



# A 2030 Investment Vision for **Natural Climate Solutions**

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Recognising an Opportunity at Scale for Institutional Investors

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With contributions from



January 2021

# Natural Climate Solutions—30% of the Required Solution to Climate Change through 2030

## Contents

- 1 An Investment Vision for 2030
- 2 The Land Use Challenge and Natural Climate Solutions
- 3 A Call to Investment Action

## Investment Actions Related to Natural Climate Solutions

### *Engage in Advocacy, Screening and Enforcement*



Deforestation-free  
Commodities



Climate  
Policies

### *Invest in Sustainable and Regenerative Production*



Sustainable  
Agriculture



Sustainable  
Forestry



Innovation in  
Food Systems



Circular  
Bio-economy

### *Innovate through Exposure to New Products and Markets*



Rural  
Livelihoods



Restoration and  
Reforestation with  
Carbon Finance



Green  
Infrastructure

# *An Investment Vision for 2030*



# A New Investment Perspective on Sustainable Land Use

**We offer institutional investors an NCS Investment Vision for 2030—a transition pathway to investment in sustainable land use that can deliver a carbon neutral society aligned with our planet’s natural infrastructure and the needs of people.**

**Land-based climate change mitigation including conservation of nature, sustainable forestry and agriculture, and restoration of degraded land—collectively known as Natural Climate Solutions (NCS)—must become directly accessible to investors at scale.**

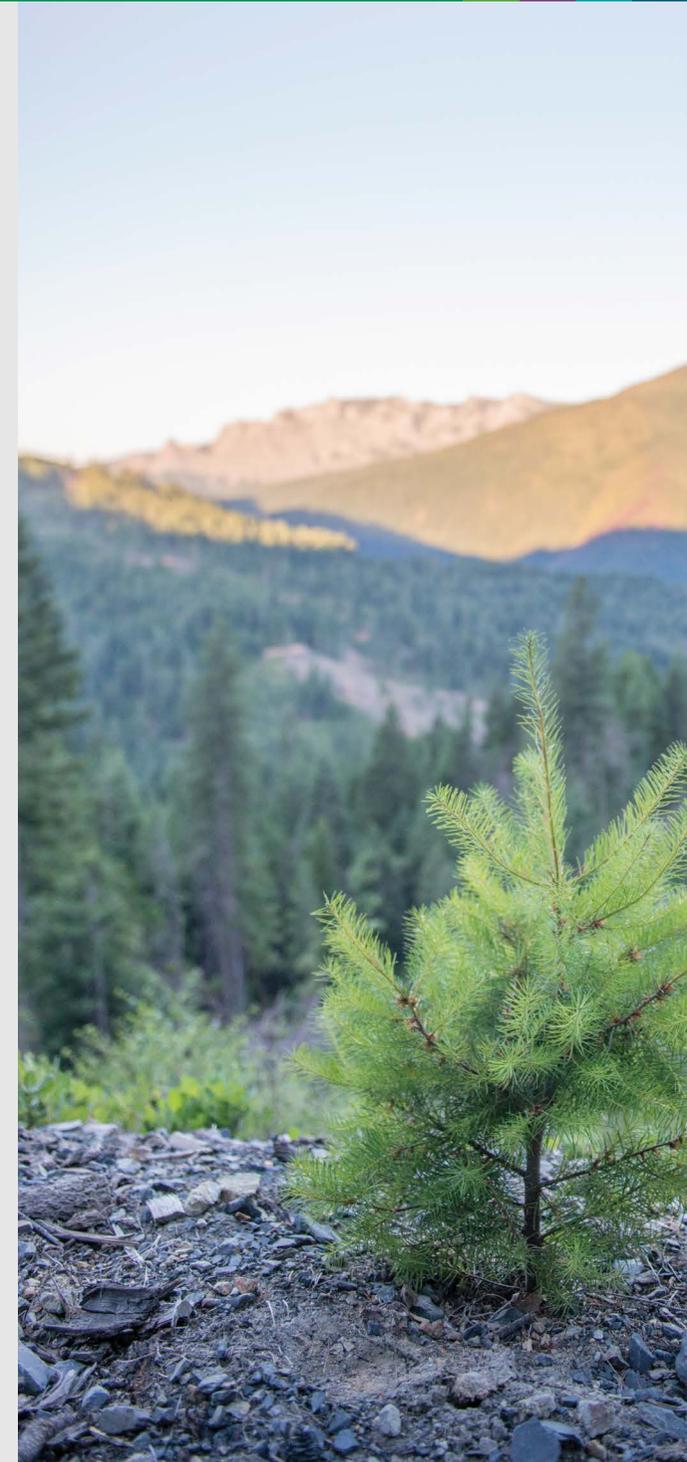
**10 billion tonnes of CO<sub>2</sub> emissions reductions and removals from the land use sector will be required annually through 2030 to meet Paris Accord climate targets—hundreds of billions of dollars need to flow into sustainable land use and related sectors to achieve this objective.**

The asset allocation strategies of institutional investors can be aligned with a sustainable land use transition that is parallel to the clean energy transition—a substantial investment opportunity alongside renewable energy, sustainable transport, development of low carbon intensity materials, and other technology-driven climate solutions.

There are challenges and risks that must be addressed including the need for substantial investment in emerging markets and ensuring that environmental and social safeguards are met as competition for land use grows among agriculture, forestry, community usage, conservation and restoration, energy and other sectors.

Note: This presentation focuses solely on land-based NCS but there are a whole range of ocean-related NCS as well.

Sources: (1) Buchner, B., et al., 2017. Global Landscape of Climate Finance 2017. Climate Policy Initiative, San Francisco. (2) Griscom, et al. 2017. *Natural Climate Solutions*. (3) New Climate Economy reports 2016 and 2018. (4) IPCC Special Report on Climate Change and Land, August 2019. (5) The Nature Conservancy and Environmental Finance, *Investing in Nature: Private Finance for Nature-based Resilience*, November 2019. (6) Convention on Biological Diversity, Zero Draft of the Post-2020 Global Biodiversity Framework.



# The 2030 NCS Investment Vision

*Achieving 10 billion tonnes of emissions reductions per annum through the transition to sustainable land use*



2020

End deforestation and implement best practices on existing land assets



Achieve net zero emissions across forestry, agriculture and land use



Invest to create sustainable, climate positive landscapes integrating conservation, restoration, and production

2030

Notes: By ending deforestation we mean eliminating deforestation and conversion of natural lands. By "climate positive" landscapes, we mean actively managed landscapes that are sequestering more carbon dioxide than is being released through production-related and other management-related activities.



# *The Land Use Challenge and Natural Climate Solutions*

# Our Current Land Use Is Not Sustainable

*In much of the world land use is not sustainable and deforestation, soil loss, and land degradation continue.*

Terrestrial ecosystems hold twice as much carbon as the atmosphere and represent the largest component of the carbon cycle—yet this value is unpriced and therefore largely ignored.

Unsustainable land use and land use change (e.g. deforestation, conversion of wetlands and grasslands) contribute approximately one quarter of annual global greenhouse gas emissions.

Loss of forests, wetlands, and mangroves is leading to reduction in clean, plentiful water and exacerbating physical risks associated with climate change.

Recent scientific analysis suggests that the planet is undergoing a sixth extinction event—declines in populations of insects, birdlife and mammals are increasing.

Sources: (1) Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Global Assessment on Biodiversity and Ecosystem Services. (2) IPCC Special Report on Climate Change and Land, August 2019. (3) Elizabeth Kobert, *The Sixth Extinction: An Unnatural History*. (4) Corrine Le Quere, et al, Global Carbon Budget 2018.



# Conserving Nature while Supporting Communities— A Core Part of the Sustainability Transition

*In order to protect and restore nature,  
policies, investment, and land management  
practices must ensure:*

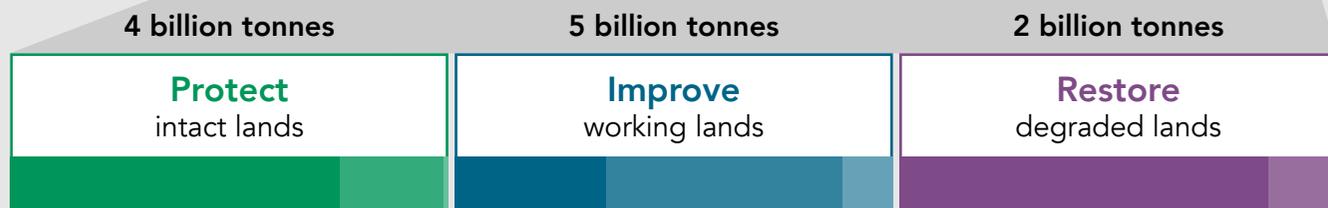
Conservation, improvement and  
restoration of Earth's natural  
infrastructure—all the goods and  
services provided by nature



An economic system that rewards  
all land managers for being part  
of the sustainability solution

# Protect, Improve, and Restore—Addressing Climate Change through Natural Climate Solutions

Annual global greenhouse gas emissions are approximately 43 billion tonnes of CO<sub>2</sub>e. NCS could remove approximately 25–30% of global annual emissions by 2030.



Protect forests



Protect wetlands



Protect grasslands



Manage timberlands better



Manage croplands better



Manage grazing lands better



Restore forests



Restore wetlands

*There are three key areas of NCS:*

- **Protect** forests and natural ecosystems from degradation or conversion to agriculture
- **Improve** management of agriculture and forestry production systems, including a focus on regenerative models
- **Restore** degraded lands with natural vegetation and/or sustainable agriculture

Investment in sustainable land use can also be an important part of sustainable rural economic development in alignment with the Sustainable Development Goals.

Sources: (1) Griscom et al., PNAS (2017). (2) Griscom et al., 2020, Philosophical Transactions of the Royal Society. (3) R B Jackson et al 2019 Environ. Res. Lett. 14 121001, "Persistent fossil fuel growth threatens the Paris Agreement and planetary health", 4 December 2019. Graphics adapted from Nature Conservancy magazine and 5W Infographics.

# *A Call to Investment Action*



# A Call to Investment Action on NCS

*Investment must be channelled into strategies and companies that protect and restore ecosystems and improve working lands as a part of their investment thesis and long-term value creation approach.*

Capital allocation strategies should integrate exposure to Natural Climate Solutions and related sectors through equities, fixed income, alternatives and real assets portfolios to assess risk, improve existing asset management, and identify new investment opportunities flowing from a price on carbon emissions.

## Investment risks associated with destruction of natural capital:



Supply Chain  
Performance



Asset  
Values



Physical  
Security



Business  
Continuity



Legal  
Action



Regulatory  
Change



Reputation  
Damage



Societal  
Disruption

# Recapitalizing Land-based Real Assets through Carbon Pricing— A Significant Market Opportunity

**Assuming a robust policy environment and carbon pricing, hundreds of billions of dollars could flow annually into forest conservation, reforestation, and sustainable land management outcomes in commercial agriculture and forestry.**

**Carbon asset value in land use could be trillions of dollars in 2030 and beyond, which would be capitalized into land and forest values. A world in which the carbon price reaches \$100 per tonne could see substantial areas of forests and land valued primarily for their conservation value.**

Investment experience in mature markets such as the United States, Australia, and New Zealand shows that modest carbon pricing (for example, \$15 per tonne of CO<sub>2</sub>) creates meaningful incentives for extended rotations in forestry and just slightly higher prices (such as \$25 per tonne) can create incentives for investment in native revegetation and new plantation development. The carbon price threshold for such activities can be even lower in emerging markets, where cost of land is lower. Rising carbon pricing would also create incentives for regenerative agricultural practices and sustainable intensification of agricultural production.

Carbon stock conservation and sequestration needs to be perpetuated over long periods of time—usually 100 years—suggesting open-ended investment structures.

Growing competition for land between production and conservation would need to be balanced to ensure multiple objectives of climate mitigation, biodiversity protection, and food security are achieved.



# Accessing Investment Opportunities in Natural Climate Solutions—toward the 2030 Vision

**Scale and commercial returns are achievable. There is a spectrum of opportunities which are “investment ready” today and ones which will develop and scale over time.**

The sustainable investment agenda for institutional investors must continue to focus on ending deforestation in supply chains and supporting strong policy action on climate change.

Investments related to promoting the emergence of a circular bio-economy and more sustainable food systems noted here can ease pressure on natural ecosystems by promoting resource efficiency and use of renewable materials.

Carbon pricing will enable new investment models related to conservation; restoration of marginal agricultural lands; improvement in forestry and agricultural productivity; and rural prosperity and livelihoods.

It will be critical to ensure that carbon offsets do not replace actions to reduce emission footprints and meet high quality standards.

This is not an exhaustive list but highlights key access points for an investment portfolio.

## Investment Actions Related to Natural Climate Solutions

### *Engage in Advocacy, Screening and Enforcement*



Deforestation-free Commodities



Climate Policies

### *Invest in Sustainable and Regenerative Production*



Sustainable Agriculture



Sustainable Forestry



Innovation in Food Systems



Circular Bio-economy

### *Innovate through Exposure to New Products and Markets*



Rural Livelihoods



Restoration and Reforestation with Carbon Finance



Green Infrastructure

# Actions Across Asset Classes—Engage, Invest and Innovate

Investors have a major opportunity across asset classes to reduce risks, create economic value, and ensure a scaled and robust approach to Natural Climate Solutions.

## *Fixed Income*

- Invest in corporate or government green bonds to support Green Infrastructure
- Focused bond strategy to support scaling up of Circular Bio-economy

## *Equities*

- End deforestation by requiring disclosure from companies sourcing key commodities, e.g. beef, soybeans, palm oil, to certify deforestation-free supply chains
- Invest at scale in various companies with Food Systems Innovation and the Circular Bio-economy as portfolio thematic areas
- Ensure robust climate mitigation strategies in portfolio companies

## *Alternatives & Other*

- Significantly increase allocation to high sustainability Agriculture and/or Forestry investments and improve asset management in existing assets
- Develop new, substantial allocation to carbon finance markets through innovative investment models in restoration and reforestation



# Engage in Advocacy, Screening and Enforcement— *Implement Deforestation-free Investment*

Deforestation is driven by conversion of natural forests to other land uses, including:



Oil palm  
and soy



Pastures for  
cattle grazing



Settlements



Roads and  
infrastructure

Various forms of agriculture are the primary causes of conversion, particularly in tropical areas.

Illegal and unsustainable natural resources production continues to be a problem despite international trade restrictions and improving governance.

## *Investment Action – Deforestation-free Investment*

- Commit to eliminating deforestation and the conversion of natural lands throughout operations and supply chain
- Require that all new financing and investments avoid deforestation and the conversion of natural vegetation
- Deploy effective assurance programs that include traceability, monitoring and verification
- Regularly disclose measurable progress in reducing the amount of deforestation and conversion of natural lands

Sources: (1) Forest Trends, Supply Change Initiative. (2) Climate Focus, *Zero-deforestation Commodity Supply Chains by 2020: Are We on Track?*, January 2018. (3) Tropical Forest Alliance. (4) New York Declaration on Forests. (5) For supply chain technology, see for example, Global Forest Watch, <https://www.globalforestwatch.org/> and Trase, <https://trase.earth/>. (6) Ceres and UN PRI Investor Initiative for Sustainable Forests.

# Engage in Advocacy, Screening and Enforcement— *Advocacy for Climate Policies*



Advocate for robust carbon pricing

Align investment portfolio with Paris Agreement's goals

Accelerate private sector investment into the low carbon transition

Commit to improve climate-related financial reporting

Note: See The Investor Agenda for more information, <https://theinvestoragenda.org/>

# Invest in Sustainable and Regenerative Production— *Investment in High Sustainability Forestry and Agriculture*

**Demand for timber and agricultural products is highly correlated to GDP growth and population growth; rising demand will continue to put pressure on nature.**



Climate change mitigation is possible through investment in sustainable commercial forestry and agriculture through a focus on better technology and management practices, including improvements in soil quality and soil carbon

Certification systems and other social and environmental management systems can provide quality assurance and support management for commercial, environmental, and social outcomes in alignment with the Sustainable Development Goals.



Carbon finance can drive climate mitigation through greenfield plantation development in suitable areas and integration of conservation and restoration projects in productive forestry and agricultural landscapes

## *Investment Opportunity – Forestry and Agriculture*

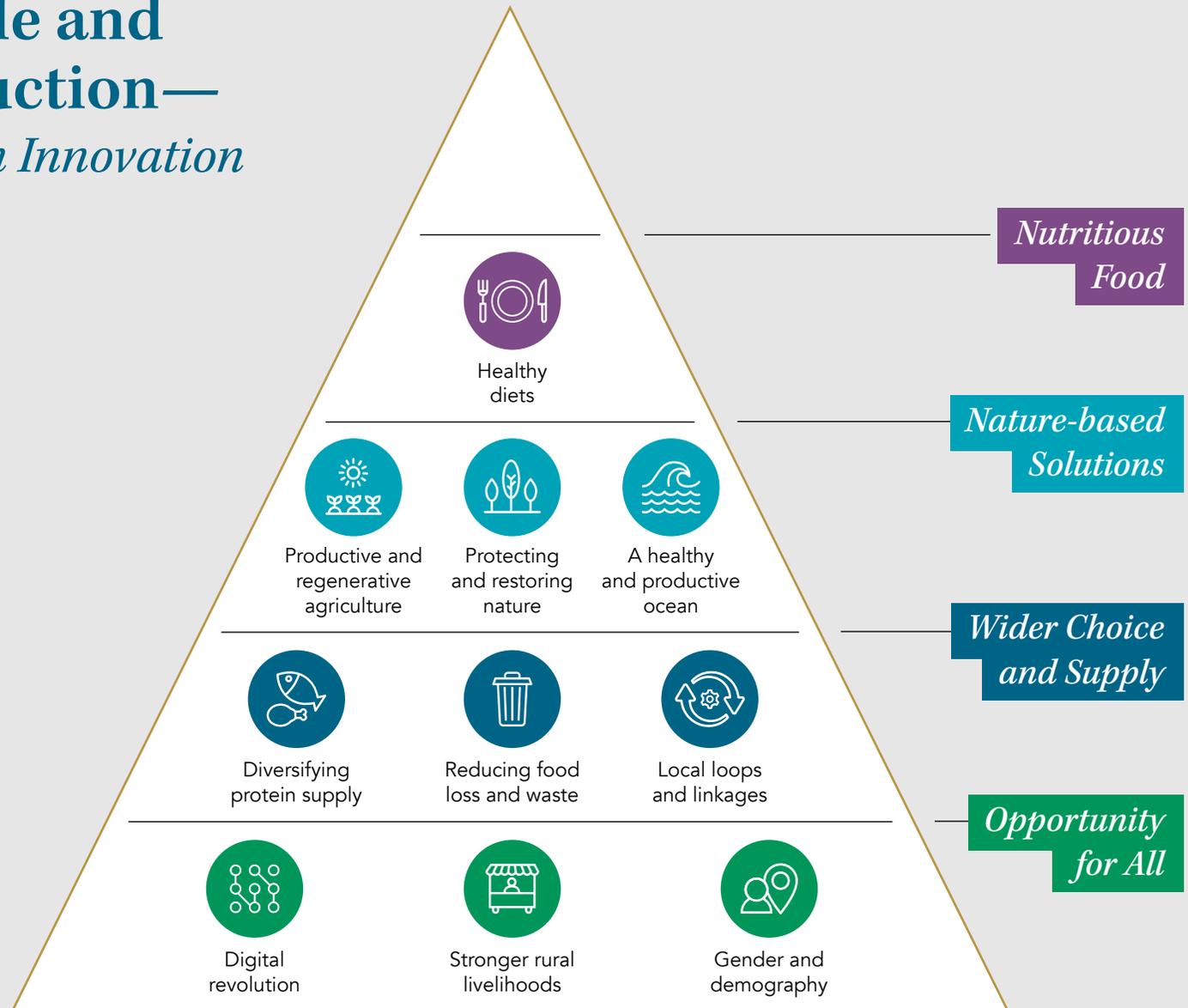
- Well-established institutional asset classes offering commercial returns from sale of food and fiber commodity products
- Core real assets return comprised of cash yield and capital appreciation
- Low volatility
- Significant growth opportunity in emerging markets and opportunity for long-term value improvements
- Estimated that the world may require an additional 250 million hectares of forest plantations by 2050 to meet rising demand across various markets—investment requires a sustainability approach that does not result in deforestation
- Estimated that the world may require 60% more food by 2050 if current population and consumption trends continue—investment in sustainable intensification of agriculture is required

Sources: (1) WWF Living Forest Report. (2) UN FAO.

# Invest in Sustainable and Regenerative Production— *Investment in Food System Innovation*

The Food and Land Use Coalition has identified ten critical transitions that would enable food and land use systems to provide food security and healthy diets for a global population of over nine billion by 2050, while also tackling climate, biodiversity, health and poverty challenges.

These transitions shown in the figure represent a \$4.5 trillion annual business opportunity and require an estimated \$300 billion per annum in investment to 2030. Institutional investors can approach this variety of transition opportunities as a critical investment portfolio theme, where focused investment on food system innovation can reduce pressure on ecosystems and accelerate sustainable land use.



Sources: The Food and Land Use Coalition, *Growing Better: Ten Critical Transitions to Transform Food and Land Use*, September 2019.

# Invest in Sustainable and Regenerative Production— *Investment in the Circular Bio-economy*

## The circular bioeconomy represents a \$7.7 trillion opportunity through 2030.

A bioeconomy uses biological resources as the production input; in a circular system, these resources are renewable, sustainably managed, recovered, and reused.

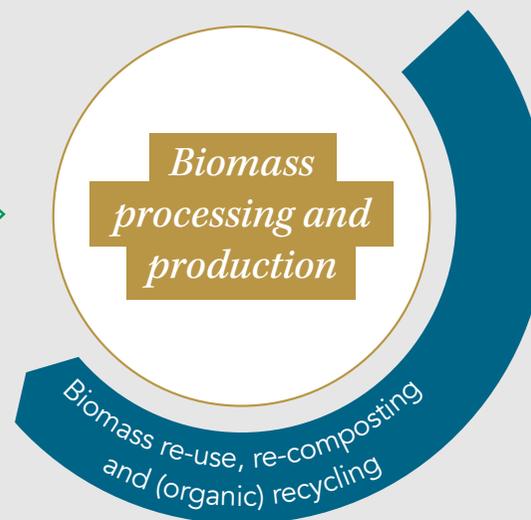
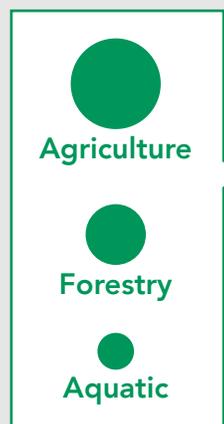
The circular bio-economy must lead to carbon neutral or net negative outcomes to align with Natural Climate Solutions.

The circular bioeconomy serves to address the issue that while the global population has doubled in the last 50 years, resource extraction has tripled, contributing to the climate crisis, biodiversity loss, and resource scarcity. A circular bioeconomy could alleviate resource supply concerns, minimize waste, reduce fossil fuel consumption, and relieve pressures on land.

Additionally, a circular bioeconomy makes a strong business case; it allows companies to enter new markets and customer segments, mitigate regulatory and societal risks, provides a competitive advantage, and leads to innovations across the supply chain.

Institutional investors can approach the circular bio-economy as a critical investment portfolio theme, where focused investment on companies and technologies associated with the circular bio-economy can reduce pressure on ecosystems and accelerate sustainable land use.

### Sources of biomass



### Example Bio-economy Products

- Building materials
- Forest products
- Paper packaging and recyclable bioplastics
- Motor vehicles and components
- Machinery and equipment
- Electronics and electrics
- Pharmaceuticals

Source: WBCSD CEO Guide to the Circular Bioeconomy, 7 November 2019.

Note: Bio-energy projects must have lifecycle assessments to understand whether they meet the test of carbon neutrality.

# Innovate through Exposure to New Products and Markets— *Investment in Restoration and Reforestation with Carbon Finance*

**IPCC Special Report on Climate Change and Land notes that all climatic modelling that limits global warming to under 2°C requires improvements in land use; some models require hundreds of millions of hectares of increase in forest area by 2050 relative to 2010 in order to meet temperature targets.**

Major corporations are beginning to make significant investments in reforestation and ecological restoration as part of stewardship and climate neutrality pledges—for example, the global aviation industry is expected to drive 3.5 billion tonnes of demand for CO<sub>2</sub> reductions between 2021 and 2035.

Majority of the required investment in conserving forests and restoring degraded lands will be required in developing countries—across Latin America, South and Southeast Asia, and Africa—where much of the landscape degradation is occurring now.

There is also an opportunity for restoration of degraded lands in developed markets. For example, Australia’s red meat and livestock industry has announced it will seek to be carbon neutral by 2030 through changes in management practices, technology and improvements in land use and soil quality.

Restoration and reforestation must be undertaken in a way that is aligned with food security and biodiversity.

**Industries that are seeking to decarbonize:**



Oil and gas



Aviation



Technology



Finance



Consumer Goods

Sources: (1) New Climate Economy Report, 2016. (2) International Air Transport Association. (3) ABC News, “Australian red meat sector sets 2030 carbon neutral target at Alice Springs producer forum”, November 2017, <https://www.abc.net.au/news/rural/2017-11-22/meat-livestock-australia-sets-cattle-industry-carbon-target/9180902>. (3) Fargione et al., «Natural Climate Solutions for the United States,» *Sci. Adv.* 2018.

## *Investment Opportunity – Carbon Finance Driven Restoration*

- New investment models involving long-term carbon off-take contracts from corporate entities can finance landscape-level commercial reforestation and restoration for ecological values
- Assuming a \$1,000 per hectare restoration cost, this could be up to a \$1 trillion investment requirement
- This investment model may be linked to carbon neutrality in supply chains across sectors
- Engagement with rural and farming communities will be critical to generating scale
- Certification standards and quality protocols will support positive environmental and social outcomes
- Companies must also engage in robust emission reduction strategies related to their operations

# Innovate through Exposure to New Products and Markets— *Investment in Rural Livelihoods*

**500 million families rely on agriculture for their livelihoods, but these farms are often characterized by small-scale holdings (e.g. 1 hectare or less). Limited access to capital and lack of clear land tenure often leads to inefficient land use and inability to invest in productivity improvements.**

Innovative investment models are needed that link agricultural and forestry production with landscape restoration and community benefits sharing, such as agro-forestry models (integrated timber and agricultural production at the landscape level) or out-grower schemes where individuals or groups of small holder farmers produce sustainable timber through contractual arrangements.

Such investment requires greater due diligence, relationship building, and strong operational capacity on the ground in emerging markets—but offers higher returns.

Local and indigenous land rights must be understood and respected as part of investment processes.

Blended finance structures between institutional investors, impact investors, and public finance can support training, skills development, and capacity building while reducing investment risk.

*Successful investment in such models will create strong alignment with the Sustainable Development Goals, enhancing economic opportunity and rural livelihoods.*

Sources: UN FAO, Smallholders and Family Farmers Factsheet.

# Innovate through Exposure to New Products and Markets— *Investment in Green Infrastructure*

There is increasing recognition that “green infrastructure”—forests, wetlands, and mangroves—can perform better and at lower cost than traditional “grey infrastructure” to provide the following essential services:

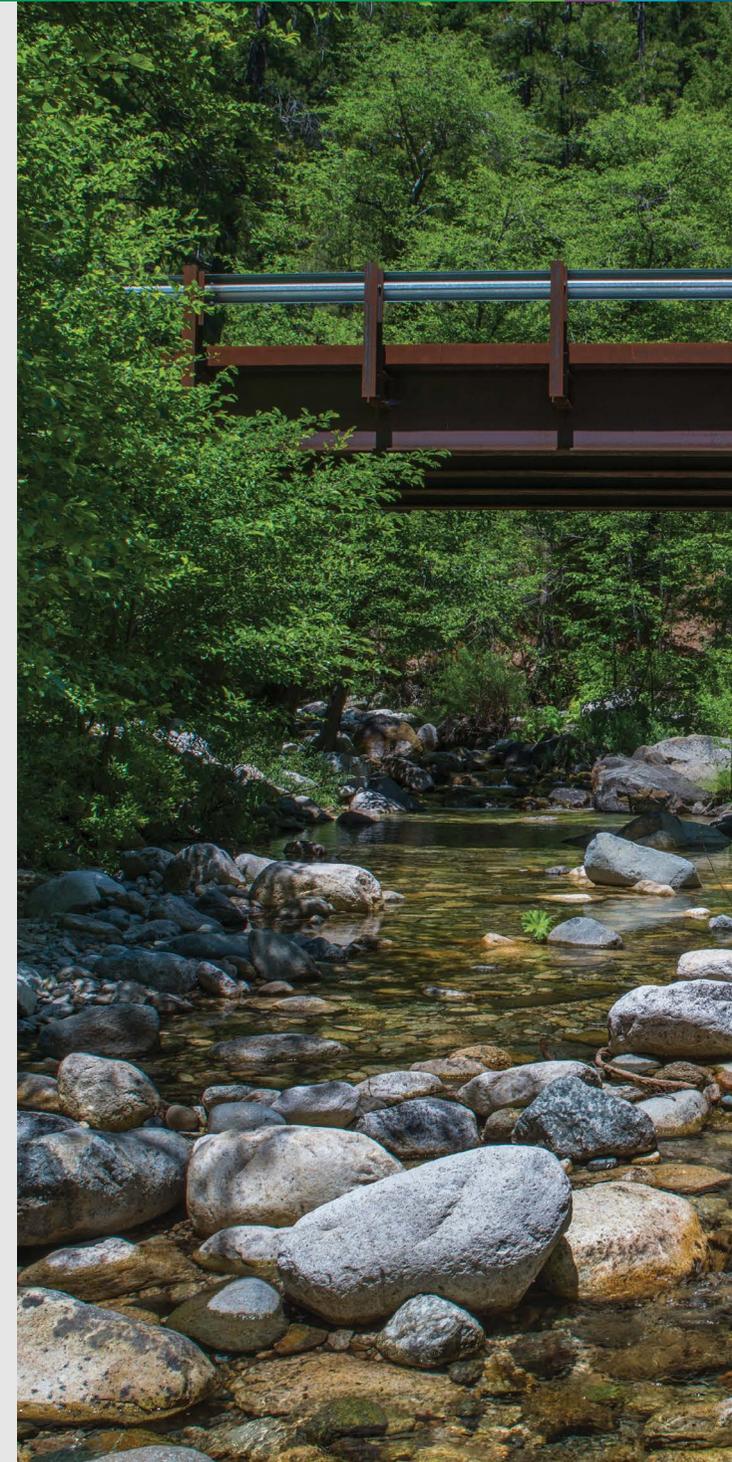
- Water purification and storage
- Flood management
- Irrigation

The potential for scale is large. For example, the OECD estimates global financing needs for water supply infrastructure at \$6.7 trillion by 2030 and \$22.6 trillion by 2050, significantly outpacing financial flows to this sector. Solutions that are cost-effective, enhance infrastructure service provision, show resilience in a changing climate, and contribute to social and environmental goals must be developed and deployed worldwide.

## *Investment Access to Green Infrastructure*

- Environmentally focused bonds (e.g. climate bonds, green bonds)
- Corporate stewardship and risk assessment of natural infrastructure (e.g. watershed protection by food and beverage companies)
- Insurance payments for risk reduction through nature-based solutions
- Public-private partnerships for infrastructure including investing alongside development finance institutions

Sources: (1) World Resources and World Bank, Integrating Grey and Green: Creating Next Generation Infrastructure, March 2019. (2) Forest Trends, State of Watershed Investment 2016.



# Next Steps

**Investment in Natural Climate Solutions and the transition to sustainable land use is already underway through growing societal pressure, rising economic risk, and increasing policy intervention.**

However, we need investors to support:

- Stronger policy settings to ensure a robust carbon price
- Alignment of portfolios with the investment actions and strategies in this vision
- Transparency and impact reporting to ensure progress and accountability across asset classes and investment managers

## Questions for your consideration:

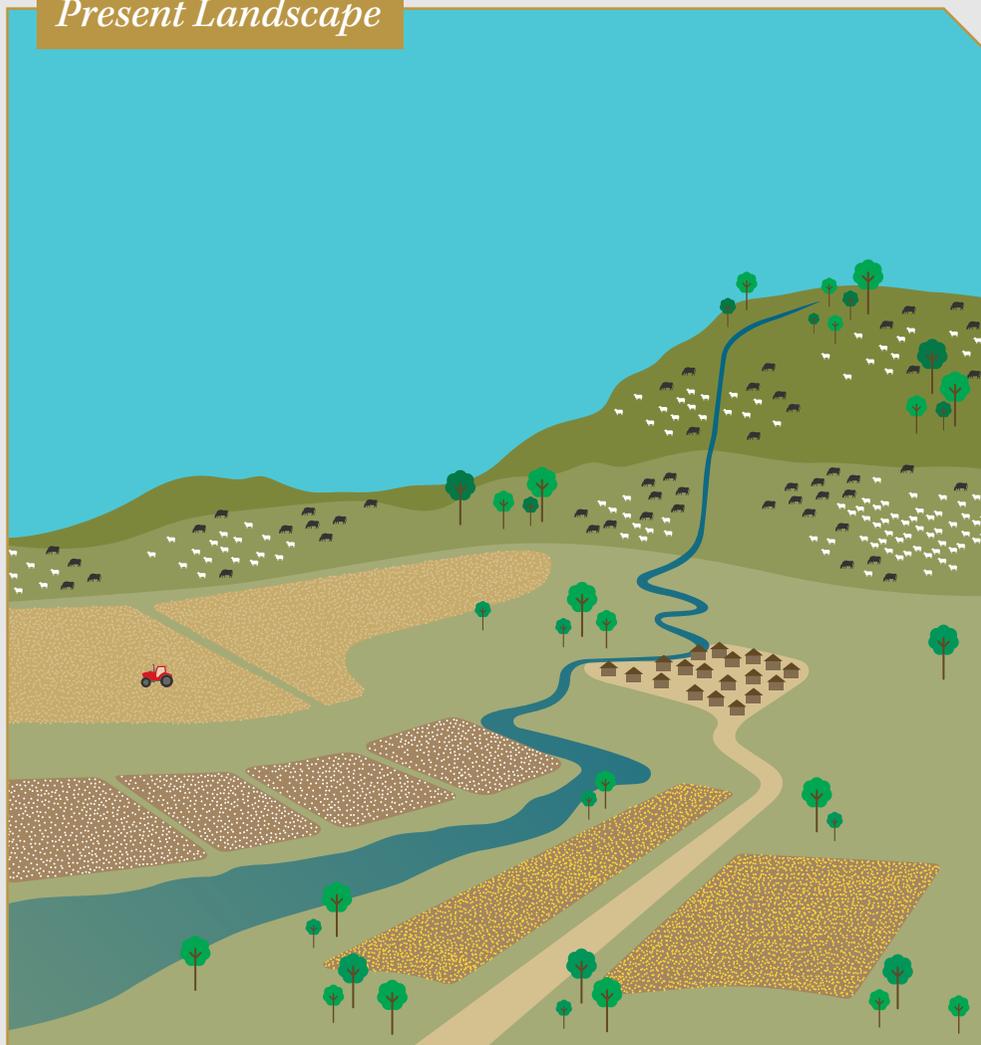
- Do you broadly agree with the NCS Investment Vision, specifically the need and urgency to mobilize significant investor resources?
- How would you gain support for the NCS Investment Vision within your organization over the next 12 months and what might be the concerns about allocating investment to this area?
- What resources and research would make this NCS Investment Vision more actionable for institutional investors?



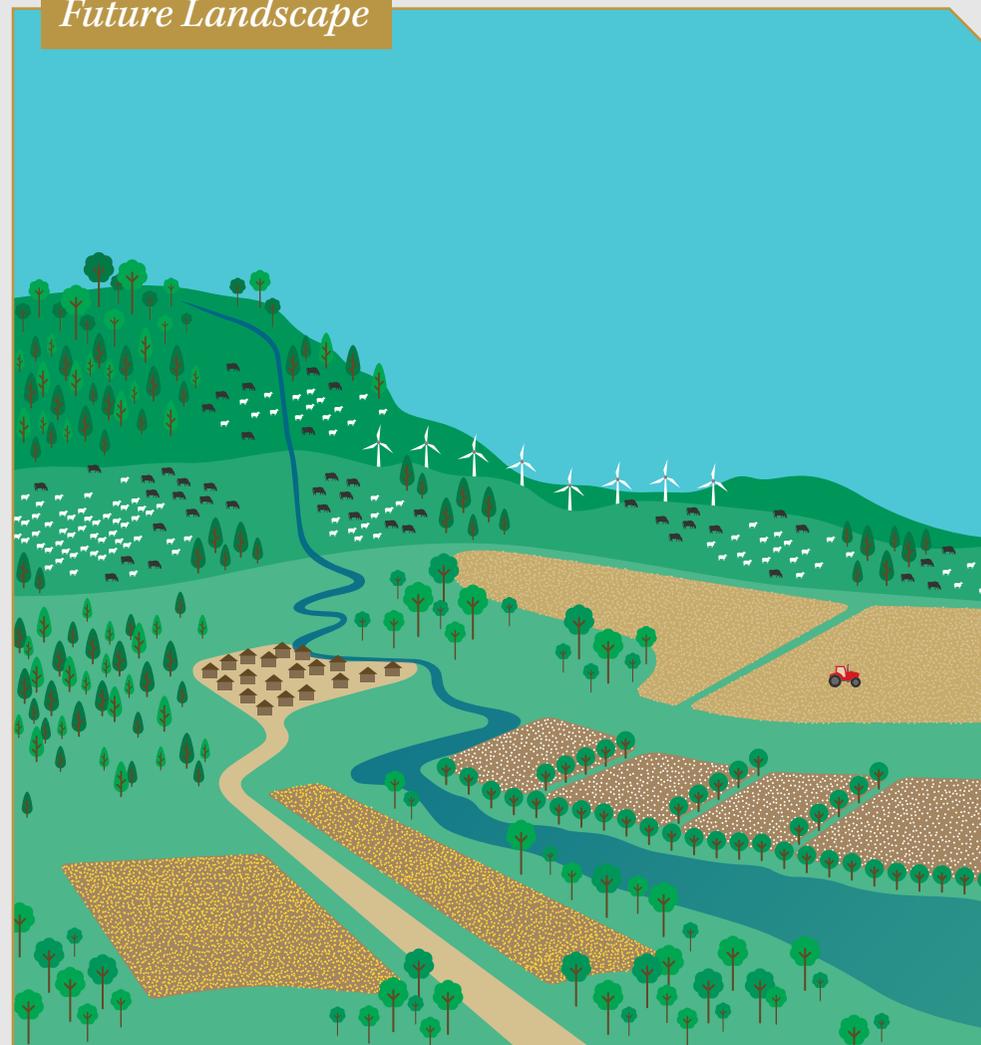
*Natural Climate Solutions and the goal of sustainable land use must become a central and critical part of any decarbonisation strategy in institutional portfolio allocation.*

# Example Investment Case—Sustainable Land Use Will Become More Profitable and Enhance Resilience

*Present Landscape*



*Future Landscape*



# Example Investment Case—Sustainable Land Use Will Become More Profitable and Enhance Resilience

## Present Landscape

Land Use	Area	Gross Revenue \$/ha	Gross revenue
Wheat	250,000	\$500	\$125,000,000
Canola	150,000	\$750	\$112,500,000
Cattle	200,000	\$250	\$50,000,000
Sheep	150,000	\$300	\$45,000,000
Cotton	150,000	\$5,000	\$750,000,000
Permanent horticulture	100,000	\$15,000	\$1,500,000,000
<b>Total</b>	<b>1,000,000</b>		<b>\$2,582,500,000</b>

### Environmental and Social Problems

- Low biodiversity
- Greenhouse gas emissions from livestock
- Soil erosion and turbid waterways
- Nutrients leaching in waterways
- Saline discharge; dryland salinity increasing
- Vulnerability of agricultural communities to single commodity markets and climate change

Note: This information represents the gross revenues of a hypothetical million-hectare landscape today in the Murray-Darling River basin of southeastern Australia. The landscape includes high value irrigated agriculture (e.g. cotton, permanent horticulture such as nuts or citrus), dryland cropping for wheat and canola, and cattle and sheep grazing. Data on expected revenues per hectare are approximate and indicative in nature and were informed by a verbal conversation with the land valuer CBRE in January 2020. Dollar values are in Australian dollars.

## Future Landscape

Land Use	Area	Gross Revenue \$/ha	Gross revenue
Wheat	210,000	\$550	\$115,500,000
Canola	130,000	\$825	\$107,250,000
Cattle	200,000	\$275	\$55,000,000
Sheep	150,000	\$330	\$49,500,000
Cotton	120,000	\$5,500	\$660,000,000
Permanent horticulture	100,000	\$16,500	\$1,650,000,000
Timber plantations	30,000	\$36,000	\$43,200,000
Native revegetation	140,000	\$250	\$35,000,000
Wind farm development			\$10,000,000
Salinity credits			\$20,000,000
<b>Total</b>	<b>1,000,000</b>		<b>\$2,745,450,000</b>

### Environmental and Social Benefits

- Biodiversity increased
- Greenhouse gas emissions reduced
- Soil erosion reduced
- Nutrients retained on farms
- Dryland salinity reduced
- Potential for more diverse revenue streams for agricultural communities

Note: This figure represents the gross revenues of a hypothetical million-hectare landscape at a point in the future in the Murray-Darling River basin of southeastern Australia supported by carbon finance and other revenue streams supporting environmental outcomes. The landscape includes high value irrigated agriculture (e.g. cotton, permanent horticulture such as nuts or citrus), dryland cropping for wheat and canola, and cattle and sheep grazing as in the “present 2020 scenario” but has also been reforested with a mix of pine plantations for timber production; revegetated with native vegetation to increase carbon sequestration, reduce dryland salinity, and improve biodiversity; and leased land for wind farm development. Compared to the “present” scenario, this scenario assumes higher prices for canola, wheat, cotton, and horticulture—based upon an assumption of rising demand, carbon pricing, and land use competition—but assumes decreased area to other land uses. Similarly, there is an assumed price increase for cattle and sheep, but the land area remains the same based upon an assumption that there will be native revegetation on these areas for partial grazing and shelter belts. The timber plantations figures assume only revenue from timber and no carbon and assume 1,200 hectares harvested per annum. A \$50/tonne carbon price is assumed for native revegetation with 5 tonnes/ha/year sequestered. Wind farm assumes 1000 MW developed at revenue of \$10,000 per MW per year revenue to landscape as rental. Scenario assumes a salinity reduction benefit of \$500 per hectare on approximately a third of the native revegetation. Note this scenario is indicative and conceptual only and not based on econometric modelling.