



Understanding the Global, National, and State Context of Natural Capital and Nature Positive.

Dr. Renee Young

The Western Australian Biodiversity Science Institute

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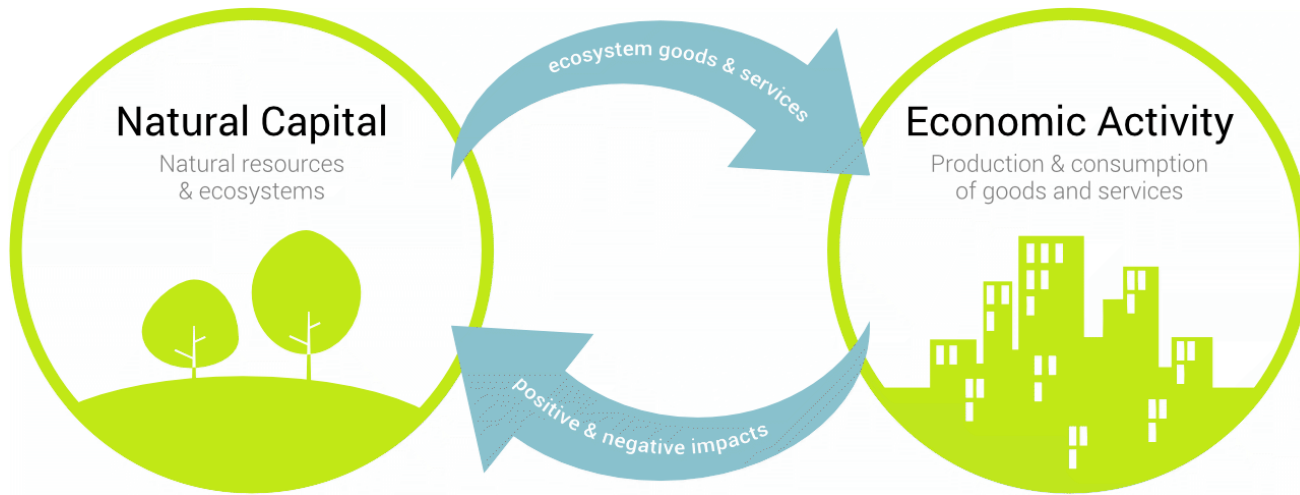
What is Natural Capital?

Why are we talking so much about it?

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Natural capital can be defined as the world's stocks of natural assets which include geology, soil, air, water and all living things.



Natural Capital



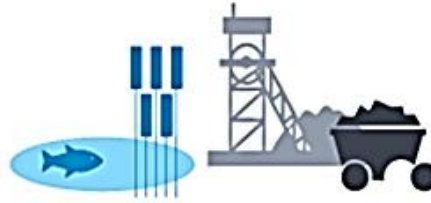
Biodiversity



Stocks:

- Species
- Communities
- Landscapes
- Ecosystems
- Soils
- Air
- Water

Ecosystem services



Services:

- Pollination
- Biomass
- Nutrient cycling
- Water purification

Benefits to business and to society

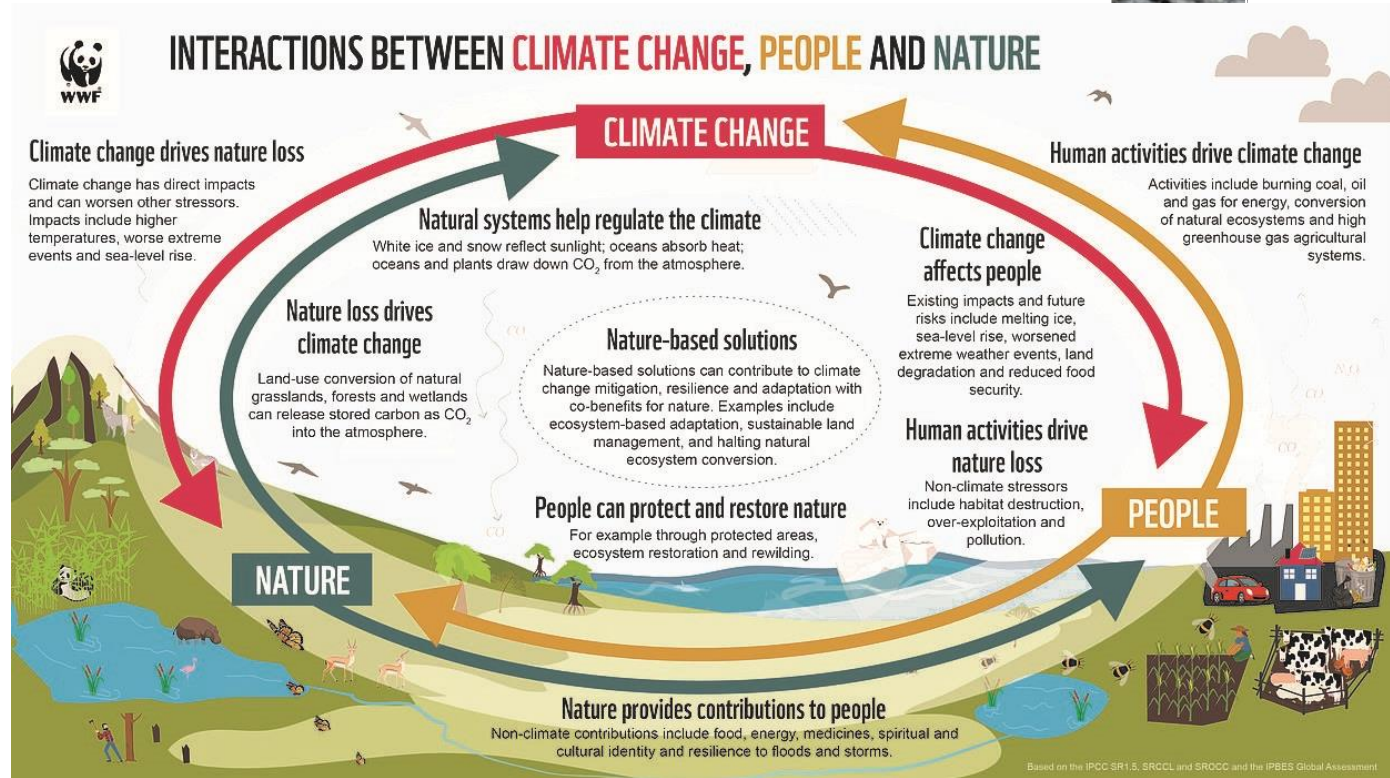


Benefits:

- Timber
- Energy
- Clean water
- Clean air
- Recreation
- Hazard protection
(flooding, climate change mitigation)
- Wildlife conservation



More than half of the world's economic output is moderately or highly dependent on nature and there is growing recognition in the finance and business sector of the need to move beyond climate considerations and address nature-related concerns.



Ecosystem-based adaptation can protect lives and livelihoods



HAZARD: Loss of life and assets due to intense wildfires

SOLUTION: Forest management to reduce risk of super-fires



HAZARD: Asset loss, yield reduction and contamination due to flooding

SOLUTION: Restore wetlands to absorb and filter flood waters



HAZARD: Crop failures and livestock loss due to drought

SOLUTION: Agro-forestry to make better use of soil moisture and reduce evaporation



HAZARD: Urban flooding due to intense rainfall

SOLUTION: Restore water catchment areas and expand green spaces to reduce flood risks



HAZARD: Loss of land, livelihoods and assets due to rising sea levels and coastal erosion

SOLUTION: Protect and restore coastal wetlands to combat coastal erosion and keep pace with rising seas



HAZARD: Landslides, soil loss and siltation due to intense rainfall

SOLUTION: Protect and restore forests to stabilize soils and slow water runoff



HAZARD: Reduced or intermittent river flow due to drought

SOLUTION: Protect and restore forests and watersheds to regulate flow



HAZARD: Asset loss, yield reduction and transport disruption due to flooding

SOLUTION: Protect and restore forests to slow water run-off



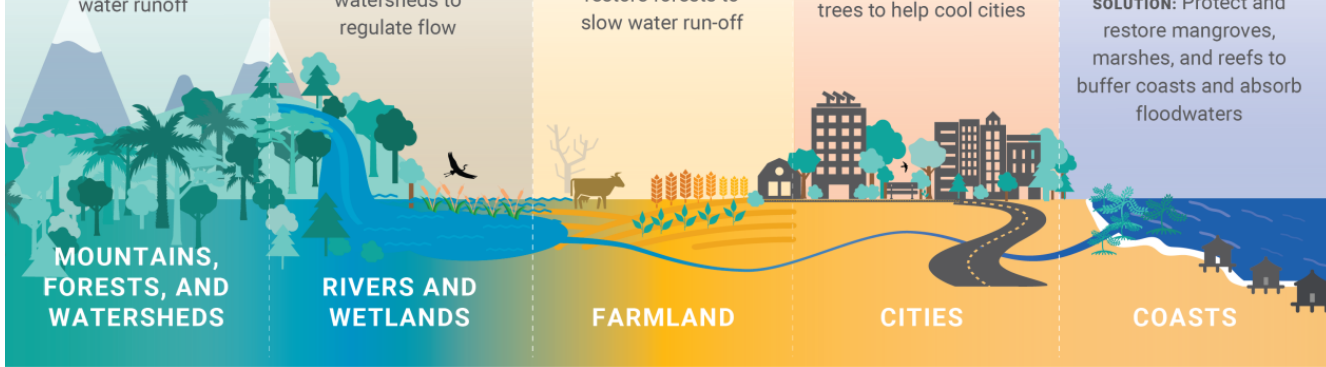
HAZARD: Heat stress due to urban heat islands

SOLUTION: Expand green spaces and plant trees to help cool cities



HAZARD: Loss of life and assets due to storm surges and inundation

SOLUTION: Protect and restore mangroves, marshes, and reefs to buffer coasts and absorb floodwaters



**MOUNTAINS,
FORESTS, AND
WATERSHEDS**

**RIVERS AND
WETLANDS**

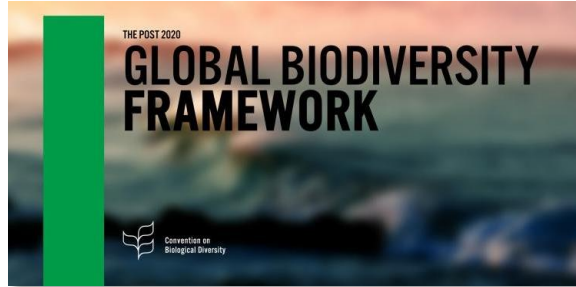
FARMLAND

CITIES

COASTS

International actions

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Global Biodiversity Framework (GBF): sets targets and milestones on the route towards ‘living in harmony with nature’ by 2050

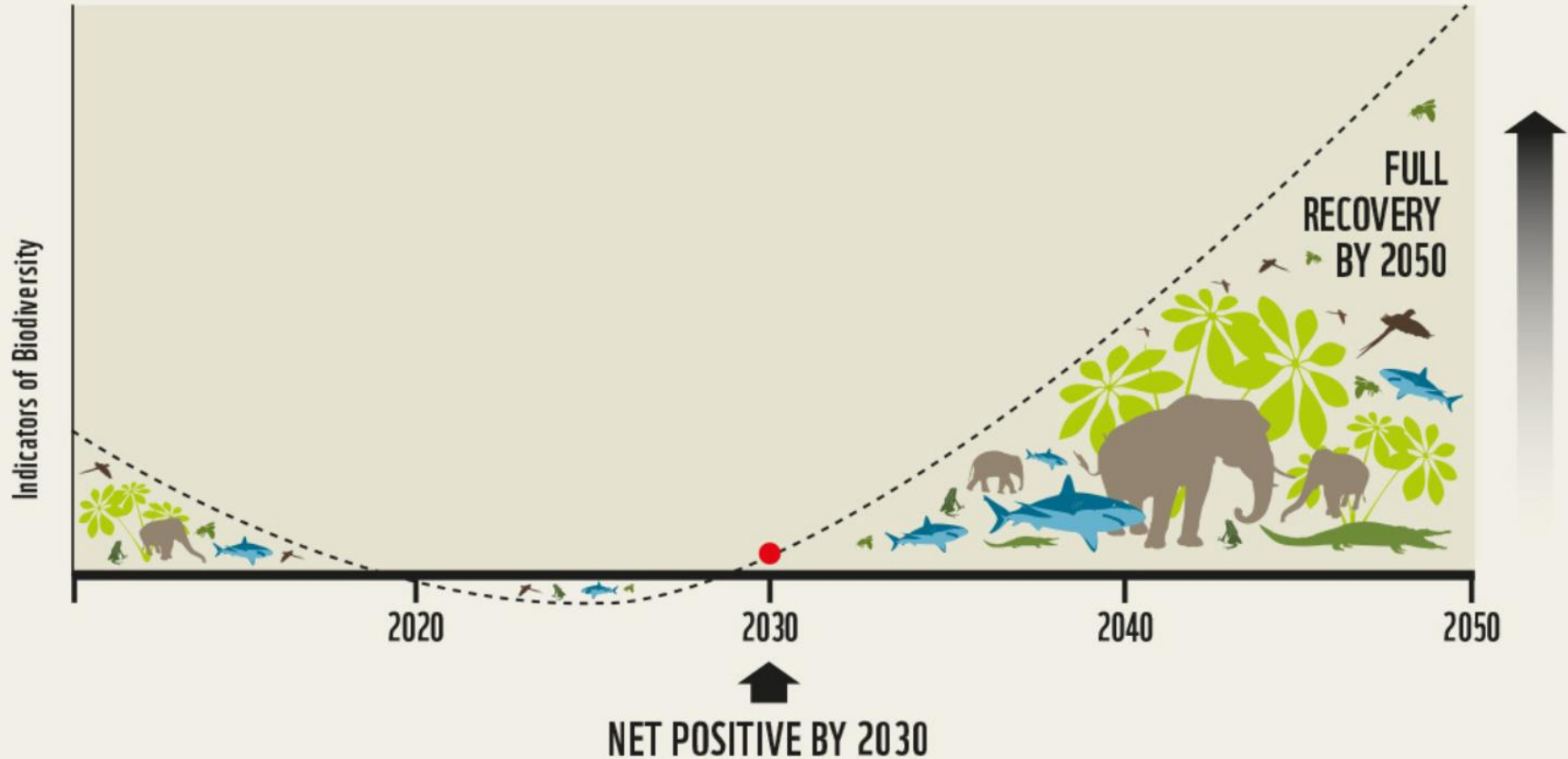
- Target 2: by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and coastal and marine ecosystems are under **effective restoration**.
- Target 15: Take legal, administrative or policy measures so business and finance disclose their risks, dependencies and impacts on biodiversity (paraphrased).



Taskforce for Nature Related Financial Disclosures (TNFD): ‘Supporting a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes’.

Governance	Strategy	Risk & impact management	Metrics & targets
Disclose the organisation's governance of nature-related dependencies, impacts, risks and opportunities.	Disclose the effects of nature-related dependencies, impacts, risks and opportunities on the organisation's business model, strategy and financial planning where such information is material.	Describe the processes used by the organisation to identify, assess, prioritise and monitor nature-related dependencies, impacts, risks and opportunities.	Disclose the metrics and targets used to assess and manage material nature-related dependencies, impacts, risks and opportunities.

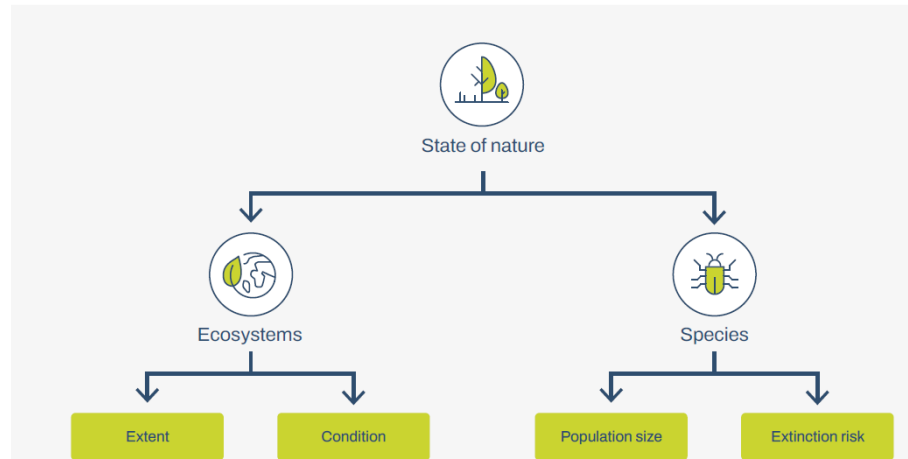
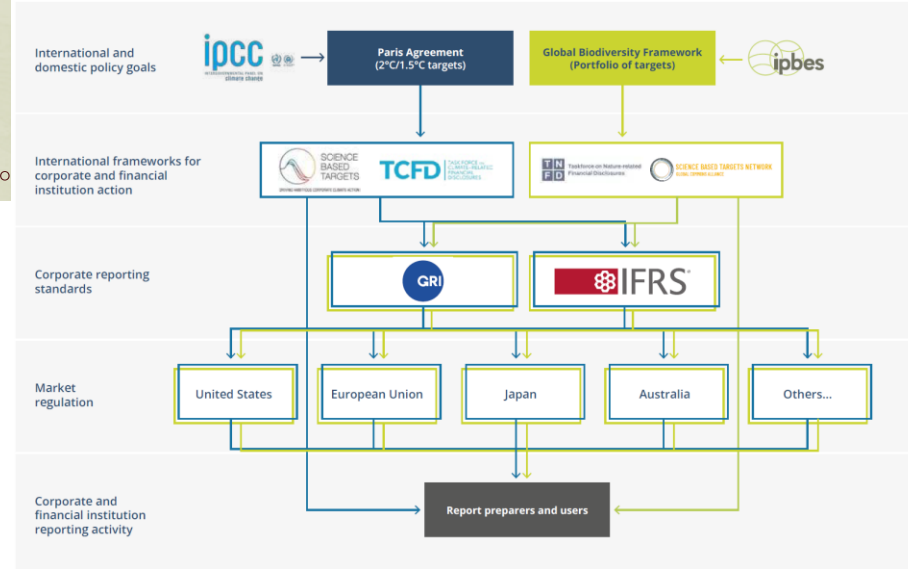
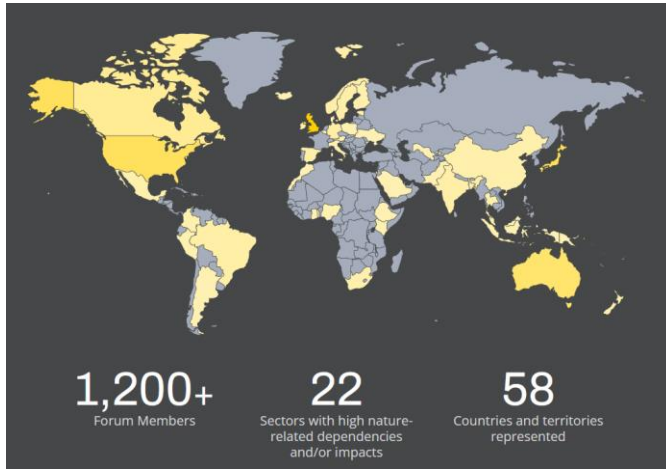
Nature Positive by 2030



International actions

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- TNFD provides a way for organisations to disclose their nature-related issues... in response to growing demands from investors.
- Mandatory reporting on impacts on Nature expected over coming years.
- Companies are already adopting the framework.



International actions

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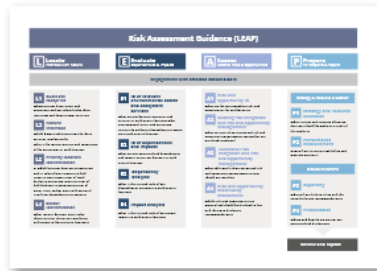


Figure 2: Who the TNFD framework is designed for

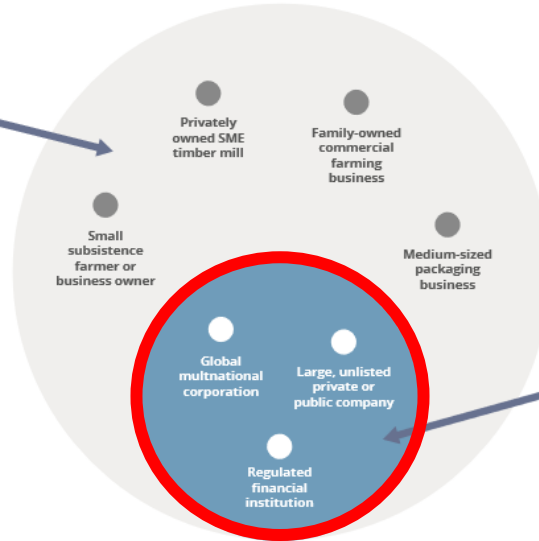
Framework Users

Companies and financial institutions of all sizes and across all sectors interacting with nature and participating in global business supply chains and financial system

Framework component of value to users: LEAP



Companies using the LEAP approach to assess nature-related issues



Companies disclosing against TNFD recommendations

Report Preparers & Users

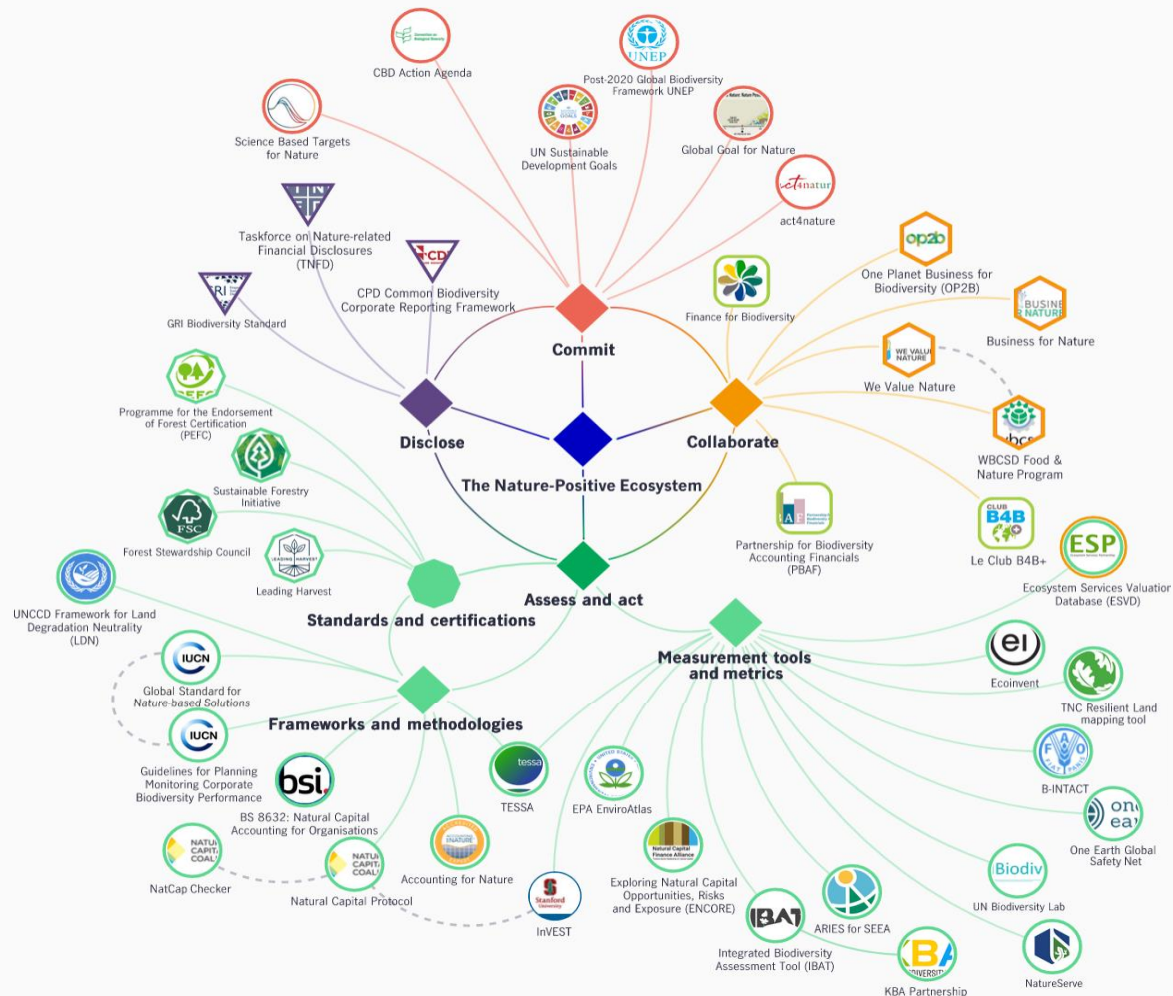
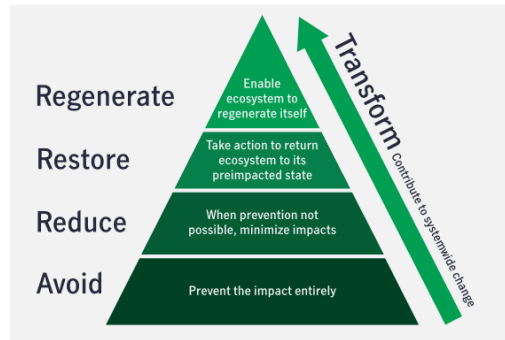
Companies and financial institutions required to disclose information to regulators and other stakeholders, including capital providers

Framework components of value to users: LEAP + Disclosure Recommendations

TNFD Nature-related Disclosure Recommendations (v0.4)			
Businesses	Industry	Sub-Sectors	Global & Supply
<p>Businesses are required to disclose information on the following:</p> <ul style="list-style-type: none"> Material risks and opportunities Material impacts Material dependencies Material contributions 	<p>Industry are required to disclose information on the following:</p> <ul style="list-style-type: none"> Material risks and opportunities Material impacts Material dependencies Material contributions 	<p>Sub-Sectors are required to disclose information on the following:</p> <ul style="list-style-type: none"> Material risks and opportunities Material impacts Material dependencies Material contributions 	<p>Global & Supply are required to disclose information on the following:</p> <ul style="list-style-type: none"> Material risks and opportunities Material impacts Material dependencies Material contributions
<p>Recommended Disclosures:</p> <ul style="list-style-type: none"> Businesses should disclose information on the following: Businesses should disclose information on the following: Businesses should disclose information on the following: Businesses should disclose information on the following: 	<p>Recommended Disclosures:</p> <ul style="list-style-type: none"> Industry should disclose information on the following: Industry should disclose information on the following: Industry should disclose information on the following: Industry should disclose information on the following: 	<p>Recommended Disclosures:</p> <ul style="list-style-type: none"> Sub-Sectors should disclose information on the following: Sub-Sectors should disclose information on the following: Sub-Sectors should disclose information on the following: Sub-Sectors should disclose information on the following: 	<p>Recommended Disclosures:</p> <ul style="list-style-type: none"> Global & Supply should disclose information on the following: Global & Supply should disclose information on the following: Global & Supply should disclose information on the following: Global & Supply should disclose information on the following:

- **Locate** your interface with nature;
- **Evaluate** your dependencies and impacts;
- **Assess** your risks and opportunities; and
- **Prepare** to respond to nature-related risks and opportunities and report.

The Nature Positive Ecosystem

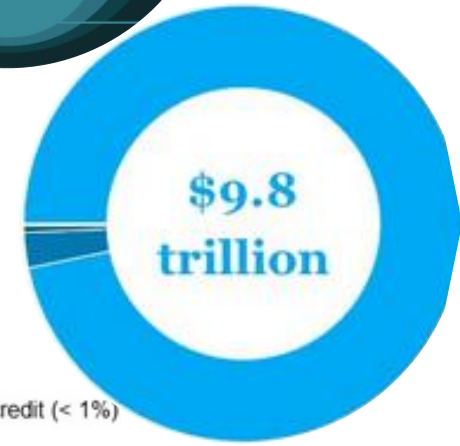
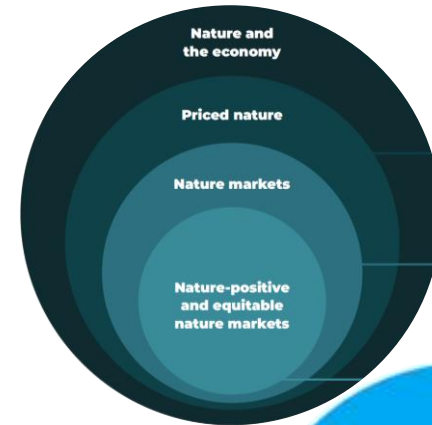


Nature markets

The rise of nature markets can play a central role in reshaping our unsustainable economy if their design and governance is founded on impact and equity.

Exhibit 2 The Many Forms of Nature Markets – a Taxonomy

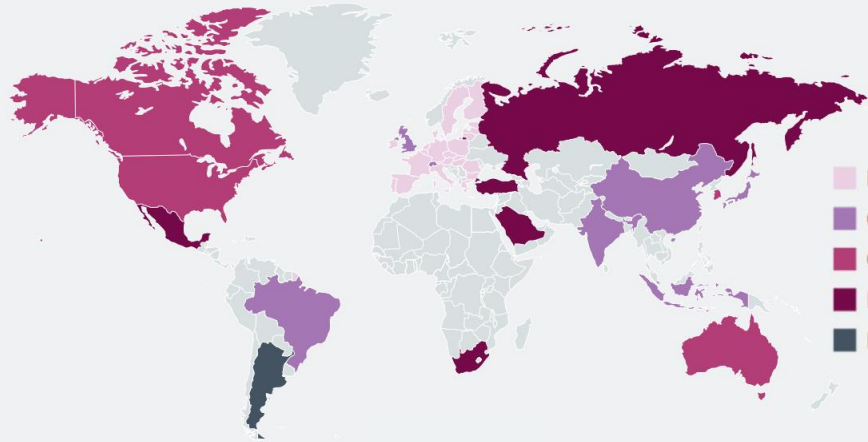
Type	Description	Category	Traded element	Segments
Asset Markets	Markets in which the right to use ecosystem assets with long-lived value are traded	Real assets	Rights to use an entire ecosystem asset and resulting services	Agricultural land, timberland, water rights, biodiversity IP, additional ecosystems assets
Intrinsic Markets	Markets in which provisioning, regulating, or cultural ecosystem services are traded	Products	Use of provisioning services	Hard and soft commodities, legal and illegal wild species, genetic materials, water rights leases
		Conservation	Conservation of nature for direct economic benefit or altruistic value	Payments for ecosystem services, overseas development aid, philanthropic grants, sustainability-linked debt
		Access	Access to/use of cultural services	Wildlife tourism
Credit Markets	Markets in which credits that reflect efforts to enhance or conserve ecosystem assets or services are traded	Nature-specific credits	Credits that reflect the value of ecosystem services	Mitigation banks, water quality credits, voluntary biodiversity credits
		Nature-related carbon credits	Credits that reflect the value or carbon sequestration or storage	Nature-related voluntary carbon credits, AFOLU sector compliance carbon allowances
Derivative Markets	Markets for financial products which directly reflect ecosystem values or ecosystem risks	Financial products	Financial products directly tied to ecosystem assets or services	Commodity derivatives, nature-related insurance, wildlife NFTs, biodiversity loss insurance, securitization of ecosystem assets, water futures





Climate

None Best practice



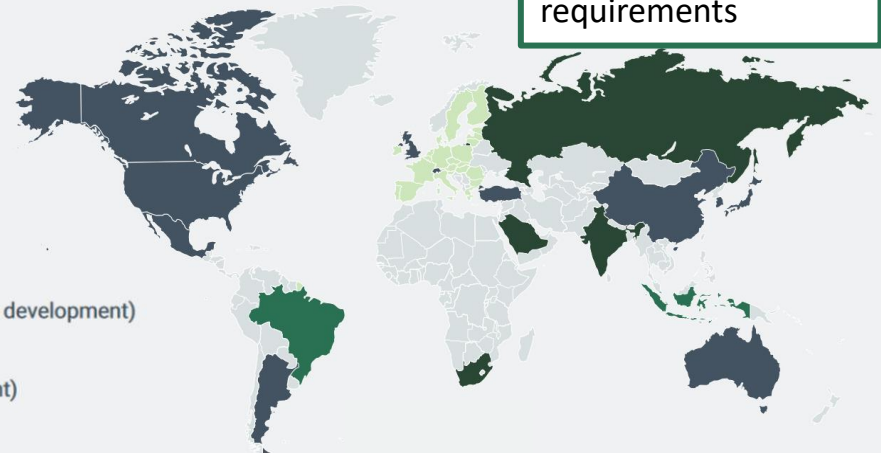
Over 50% of the G20+ have climate-related disclosure requirements partially based on or fully aligned with the TCFD

Disclosure Requirements

Biodiversity-related disclosure across the G20+ is in its infancy. Only four jurisdictions, namely Brazil, the EU, Indonesia and Singapore, have biodiversity-related disclosure requirements



Biodiversity



Emerging best practice (under development)
 On the rise
 On the rise (under development)
 Initial
 None

National actions

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Australian Government
Department of Climate Change, Energy,
the Environment and Water

**Nature Positive Plan:
better for the environment,
better for business**

December 2022

dccaew
gov.au

2022-2023

The Parliament of the
Commonwealth of Australia

HOUSE OF REPRESENTATIVES

As passed by both Houses

Nature Repair Bill 2023

No. , 2023

**A Bill for an Act to establish a national voluntary
framework for projects to enhance or protect
biodiversity, and for other purposes**

- Came into effect on 15 December 2023.
- A world-first legislated, national, voluntary biodiversity market.
- Allow for a broad range of different types of nature repair, protection and restoration activities.
- Clean Energy Regulator will administer both the Nature Repair Market and the Australian Carbon Credit Unit (ACCU) Scheme to support alignment between carbon and biodiversity markets.

National actions

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Kunming-Montreal Global Biodiversity Framework
4 Goals 23 targets to 2030

Australia's approach:

6 National Targets
3 Key Enablers of Change
Sustained Action




Australia's Targets

-  30% of priority degraded areas under effective restoration by 2030.
-  Minimise the impact of invasive species on biodiversity in our most precious places by 2030.
-  [Expand/grow/maximise/increase] the circularity of Australia's economy by 2030, to reduce the impact of pollution and habitat destruction.
-  Embed climate change adaptation into decision-making by 2030, to support increased resilience of biodiversity.
-  Protect and conserve 30% of Australia's land and 30% of Australia's oceans by 2030.
-  Work towards zero new extinctions.

Consultation closes on **Thursday, 4 April 2024**



 Australian Government
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the Environment and Water

Nature Repair Market Draft Bill

Biodiversity Certificates

What is a biodiversity certificate?

The nature repair market establishes a framework for issuing, tracking and ensuring the integrity of **biodiversity certificates**.

Biodiversity certificates provide an easy way for businesses, governments and individuals to invest in nature repair projects – without owning an interest in the land.

A **single certificate** will be issued for each project. Certificates will provide **standardised information** to enable the market to compare and value projects.

Certificates will be listed, and their status and ownership tracked via a **public register**. This will help certificate owners show their shareholders, customers and employees how they are supporting nature repair.

The **Nature Repair Market Bill** (the Bill) includes provisions to ensure the ongoing integrity of **biodiversity certificates**. These are designed to ensure the market can have confidence that **biodiversity certificates** will always accurately describe the projects and the outcomes it is achieving for nature. For more information, please see our factsheet on ensuring integrity.

What information would be on the certificate?

The information on the **biodiversity certificate** will include:

- the type of project, for example protection of existing high-quality habitat or restoration of habitat
- the area and location of the project
- the type of habitat, its conservation priority and any threatened species
- the activities that will be undertaken, for example fencing, weeding, in-fill planting and pest control
- the initial condition of the habitat and the expected change in condition of the habitat as a result of the project, including benefits for threatened species and ecological communities
- the duration of the project, for example protection in perpetuity or management for 10 years (because the land is already protected under a conservation covenant)

Biodiversity certificates could also include information about other matters such as First Nations engagement and community benefits.

Proponents will be required to monitor and report on their projects, including its benefits for biodiversity. Proponents will also have to report relevant changes to the project such as impacts of bushfire. Certificates will be updated to reflect this information. This will ensure certificates always provide accurate information about the project and its benefits for nature.

Department of Climate Change, Energy, the Environment and Water
December 2022


Governance and integrity

- The Act will provide the rules that ensures integrity, enforcement, and genuine environmental benefit.
- Provides for an expert to review proposed methods.
- Standards to ensure genuine improvements in nature.
- Each project will have a single tradable certificate. Owners can sell these certificates to buyers under commercial contracts.
- Certificates will provide standard information to enable the Market to compare and value projects.
- Certificates, their status and ownership trackable via a public register.

National actions

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Nature Repair Market Draft Bill

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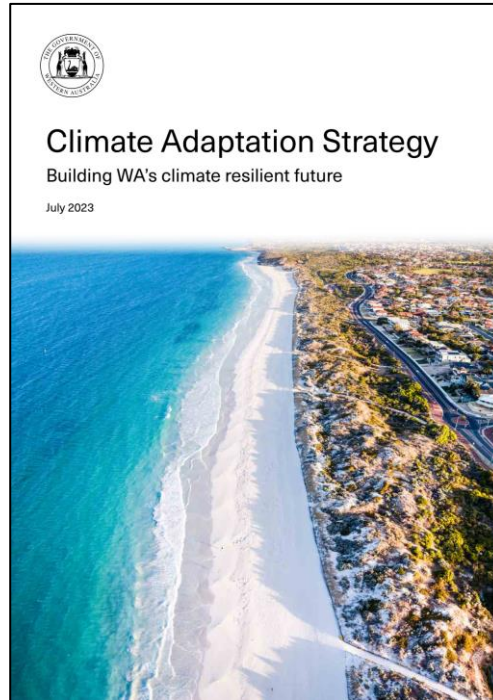
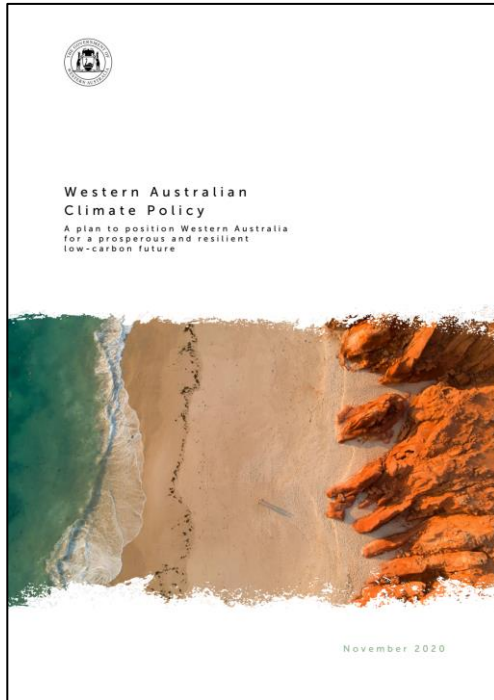
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Department of Climate Change, Energy, the Environment and Water
December 2022

Projects may include:

- Improving or restoring native vegetation through activities such as fencing or weeding.
- Planting a mix of local native species.
- Protecting rare grasslands that provide habitat for an endangered species.
- Hessian bag seagrass plantings to restore seagrass meadows.
- Removing tidal barriers to restore mangroves, saltmarshes and mudflats.
- Landholders can also undertake projects to protect existing habitats, restore and improve damaged areas and establish new plantings to promote biodiversity and animal habitats.

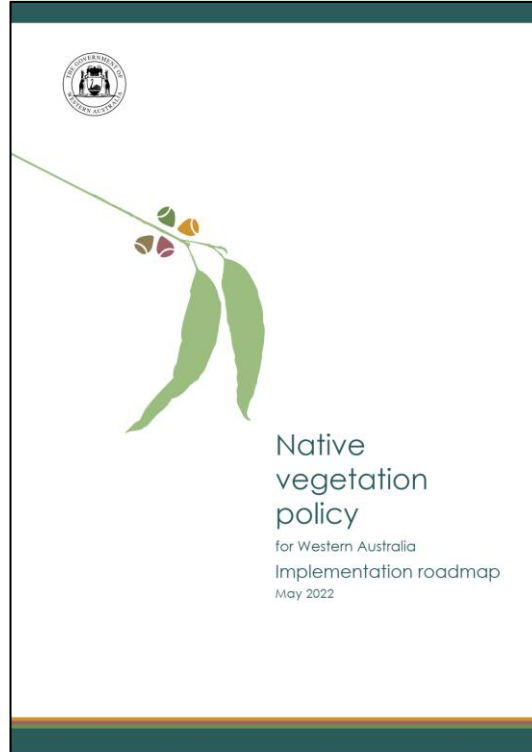
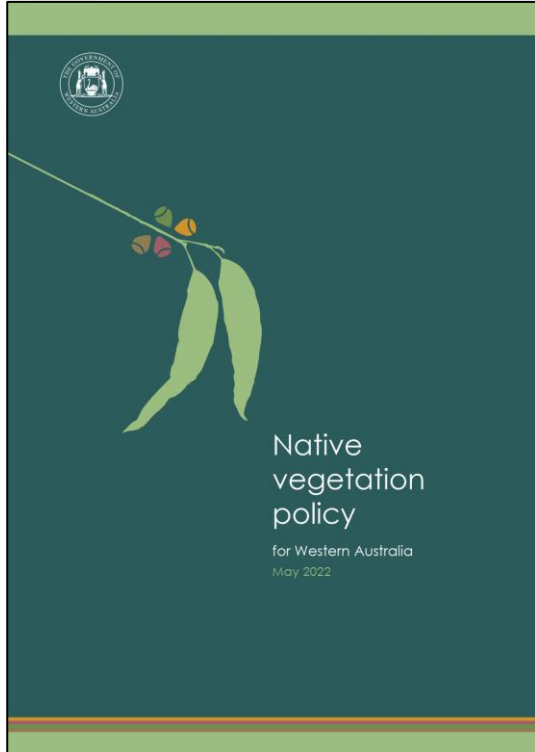


Directions to support and accelerate climate adaptation across the state:

1. Produce and communicate credible climate information and resources.
2. Build public sector climate capability and strengthen accountability.
3. Enhance sector-wide and community partnerships to unite and coordinate action.
4. Empower and support the climate resilience of Aboriginal people.

State actions

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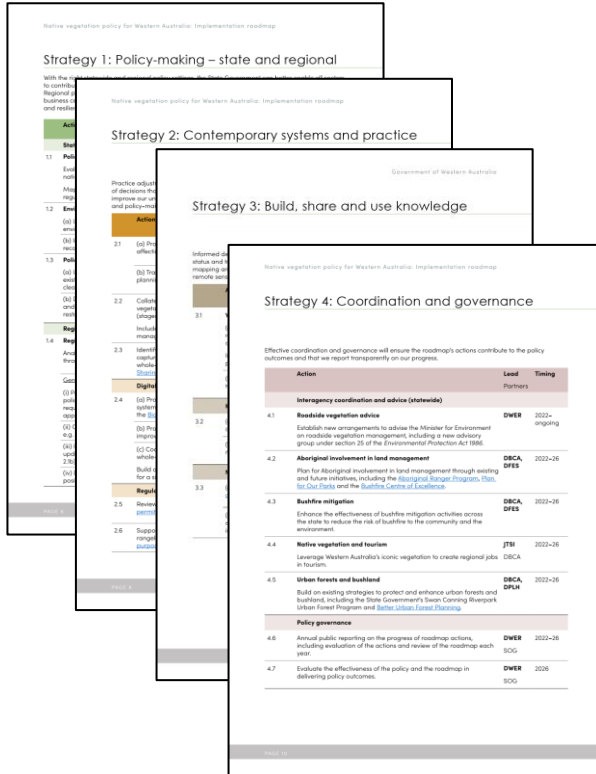


A whole-of-government approach to achieving better outcomes for native vegetation:

- policy settings at a statewide and regional level for application by all agencies
- practices for consistent and transparent decision-making
- information and systems for accessible and reliable data.

State actions

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1.3	Policy options to support net gain	DWER	2023
	(a) Undertake an economic and policy analysis, assessing how existing policy instruments are interacting to influence choices to clear, conserve or restore, including motivations and barriers.		
	(b) Develop policy reform options to better incentivise conservation and restoration, support a net gain in native vegetation and build the restoration economy.	DWER, DBCA, DPIRD	2024
1.4	Regional planning prioritisation and scoping	DWER	2022
	Analyse issues and consult to prioritise regions or matters to address through regional planning.	DBCA, DMIRS, DPIRD, DPC, DPLH	
	<u>General steps:</u>	per region	2022–2026
	(i) Project planning to define primary decision-making pathways, policy-making model(s), lead agency, interim spatial boundaries, requirements for a strategic offsets plan, stakeholder engagement approach and outputs.		
3.1	WA native vegetation extent dataset (WAVE)	DWER	2022–ongoing
	(a) New dataset and monitoring system: semi-automated, regularly updated statewide dataset, leveraging remote sensing and machine learning.	DBCA, Landgate, DPIRD, DPLH, DFES, DMIRS	
	Includes publicly available satellite products for multiple purposes, such as tracking clearing over time.		
	(b) Use 3.1(a) to improve statistics on proportion of vegetation type remaining, to support cumulative impact assessment.	DWER, DBCA	2024–ongoing

State actions

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Protect
Grow
Innovate

Western Australian Carbon Farming and Land Restoration Program ACCU Plus Program Guidelines

3. Priority co-benefits

ACCU Plus projects deliver one or more of the CF-LRP's five priority co-benefits. These additional positive outcomes increase the value of the carbon sequestered and support the RBDC's decision to invest in the projects.



Tambellup Noongar Farm Carbon Restoration Project

Project Overview:

- Recipient: Native Carbon 3
- Location: Tambellup, WA
- Total funding: \$607,750
- Project size: 130 hectares
- Estimated ACCUs: 22,100
- Project method: Reforestation by Environmental or Mallee Plantings – FullCAM

The Tambellup Noongar Farm Carbon Restoration Project is a best practice demonstration of how carbon farming can benefit the Aboriginal community in southwest Australia. With the ecological restoration of 130 hectares of degraded farmland located directly adjacent to the Gordon River, this project will deliver real outcomes for the conservation of biodiversity, the arresting of local salinity, the sequestration of atmospheric carbon, and the generation of employment opportunities for the local Aboriginal community. Through collaborative partnerships with like-minded individuals and organisations, the recipient will develop and share cultural and environmental knowledge with members of their community and beyond. The recipient and project partners see this as first step forward to getting their community back on country, and sharing time and stories on the land they will restore.



Tambellup Noongar Farm - Project site

Wellwood Farm Carbon Project

Project Overview:

- Recipient: KJ Barrett & LM Barrett & SJ Barrett
- Location: Bagebup and Nyabing, (Katanning) WA
- Total funding: \$160,000
- Project size: 2000
- Estimated ACCUs: 83,160
- Project method: Estimation of Soil Organic Carbon Sequestration using Measurement and Models
- Project permanence: 25 years

The recipient aims to improve the land management of its properties in Bagebup and Nyabing through a soil carbon project that improves the ecological function of the properties where mixed cropping and grazing occurs. Paddocks will undergo pasture renovation to improve the capacity of the land to sequester and store soil carbon. Use of a new disc-seeding system will assist by reducing the soil disturbance caused by seeding additional pasture species.

Cropping activities will continue on rotation, although sheep grazing will be prioritised. Building soil structure, encouraging deeper-rooted plants and minimising tillage will be the focus to maintain the soil organic carbon once it has been sequestered. Increasing the number and variety of species grown will underpin the 'materially different' approach to land management for this project. Continual monitoring of soil health and carbon levels will help guide management decisions on how to continually improve pastures and cover crops. Experience and attention to weather forecasting will guide decisions on seed mixes, seeding time and grazing practices.



Wellwood project site

Boorukup Restoration Project

Project Overview:

- Recipient: Native Carbon 2
- Location: Cranbrook, WA
- Total funding: \$540,000
- Project size: 250 hectares
- Estimated ACCUs: 48,000
- Project method: Reforestation by Environmental or Mallee Plantings – FullCAM
- Permanence period: 100 years

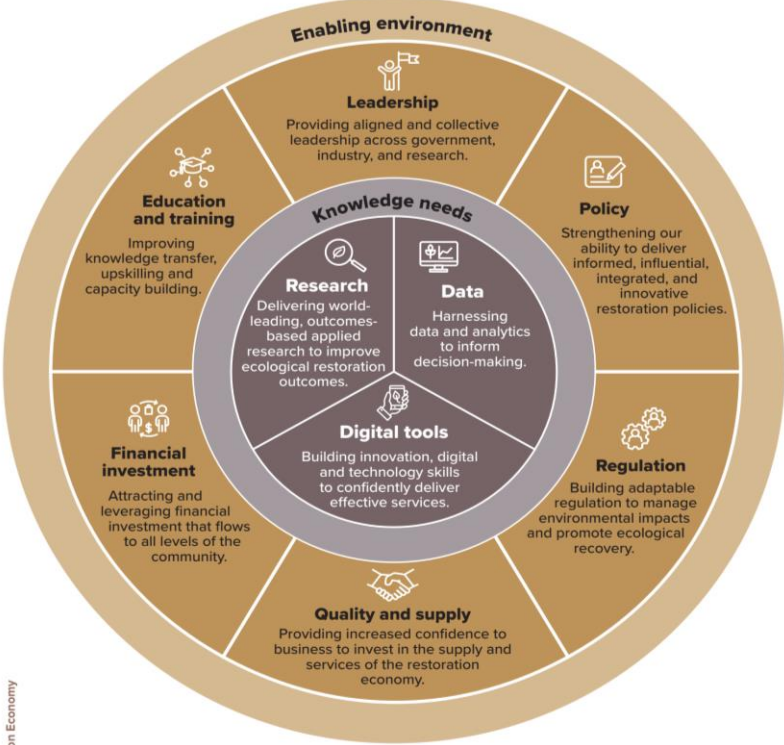
The 358-ha demonstration site in Cranbrook, WA is establishing best practice through the revegetation of 250 hectares of degraded, low value farmland. Revegetation is being implemented using both direct seeding and hand planting to achieve diverse restoration at-scale.

The project has been designed to meet 5-star ecological restoration on a complex mosaic of soil types in a hydrological 'at risk' area by reducing habitat fragmentation between remnant patches of vegetation along the Gordon River.



Scaling restoration

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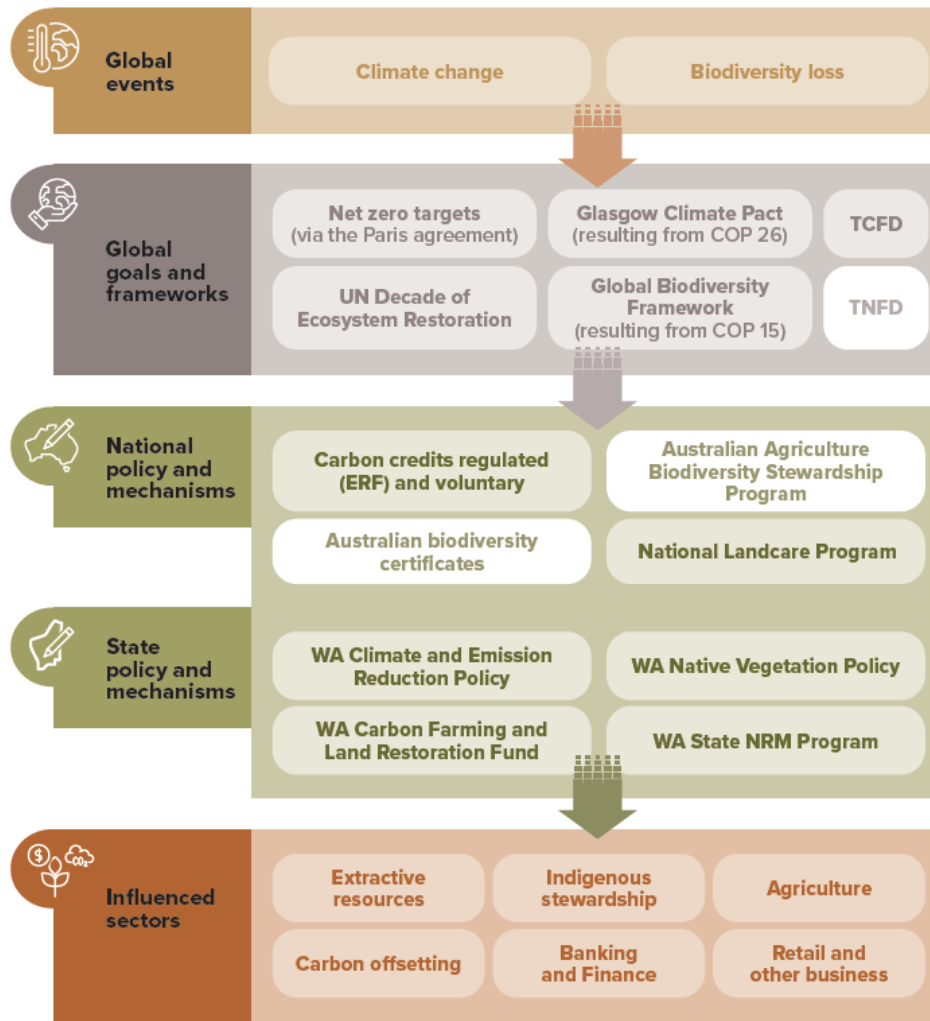


Private finance is not a substitute for a state funding and strategy – they’re symbiotic.

Natural Capital isn’t just about economics, we need natural capital for an enduring future

A whole-of-system approach is needed to ensure robust Restoration Economies are established that capitalize on the investment opportunity while supporting effective scaling.





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