-for-Outcomes Mechanisms could hold the key to scale up effective conservation programs or interventions of ecosystem restoration projects in Australia, as well as test innovative models of ecosystem services delivery.
Blended Finance	By layering different types of capital with varying degrees of financial risk, financial returns and impact appetites, this approach has the potential and flexibility to meet the needs of the agricultural sector. It could also re-imagine a more effective use of finite government funding whilst widening the pool of finance available from an emerging investor community (e.g. high net worth individuals, family offices and impact investors). To catalyse a Sustainable Finance market for the agricultural sector, government could substantially de-risk the investment proposition for private investors and credit enhance the investment proposition to allow new investors to engage in Sustainable Agriculture. Several such credit-enhancement tools include: • The presence of concessional finance from either government, conservation actors, philanthropists or investors provides the assurance of having the necessary comfort in the form of a 'first-loss' capital tranche in place. • A credit guarantee (e.g. government) for down-stream loan instruments that protects the lender against non-payment (default) by a farmer or in the early-stages before a market-based ecosystem services scheme generates returns. • A carbon 'off-take agreement' where government commits to certain conditions for buying future carbon credits would significantly reduce the risk of investments by minimising the risk of monetising the carbon credit production. Such an undertaking could also be an incentive for lenders to accept carbon credits as a 'non-traditional' form of collateral. This would consequently de-risk the loan portfolio for the lender, giving rise to more favourable lending conditions to sustainably-operating farmers over time. • A price floor policy for carbon credits until the market is functioning and carbon credits can be freely traded. • Equally, a weather or biodiversity index-based guarantee/risk insurance instrument can be an effective tool to reduce the capital risk for investors with a more conservative risk appetite.	**Althelia Ecosphere Funds** Althelia Funds is an experienced and recognised asset manager with an impact-driven approach to investment, aligning strong financial returns with measureable environmental and social impact. It is the product of the recent acquisition of Althelia Ecosphere, a pioneer impact investor in the Natural Capital space by Mirova, a leading European Responsible Investment Platform. Althelia Ecosphere Funds has developed funds that work to link sources of capital with activities on the ground. These activities unify economic, social and environmental improvements; and generate competitive returns alongside measurable social and environmental impact. Althelia Ecosphere Funds invests with the public sector in projects that reduce deforestation, mitigate climate change, protect biodiversity and provide a fair and sustainable living to rural communities, whilst offering investors a fair return on capital. The Sustainable Ocean Fund and Althelia Climate Fund are Althelia Ecosphere Funds' two core initiatives.[58] **Althelia Climate Fund** Another fund within Althelia Ecosphere is the Althelia Climate Fund.[59] It was established in 2014 and invests in agroforestry, REDD+ and sustainable land-use projects that transform land-use practices whilst delivering environmental credits and sustainable commodities. In 2014, USAID announced it would support this fund with $133.8 million in commercial financing for forest conservation and sustainable land use.[60] Under the deal, USAID guarantees 50 per cent of loans that Althelia makes to reducing emissions from deforestation and forest degradation (REDD+) project developers.

58. Althelia, n.d., Althelia Climate Fund, https://althelia.com/althelia-climate-fund/
59. Althelia, n.d., Althelia Climate Fund, https://althelia.com/althelia-climate-fund/
60. The Borgen Project, 3 June 2014, Available at: https://borgenproject.org/tag/the-althelia-climate-fund/
61. Climate Bonds Initiative, 2019, Green Bonds Market 2019, Available at: https://www.climatebonds.net
62. Climate Bonds Initiative, 2019, Land Use, Available at: https://www.climatebonds.net/standard/land-use
63. Climate Bonds Initiative, 2019, Forestry, Available at: https://www.climatebonds.net/standard/forestry
64. Climate Bonds Initiative, 2019, Agriculture Criteria, Available at: https://www.climatebonds.net/agriculture
65. Climate Bonds Initiative, 2019, Green finance state of the market - 2019, Available at: https://www.climatebonds.net/files/files/Australia_gbsotm-2019-update_201908%282%29.pdf
66. International Finance Corporation, n.d., Available at: https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new/investor+relations/ir-products/forest_bonds
67. Bloomberg, 2019, Starbucks Completes Issuance of Third and Largest Sustainability Bond, Available at: https://www.bloomberg.com/press-releases/2019-05-13/starbucks-completes-issuance-of-third-and-largest-sustainability-bond
68. Starbucks, n.d, Available at: https://www.starbucks.com/responsibility/community/farmer-support/social-development-investments

Instrument	Description	Agricultural Example
Use of Proceeds **Green Bond**	Bonds issued with the 'green' label have grown dramatically in recent years. Green Bonds can provide an effective and proven way to raise funds for programs and projects with specific uses and positive environmental and/or climate adaption and mitigation. Green Bonds work well for raising capital for established projects but are less suitable for projects at proof-of-concept or early investment stages. According to the Climate Bonds Initiative (CBI), a Standard and Certification labelling organisation, Green Bond issues were in excess of $171 billion in 2018 and $211 billion in 2019.[61] The majority of these are for urban infrastructure, alternative energy development, renewable energy, or other areas that might be described as regular municipal or corporate uses with a 'green' use of proceeds. However, land use sectors – specifically agriculture, forestry and other land use – were identified by CBI as a priority area for the development of robust criteria. This would screen use-of-proceeds investments in land use assets and related projects that are most strongly compatible with an emission trajectory in line with the Paris Agreement.[62] Consequently, the Forestry Criteria were released for certification in November 2018.[63] The Criteria for Protected Agriculture launched its public consultation process in September 2018. A separate Agriculture Criteria is expected to be launched in January 2020 with scope including cropland, grassland, livestock restoration and controlled environments. Guidance, such as Climate Bond Agriculture Criteria and the European Commission's Technical Expert Group (TEG) on Sustainable Finance in Agriculture, is likely to catalyse investment and can be utilised by governments in setting regulation or recommendations for decarbonising the sector.[64] [65] Whilst Green Bonds are yet to be issued in the Australian agricultural industry, CBI's focus on land use as a priority area for Green Bond certification provides an opportunity for the industry to become more active in this market.	**IFC Forest Bond** In 2016, the International Finance Corporation (IFC)[66] opened trading on the London Stock Exchange to mark the listing of the first-of-its-kind Forests Bond. The Forests Bond gives investors the option of receiving repayment in carbon credits or cash. This is an innovative capital market mechanism that raised $152 million in its first sale. The bond supports IFC's private sector lending and the prevention of deforestation in developing countries. It aims to decrease the 5.5 million hectares of tropical forest area that are deforested every year – an effort that will be critical to keeping global warming under 2 degrees Celsius. Investors were offered a choice between a cash or carbon-credit coupon. Those choosing the carbon-credit coupon can retire the credits to offset corporate greenhouse gas emissions or sell them on the carbon market. BHP Billiton provides a price-support mechanism for the Forests Bond. If investors elect the cash coupon option, BHP will off-take the carbon credits generated and delivered by a different REDD project (Kasigau Corridor REDD project). The Kasigau Corridor is a region in East Kenya that used to depend on deforestation for survival. Cattle had grazed the fields into dust and much of the dry-land forest had been cut for firewood and farmland. Since receiving initial funding from Wildlife Works, wildlife and flora have returned to the area and the sanctuary established provides income to the local community for protecting the land, creating jobs in activities like wildlife monitoring and sustainable agriculture. The IFC Forests Bond now consistently supports the Kasigau Corridor Project.
Incentive-Based **Sustainability-Linked Loan**	A Sustainability Linked Loan (SLL) is a down-stream Sustainable Finance instrument that rewards a borrower with lower costs of funding if pre-agreed improvements in sustainability performance are being met and/or exceeded over the life of the loan. The borrower's sustainability performance is measured using key performance targets. These can include indicators and externally-verified metrics that measure improvements in the borrower's sustainability profile.	**Sustainability-Linked Loan Fund** The Australian Government could take a direct role to accelerate the adoption and mainstreaming of sustainable farming practices by creating a Sustainability-Linked Loan Fund (SLLF). This could be directed towards eligible borrowers (e.g. farmers that take steps to sequester carbon or reduce run-offs into Great Barrier Reef or adopt other sustainable farming practices that can be verified and measured) in the form of concessionary patient 'green' loans. This loan could flip into 'non-recourse' once farmers deployed the capital as intended, participate in sustainable agricultural training, and adopt carbon sequestration practices or be partially amortised by the monetisation of future carbon credits produced by eligible farmers. The SLLF could work through banks or through a well-targeted mechanism with retailers via their commodity supply chains to reach small-to-medium sized farmers. Sustainability reporting could be tracked and integrated either as part of the lender's lending terms or the corporates' supplier reporting practices, and utilise third-party metrics such as carbon standards, or impact metrics to track and demonstrate their impact.
Supply Chain Adaptation Fund	Sustainable Finance mechanisms supported or sponsored by retailers to assist their producer suppliers to adapt to higher practices. Australian corporate agriculture and retailers could adopt a similar concept with deep supply-chain links to commodities (e.g. sugar, cattle and timber/pulp). This model could be used to fund farmers' adoption of voluntary, pre-agreed sustainable farming practices in line with their Corporate Sustainability Procurement targets. This could take the form of a Natural Capital and Biodiversity Loan Facility, and be sourced as part of corporate agriculture's Australian bond market issue.	Starbucks issued a US$1 billion Sustainability Bond[67] with the majority of the proceeds to be used internally. However, USD$20 million will be directed to support a new equity investment in responsAbility Investments AG, as part of **Starbucks Global Farmer Fund**[68] that supports farmers via an innovative loan program to coffee growers to help them achieve Starbucks's ethical and social standards and to fund additional agronomy support services in targeted countries. This work directly influences coffee quality, sustainability and overall profitability for the entire specialty coffee industry. Starbucks understanding of the need of its farmers and producers in their supply-chain to adapt to higher environmental standards assisted the company to create its own internal set of impact metrics and standards (Coffee and Farmer Equity practices). These include measures to protect water quality and preserve biodiversity. While internal criteria lack the comparative ability of standards or certification schemes, it is technically possible that a corporate in agriculture's owned metric can go further in measuring and achieving environmental stewardship through the corporate's supply chain and procurement protocols.

The Investment Landscape: Attracting New Capital

The Investment Thesis for Sustainable Agriculture

NFF's most current estimate suggests that the sector will need investment to the tune of $159.5 billion in new capital to meet growing global demand for produce, and fund its growth to achieve a $100 billion agricultural industry by 2030.[69]

The rise of Sustainable Finance marks a new dawn for the agricultural sector. If the farm sector can successfully be incentivised to adapt, it is poised to attract new capital and evolve into an attractive uncorrelated asset class and thematic investment opportunity. Consequently, this would also 'de-risk' the investment proposition for ESG investors and overcome some of the real or perceived existing investment barriers and re-position the sector.

According to the Business Council on Sustainable Development Australia, there is a clear business case to 'future-proof' access to funding and simultaneously co-optimise and scale climate adaptation and sustainable farming practices.[70]

Traditionally, agricultural assets have been seen as a long-term investment proposition, and required 'patient capital'. This takes an investment horizon of 10 or more years and often has flexible loan repayment terms reflective of the seasonality of agricultural production. This has limited the type and scale of investment in the sector and provided a challenging proposition for mainstream financiers. Whilst agriculture is a mature industry, access to funding remains a challenge and current levels of private investment in the entire agricultural value chain are critically low.

Task Force on Climate-related Financial Disclosures

Global capital markets move quickly to pursue an agenda for sustainable economic growth and respond to environmental (climate change) risks in their investment and pricing decisions. This trend is fuelled by major mandatory shareholder disclosure requirements such as the Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures (TCFD). The proposed standardised metrics will likely see investors considering to what extent their financing/investment objectives mitigate climate change and/or promote adaptation to better manage it, question how their indices and funds compare with other similar products, and to what degree do they exceed the reference benchmarks.[71]

This poses enormous opportunities for Australian agriculture, which is considered to be a sustainable economic activity in the context of the standardised metrics. The agricultural sector will need to improve its disclosure and sector performance data as investors start to become more advanced in their prepared targets. A methodology for risk and impact assessment, measurement and monitoring will be required.

Key drivers of the Sustainable Agriculture Investment Thesis are outlined in Figure 6.

Figure 6: Key Drivers of the Sustainable Agriculture Investment Thesis

Public Sector	Agriculture Sector	Private Sector	Systemic Factors
Private Sector Engagement UN SDG's Paris Agreement, UNFCCC, COP21	Total Farm Assets Increased role in supplying the growth of public and private carbon markets	Shareholder activism Insatiable institutional Investors appetite for SDG compatible products Pricing for ESG risks	Climate Change Technology and Data (AI, big data, blockchain) Consumer Trends, Diet Change Demographics
Market-based policy signals Natural Capital development frameworks Systems strengthening Pay-for-Outcomes	Integration along the supply chain Ongoing trade-off between economic growth and environmental stewardships Fragmented sector with limited resources/capacity	Social License to Operate, Evolving view on fiduciary duties Responsible Investments and Sustainable Finance Reporting Standards/Disclosure	Blended Value: global convergence and re-calibration of sectors, interest, roles and responsibilities Global Trade Patterns
Declining real budgets Estimated UN financing gap of USD$2.5 trillion per year[72] Increased accountability	Environmental Stewardship Climate Change Adaptation & Resilience Natural Capital Generational Change	Trust Erosion, Transparency Transition from Shareholder Value > Shared Value > System Value Proliferation of reporting and transparency requirements e.g. TCFD	Largest inter-generational wealth transfer in history Shifting investor demographics Rise of Asia, Food Security Trust, Transparency, Food Provenance

Source: KPMG Australia

69. National Farmers Federation (NFF), 2018, 2030 Roadmap: Australian Agriculture's Plan for a $100 Billion Industry, Available at: https://www.nff.org.au/get/6175.pdf
70. Business Council on Sustainable Development Australia, n.d., Available at: https://www.bcsda.org.au/
71. Task Force on Climate-related Financial Disclosures, n.d., Available at: https://www.fsb-tcfd.org/
72. OECD, n.d., Available at: http://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/OECD-PF4SD-Conference-background-document.pdf

Contribution to Sustainable Development Goals

In September 2015, 193 developed and developing countries agreed to implement a set of 17 Sustainable Development Goals (SDGs) to be achieved by 2030. The SDGs provided a shared blueprint to achieve a better and more sustainable future for all. The 17 SDGs are all interconnected, and in order to leave no-one behind, it is important that we achieve them all. The SDGs set ambitious targets that presuppose an active role for private industry and investors, and provide a universal language and framework to unify and align approaches of disparate sectors.

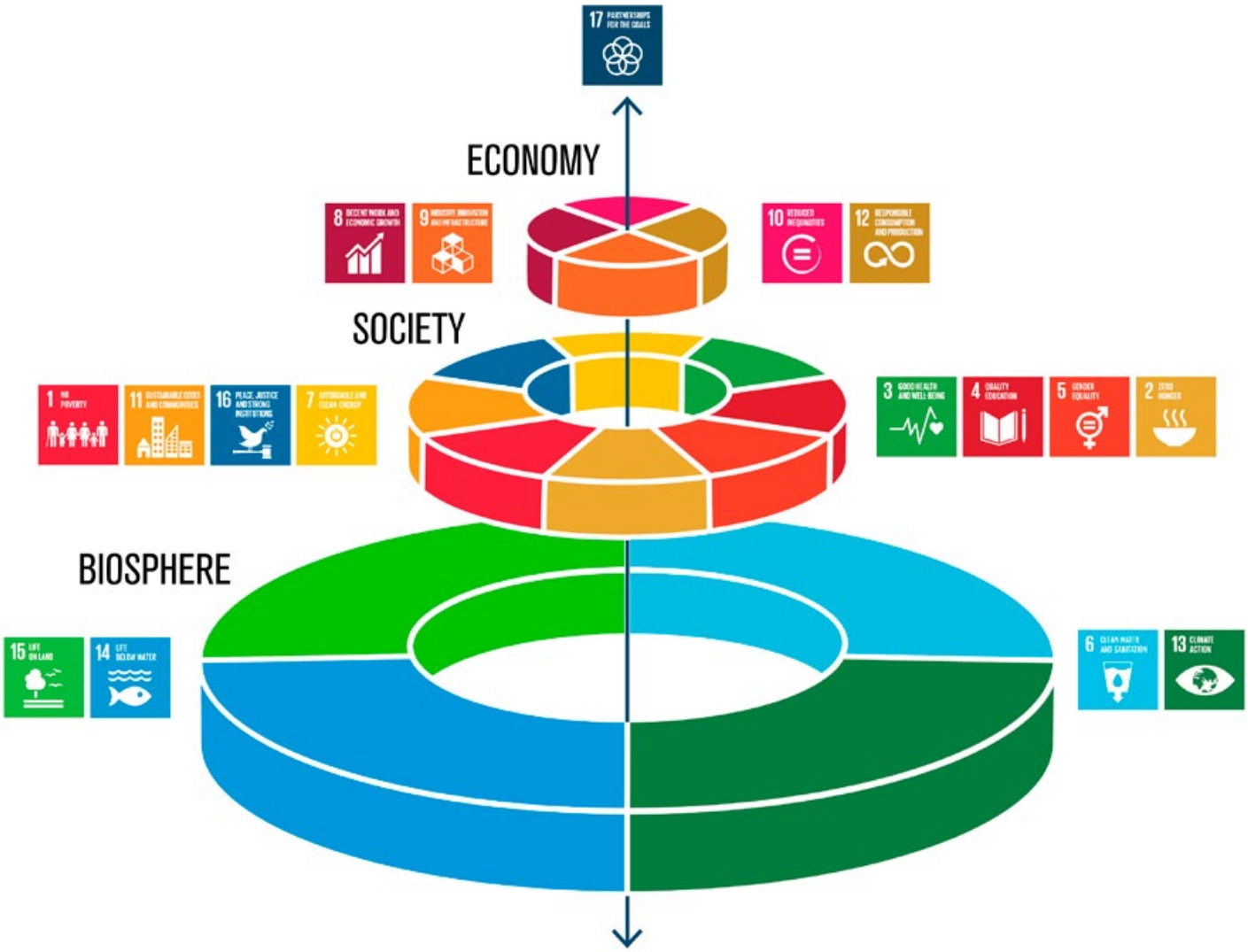
Agriculture and sustainable water management have a major role in combating climate change, and in regenerating and preserving ecosystems, and underpin the achievement of all other SDGs as outlined in Figure 7.

The United Nations Principles for Responsible Investment (UNPRI) identified sustainable agriculture as one of 10 key global impact investing theme and aligns with several UN SDGs.

In the recently developed Market Map[73] it provides clear guidance for selecting investments that truly contribute to the SDGs and to the impact industry.

This Market Map aims to bring more clarity to the process of identifying impact investing companies and thematic investments so that asset owners and fund managers can better assess and select investments that truly contribute to the SDGs. Specifically, the UNPRI identified sustainable agricultural production as critical to achieving SDGs 2, 6, 14 and 15.

Figure 7: United Nations Sustainable Development Goals



Source: Azote Images for Stockholm Resilience Centre, www.stockholmresilience.org

An Evolving Capital Spectrum

Sustainable Finance is experiencing significant momentum with the market surging 26 per cent in 2018, including a record $247 billion worth of sustainability-themed debt instruments raised during the year. The sustainable debt market is comprised of labelled bonds and loans that finance projects with green benefits, social benefits or a mixture of both.[74] Sustainable Investments now command a sizable share of professionally managed assets in each region, constituting 63 per cent in Australia and New Zealand and are a major force across global financial markets.[75] All around the world, investors are shifting their attitudes about the role capital should play in our society. As illustrated in Figure 8, investors have a continuum on how to engage for impact as part of their investment decision making process.

New Investor Markets

Starting from a low base, the investment market in sustainable agricultural assets is growing rapidly.[76] Doubling in the last decade, the market is attracting an increasing number of mainstream investors. In a recent 2019 survey conducted by the Environment Finance and The Nature Conservancy[77] of major pension funds, insurance companies and international asset managers, reinforced evidence from other studies that there is a growing appetite among mainstream investors for investments that protect or enhance natural capital. Sustainable agriculture ranked amongst the most attractive types of natural capital investments amongst forestry, fisheries/oceans, biodiversity and coastal resilience (e.g. coral reefs) and freshwater resources (e.g. wetlands). Several respondents are planning significant new investments in the agricultural sector.

Additionally, it is likely that the movement of impact investing will also increase investor demand for sustainable agricultural assets. Impact investors are seeking to allocate capital with the intention to generate positive, measurable social and environmental impact alongside financial return.[76] Impact investment is not an asset class in itself – it spans all capital types. The Global Impact Investing Network (GIIN)[78] estimates that more than 1,340 organisations currently manage USD$502 billion (2018) in impact investing assets worldwide. These investors range from asset managers, pension funds, banks and insurance companies to development finance institutions, foundations and family offices. The GIIN notes that it "underscores the huge diversity of the market, players and geographies, and the significant amount of capital at work to address the world's social and environmental challenges. The market continues to grow rapidly, with new investors establishing impact investing practices and allocating additional capital to positive impact."

Figure 8: Responsible and Ethical Investment Engagement Spectrum

Corporate engagement and shareholder action	**Traditional investment**	**Responsible and ethical investment**							**Philanthropy**
		ESG integration	**Corporate engagement/ shareholder action**	**Screening**			**Sustainability-themed investment**	**Impact investing (and community investing)**	
				Negative screening	Norms-based screening	Positive/best in class screening			
Focus	Limited or no regard for ESG factors	Consideration of ESG factors as part of investment decision	Using shareholder power to influence corporate behaviour	Industry sectors or companies excluded/ divested to avoid risk and better align with values	Screening out investments that do not meet minimum standards and including investments that meet defined ESG criteria	Investments that target companies of industries with better ESG performance	Investments that specifically target sustainability themes (eg: clean energy, green property)	Investments that target positive social and environmental impact and provide either a market or below market rate	Grants that target positive social and environmental impact with no financial return
Impact intention	**Agnostic**	**Avoids harm**				**Benefits stakeholders**			
							Contributes to solutions		
Features	**Delivers competitive financial returns**								
		Manages ESG risks							
						Pursues ESG opportunities			
							Intentionality: delivery of impact is central to underlying asset/investment		
								Impact of investment is measured & reported	

Source: KPMG Australia, adapted from Responsible Investment Association of Australasia

73. United Nations Principle for Responsible Investment (UNPRI), n.d., Available at: Impact Investing Market Map, https://www.unpri.org/download?ac=5426
74. RIAA, 2019, Responsible Investment Benchmark report, Available at: https://responsibleinvestment.org/wp-content/uploads/2019/07/RIAA-RI-Benchmark-Report-Australia-2019-2.pdf
75. Bloomberg Professional Services, January 2019, Sustainable debt market sees record activity in 2018, Available at: https://www.bloomberg.com/professional/blog/sustainable-debt-market-sees-record-activity-2018/
76. GSIA, 2018, Global Sustainable Investment Review, http://www.gsi-alliance.org/wp-content/uploads/2019/06/GSIR_Review2018F.pdf
77. The Nature Conservancy and Environmental Finance, Investing in Nature: Private finance for nature-based resilience, published November 2019
78. Global Impact Investing Network, 2019, What you need to know about impact investing, Available at: https://thegiin.org/impact-investing/need-to-know/#what-is-impact-investing

Data from the *The Global Family Office Report 2016* found that 32 per cent of 267 surveyed family offices were either somewhat or highly active in impact investing. Additionally, 30 per cent indicated they were likely to become active in the field.[79] Family offices have a long appreciation of prime agricultural land investments in Australia. There is also a growing trend amongst family offices towards investing in sustainable and regenerative agriculture. Reliable impact indicators and metrics such as biodiversity and carbon sequestration would make Sustainable Agriculture a more attractive proposition.

Real/Perceived Barriers to Investment

The agricultural sector offers a variety of investment opportunities with products that are highly valued by domestic and global consumers.[80] However, according to submissions made to the Australian Government Parliamentary Standing Committee on Agriculture and Water Resources in 2018, there is a distinct lack of local investment in the Australian agricultural industry due to a range of both real and perceived barriers.[81] The submissions identified nine key barriers:

1. **Disclosure and sector performance data:** Insufficient industry performance data and a weak understanding of financial risks and opportunities make it difficult to ascertain the value of potential and current agricultural investments. Globally, large institutional investors are considering the physical, liability and transition risks associated with climate change as a risk, which is being priced into the cost of capital.
2. **Innovation and technology:** Australia is lacking in agricultural research and development adoption, particularly in AgTech. This is needed in relation to the productivity and climate change resilience of Australia's agricultural products as well as to gain access to local and international innovations.
3. **Foreign investment approvals:** Foreign investment approval rules may be an impediment for Australian superannuation funds, particularly where their capital is being pooled with non-Australian capital. Currently, the investor's domicile is the determinant of whether FIRB approvals are required.
4. **Regulatory barriers:** Some investors have identified that current sector-specific compliance frameworks (such as land use and chemical stewardship) provide an impediment to investment. Private investors felt discouraged from directing funds into anything beyond farmland itself,[82] while APRA and ASIC indicated that no regulatory or legislative barriers to agricultural investment existed within their fields of responsibility.[83]
5. **Liquidity:** As the agricultural sector requires long-term commitments, investment in agriculture is seen as non-liquid and the majority of investors prefer liquidity options. An asset class that provides a risk to short-term performance is seen as one to be avoided.[83] This lack of liquidity can be viewed as a benefit where 'patient capital' can be utilised to fund long-term investments, without the constant flux of market volatility. The need for long-term asset returns to fund long-term liabilities would suggest agriculture is a well-matched investment to fund the retirement needs of Australians.[84]
6. **Volatility risk:** Agricultural investments are exposed to a number of risks, such as production linked to natural hazards, pests, disease, fire, commodity price volatility, and political uncertainty. The volatility of agricultural markets provides uncertainty for investors and increases the risk exposure of the asset type, making it a less attractive investment option.
7. **Environmental factors:** Environmental risk factors include greenhouse gas emissions, drought, biodiversity loss, water scarcity and water use, waste, and pollution. These risks can be mitigated through initiatives such as sustainable land-use as well as increasing the resilience of the sector to the impacts of climate change.[85] These risks, however, have made the investment in agricultural assets less attractive for fund managers.
8. **Human rights:** The risks around responsible and ethical sourcing and human rights in a supply chain are unattractive to investors, and can create uncertainty when examining agricultural assets, particularly farms, for investment.
9. **Changing consumer preferences:** The industry is subject to disruption from changing consumer preferences toward specific diet trends. These trends can lead to valuation differences within agricultural asset classes, creating uncertainty in the long-term performance of those assets.

79. The Global Family Office Report, 2016, Available at: http://www.globalfamilyofficereport.com/
80. OECD, 2019, Social Impact Investment 2019: The Impact Imperative for Sustainable Development 2019, Available at: https://www.oecd.org/development/social-impact-investment-2019-9789264311299-en.htm
81. Parliament of the Commonwealth of Australia, 2018, Super-charging Australian Agriculture. Available at: https://parlinfo.aph.gov.au/parlInfo/download/committees/reportrep/024226/toc_pdf/Super-chargingAustralianAgriculture.pdf;fileType=application%2Fpdf
82. Macquarie Group, 2018, Inquiry into superannuation fund investment in agriculture. Submission 21, Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/House/Standing_Committee_on_Agriculture_and_Water_Resources/superfundinvestment/Submissions
83. West, J, 2018, Inquiry into superannuation fund investment in agriculture. Submission 1, Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/House/Standing_Committee_on_Agriculture_and_Water_Resources/superfundinvestment/Submissions
84. Australian Securities and Investments Commission, 2018, Inquiry into superannuation fund investment in agriculture. Submission 11

    Australian Prudential Regulation Authority, 2018 Inquiry into superannuation fund investment in agriculture. Submission 2,

    Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/House/Standing_Committee_on_Agriculture_and_Water_Resources/superfundinvestment/Submissions
85. Parliament of the Commonwealth of Australia, 2018, Super-charging Australian Agriculture. Available at: https://parlinfo.aph.gov.au/parlInfo/download/committees/reportrep/024226/toc_pdf/Super-chargingAustralianAgriculture.pdf;fileType=application%2Fpdf
86. Australian Sustainable Finance Initiative, n.d., What is ASFI, Available at: https://www.sustainablefinance.org.au

While not a key barrier identified during the submission process, it is important to note that there is still a lack of trust by farmers in financial incentive schemes for ecosystem services based on outcomes of past funding and grant based programs. This is a barrier required to be overcome as part of the establishment of new ecosystem services markets in Australia.

Key Insights

Sustainable Finance instruments provide a new paradigm and opportunity for investment vehicles into the agricultural sector. Utilising mature financial instruments to connect the capital markets to the farming sector will assist towards reducing the $159.9 billion capital shortfall in the sector.

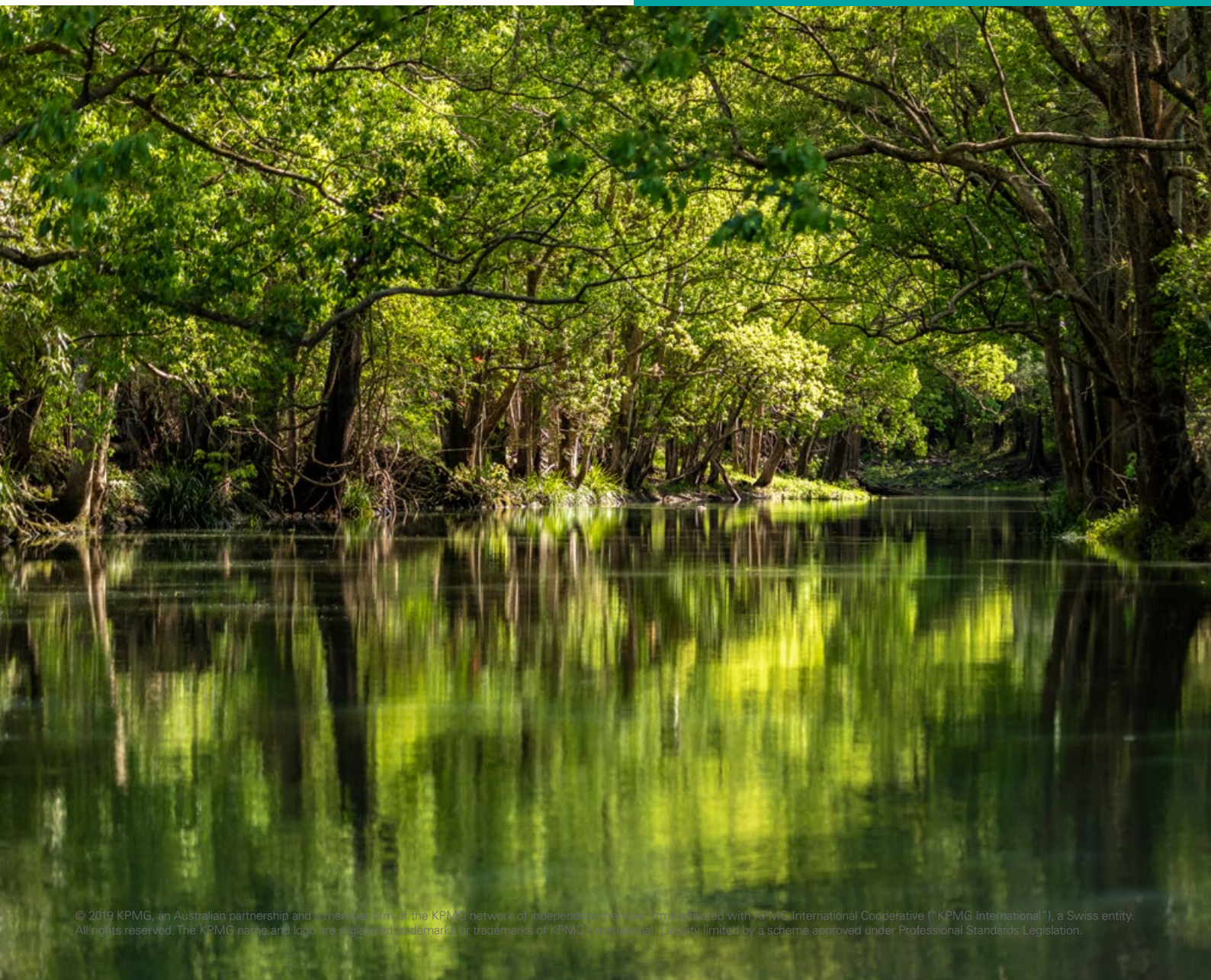
There is a longer-term opportunity to develop broader forms of Sustainable Finance instruments to build on the immediate opportunity presented through ecosystem services markets.

Recommendations

- To deliver new market mechanisms based on Natural Capital assets, further research is required to fully define the Natural Capital valuation metrics, trading protocols and frameworks.
- Opportunity for the Australian Government to harmonise investment market regimes with other international jurisdictions.

Case Study: Australia launched the Australian Sustainable Finance Initiative (ASFI)

ASFI is a collaboration between executives from Australia's major banks, superannuation funds, insurance companies, financial services peak bodies, and academia.[86] The ASFI is tasked with delivering an Australian Sustainable Finance Roadmap in 2020. This will provide recommendations for the industry to contribute more systematically to sustainability goals, and effectively 'embed' ESG considerations into the financial system. Recommendations of the Roadmap will include changes to Australian policy, legislation, regulation, as well as industry codes, practices and/or tools.



Recommendations

The development of an Australian Natural Capital market is a complex, yet attainable goal that requires cross-sector co-ordination and convening. There are already significant existing initiatives driving momentum in parts of the various sectors, however, it is time to bring these initiatives together to truly enable, unlock and develop a national, scalable and globally aligned coordinated Natural Capital market. It will require collaboration across government, industry, finance and conservation organisations along with the farming community and broader agricultural industry.

The Australian Government has a critical co-ordination and de-risking role to play in the creation of an enabling market infrastructure for a co-ordinated Natural Capital market to develop.

Our recommendations are derived from collaboration with the NFF, market insights gleaned from external contributors and KPMG's internal collective views.

Key recommendations to advance the development of a Natural Capital market in Australia include:

1. **Implement the $30 million Pilot Agricultural Stewardship Program** to support accelerating the development and design of an ecosystem services market. The key priority is to fund the required pilot of a market system that pays farmers for managing their land, which, if successful, could be scaled nationally.

2. Australian Government to stimulate and incentivise Natural Capital projects and sustainable land use and management practices by farmers by establishing an **initial $1 billion over four years to establish a National Biodiversity Conservation Trust tied to the EPBC Act to support the public benefits of protection of Matters of National Environmental Significance using market-based approaches as recommended in the independent review of the Environment Protection Biodiversity Conservation Act.** The Fund would be targeted at farmers that are undertaking sustainable farm management, addressing climate mitigation and adaptation (including disaster preparedness and coastal management). The Australian Natural Capital Fund will be a new form of sustainable land use and management contract that rewards and incentivise farmers for the provisions of public goods on their farms and for implementing Natural Capital projects. This fund could be structured in a manner that blends various capital types and invites private sector investment participation at scale. Government should de-risk this fund by leveraging its strong Australian sovereign credit risk. This fund can be structured and designed to encourage a deepening and widening of capital to engage in the agricultural sector and leverage finite government grants more effectively.

3. Development of a Federal Natural Capital Policy

   Australia needs a Natural Capital policy that can drive industry valuation of Natural Capital and its incorporation into the national environmental economic accounts. The policy will help establish a marketplace that enables Natural Capital to be valued through crediting payments for derived ecosystems services. Valuing Natural Capital will also facilitate direct measurement and tracking of land condition and provide landholders with incentives to improve the value of these assets.

   There are five pillars required to progress Natural Capital policy:

   - Government recognition on the need for a Natural Capital policy;
   - Development of a process for valuing biophysical assets and ecosystem services;
   - Development of a process to publicly monetise biophysical assets and ecosystem services;
   - Establishment of a private market; and
   - Mechanism for policy review to inform future policy.

4. Consolidate the multiple efforts and reach consensus to **establish Natural Capital standards/metrics to converge upon reliable, robust, consistent, credible and accessible taxonomies on how to value ecosystem services**. The Natural Capital Commission (see Recommendation 2) should draw on **Technical Experts Groups** to nationally agree on Natural Capital taxonomies in various agricultural sub sectors. These standards/impact metrics should build on existing methodologies and be codified into digital format to bring down the ongoing verifications costs. The Natural Capital metrics should be designed in a manner that inspires trust and confidence for capital market investors in the agricultural asset class. These metrics should make climate risk and opportunities visible in private capital markets and enable investors to make evidence-based assessment on risk-adjusted returns and benchmarking. The metrics should also enable a Land-Sector Use of Proceeds certification standard for Green Agriculture Bonds.

5. Call for the Australian Government to establish **Natural Capital standards and trading protocols** that set out the key components on trading those new farm assets. This can set the tone on how farmers can engage with Natural Capital markets (i.e. carbon) and measurement methodologies that can be applied to allow for varying agricultural enterprises. There is an **opportunity to harmonise these trading protocols with international standards to allow the Natural Capital markets to reach their full potential both domestically and globally**.

6. **Enhance capacity building for farmers and other landholders to be able to participate in Natural Capital markets.** Additionally, there is the need to develop clear guidelines for the farm management practices required and accurately describe the value proposition for landholders to implement the practices.

7. **Identify and support intermediaries with the required convening power to design and financially structure investable Sustainable Finance mechanisms.** This would stimulate latent demand and connect, on appropriate terms, capital demand with supply. It would also channel much needed investment into the agricultural sector, engage additional investors in agriculture, grow and evolve agriculture as an attractive asset class, and bring scale to the market.

8. Implement measures that **address some of the impediments for investment in the agricultural sector as identified in the recent submissions made to the Parliamentary Standing Committee on Agriculture and Water Resources**.

In conclusion, urgency is needed around progress, as existing initiatives require a coordinated approach to unlock the market and deliver truly functioning financial market instruments for the benefit of the investment community, farmers and other landholders, and the Australian community.

References

ABARES, 2018, ABARES Insights, Issue 1, 2018, Available at: http://data.daff.gov.au/data/warehouse/9aa__/ABARESInsights/2018_01/SnapshotAustralianAgriculture20181019_v1.0.0.pdf

Althelia, n.d., Althelia Climate Fund, https://althelia.com/althelia-climate-fund/

Aretino, B, Holland, P, Peterson, D and Schuele, M, 2001, Creating Markets for Biodiversity: A Case Study of Earth Sanctuaries Ltd, Productivity Commission Staff Research Paper, AusInfo, Canberra

ASFI, n.d., What is ASFI, Available at: https://www.sustainablefinance.org.au/

Australian Bureau of Statistics, 2017, Land Management and Farming in Australia 2016–17, Available at: https://www.abs.gov.au/ausstats/abs@.nsf/mf/4627.0

Australian Securities and Investments Commission, 2018, Inquiry into superannuation fund investment in agriculture. Submission 11, Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/House/Standing_Committee_on_Agriculture_and_Water_Resources/superfundinvestment/Submissions

Australian Prudential Regulation Authority, 2018 Inquiry into superannuation fund investment in agriculture. Submission 2, Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/House/Standing_Committee_on_Agriculture_and_Water_Resources/superfundinvestment/Submissions

Australian Trade and Investment Commission, 2019, Why Australia: Benchmark Report, Why Australia: Benchmark Report, Available at: https://www.austrade.gov.au/International/Invest/Resources/Benchmark-Report

Biodiversity Conservation Trust, n.d., What we do, Available at: https://www.bct.nsw.gov.au/what-we-do.

Bloomberg Professional Services, January 2019, Sustainable debt market sees record activity in 2018, Available at: https://www.bloomberg.com/professional/blog/sustainable-debt-market-sees-record-activity-2018/

Bloomberg, 2019, Starbucks Completes Issuance of Third and Largest Sustainability Bond, Available at: https://www.bloomberg.com/press-releases/2019-05-13/starbucks-completes-issuance-of-third-and-largest-sustainability-bond

Brookings Institute, n.d., www.brookings.edu

Business Council on Sustainable Development Australia, n.d., Available at: https://www.bcsda.org.au/

Carbon Market Institute, 2017, Carbon Farming Industry Roadmap, Available at: tent/uploads/2017/11/Carbon-Farming-Industry-Roadmap.pdf

Climate Bonds Initiative, 2019, Agriculture Criteria, Available at: https://www.climatebonds.net/agriculture

Climate Bonds Initiative, 2019, Forestry, Available at: https://www.climatebonds.net/standard/forestry

Climate Bonds Initiative, 2019, Green Bonds Market 2019, Available at: https://www.climatebonds.net

Climate Bonds Initiative, 2019, Green finance state of the market - 2019, Available at: https://www.climatebonds.net/files/files/Australia_gbsotm-2019-update_201908%282%29.pdf

Climate Bonds Initiative, 2019, Land Use, Available at: https://www.climatebonds.net/standard/land-use

Costanza R, de Groot R, Sutton P, Van der Ploeg S, Anderson SJ, Kubiszewski I, Farber S, Turner RK, 2014, Changes in the global value of ecosystem services, Global environmental change, 1 26, 152-8.

Department of the Environment and Energy, n.d., About the Climate Solutions Fund - Emissions Reduction Fund, Available at: http://www.environment.gov.au/climate-change/government/emissions-reduction-fund/about

FAO, 2015, Natural Capital Impacts in Agriculture: Supporting better business decision-making, Available at: http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/Natural_Capital_Impacts_in_Agriculture_final.pdf

FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/en/

FAO, 2019, Ecosystem Services & Biodiversity (ESB), Available at: http://www.fao.org/ecosystem-services-biodiversity/incentives/en/

Foley, M, June 2019, Farm Online National: Government told to fund farmers who boost biodiversity, Available at: https://www.farmonline.com.au/story/6247226/government-told-to-fund-farmers-who-boost-biodiversity/

Global Impact Investing Network, 2019, What you need to know about impact investing, Available at: https://thegiin.org/impact-investing/need-to-know/#what-is-impact-investing

Government of South Australia, 2017, Yorke Peninsula: The Value of Tourism, Available at: https://tourism.sa.gov.au/documents/CORP/documentMedia.ashx?A={B7BB4C18-8C54-438C-AA37-42BB7A299E93}&B=True

GSIA, 2018, Global Sustainable Investment Review, http://www.gsi-alliance.org/wp-content/uploads/2019/06/GSIR_Review2018F.pdf

Hamon, L, 2019, The EU Sustainable Finance explained – Taxonomy, Available at: https://blog.kpmg.lu/eu-sustainable-finance-explained-taxonomy/

International Finance Corporation, n.d., Available at: https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new/investor+relations/ir-products/forest_bonds

Investment Group on Climate Change, 2018, Inquiry into superannuation fund investment in agriculture. Submission 13, Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/House/Standing_Committee_on_Agriculture_and_Water_Resources/superfundinvestment/Submissions

Johnston, G, Menz, C, Natural Resource: Northern and Yorke, 2019, Rewilding Yorke Peninsula, Available at: https://www.naturalresources.sa.gov.au/northernandyorke/news/170622-rewilding-yorke-peninsula-nws

KPMG Investment Advisory, February 2018, Responsible Investing – A fad or the future?, Available at: https://assets.kpmg/content/dam/kpmg/uk/pdf/2018/03/kpmg_responsible_investment_a_fad_or_the_future.pdf

Macquarie Group, 2018, Inquiry into superannuation fund investment in agriculture. Submission 21, Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/House/Standing_Committee_on_Agriculture_and_Water_Resources/superfundinvestment/Submissions

National Farmers Federation, 2018, 2030 Roadmap: Australian Agriculture's Plan for a $100 Billion Industry, Available at: https://www.nff.org.au/get/6175.pdf

National Farmers' Federation (NFF), 2019, Farm Facts, Available at: https://www.nff.org.au/farm-facts.html

National Farmers' Federation (NFF), November 2018, Statement by NFF CEO Tony Mahar on new small business funding measures, Available at: https://www.nff.org.au/read/6222/statement-nff-ceo-tony-mahar-on.html

National Landcare, 2015, National Landcare Programme for Sustainable Agriculture, Available at: http://www.nrm.gov.au/system/files/pages/edaaee10-d943-4d5c-ab4d-a0bcddc2ae21/files/sustainable-agriculture-grants-successful.pdf

National Landcare, 2019, National Landcare Programme Phase Two, Available at: http://www.nrm.gov.au/national-landcare-program

Natural Capital Coalition, August 2018, No one wants to put a price on nature but we do need a better understanding of its value, Available at: https://naturalcapitalcoalition.org/no-one-wants-to-put-a-price-on-nature-but-we-do-need-a-better-understanding-of-its-value/

Natural Capital Coalition, n.d., Natural Capital Commitment https://naturalcapitalcoalition.org/projects/business-for-nature/natural-capital-commitment/

Needham K, 2019, Offsetting impacts of development on biodiversity and ecosystem services, Available at: https://besjournals.onlinelibrary.wiley.com/doi/abs/10.1111/1365-2664.13372

OECD, 2019, Social Impact Investment 2019: The Impact Imperative for Sustainable Development 2019, Available at: https://www.oecd.org/development/social-impact-investment-2019-9789264311299-en.htm

Parliament of the Commonwealth of Australia, 2018, Super-charging Australian Agriculture. Available at: https://parlinfo.aph.gov.au/parlInfo/download/committees/reportrep/024226/toc_pdf/Super-chargingAustralianAgriculture.pdf;fileType=application%2Fpdf

Reef Credit, n.d., What is the Reef Credit Scheme?, Available at: https://www.reefcredit.org

RIAA, 2019, Responsible Investment Benchmark report, Available at: https://responsibleinvestment.org/wp-content/uploads/2019/07/RIAA-RI-Benchmark-Report-Australia-2019-2.pdf

Rolfe, J, Whitten, S, Windlea, J, 2017, The Australian experience in using tenders for conservation, Land Use Policy, vol. 63, Available at: https://www.sciencedirect.com/science/article/pii/S026483771500126X

Spence, A, 2019, Feral-proof fence drives biodiversity revival, Available at: http://theleadsouthaustralia.com.au/industries/environment/feral-proof-fence-drives-biodiversity-revival/

Stevens, W, 2001, Parliament of Australia: Declining Biodiversity and Unsustainable Agricultural Production-Common Cause, Common Solution?, Available at: https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp0102/02RP02

Starbucks, n.d., Available at: https://www.starbucks.com/responsibility/community/farmer-support/social-development-investments

Stockholm Resilience Centre, n.d., Available at: https://stockholmresilience.org/research/planetary-boundaries.html

Sweeney, O, et al, 2019, We can 'rewild' swathes of Australia by focusing on what makes in unique, Available at: http://theconversation.com/we-can-rewild-swathes-of-australia-by-focusing-on-what-makes-it-unique-111749.

TEEB, 2018, Scientific and Economic Foundations Report, Available at: http://teebweb.org/agrifood/wp-content/uploads/2018/11/Foundations_Report_Final_October.pdf

The Global Family Office Report, 2016, Available at: http://www.globalfamilyofficereport.com/

The Nature Conservancy and Environmental Finance, Investing in Nature: Private finance for nature-based resilience, published November 2019

UNEP Finance Initiative, 2010, Principles for Responsible Investment, Universal ownership: Why environmental externalities matter to institutional investors.

UNEP Finance Initiative, 2012, A commitment by financial institutions to mainstream natural capital in financial products and in accounting, disclosure and reporting frameworks, Available at: https://www.unepfi.org/fileadmin/documents/ncd_booklet.pdf

United Nations, 2019, United Nations Global Compact, Available at: https://www.unglobalcompact.org/

United Nations Principle for Responsible Investment (UNPRI), n.d., Available at: Impact Investing Market Map, https://www.unpri.org/download?ac=5426

Victorian Department of Environment, Land, Water and Planning n.d., Available at: https://www.environment.vic.gov.au/innovative-market-approaches/bushtender

WBCSD, 2019, Food & Nature, Available at: https://www.wbcsd.org/Programs/Food-Land-Water

West, J, 2018, Inquiry into superannuation fund investment in agriculture. Submission 1, Available at: https://www.aph.gov.au/Parliamentary_Business/Committees/House/Standing_Committee_on_Agriculture_and_Water_Resources/superfundinvestment/Submissions

World Wildlife Fund, n.d., Available at: https://www.worldwildlife.org/pages/invest#

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